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Advance Data
From Vital and
Health Statistics:
Numbers 171-180

April 1995



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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Advance Data From Vital and Health Statistics: Numbers 171–180

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Data in this report from health and demographic surveys present statistics by age and other variables on office visits to cardiovascular disease specialists, characteristics of persons dying from heart and cerebrovascular diseases, use of vitamin and mineral supplements, firearm mortality among children and youth, and AIDS knowledge and attitudes. Estimates are based on the civilian non-institutionalized population of the United States. These reports were originally published in 1989.

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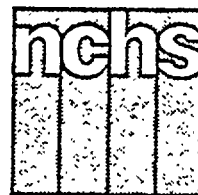
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Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

Office Visits to Cardiovascular Disease Specialists, 1985

by Cheryl Nelson, M.S.P.H., Division of Health Care Statistics

In 1985 an estimated 10.6 million patient visits were made to the offices of physicians specializing in cardiovascular disease. This represented 1.7 percent of all ambulatory visits to all physician specialties. Patients seeking health care services from cardiovascular disease specialists were generally older than patients seeking care from physicians in other specialties. Patients 45 years of age and older represented 87 percent of the ambulatory visits. Patients 65 years of age and older accounted for an estimated 5 million visits and had a visit rate of 186 visits per 1,000 persons (table 1). The mean age of patients visiting cardiovascular disease specialists was 61.7 years (table 2). In other physician specialties, the next highest mean patient age was about 54 years for internal medicine, ophthalmology, and urological surgery.

Table 1. Number, percent distribution, and rate of office visits to cardiovascular disease specialists, by age of patient: United States, 1985

Age of patient	Number of visits in thousands	Percent distribution	Visit rate per 1,000 persons
All ages	10,617	100.0	45
Under 25 years	*257	2.4	3
25-44 years	1,112	10.5	16
45-64 years	4,232	39.9	96
65 years and over	5,015	47.2	186

Table 2. Mean age of visiting patients by physician specialty: United States, 1985

Physician specialty	Mean age of visiting patient
All specialties	39.6
Cardiovascular disease	61.7
Ophthalmology	54.4
Internal medicine	54.3
Urological surgery	54.1
General surgery	48.5
Neurology	45.3
Dermatology	41.0
General and family practice	40.2
Orthopedic surgery	40.0
Psychiatry	39.1
Otorhinolaryngology	36.5
Obstetrics and gynecology	32.5
Pediatrics	5.9
All other specialties	46.2

This report is based on data from the 1985 National Ambulatory Medical Care Survey (NAMCS). NAMCS, a year-long probability sample survey of the Nation's office-based physicians, was conducted annually from 1973

through 1981 and again in 1985 by the Division of Health Care Statistics of the National Center for Health Statistics. General findings from the 1985 NAMCS have been published (1).

In the office-based setting, visits by white patients outnumbered visits by black patients and by patients of other races in seeking health care services from cardiovascular disease specialists (table 3).

Established patient-physician relationships accounted for 88 percent of the visits, and the majority of those visits (78 percent) were from patients with old problems returning to the physician's office (table 4). In 1975-76, established patient-physician relationships accounted for 75 percent of the visits to cardiovascular disease specialists (2).

¹McLemore T, DeLozier J. 1985 summary: National Ambulatory Medical Care Survey. Advance data from vital and health statistics; no 128. Hyattsville, Maryland: National Center for Health Statistics. 1988.

²Koch H. Office visits to cardiovascular specialists, National Ambulatory Medical Care Survey, United States, 1975-76. Advance data from vital and health statistics; no 42. Hyattsville, Maryland: National Center for Health Statistics. 1988.

Table 3. Number and percent distribution of office visits to cardiovascular disease specialists, by sex and race of patient: United States, 1985

Sex and race of patient	Number of visits in thousands	Percent distribution
All visiting patients	10,617	100.0
Sex		
Female	4,842	45.6
Male	5,775	54.4
Race		
White	10,116	95.3
Black and other	500	4.7

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

Referral status and prior visit status	Number of visits in thousands	Percent distribution
All statuses	10,617	100.0
Referral status		
Referred by another physician	778	7.3
Not referred by another physician	9,838	92.7
Prior visit status		
New patient	1,239	11.7
Established patient	9,378	88.3
New problem	1,081	10.2
Old problem	8,297	78.1
New problem visit	2,320	21.9
Return visit	8,297	78.1

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

Principal reason for visit module and RVC code ¹	Number of visits in thousands	Percent distribution
All principal reasons for visit modules	10,617	100.0
Symptom module		
General symptoms . . . . .	.S001-S999	4,430
Symptoms referable to the respiratory system . . . . .	.S400-S499	627
Symptoms referable to the musculoskeletal system . . . . .	.S900-S999	666
Disease module . . . . .	.D001-D999	1,904
Diseases of the circulatory system . . . . .	.D500-D599	1,562
Diagnostic, screening, and preventive module . . . . .	.X100-X599	2,314
Treatment module ^{2,3} . . . . .	.T100-T999	1,346
All other modules		623

¹RVC means "reason for visit classification." Codes are based on Schneider D, Appleton L, McLemore T. A reason for visit classification for ambulatory care. National Center for Health Statistics. Vital Health Stat 2(78), 1979.

²Includes injuries and adverse effects module, test result module, administrative module, and blank and uncodable entries.

³Each module represents fewer than 256,000 visits.

Table 6. Number and percent distribution of office visits to cardiovascular disease specialists, by the most common principal reason for visit: United States, 1985

Most common principal reason for visit and RVC code ¹	Number of visits in thousands	Percent distribution
All principal reasons for visit modules	10,617	100.0
General medical examination . . . . .	.X100	1,501
Chest pain and related symptoms . . . . .	.S050	1,214
Ischemic heart disease . . . . .	.D515	707
Hypertension . . . . .	.D510	418
Other heart disease . . . . .	.D520	*351
Abnormal pulsations and palpitations . . . . .	.S260	*349
Shortness of breath . . . . .	.S415	*262
Blood pressure test . . . . .	.X320	*254
Vertigo—dizziness . . . . .	.S225	*229
All other reasons		5,331

¹RVC means "reason for visit classification." Codes are based on Schneider D, Appleton L, McLemore, T. A reason for visit classification for ambulatory care. National Center for Health Statistics. Vital Health Stat 2(78), 1979.

Patient's reason for visiting the physician

A symptom was most often given by patients as the major reason for visiting cardiovascular disease specialists (table 5). The general symptom most often recorded as a reason for visit was chest pain (table 6). However, the most often recorded reason for visit was a general medical examination, accounting for about 14 percent of all reasons for visit. Diseases of the circulatory system, such as ischemic heart disease and hypertension, were also among the most common reasons for visiting the cardiovascular disease specialist.

Physician diagnoses

Cardiovascular disease physicians ordered or provided some type of diagnostic service for the majority of their patients' visits. No diagnostic services were utilized in almost 14 percent of the patient visits (table 7). Except for internal medicine and obstetrics and gynecology, cardiovascular disease specialists used the blood pressure check as a diagnostic tool more often than did physicians in other specialties. In 70 percent of the visits, cardiovascular physicians ordered or provided a blood pressure check. The EKG was another principal diagnostic tool used by cardiovascular disease physicians; in 30 percent of the patient visits, the physicians ordered or provided an EKG. Internists utilized the EKG in 11 percent of their patient visits; they ranked second to cardiovascular disease physicians in EKG utilization.

Sixty-three percent of all visits to cardiovascular disease physicians resulted in diagnoses of diseases of the circulatory system (table 8). Other forms of chronic ischemic heart disease, essential hypertension, cardiac dysrhythmias, angina pectoris, and heart failure represented 48 percent of the most common principal diagnoses made by cardiovascular disease specialists (table 9).

Table 7. Number and percent distribution of office visits to cardiovascular disease specialists, by number and type of diagnostic services ordered or provided: United States, 1985

<i>Number and type of specified diagnostic services ordered or provided</i>	<i>Number of visits in thousands</i>	<i>Percent distribution</i>
All diagnostic services	10,617	100.0
Number of specified diagnostic services		
None	1,452	13.7
1	4,185	39.4
2	2,408	22.7
3	1,144	10.8
4	476	4.5
5 or more	951	8.9
Type of diagnostic services		
None	1,452	13.7
Blood pressure check	7,478	70.4
EKG	3,208	30.2
Blood chemistry	1,870	17.6
Hematology	1,412	13.3
Urinalysis	1,110	10.5
Chest x-ray	979	9.2
Other lab test	728	6.9
Breast exam	717	6.7
Other radiology	363	3.4
Other ¹	2,928	27.6

¹Includes pelvic exam, rectal exam, visual acuity, pap test, ultrasound, and other.

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

<i>Principal diagnosis and ICD-9-CM code¹</i>	<i>Number of visits in thousands</i>	<i>Percent distribution</i>
All diagnoses	10,617	100.0
Endocrine, nutritional, and metabolic diseases and immunity disorders . . . . .	.240-279	*315 3.0
Diseases of the circulatory system . . . . .	.390-459	6,700 63.1
Diseases of the respiratory system . . . . .	.460-519	543 5.1
Diseases of the digestive system . . . . .	.520-579	*268 *2.5
Diseases of the musculoskeletal system and connective tissue . . . . .	.710-739	547 5.1
Symptoms, signs, and ill-defined conditions . . . . .	.780-799	681 6.4
Injury and poisoning . . . . .	.800-999	*237 *2.2
Supplementary classification . . . . .	.V01-V82	605 5.7
Other ²	721	6.8

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*.

²Includes infectious and parasitic diseases (001-139); neoplasms (140-239); mental disorders (290-319); diseases of the nervous system and sense organs (320-389); diseases of the genitourinary system (580-629); diseases of the skin and subcutaneous tissue (680-709); 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.

Table 9. Number and percent distribution of office visits to cardiovascular disease specialists, by the most common principal diagnosis: United States, 1985

<i>Most common principal diagnosis and ICD-9-CM code¹</i>	<i>Number of visits in thousands</i>	<i>Percent distribution</i>
All diagnoses	10,617	100.0
Other forms of chronic ischemic heart disease . . . . .	.414	2,232 21.0
Essential hypertension . . . . .	.401	1,289 12.1
Cardiac dysrhythmias . . . . .	.427	638 6.0
Angina pectoris . . . . .	.413	576 5.4
Heart failure . . . . .	.428	368 3.5
Symptoms involving respiratory system and other chest symptoms . . . . .	.786	*320 3.0
Other diseases of the endocardium . . . . .	.424	*316 3.0
Ill-defined descriptions and complications of heart disease . . . . .	.429	*214 *2.0
Diabetes mellitus . . . . .	.250	*162 *1.5
All other diagnoses	4,501	42.4

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*.

Table 10. Number and percent distribution of office visits to cardiovascular disease specialists, by type of visit and number of medications prescribed or ordered: United States, 1985

Type of visit and number of medications	Number of visits in thousands	Percent distribution
All visits	10,617	100.0
No drug visit (0 medications)	2,032	19.1
Drug visit	8,585	80.9
Number of medications		
1	1,543	14.5
2	1,704	16.0
3	1,641	15.5
4	1,543	14.5
5 or more	2,153	20.3

Table 11. Number and percent distribution of the most common drug mentions in the office-based practice of cardiovascular disease specialists, by therapeutic category: United States, 1985

Therapeutic category ¹	Number of drug mentions in thousands	Percent distribution
All drugs	26,812	100.0
Cardiovascular drugs	12,427	46.4
Cardiac drugs	6,196	23.1
Vasodilating drugs	3,699	13.8
Hypotensive drugs	2,466	9.2
Electrolytic, caloric, and water balance agents	4,860	18.1
Diuretics	3,448	12.9
Replacement solutions	1,162	4.3
Central nervous system drugs	3,116	11.6
Analgesics and antipyretics	1,789	6.7
Nonsteroidal anti-inflammatory agents	1,470	5.5
Anxiolytics, sedatives, and hypnotics	873	3.3
Benzodiazepines	*716	2.7
Hormones and synthetic substitutes	1,273	4.8
Antidiabetic agents	*648	2.4
Gastrointestinal drugs	997	3.7
Blood formation and coagulation agents	804	3.0
Anticoagulants	*697	2.6
Other ²	3,335	12.4

¹Based on the American Hospital Formulary Service Classification System Drug Product Information File, The American Druggist Blue Book Data Center, San Bruno, Calif., 1985.

²Includes antihistamine drugs; anti-infective agents; antineoplastic agents; autonomic drugs; antitussive, expectorants, and mucolytic agents; eye, ear, nose, and throat (EENT) preparations; local anesthetics; serums, toxoids, and vaccines; skin and mucous membrane agents; smooth muscle relaxants; vitamins; other and undetermined.

Table 12. Number, percent, and therapeutic use of the 10 drugs most frequently utilized in the office practice of cardiovascular disease specialists, by entry name: United States, 1985

Entry name of drug ¹	Number of mentions in thousands	Percent	Therapeutic use
All	26,812	100.0	
Lanoxin (digoxin)	1,442	5.4	Cardiotonic
Lasix (furosemide)	1,361	5.1	Diuretic
Inderal (propranolol)	1,174	4.4	Cardiotonic
Dyazide (triamterene, hydrochlorothiazide)	966	3.6	Diuretic
Persantine (dipyridamole)	*687	2.6	Vasodilator
Isordil (isosorbide)	*686	2.6	Vasodilator
Coumadin (warfarin)	*683	2.5	Anticoagulant
Digoxin	*674	2.5	Cardiotonic
Nitroglycerin	*643	2.4	Vasodilator
Procardia (nifedipine)	*630	2.4	Cardiotonic

¹The trade or generic name used by the physician on the prescription or other medical records. Trade name drug entries are accompanied by parenthesized generic ingredients.

Medication therapy

The 26 million drugs prescribed or provided by cardiovascular disease physicians account for almost 4 percent of all drugs reported by all specialties. Drugs mentioned in visits to general and family practitioners and internists account for the majority (54 percent) of all reported drugs (3). Medication was prescribed or provided by cardiovascular disease specialists in almost 81 percent of the visits (table 10); that was more often than in any other physician specialty. General and family practitioners and internists, respectively, prescribed or provided drugs in 72 and 77 percent of their visits. Cardiovascular disease physicians prescribed or provided two or more medications in 66 percent of their visits; general and family practitioners and internists prescribed or provided two or more medications in only 33 and 45 percent of their visits, respectively. The average number of drugs prescribed or provided by cardiovascular physicians was 2.5 drugs per visit. When drugs were prescribed or ordered by cardiovascular disease physicians, the average number of drugs per drug visit was 3.1.

Forty-six percent of the drugs reported by cardiovascular disease physicians were classified as cardiovascular drugs—specifically, cardiac drugs, vasodilating drugs, and hypotensive drugs (table 11). The cardiac drug Lanoxin accounted for 5 percent of the drugs reported. Digoxin, the principal generic ingredient of Lanoxin, was mentioned at least 2 percent of the time (table 12). Digoxin, as a generic ingredient, accounted for 7 percent of all drug ingredients (table 13).

Counseling was the principal non-medication therapy utilized by cardiovascular disease specialists (table 14).

³Koch H. Highlights of drug utilization in office practice, National Ambulatory Medical Care Survey, 1985. Advance data from vital and health statistics; no 134. Hyattsville, Maryland: National Center for Health Statistics. 1988.

Table 13. Number and percent of the 10 generic ingredients most frequently utilized in the office practice of cardiovascular disease specialists: United States, 1985

Generic ingredients	Number of mentions in thousands	Percent
All ¹	30,308	100.0
Digoxin	2,138	7.1
Nitroglycerin	1,829	6.0
Hydrochlorothiazide	1,748	5.8
Furosemide	1,361	4.5
Propranolol	1,224	4.0
Potassium replacement solutions	1,085	3.6
Triamterene	1,005	3.3
Aspirin	991	3.3
Isosorbide	971	3.2
Dipyridamole	855	2.8

¹ "There are more generic ingredients listed as used in office practice than entry names of drugs because a trade name drug can have multiple generic ingredients."

Table 14. Number and percent distribution of office visits to cardiovascular disease specialists, by the most common nonmedication therapy ordered or provided: United States, 1985

Nonmedication therapy	Number of visits in thousands	Percent distribution ¹
All nonmedication therapies	10,617	100.0
None	8,597	81.0
Diet counseling	601	6.2
Other counseling	1,179	11.1
All other ^{2,3}	508	4.8

¹ May not add to 100.0 percent because more than one nonmedication therapy was possible.

² Includes physical therapy, ambulatory surgery, psychotherapy, family planning, and other.

³ Each element represents fewer than 260,000 visits.

Table 15. Number and percent distribution of office visits to cardiovascular disease specialists, by duration of visit: United States, 1985

Duration	Number of visits in thousands	Percent distribution
All durations	10,617	100.0
0 minutes ¹	390	3.7
1-5 minutes	*227	*2.1
6-10 minutes	1,023	9.6
11-15 minutes	3,390	31.9
16-30 minutes	4,431	41.7
31-60 minutes	968	9.1
61 minutes and over	*185	*1.8

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

Table 16. Number and percent distribution of office visits to cardiovascular disease specialists, by disposition: United States, 1985

Disposition	Number of visits in thousands	Percent distribution ¹
All dispositions	10,617	100.0
No followup planned	533	5.0
Return at specified time	8,501	80.1
Return if needed	729	6.9
Telephone followup planned	381	3.6
Referred to other physician	*328	3.1
Return to referring physician	575	5.4
Admit to hospital	*281	*2.6
Other	*52	*0.5

¹ May not add to 100.0 percent because more than one disposition was possible.

Duration and disposition of visit

The mean duration of all visits to cardiovascular disease specialists was 22 minutes. Seventy-three percent of those visits had a duration of between 11 and 30 minutes (table 15). However, when patient visits are stratified by the patient's prior visit status, the mean duration of visit was 38 minutes for new patients and 20 minutes for established patients.

Some type of "return" disposition was given in 92 percent of visits to cardiovascular disease specialists; eighty percent of visits were given the disposition of "return at a specified time" (table 16).

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 (NAMCS) from March 1985 through February 1986. The target universe of NAMCS includes office visits made within the coterminous 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 non-Federal, office-based physicians was selected from master files maintained by the American Medical Association and the American Osteopathic Association. The physician

response rate for the 1985 NAMCS was 70 percent; the response rate for cardiovascular disease specialists was 51 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; 1,506 patient records were from cardiovascular disease specialists. Characteristics of the physician's practice, such as primary specialty and type of practice, were obtained during an

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.		Department of Health and Human Services Public Health Service National Center for Health Statistics																																																																			
1. DATE OF VISIT / / Month Day Year		PATIENT RECORD NATIONAL AMBULATORY MEDICAL CARE SURVEY		OMB No. 0937-0141 Expires 9/30/88 (PHS) 6105-D 456-232																																																																	
2. DATE OF BIRTH / / Month Day Year	3. SEX 1 <input type="checkbox"/> FEMALE 2 <input type="checkbox"/> MALE	4. COLOR OR RACE 1 <input type="checkbox"/> WHITE 2 <input type="checkbox"/> BLACK 3 <input type="checkbox"/> ASIAN/PACIFIC ISLANDER 4 <input type="checkbox"/> AMERICAN INDIAN/ALASKAN NATIVE	5. ETHNICITY 1 <input type="checkbox"/> HISPANIC ORIGIN 2 <input type="checkbox"/> NOT HISPANIC	6. EXPECTED SOURCE(S) OF PAYMENT <i>[Check all that apply]</i> 1 <input type="checkbox"/> SELF-PAY 4 <input type="checkbox"/> BLUE CROSS/BLUE SHIELD 7 <input type="checkbox"/> NO CHARGE 2 <input type="checkbox"/> MEDICARE 5 <input type="checkbox"/> OTHER COMMERCIAL INSURANCE 8 <input type="checkbox"/> OTHER <i>[Specify]</i> 3 <input type="checkbox"/> MEDICAID 6 <input type="checkbox"/> HMO/PRE-PAID PLAN	7. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN? 1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO																																																																
8. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT <i>[In patient's own words]</i> a. MOST IMPORTANT _____ b. OTHER _____		9. GLUCOSE TESTS THIS VISIT <i>[Check all ordered or provided]</i> 1 <input type="checkbox"/> NONE 2 <input type="checkbox"/> BLOOD 3 <input type="checkbox"/> URINE 4 <input type="checkbox"/> ORAL	10. OTHER DIAGNOSTIC SERVICES THIS VISIT <i>[Check all ordered or provided]</i> 1 <input type="checkbox"/> NONE 6 <input type="checkbox"/> URINALYSIS 11 <input type="checkbox"/> BLOOD PRESSURE CHECK 2 <input type="checkbox"/> BREAST EXAM 7 <input type="checkbox"/> HEMATOLOGY 12 <input type="checkbox"/> EKG 3 <input type="checkbox"/> PELVIC EXAM 8 <input type="checkbox"/> BLOOD CHEMISTRY 13 <input type="checkbox"/> CHEST X-RAY 4 <input type="checkbox"/> RECTAL EXAM 9 <input type="checkbox"/> PAP TEST 14 <input type="checkbox"/> OTHER RADIOLOGY 5 <input type="checkbox"/> VISUAL ACUITY 10 <input type="checkbox"/> OTHER LAB TEST 15 <input type="checkbox"/> ULTRASOUND 16 <input type="checkbox"/> OTHER SERVICE <i>[Specify]</i>																																																																		
11. PHYSICIAN'S DIAGNOSES a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 8a _____ b. OTHER SIGNIFICANT CURRENT DIAGNOSES _____		12. HAVE YOU SEEN PATIENT BEFORE? 1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO IF YES, FOR THE CONDITION IN ITEM 11a? 1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO	13. NON-MEDICATION THERAPY <i>[Check all services ordered or provided this visit]</i> 1 <input type="checkbox"/> NONE 5 <input type="checkbox"/> PSYCHOTHERAPY 9 <input type="checkbox"/> CORRECTIVE LENSES 2 <input type="checkbox"/> PHYSIOTHERAPY 6 <input type="checkbox"/> FAMILY PLANNING 10 <input type="checkbox"/> OTHER <i>[Specify]</i> 3 <input type="checkbox"/> AMBULATORY SURGERY 7 <input type="checkbox"/> DIET COUNSELING 4 <input type="checkbox"/> RADIATION THERAPY 8 <input type="checkbox"/> OTHER COUNSELING																																																																		
14. MEDICATION THERAPY <i>[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.]</i> IF NONE, CHECK HERE <input type="checkbox"/> <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 5%;"></td> <td style="width: 10%; text-align: center;">a.</td> <td style="width: 10%;"></td> <td style="width: 10%; text-align: center;">b.</td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> <td style="width: 10%;"></td> </tr> <tr> <td></td> <td style="text-align: center;">NEW MEDICATION?</td> <td></td> <td style="text-align: center;">FOR DX IN ITEM 11a?</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">YES</td> <td style="text-align: center;">NO</td> <td style="text-align: center;">YES</td> <td style="text-align: center;">NO</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td></td> <td></td> <td></td> </tr> <tr> <td>3</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td></td> <td></td> <td></td> </tr> <tr> <td>4</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td></td> <td></td> <td></td> </tr> <tr> <td>5</td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td style="text-align: center;">1 <input type="checkbox"/></td> <td style="text-align: center;">2 <input type="checkbox"/></td> <td></td> <td></td> <td></td> </tr> </table>				a.		b.						NEW MEDICATION?		FOR DX IN ITEM 11a?						YES	NO	YES	NO				1	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>				2	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>				3	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>				4	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>				5	1 <input type="checkbox"/>	2 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>				15. DISPOSITION THIS VISIT <i>[Check all that apply]</i> 1 <input type="checkbox"/> NO FOLLOW-UP PLANNED 2 <input type="checkbox"/> RETURN AT SPECIFIED TIME 3 <input type="checkbox"/> RETURN IF NEEDED, P.R.N. 4 <input type="checkbox"/> TELEPHONE FOLLOW-UP PLANNED 5 <input type="checkbox"/> REFERRED TO OTHER PHYSICIAN 6 <input type="checkbox"/> RETURNED TO REFERRING PHYSICIAN 7 <input type="checkbox"/> ADMIT TO HOSPITAL 8 <input type="checkbox"/> OTHER <i>[Specify]</i>		16. DURATION OF THIS VISIT <i>[Time actually spent with physician]</i> _____ Minutes
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Figure. 1985 National Ambulatory Medical Care Survey patient record

induction interview. The National Opinion Research Center, under contract to NCHS, was responsible for the survey's data collection and processing operations.

Adjustments for nonresponse

Estimates from NAMCS data were adjusted to account for sample physicians who were in scope but did not participate in the study. This adjustment was calculated to minimize the impact of response on final estimates by imputing to nonresponding physicians the practice characteristics of similar responding physicians. For this purpose, physicians were judged similar if they had the same specialty designation and practiced in the same PSU.

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. These measurements are applied to office visits in tables I and II; in tables III and IV they are applied to drug mentions.

Rounding

In the tables, estimates of office visits have been rounded to the

Table I. Relative standard errors of estimated numbers of office visits to cardiovascular disease specialists: National Ambulatory Medical Care Survey, 1985.

Estimated number of office visits in thousands	Relative standard error in percent
100*	55.0
300*	32.4
353	30.0
500	25.5
1,000	18.8
3,000	12.5
5,000	10.8
10,000	9.4
30,000	8.3

Example of use of table: An aggregate estimate of 4,000,000 visits has a relative standard error of 11.5 percent, or a standard error of 460,000 visits (11.5 percent of 4,000,000).

Table II. Approximate standard errors of percent of estimated numbers of office visits to cardiovascular disease specialists: National Ambulatory Medical Care Survey, 1985

Estimated number of office visits in thousands	Estimated percent					50
	1 or 99	5 or 95	10 or 90	20 or 80	30 or 70	
Standard error in percentage points						
200	3.8	8.4	11.6	15.4	17.6	19.3
300	3.1	6.8	9.4	12.6	14.4	15.7
500	2.4	5.3	7.3	9.7	11.2	12.2
1,000	1.7	3.7	5.2	6.9	7.9	8.6
2,000	1.2	2.6	3.6	4.9	5.6	6.1
3,000	1.0	2.2	3.0	4.0	4.6	5.0
5,000	0.8	1.7	2.3	3.1	3.5	3.8
10,000	0.5	1.2	1.6	2.2	2.5	2.7
20,000	0.4	0.8	1.2	1.5	1.8	1.9

Example of use of table: An estimate of 3 percent based on an aggregate estimate of 10,000,000 visits has a standard error of 0.85 percent, or a relative standard error of 28 percent (0.85 percent ÷ 3 percent).

Table III. Relative standard errors of estimated numbers of drug mentions in the office-based practice of cardiovascular disease specialists: National Ambulatory Medical Care Survey, 1985

Estimated number of drug mentions in thousands	Relative standard error in percent
300*	46.0
500*	36.3
768	30.0
800	29.5
1,000	26.8
3,000	17.8
5,000	15.4
8,000	13.9
10,000	13.3
30,000	11.7
50,000	11.2

Example of use of table: An aggregate estimate of 15,000,000 drug mentions has a relative standard error of 12.6 percent, or a standard error of 1,890,000 drug mentions (12.6 percent of 15,000,000).

nearest thousand. Consequently, estimates will not always add to totals. Rates and percents were calculated from original unrounded figures and do not necessarily agree with percents calculated from rounded data.

Table IV. Approximate standard errors of percent of estimated numbers of drug mentions by cardiovascular disease specialists: National Ambulatory Medical Care Survey, 1985

Estimated number of office visits in thousands	Estimated percent					50
	1 or 99	5 or 95	10 or 90	20 or 80	30 or 70	
Standard error in percentage points						
500	3.4	7.5	10.4	13.9	15.9	17.3
1,000	2.4	5.3	7.3	9.8	11.2	12.3
2,000	1.7	3.8	5.2	6.9	7.9	8.7
3,000	1.4	3.1	4.2	5.7	6.5	7.1
5,000	1.1	2.4	3.3	4.4	5.0	5.5
10,000	0.8	1.7	2.3	3.1	3.5	3.9
20,000	0.5	1.2	1.6	2.2	2.5	2.7
30,000	0.4	1.0	1.3	1.8	2.0	2.2
50,000	0.3	0.7	1.0	1.4	1.6	1.7

Example of use of table: An estimate of 2 percent based on an aggregate estimate of 30,000,000 drug mentions has a standard error of 0.55 percent, or a relative standard error of 27.5 percent (0.55 percent ÷ 2 percent).

sibility 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 and a physician or a staff member working under the physician's supervision, for the purpose of seeking care and rendering personal health services.

A drug mention is the physician's entry of a pharmaceutical agent—by

any route of administration—for prevention, diagnosis, or treatment. Generic as well as brand-name drugs are included, as are nonprescription as well as prescription drugs. Along with all new drugs, the physician also records continued medications if the patient was specifically instructed during the visit to continue the medication.

A drug visit is a visit in which medication was prescribed or provided by the physician.

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

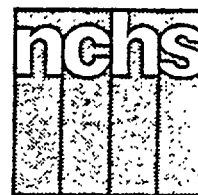
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Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

Characteristics of Persons Dying From AIDS

Preliminary Data From the 1986 National Mortality Followback Survey

by Gloria Kapantais, M.A., and Eve Powell-Griner, Ph.D., Office of Vital and Health Statistics Systems

Introduction

In the span of one decade, acquired immune deficiency syndrome (AIDS) has become a public health problem of global urgency. Since its identification in 1981, both the absolute number and rate of deaths from AIDS have increased steadily in the United States. For example, between 1983 and 1986, the estimated number of AIDS deaths based on death certificates received by the National Center for Health Statistics (NCHS) through the mortality vital registration system grew from 1,141 to 10,900, and the estimated AIDS death rate increased from 0.5 to 4.5 per 100,000 population (1). AIDS is one manifestation of infection from the human immunodeficiency virus (HIV). Estimates of numbers of persons in the United States who are infected with HIV range from 1.0 to 1.5 million persons (2).

This report presents data from the 1986 National Mortality Followback Survey (NMFS) on selected characteristics of persons with mention of AIDS (ICD-9 code 279.1) on the death certificate. See the technical notes for

a discussion of the ICD-9 codes. The analysis focuses on three broad subject areas: social and demographic characteristics, health care access and utilization during the last year of life, and measures of disability prior to death.

The 1986 NMFS is a 1-percent stratified random national sample representative of adults aged 25 years or over who died in the United States during 1986. The 1986 NMFS is the fifth of the periodic followback surveys on decedents conducted by the National Center for Health Statistics. The four earlier surveys, all conducted in the 1960's, were less comprehensive than the 1986 survey (3-9).

The purpose of the mortality followback surveys is to collect information not typically available from death certificates, thus enabling analysts to explore in much greater detail the characteristics of decedents and the circumstances of their death. Data collected during the 1986 NMFS provide detailed information on a nationally representative sample of adult deaths and an opportunity to examine many characteristics of the decedents and their last year of life.

The 1986 NMFS consists of data for 18,733 decedents. Data on social, demographic, economic, and behavioral and health related characteristics of decedents were obtained from a mailed questionnaire or personal interview with the person identified as the informant on the death certificate. The overall response rate for the survey was 89 percent.

The NMFS population included 284 decedents for whom HIV infection was reported on the death certificate as either the underlying cause of death or as a condition contributing to death and 18,449 decedents for whom no HIV infection was reported. Information from the NMFS questionnaire was available for 245 of the HIV decedents and for 16,353 of the other decedents. When weighted to yield national estimates, these deaths represent 9,276 AIDS deaths and 1,977,593 other deaths. The nonresponse rate for NMFS decedents with HIV mentioned on the death certificate was approximately twice as high as that for decedents dying from other causes. Further description of the cause-of-death classification and weighting procedure used in the 1986

NMFS can be found in the technical notes.

Only substantive responses to the questionnaire items were included in these tables—blank items, a reply of “don’t know” or “N/A,” and so forth were not included. In addition, items were not imputed for nonresponse. For these reasons, the total number of responses varies by questionnaire item and is reflected in the totals for the tables in this report. Therefore, the number of deaths in the tables vary because of the exclusion of “no answer” and “multiple answer” deaths from the totals shown.

Sociodemographic and economic characteristics

Table 1 presents information on the age, sex, and race of persons dying from AIDS and from all other causes. Males accounted for 8,556 (92 percent) of the AIDS deaths, with 4,916 (53 percent) occurring among men 25–39 years of age and 2,781 (29 percent) among men 40–54 years of age. Females accounted for only 720 (8 percent) of the AIDS deaths. Black persons accounted for 2,063 (22 percent) of the AIDS deaths, and races other than black for 7,212 deaths

(78 percent). There were approximately equal proportions of males and females dying from all other causes of death, and the largest proportion of deaths were to those 55 years of age or more (table 1). Black persons accounted for 11 percent of all other deaths, and persons of races other than black accounted for 89 percent. Because of the small numbers of AIDS deaths in the 1986 NMFS, the remaining tables in this report present data with no sex, age, or race breakdowns.

Table 2 shows selected demographic characteristics of persons who died from AIDS or other causes. Over half (53 percent) of the AIDS decedents had some college education compared with 19 percent of other decedents. Fewer than one fourth (24 percent) of the AIDS decedents had less than a high school education compared with 52 percent of other decedents.

Even though most of the AIDS decedents were in the younger age groups, a population that is usually employed, only 34 percent of them were employed at the time of their death. In general, persons having AIDS had stopped working for health reasons.

For those who had been employed previously, information was obtained on their longest held occupation (table 2). Unlike those dying from other causes, more than half of the persons who died from AIDS were in managerial and professional specialty occupations (39 percent) and technical, sales, or administrative support occupations (21 percent). Over half of the AIDS decedents (59 percent) lived alone or with a nonrelative during the last year of life compared with one-fourth of other decedents (table 2). Over one-third (35 percent) of AIDS decedents lived with one relative or more compared with 63 percent of other decedents.

Although persons who died from AIDS generally were in “white collar” occupations, they were likely to have had low levels of family income—28 percent had 1985 incomes below \$5,000 (table 3). About 36 percent of the AIDS decedents were in the

Table 1. Estimated number and percent distribution of decedents by age, according to sex, race, and cause of death: United States, 1986

Age, sex, and race	AIDS		All other causes	
	Estimated number	Percent distribution	Estimated number	Percent distribution
Both sexes				
All races:				
All ages	9,276	100	1,977,593	100
25–39 years	5,260	57	83,787	4
40–54 years	2,824	30	147,878	7
55 years and over	*1,192	*13	1,745,928	88
Black:				
All ages	2,063	100	225,940	100
25–39 years	1,354	66	20,623	9
40–54 years	*589	*29	29,994	13
55 years and over	*120	*6	175,323	78
All other:				
All ages	7,212	100	1,751,653	100
25–39 years	3,906	54	63,164	4
40–54 years	2,235	31	117,885	7
55 years and over	*1,072	*15	1,570,605	90
Male				
All races:				
All ages	8,556	100	1,021,192	100
25–39 years	4,910	57	58,798	6
40–54 years	2,781	33	92,455	9
55 years and over	*865	*10	869,939	85
Black:				
All ages	1,746	100	121,548	100
25–39 years	1,200	69	13,991	12
40–54 years	*547	*31	18,402	15
55 years and over	0	0	89,154	73
All other:				
All ages	6,810	100	899,644	100
25–39 years	3,711	54	44,807	5
40–54 years	2,235	33	74,053	8
55 years and over	*865	*13	780,785	87
Female				
All races:				
All ages	*720	*100	956,401	100
25–39 years	*349	*48	24,989	3
40–54 years	*43	*6	55,423	6
55 years and over	*327	*45	875,989	92
Black:				
All ages	*317	*100	104,392	100
25–39 years	*154	*49	6,632	6
40–54 years	*43	*14	11,592	11
55 years and over	*120	*38	86,169	83
All other:				
All ages	*402	*100	852,009	100
25–39 years	*196	*49	18,357	2
40–54 years	0	0	43,832	5
55 years and over	*207	*51	789,820	93

NOTE: Numbers may not add to totals because of rounding. Oregon not included in the 1986 NMFS.

Table 2. Estimated number and percent distribution of decedents by selected demographic characteristics, according to cause of death: United States, 1986

Selected characteristics	AIDS		All other causes	
	Estimated number	Percent distribution	Estimated number	Percent distribution
Education				
Total	8,642	100	1,826,533	100
Less than high school	2,061	24	953,462	52
High school	1,992	23	525,382	29
1-3 years of college	1,770	20	194,231	11
4 years of college or more	2,819	33	153,459	8
Longest held occupation				
Total	8,083	100	1,662,707	100
Managerial or professional	3,164	39	260,688	16
Technical, sales, or administrative support	1,703	21	391,850	24
Service	*1,019	*13	234,177	14
Precision, craft, or repair	*753	*9	237,605	14
Operators or laborers	*1,032	*13	381,627	23
Farming, forestry, or fishing	*203	*3	130,935	8
Armed Forces	*210	*3	25,825	2
Living arrangement				
Total	8,637	100	1,892,794	100
Lived in institution	*495	*6	253,166	13
Lived alone or with nonrelative	5,104	59	456,114	24
Lived with 1 relative	*997	*11	753,040	40
Lived with 2 relatives or more	2,042	24	430,474	23

NOTE: Numbers may not add to totals because of rounding. Oregon not included in the 1986 NMFS.

Table 3. Estimated number and percent distribution of decedents by family income and assets, according to cause of death: United States, 1986

Family income and assets	AIDS		All other causes	
	Estimated number	Percent distribution	Estimated number	Percent distribution
Family income				
All incomes	6,552	100	1,554,853	100
Less than \$5,000	1,813	28	335,622	22
\$5,000-\$10,999	*982	*15	459,804	30
\$11,000-\$18,999	*1,385	*21	330,086	21
\$19,000 or more	2,371	36	429,342	28
Assets at death				
All assets	8,019	100	1,616,727	100
None	3,053	38	316,648	20
\$1-\$4,999	2,226	28	312,330	19
\$5,000-\$24,999	*888	*11	261,922	16
\$25,000 or more	*1,852	*23	725,827	45

NOTE: Numbers may not add to totals because of rounding. Oregon not included in the 1986 NMFS.

highest income category of \$19,000 or more. In addition, the AIDS decedents tended to have few assets at death. Thirty-eight percent of AIDS decedents had no assets compared with 20 percent of other decedents, and 28 percent of AIDS decedents had total assets of between \$1 and \$5,000 compared with 19 percent of other decedents. Assets included home, cash, stocks, bonds, cars,

jewelry, business interests, and so forth. Because only a minority of AIDS decedents had lived with relatives in the year before their death, family income reported in the 1986 NMFS in most cases reflected only the income of the decedent. Often, the AIDS decedents, who tended to be young, were unemployed at the time of death. These factors may account, in part, for their lower income and assets.

Health care and costs

Selected measures of health care utilization for decedents are shown in table 4. Utilization of various health care services in the last year of life indicates that AIDS decedents tended to be sick for a substantial part of the year prior to death.

Persons who died from AIDS made frequent visits to a physician during the last year of life. Over one-third (37 percent) had 25 physician visits or more during the last year of life compared with 18 percent of other decedents. About 5 percent of the persons dying from AIDS had no physician visits during this time compared with 13 percent of persons dying from other causes. Larger proportions of persons who died from AIDS had one or more visits to a psychiatrist or other mental health professional during their last year of life (19 percent) than did persons who died from other causes (5 percent).

Of the estimated 9,276 AIDS decedents in the NMFS, 8,010 were reported to have been overnight patients in a hospital in the last year of life. Almost half (49 percent) of the AIDS decedents who were overnight patients spent 1 month or longer in a hospital compared with 29 percent of all other decedents. About 17 percent of the AIDS decedents received home hospice care during the last year of life compared with 9 percent of other decedents. During the 1986 NMFS, questions were also asked about residence in a nursing home during the last year of life, but the number of AIDS decedents residing in a nursing home was too low to yield reliable estimates.

The health care costs for almost one-half (45 percent) of the AIDS decedents and one-fourth of other decedents were primarily paid by private insurance or HMO's (table 5). (Another NCHS survey also reported substantial use of private insurance for payment of medical expenses among persons with AIDS (10). Approximately 22 percent of the AIDS decedents, compared with 9 percent of other decedents, had Medicaid as their

Table 4. Estimated number and percent distribution of decedents by selected health care utilization measures, according to cause of death: United States, 1986

Health care utilization measures	AIDS		All other causes	
	Estimated number	Percent distribution	Estimated number	Percent distribution
Physician visits				
Total	7,652	100	1,825,128	100
No visits	*357	*5	239,911	13
1-9 visits	2,705	35	760,123	42
10-24 visits	1,731	23	502,195	28
25 visits or more	2,859	37	322,900	18
Mental health visits				
Total	8,229	100	1,920,664	100
No visits	6,671	81	1,828,544	95
1 visit or more	1,558	19	92,120	5
Nights in hospital				
Total	8,010	100	1,401,800	100
1-14 nights	1,843	23	594,466	42
15-30 nights	2,284	29	406,921	29
31 nights or more	3,883	48	400,412	29
Home hospice care				
Total	8,483	100	1,905,032	100
Yes	1,414	17	169,508	9
No	7,069	83	1,735,524	91

NOTE: Numbers may not add to totals because of rounding. Oregon not included in 1986 NMFS.

Table 5. Estimated number and percent distribution of decedents by primary source of payment for health care, according to cause of death: United States, 1986

Primary payment source	AIDS		All other causes	
	Estimated number	Percent distribution	Estimated number	Percent distribution
All sources	7,744	100	1,595,957	100
Self or family	*523	*7	210,153	13
Medicare	*914	*12	758,348	48
Medicaid	1,688	22	143,631	9
HMO or private insurance	3,450	45	345,269	22
Other	*1,170	*15	138,556	9

NOTE: Numbers may not add to totals because of rounding. Oregon not included in the 1986 NMFS. HMO is health maintenance organization.

Table 6. Estimated number and percent distribution of decedents by own money spent for health care, according to cause of death: United States, 1986

Money spent for health care	AIDS		All other causes	
	Estimated number	Percent distribution	Estimated number	Percent distribution
All amounts	6,983	100	1,606,817	100
Less than \$200	2,718	39	438,249	27
\$200-\$1,999	1,867	27	625,626	39
\$2,000 or more	2,399	34	542,942	34

NOTE: Numbers may not add to totals because of rounding. Oregon not included in the 1986 NMFS.

primary payment source. Thirty-nine percent of the AIDS decedents spent less than \$200 for their health care, and almost two-thirds spent less than \$2,000 of personal money for such care (table 6).

Disability measures

Selected health status characteristics for decedents were also collected during the 1986 NMFS; these characteristics indicate that persons dying from AIDS were likely to suffer from

certain disabilities. Table 7 shows how many persons who died from AIDS or other causes were reported to be disoriented prior to death. Twenty-six percent of the persons dying from AIDS and 13 percent of those dying from other causes were reported as having trouble recognizing family or friends during the last hours or days before death. About 18 percent of AIDS decedents and 11 percent of other decedents were reported to have had trouble remembering the current year in the last hours or days before death. Approximately 26 percent of AIDS decedents and 15 percent of other decedents had difficulty understanding their whereabouts.

A large proportion of decedents were also reported to have received help from others or to have used special equipment in daily activities, such as bathing, eating, walking, dressing, or using the toilet. There were few differences in these disabilities by cause of death. As table 8 shows, 60 percent of persons dying from AIDS were reported as having received assistance in bathing, and 57 percent received help with using the toilet. The least assistance received by AIDS decedents was with eating—40 percent were reported to have received such assistance.

Over half (52 percent) of the AIDS decedents were reported receiving help at home during the last year of life with daily activities and 54 percent were reported receiving help at home during the last year with medical care, such as taking medicines, giving pills or injections, or changing bandages (table 9). Similar proportions of persons dying from other causes reported such help. Among those who received help, about 69 percent of the AIDS decedents, compared with 91 percent of other decedents, had a relative provide the care. Thirty-eight percent of the AIDS decedents, compared with 13 percent of the other decedents, received help from a neighbor or friend. About 38 percent of AIDS decedents were helped by visiting homemakers or visiting nurses, as were 32 percent of persons dying from other causes.

Table 7. Estimated number and percent distribution of decedents by frequency of disorientation during last year of life, according to cause of death and type of disorientation: United States, 1986

Frequency of disorientation	Difficulty recognizing family or friends		Difficulty remembering what year it was		Difficulty understanding whereabouts	
	Estimated number	Percent distribution	Estimated number	Percent distribution	Estimated number	Percent distribution
AIDS decedents						
All frequencies	8,440	100	8,448	100	8,592	100
All or most of the time	*248	*3	*285	*3	*248	*3
Some of the time	*577	*7	*1,095	*13	*1,646	*19
Last hours or days	2,161	26	1,490	18	2,210	26
Never or hardly ever	5,453	65	5,578	66	4,488	52
All other decedents						
All frequencies	1,928,289	100	1,919,868	100	1,923,535	100
All or most of the time	115,284	6	192,697	10	158,547	8
Some of the time	206,473	11	221,774	12	261,467	14
Last hours or days	242,883	13	214,902	11	287,592	15
Never or hardly ever	1,363,649	71	1,290,495	67	1,215,928	63

NOTE: Numbers may not add to totals because of rounding. Oregon not included in the 1986 NMFS.

Table 8. Estimated number and percent of decedents, by assistance received with activities of daily living and cause of death: United States, 1986

Activities of daily living	AIDS		All other causes	
	Estimated number	Percent	Estimated number	Percent
Bathing	5,241	60	1,089,918	56
Eating	3,647	40	680,035	35
Walking	4,118	47	986,410	51
Toilet	4,967	57	954,371	49
Dressing	4,375	50	959,818	50

NOTE: Oregon not included in the 1986 NMFS.

Table 9. Estimated number and percent of decedents by type and source of help received at home and cause of death: United States, 1986

Type and source of help received	AIDS		All other causes	
	Estimated number	Percent	Estimated number	Percent
Type of help				
Daily activities	4,353	52	742,345	46
Medical care	4,506	54	762,712	47
Source of help				
Relative	3,251	69	785,470	91
Neighbor or friends	1,797	38	111,998	13
Visiting nurse or homemaker	1,763	38	276,473	32
Other	*496	*11	102,053	12

NOTE: Oregon not included in the 1986 NMFS.

Summary

The 1986 NMFS data indicate that persons dying of AIDS tend to be young, have a high educational attainment, and have high-status occupations. However, although persons who died from AIDS generally were in "white collar" occupations, as a group they were also likely to have had very low levels of family income in 1985

and no assets at the time of death. Employment status at time of death, living arrangements, and age structure of the AIDS deaths appear to be associated with the level of assets and income for these decedents.

Despite their young age, persons dying from AIDS were likely to suffer certain disabilities and to be disoriented prior to their death. A large number of AIDS decedents were

reported to have used special equipment in daily activities such as bathing, eating, walking, dressing, and using the toilet. Large proportions of AIDS decedents were also reported to have received help at home in taking medicines, receiving injections, or obtaining other nursing care. These patterns reflect the prolonged and severe debilitating nature of their illness.

Persons who died from AIDS frequently used physicians' services and spent substantial time in the hospital during the last year of life. A considerable proportion of AIDS decedents were reported to have consulted a psychiatrist or other mental health professional during the last year of life, and to have received home hospice care. The primary source of payment for most AIDS decedents was private insurance or a health maintenance organization. However, Medicaid was the primary source of payment for care among more than one-fifth of the decedents.

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Technical notes

Sources of data and sample design

The NMFS sample was selected from the Current Mortality Sample (CMS). This is a systematic 10-percent sample of death certificates received each month in the 50 States, the District of Columbia, and the independent registration area of New York City (11). Oregon was not included in the 1986 NMFS because of respondent consent requirements. Thus, these data are representative of deaths in the United States excluding Oregon. Oregon accounts for 1.1 percent of all deaths in the United States; there is little variation in the percent by age among Oregon deaths.

Oversampling by race, age, and selected causes of death was done to permit the study of race differentials in mortality and the characteristics of persons who died at a younger age. All CMS death certificates for decedents with certain characteristics were included in the 1986 NMFS. These included all women in the CMS 25-54 years of age and all men 35-64 years of age who died from ischemic heart disease, all deaths from asthma, rare cancer deaths, and all deaths of American Indians, Aleuts, or Eskimos. In addition, deaths to persons under

55 years of age were oversampled 3.1 times, and deaths to black people were oversampled 2.9 times. Death certificates in the CMS that were eligible for the 1986 NMFS were sequentially assigned to 1 of 18 sampling strata. The strata formation was based on the decedent's age, sex, race, and cause of death.

For the 1986 NMFS, questionnaires were mailed by the U.S. Bureau of the Census to the next of kin or to the person listed on the death certificate as providing the personal information on the decedent's death certificate about 6 months after the death. A reminder letter was mailed 10 days after the first mailing, followed by a second mailing 1 month after the first mailing. Telephone or personal visits were made by Census interviewers to nonrespondents 1 month after the second mailing.

Eighty-two percent of all the respondents who completed the NMFS questionnaire were close relatives—either the spouses, parents, siblings, or adult children—of the decedents. However, approximately 22 percent of the respondents for AIDS decedents were nonrelatives, compared with 6 percent for non-AIDS decedents. The total

response rate was 89 percent, yielding 16,598 completed questionnaires.

For 1986, acquired immunodeficiency syndrome (AIDS) and human immunodeficiency virus (HIV) infection, when reported on the death certificate, were assigned to the category "deficiency of cell-mediated immunity" (code 279.1), as were other diseases classifiable as deficiency of cell-mediated immunity (12). Because the rules for selecting the underlying cause of death for 1986 give preference to other categories (for example, pneumocystosis), deaths with HIV infection used in this study were those for which deficiency of cell-mediated immunity was classified as either an underlying or a nonunderlying cause of death.

Information on age, race, sex, underlying and multiple cause-of-death data for each decedent was obtained from final data on the Multiple Cause-of-Death Statistical File compiled by NCHS. Records from the 1986 multiple cause-of-death file were matched to the data from the NMFS informant questionnaire for each decedent in the survey. The overall match rate was 99.9 percent.

Comparisons of number of deaths from the vital statistics registration system and the 1986 NMFS estimates

suggest that the counts of deaths are similar. For example, the NMFS-weighted data for 180 deaths to males 25–54 years of age yields 8,128 estimated deaths with mention of code 279.1 on the certificate, compared with 8,799 for the final vital statistics system file. Although the final weights applied to the NMFS adjust for differential sampling by race, sex, and age, no adjustment was made for cause of death. Hence, NMFS estimates of deaths by cause will not necessarily equal counts obtained from the vital statistics file.

Estimation procedures

Probability sampling allows the NMFS data to be weighted to produce national estimates for the United States except for Oregon. It also allows approximation of the sampling error.

The NMFS sampling weights are prepared by a poststratified ratio estimation procedure. The sampling weight for each sample decedent is based on a product of the following three component weights.

- (1) Probability of selection. The basic weight for each sample decedent is the reciprocal of its probability of sample selection.
- (2) Adjustment for nonresponse. In an attempt to reduce nonresponse bias, the NMFS sampling weights are adjusted for nonresponse. This adjustment was implemented within subsets of the sampling strata and was the reciprocal of the response rate within the subset. This adjustment reduces nonresponse bias to the extent that data for a nonrespondent is similar to data for respondents in these adjustment classes. No adjustment was made for the exclusion of Oregon from the survey.
- (3) Poststratification by age, sex, and race. Within 28 poststrata defined by decedent age, sex, and race (see table I), the NMFS estimates were ratio adjusted to counts for the number of deaths reported to the National Vital Registration System for the

Table I. Parameters used to approximate the relative standard errors for estimates based on the 1986 National Mortality Followback Survey, by domain of study

Domain of study	Parameters	
	A	B
All decedents	-.000088	173.472799
Decedents 25–34 years of age	-.000725	40.250787
Decedents 35–54 years of age	-.000306	57.187500
Decedents 55–69 years of age	-.000325	189.139047
Decedents 70–84 years of age	-.000219	200.749692
Decedents 85 years of age and over	-.000430	181.208646
All black decedents	-.000250	57.315899
Black decedents 25–34 years of age	-.002721	36.923295
Black decedents 35–54 years of age	-.001278	48.883512
Black decedents 55–69 years of age	-.000863	64.860422
Black decedents 70–84 years of age	-.000688	59.820841
Black decedents 85 years of age and over	-.001911	54.630073
All other decedents	-.000106	184.663690
Other decedents 25–34 years of age	-.000948	39.640859
Other decedents 35–54 years of age	-.000419	62.024668
Other decedents 55–69 years of age	-.000411	214.015461
Other decedents 70–84 years of age	-.000253	211.433987
Other decedents 85 years of age and over	-.000484	190.261795

United States excluding Oregon. This adjustment makes the sample more representative of the target population by age, sex, and race.

Sampling errors and rounding of percents

Because the statistics presented in this report are based on a sample, they may differ from figures that would have been obtained if a complete census of all death certificates for decedents aged 25 years or over had been taken, using the same questionnaire, instructions, and procedures. The standard error of an estimate is primarily a measure of the variability that occurs by chance because only a sample of the population, rather than the total population, is surveyed. The standard error also reflects part of the measurement error, but it does not measure any systematic biases in the data. The chances are about 95 out of 100 that an estimate from the sample differs from the value that would be obtained from a complete census by less than twice the standard error.

Preliminary estimates of standard errors for the percents of the estimated number of decedents are presented in table I. The parameters shown in table I were estimated by a balanced-repeated-replication procedure using 20 replicate half samples. This method estimates the standard errors for survey estimates through

observation of variability of estimates based on replicate half samples of the total sample. A description of the development and evaluation of the replication technique for error estimation has been published (13,14).

Standard error applications

Standard error for aggregate estimates—The approximate standard error of an estimated number of decedents with a particular characteristic, *x*, is calculated by

$$RSE(x) = \sqrt{A + (B/x)}$$

and

$$SE(x) = x \cdot RSE(x)$$

where *x* = estimated number of decedents

A, B = parameters from table I

RSE(*x*) = relative standard error of *x*, and

SE(*x*) = standard error of *x*.

Rounding of numbers and percents

Numbers and percents within the tables and text were rounded to the nearest whole number or tenth of a percent. Therefore, the estimates may not add to the totals. In addition, the total estimated number of decedents

varies from one table to another because of the exclusion of decedents with "no answer" responses.

NOTE: Nine other Federal agencies signed interagency agreements with NCHS to co-sponsor the 1986 NMFS. These agencies are the National Heart, Lung, and Blood Institute; the National Institute of Child Health and Human Development; the National Cancer Institute; the National Institute of Aging; the National Institute of Mental Health; the Health Care Financing Administration; the U.S. Department of Veterans Affairs; the Indian Health Service; and the Office of the Secretary for Planning and Evaluation in the Department of Health and Human Services. Special thanks go to Jeffrey Maurer, Richard Klein, and other reviewers for their helpful comments on this report, and to Charles Adams, Tracy Lloyd, Arlene Siller, and George Wolf for programming assistance.

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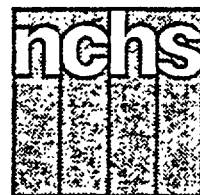
Symbols

- - - 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
 - * Estimates based on fewer than 30 sample deaths; figure does not meet standards of reliability or precision
 - # Figure suppressed to comply with confidentiality requirements
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Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

Use of Vitamin and Mineral Supplements in the United States: Current Users, Types of Products, and Nutrients

by Abigail J. Moss, Division of Health Interview Statistics, National Center for Health Statistics, and Alan S. Levy, PhD., Insun Kim, Dr. P.H., and Youngmee K. Park, PhD., Food and Drug Administration

Introduction

There is general agreement among health professionals that a balanced diet provides most persons with those nutrients essential for good health (1). Exceptions include individuals with certain specified diseases and those with special dietary needs, such as infants and pregnant or lactating women (2,3). The use of vitamin and mineral products to supplement the diet, however, continues to be an everyday practice for millions of Americans.

The first National Health and Nutrition Examination Survey conducted between 1971 and 1974 showed that about 23 percent of U.S. adults took supplements daily (4). More recently, estimates from the National Telephone Interview Special Dietary Foods Study conducted by the U.S. Food and Drug Administration's Division of Consumer Studies, Center for Food Safety and Applied Nutrition, indicated that in 1980, excluding pregnant and lactating females who have special supplementation needs, about 4 in 10 adults regularly used one vitamin and mineral product or more (5).

In 1986, the National Center for Health Statistics (NCHS), in collaboration with the U.S. Food and Drug Administration (FDA) and as part of its National Health Interview Survey (NHIS), collected information to produce measures of vitamin and mineral supplement users and the composition and quantities of specific nutrients consumed.

Because the use and composition of vitamin and mineral products fluctuate, one objective of the NCHS study was to update the 1980 FDA estimates and to make it possible to identify trends. In addition, an attempt was made to overcome several limitations of the earlier FDA survey. The FDA survey, for example, did not include young children; and the survey's sample size placed some constraints on the types of analyses that could be undertaken, including deriving nutrient intake level estimates for certain small population domains. NHIS' larger and more representative sample was expected to permit more focused analyses on specific population subgroups than were previously possible.

A second objective for the NCHS survey was to provide relevant esti-

mates that would address a priority objective stated in the Public Health Service (PHS) plans for attaining the 1990 Objectives for the Nation (6). The specific objective addressed was to develop nutrition status monitoring systems that would have the ability to detect nutritional problems in special population groups, as well as to obtain data for decisions about national nutrition policies.

This report presents estimates from the NCHS survey of the percent of adults and young children 2 to 6 years of age residing in the United States who used nonprescription vitamin and mineral supplement products in 1986. These estimates are shown by age, race, and sex, and by age with Hispanic origin, family income, poverty status, education, marital status, geographic region, place of residence, respondent-assessed health status, and weight status. Percent estimates for these variables are shown in tables 1 and 2.

The report also presents estimates of the percent of persons using types of products and nutrients, and the number of individual products taken. Tables 3, 4, and 5 contain these estimates. Vitamin and mineral product

estimates are presented in table 6 by the frequency with which they were taken. In tables 7 and 8, the median, 90th, and 95th percentile levels of intake are given for specific nutrients, expressed as a percent of the Recommended Dietary Allowance (RDA) or as a percent of the midrange levels of "Estimated Safe and Adequate Daily Dietary Intakes" (ESADDI) as applicable, and as established by the Food and Nutrition Board (7). Most of the estimates in tables 3 to 8 are shown by age and sex as well. Tables 9 and 10 contain population estimates needed to derive estimated frequencies for the percent estimates presented in tables 1 to 6.

Description of data

The data presented in this report are based on information obtained from NCHS' 1986 National Health Interview Survey. For each family interviewed during January and into July of that year, one adult 18 years of age or older and one child from 2 to 6 years of age were randomly selected to receive the vitamin and mineral questionnaire. All estimates shown are based upon these sample person counts and, except for tables 7 and 8, are weighted to produce national estimates.

The questionnaire items used to derive the estimates shown in this report identified which sample persons took any vitamin, mineral, or fluoride products during the 2-week period preceding the interview and the number of different products taken. Sample persons reporting any use were then asked to get the vitamin and mineral product containers so that the name of the product, the manufacturer's name, and the exact nutrient components and units information could be obtained directly from the labels. Where no container was available, persons were asked to report the name and manufacturer of the product(s) taken.

Other questionnaire items obtained information about the frequency and length of time each vitamin and mineral product was taken and whether it was obtained through a

doctor's prescription. In addition, women of childbearing age were asked whether they were pregnant or breast-feeding a baby during the preceding 2 weeks.

A facsimile of these questionnaire items is provided in *Current Estimates From the National Health Interview Survey, 1986* (8).

The technical notes section of this report contains a brief description of sample size, response rates, terms used, and data collection procedures employed.

Results

Profile of vitamin and mineral supplement users

For this report, a vitamin and mineral supplement user is anyone who took at least one nonprescription vitamin, mineral, or fluoride product during a 2-week reference period before the interview. It should be noted here, however, that pregnant and lactating sample persons are excluded from the estimates derived for this report. Persons taking *only* prescription vitamin and mineral products (409 sample persons, or 3 percent of the total sample) are not classified as supplement users because the

intended purpose of this report is to provide estimates that describe the self-prescribed supplement user population.

During 1986, more than one-third of all U.S. adults (36 percent) took nonprescription vitamin and mineral supplements (table 1). The percent of adults under 25 years of age who used them was somewhat lower (28 percent) than for all other adults (38 percent). Women were more likely to consume these products (41 percent) than were men (31 percent). Differences in vitamin and mineral product usage between adult men and women were found in all but the youngest age groups (figure 1).

Young children were also major consumers of vitamin and mineral supplement products (43 percent). However, use was slightly lower among school age children, from about 47 percent among 3- and 4-year-olds to 40 percent among 5- and 6-year-olds. A difference was also found in the use of vitamin and mineral products among white and black young children. About 46 percent of white children and 30 percent of black children 2-6 years of age were reported to use vitamin and mineral supplements (table 2).

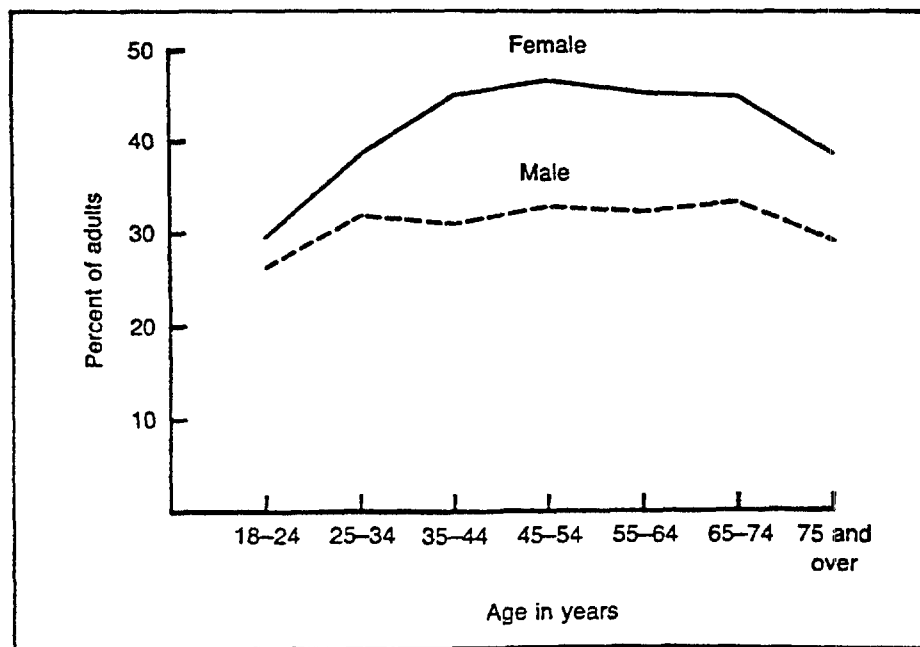


Figure 1. Percent of adults using vitamin and mineral products, by age and sex: United States, 1986

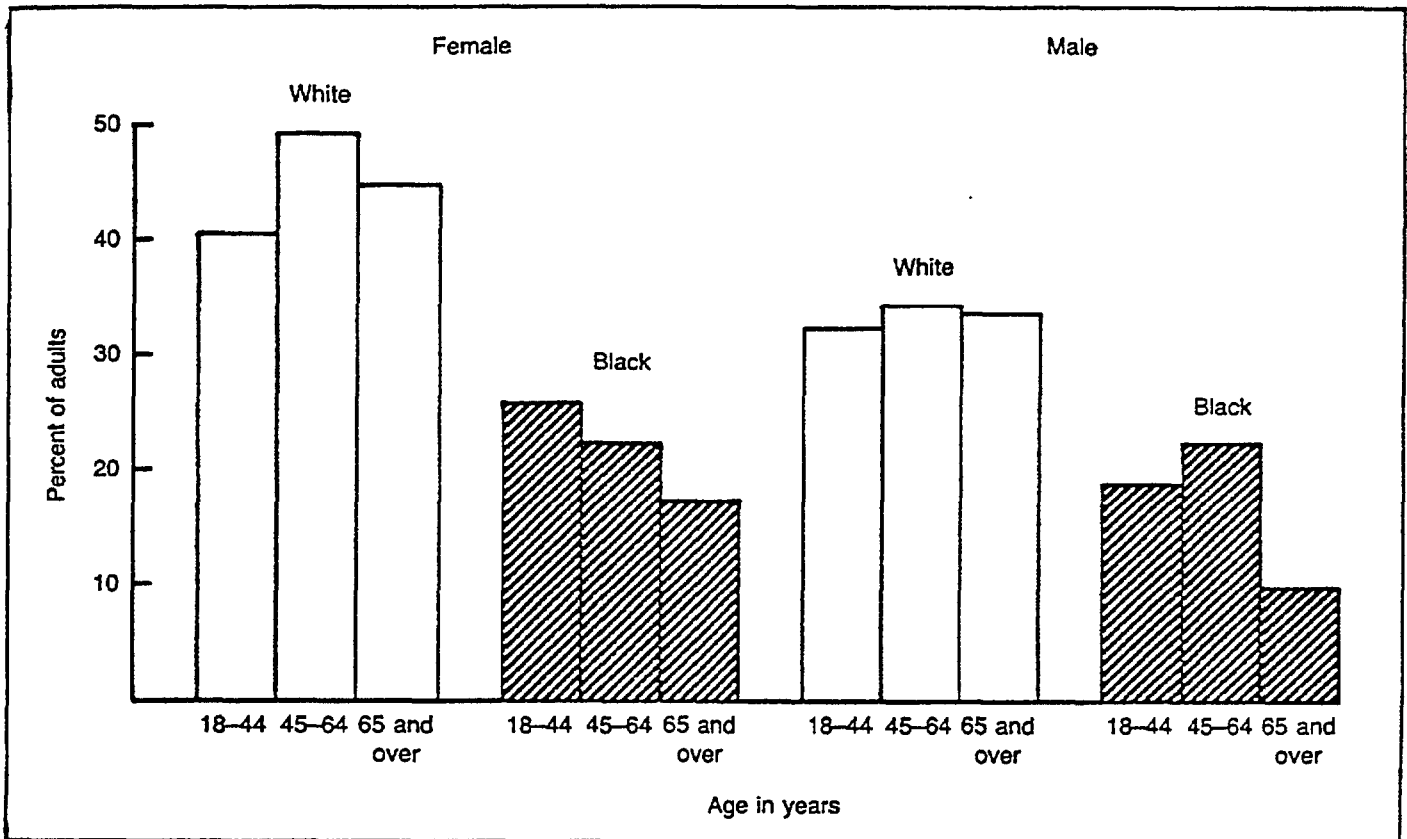


Figure 2. Percent of adults using vitamin and mineral products, by age, race, and sex: United States, 1986

Among adults, about two-fifths of all white persons in the United States used vitamin and mineral supplements compared with about one-fifth of all black adults. Differences in supplement usage between black and white persons were found for both sexes and among all age groups (figure 2). Within the population of Hispanic origin, about 29 percent of adults used nonprescription vitamin and mineral products. The greatest difference among racial groups was found among the elderly. Of persons aged 65 years and over, about 40 percent of white persons and persons of Hispanic origin and about 14 percent of black persons took vitamin and mineral supplements. Among elderly persons of all other races, over 50 percent reported their use.

As expected, family income and educational level are directly related to the use of vitamin and mineral products. Only about 28 percent of adults with family incomes under \$7,000 compared with about 45 percent of persons with incomes at or

above \$40,000 reported their use. Differentials in usage by family income level were most pronounced for children. Specifically, only 23 percent of children aged 2 to 6 years in families earning under \$7,000 took supplements compared with 50 percent of children in families earning \$40,000 or more. Similarly, with increasing education, proportionately more persons took vitamin and mineral supplements. Among adults, the estimates ranged from about 25 percent of those not completing high school to 44 percent of those with 1 year of college or more. About 27 percent of young children were given vitamin and mineral supplement products in households where no related adult was a high school graduate, compared with over 50 percent of children in households where at least one related adult had some college education.

Differences in the percent of persons using vitamin and mineral supplements were also found by geographic area. Proportionately more

persons in the West used vitamin and mineral products (45 percent) than in other regions of the country. Similarly, a higher proportion of persons living in metropolitan statistical areas (MSA's) reported using vitamin and mineral products than did those living outside these areas (38 percent compared with 31 percent).

Of the health status measures shown in this report, persons 18 years of age or older in "good health," that is, those who were not overweight and whose health was assessed as "good," "very good," or "excellent," were more likely to use vitamin and mineral supplements than less healthy persons. For example, 38 percent of persons whose assessed health was excellent or very good reported taking supplements compared with 31 percent of those in fair or poor health. About the same proportion of young children in fair or poor health, however, took vitamin and mineral supplements as did children whose health was rated as excellent or very good (about 45 percent).

Types of products and nutrients taken

Tables 3 and 4 present data on the kinds of products and nutrients taken. The first type of product classification shown in these and several other tables in this report contains nine distinct vitamin and mineral product categories according to a scheme developed by Stewart (5). For a description of the criteria for these categories, see the technical notes.

The second type of product classification separates products into two types, "broad-spectrum" and "specialized" products, using the scheme developed by Levy and Schucker (9). In this classification, broad-spectrum products are those that contain at least three of the following vitamins: A, B vitamins, C, D, and E. In addition, they may also contain one or more of the following minerals: calcium, phosphorus, iodine, iron, magnesium, copper, zinc, and manganese. All remaining products for this two-category classification are defined as specialized products.

The percents shown in table 3 are for all persons of specified ages in the U.S. population (except those excluded). Percents in table 4 are based on those persons who used at least one nonprescription vitamin and mineral product. For example, as shown in table 3, vitamin C was taken by about one third of all U.S. adults. Among adult vitamin and mineral supplement users, however, 85 percent took vitamin C (table 4). Both percent estimates are included in this report since each describes vitamin and mineral users in a meaningful way.

The following results refer to estimates for the U.S. population as shown in table 3. Single vitamins and vitamin and mineral combination products were the two most common types of products taken by U.S. women (each was taken by 17 percent of adult women). Among men, the two types of products consumed most often were single vitamins and multivitamins (13 percent for each type). About the same proportion of men and women reported taking multivitamins (13 percent and 15 percent, respectively).

Regardless of age, women were more likely than men to take single mineral products (10 percent compared with 4 percent). The difference in the percent of women and men taking single minerals was greatest for persons aged 45 to 64 years. Within this age group, 15 percent of women compared with 5 percent of men took at least one single mineral product, reflecting in part the greater usage of calcium products among older females.

Multivitamins were by far the most common type of vitamin and mineral product used by young children. In 1986, one-third of all U.S. children 2 to 6 years of age were taking multivitamins. However, unlike adults, few young children were given other types of vitamin and mineral products. For example, only 6 percent of children these ages took single vitamins.

In the second product classification, that is, broad-spectrum versus specialized products, the percent of women who took each type varied according to age. Younger women (under 45 years of age) were more likely to take broad-spectrum products (27 percent compared with the 22 percent who took specialized products). In contrast, women 45 years of age and over were more likely to take specialized products. Among those 45 to 64 years of age, 35 percent took specialized products and 26 percent took broad-spectrum products; for those 65 years old and over, 30 percent took specialized and 24 percent took broad-spectrum products.

Men under 45 years of age also were more likely to use broad-spectrum products than specialized products (21 percent compared with 15 percent). However, unlike older women, the proportion of men 45 years or older who used each type of product was about the same (20 percent for each).

Many more young children consumed broad-spectrum products (including multivitamin products) than consumed specialized products (38 percent compared with 8 percent).

What specific nutrients were in the products being consumed most

often by adults and children in this country in 1986? More men and women (about 31 percent of adults) consumed vitamin C than any other nutrient. Calcium and iron led the list of minerals taken by women. About one-fourth of all women took calcium; the highest percent was among those women 45 to 64 years of age (29 percent). The percent of women in the United States who took iron ranged from about 21 to 25 percent, depending upon their age. Among men, iron was taken more than any other mineral (16 percent).

Because most children were given multivitamins, percent estimates were about the same for each of the specific vitamins listed except for pantothenic acid and biotin, which are not included in many multivitamins. The mineral taken most by young children was iron (about 18 percent).

Number of products taken and frequency of use

Table 5 contains percent estimates of vitamin and mineral supplement users by the number of individual products taken. For persons taking 1, 2, and 3 products or more, percents are also shown according to the type(s) of product(s) taken. The product type categories included in this table are the same as those shown in tables 3 and 4.

Among vitamin and mineral supplement users, most adults (60 percent) reported taking only one over-the-counter vitamin and mineral product (table 5). Similarly, among young children taking vitamin and mineral supplements, the vast majority, over 85 percent, used only one product.

The percent of adults who used two vitamin and mineral products or more was higher for persons 45 years of age or older (45 percent) than for those under 45 years of age (about 36 percent). Also, proportionately more women than men used more than one vitamin and mineral product (45 percent compared with 34 percent). About 5 percent of all adult users, which represents 3.1 million persons, reported using at least 5 vitamin and mineral products.

There were also differences in the uses of vitamin and mineral products taken by persons who used only one product compared with persons who used more than one product. Whereas only 16 percent of adults who used one product took a single vitamin product, 86 percent of adults reporting 3 products or more reported taking a single vitamin product. Similarly, single mineral products were taken by only 6 percent of adults using one product compared with 49 percent of all adults taking 3 products or more. Among adults taking only one product, two-thirds of them took a broad-spectrum product.

About the same proportion of adults took multivitamin products, regardless of the total number of products taken (between 38 and 41 percent). Similarly, about the same proportion of young children given one product used a multivitamin as did children given two products (80 percent). Over 90 percent of all young children taking one product were given a broad-spectrum product.

Table 6 differs from other tables in this report in that the numbers and percents refer to the estimated number of vitamin and mineral products reported, not the number of persons taking them. These data are shown by the frequency with which individual types of vitamin and mineral products were taken over a 2-week period. The time intervals shown are every day, from 2 to 6 days each week, and once a week or less.

Over 70 percent of all vitamin and mineral products used by adults and young children during 1986 were taken every day. The percent of products taken by adults on a daily basis did not vary appreciably among the different product categories.

About 75 percent of all multivitamins consumed by young children were taken every day. The percent of all other vitamin and mineral products taken by children on a daily basis, however, was somewhat lower (about 65 percent).

Intake levels of nutrients taken

Table 7 shows median, 90th, and 95th percentile average daily nutrient

intake levels (most often represented as percents of the Recommended Dietary Allowances (RDA's)) for 12 vitamins and 7 minerals for men and women by three age groups. The RDA's are "the levels of intake of essential nutrients considered, in the judgment of the Committee on Dietary Allowances of the Food and Nutrition Board on the basis of available scientific knowledge, to be adequate to meet the known nutritional needs of practically all healthy persons" in the United States (7). For those nutrients for which no RDA values are established because of lack of information on which to base allowances, intakes are instead represented as percents of the midrange levels of Estimated Safe and Adequate Daily Dietary Intakes (ESADDI) as established by the Food and Nutrition Board. The nutrients reported as percents of the midrange ESADDI levels are pantothenic acid, biotin, and copper.

Table 8 is similar in content to table 7 except that the estimates are for young children. The individual nutrient estimates shown in both of these tables are based only on those persons taking the specific vitamin or mineral listed. Furthermore, they do not include persons who took any prescribed vitamin and mineral product or whose average daily intake for that nutrient is unknown. These exclusions may have had an effect on the estimates shown.

The estimates shown in tables 7 and 8 were obtained by first ordering numerically the RDA or ESADDI (unweighted) values for all eligible sample persons consuming a particular nutrient. The three RDA or ESADDI values (expressed in percents) that corresponded to the 50th, 90th, and 95th percentile positions in the listing were then selected.

Even if two individuals are adjacent by the order of their nutrient intake level, their intake levels still could differ by a relatively large amount. Such large differences would be more frequent at the extremes of intake level. Thus, the intake values shown in these two tables for the 90th and the 95th percentiles in particular

are subject to considerable variability because of sampling.

Standard errors for these estimates are not available at this time because of the complexities involved in generating the figures. Therefore, data in tables 7 and 8 should be considered "provisional" and caution should be exercised in interpreting the findings. Nevertheless, the estimates for many of the nutrients are similar to results obtained from the 1980 FDA survey (5).

The median average daily intake for most of the vitamins listed in table 7 was between 100 and 200 percent of the RDA for both men and women. Among men, the vitamins with the highest median values were vitamin C (250 percent RDA) and vitamin B₁₂ (300 percent RDA). Stated another way, the average amount of vitamin C consumed each day by 50 percent of all men reporting its use was no more than 2 1/2 times the RDA. For women, vitamin E and vitamin B₁₂ had the highest median intake values (250 percent RDA for each), followed by thiamin (225 percent RDA) and riboflavin (217 percent RDA).

Data in table 7 show that some segment of the vitamin and mineral supplement user population took certain vitamins far in excess of the RDA. For 10 percent of adult male and female users, average daily intake for six vitamins—vitamins E, C, thiamin, riboflavin, vitamin B₆, and vitamin B₁₂—was greater than 15 times the RDA. Average daily intake of thiamin, riboflavin, vitamin B₆, and vitamin B₁₂ was in excess of 30 times the RDA for 5 percent of these men and women. And 5 percent of women taking vitamin E ingested it at levels in excess of 35 times the RDA. Unfortunately, reasons for taking the vitamins were not determined for the NCHS survey.

All of the median intake values for the minerals listed were less than 200 percent of the RDA's or ESADDI's for both sexes. Although individual mineral intakes fell within a relatively close range, iron had the highest RDA value among 50, 90, and 95 percent of male and female users; it ranged from 1.8 to 5.4 times the RDA for men at these three

percentiles and from 2.8 to 4.5 times the RDA for women.

Among young children, the median intake level for most of the individual nutrients shown in table 8 also was between 100 and 200 percent of the RDA or ESADDI. At the 50th percentile, the highest intake level (286 percent) was for pantothenic acid. Five percent of children consumed about 4 times the RDA or ESADDI of vitamins A and E, folic acid, and pantothenic acid, and about 7.5 times the RDA of vitamin C.

It is generally recognized that most Americans meet their nutrient needs from foods alone, and that the use of supplements is therefore not necessary (10,11). Although there are no documented reports that daily

vitamin and mineral supplement use at or below the RDA for a particular nutrient is either beneficial or harmful for the general population, the potentially adverse effects of large doses of certain nutrients are well documented (12).

The results presented are consistent with other studies showing that supplements are commonly used by the U.S. population and that intakes of some nutrients by individuals are well in excess of their RDA's. However, these data by themselves cannot be used to evaluate the need for or the safety of vitamin and mineral supplement use by the general population. These data do not include estimates of nutrient intakes from foods and drinking water; hence, total nutrient intakes

cannot be estimated. Also, these data are limited to intakes during the 2 weeks prior to interview. In addition, the biochemical and clinical measures needed to document adverse physiological effects associated with high intakes of nutrients were not included in the survey.

Nationally representative survey data that quantify nutrient intakes from vitamin and mineral supplements are rare and have not been included in past food consumption and nutritional status surveys. Thus, the results from the 1986 NHIS make an important contribution in updating the knowledge of supplement use and in improving the ability to monitor the nutritional status of the U.S. population.

Table 1. Percent of persons using vitamin and mineral products, by sex and age: United States, 1986

<i>Age</i>	<i>Both sexes</i>	<i>Female</i>	<i>Male</i>
		Percent	
All adults 18 years and over	36.4	41.3	31.2
18-44 years	34.4	38.6	30.2
18-24 years	28.0	29.7	26.4
25-34 years	35.3	38.7	32.0
35-44 years	38.4	45.5	31.1
45-64 years	39.8	46.2	32.7
45-54 years	40.1	46.7	33.0
55-64 years	39.5	45.7	32.4
65 years and over	38.2	42.4	32.2
65-74 years	40.1	45.1	33.7
75-84 years	35.4	39.6	28.8
85 years and over	33.7	34.0	*33.0
All children 2-6 years	43.3	42.2	44.4
2 years	43.8	42.6	44.9
3-4 years	46.6	45.4	47.7
5-6 years	40.0	39.2	40.9

NOTE: See table 9 for population.

Table 2. Unadjusted and age-adjusted percent of persons using vitamin and mineral products, by age and selected characteristics: United States, 1986

Characteristic	All adults 18 years of age and over				All children 2-6 years of age	All adults 18 years of age and over
	Total	18-44 years	45-64 years	65 years and over		
Sex						
	Unadjusted percent					Age-adjusted percent ¹
Female	41.3	38.6	46.2	42.4	42.2	40.9
Male	31.2	30.2	32.7	32.2	44.4	31.1
Race						
White	38.5	36.2	42.2	40.1	46.3	38.2
Black	21.5	22.7	22.2	14.2	30.3	21.2
Other	32.0	31.1	26.3	52.3	30.7	32.1
Race and sex						
White:						
Female	43.7	40.5	49.4	44.6	45.4	43.2
Male	32.9	32.1	34.3	33.8	47.1	32.8
Black:						
Female	23.8	25.9	22.1	17.3	30.5	23.5
Male	18.7	18.9	22.4	*9.7	30.0	18.4
Hispanic origin						
All non-Hispanic	36.9	35.0	40.2	38.1	44.1	36.6
All Hispanic	28.7	26.7	31.5	40.6	37.6	30.4
Mexican American	23.5	22.8	24.8	*29.5	36.9	24.6
Puerto Rican	28.0	*16.0	*52.8	*30.9	*22.8	28.9
Cuban	21.9	*15.3	*22.6	*48.7	*26.6	20.7
Other Hispanic	40.0	38.7	37.1	*58.9	45.2	40.6
Family income						
Less than \$7,000	27.8	26.6	27.8	30.2	22.8	26.9
\$7,000-\$14,999	32.5	30.6	30.4	37.0	38.6	31.9
\$15,000-\$24,999	34.8	32.2	35.1	43.1	44.2	34.5
\$25,000-\$39,999	38.8	36.6	43.2	42.6	51.2	38.9
\$40,000 or more	44.8	41.7	50.6	44.3	50.3	43.7
NHIS Poverty index						
Below poverty line	24.2	23.8	24.2	25.7	27.3	24.0
Above poverty line	38.7	36.9	41.8	40.3	48.2	38.4
Education²						
Less than 12 years	25.5	20.3	26.3	30.7	26.9	23.7
12 years	36.0	31.2	42.1	45.3	40.1	36.3
13 years or more	44.5	42.6	49.3	47.3	51.0	44.8
Marital status						
Never married	34.3	34.2	33.6	37.4	...	36.8
Married	36.1	33.7	39.4	37.8	...	34.3
Widowed, separated, or divorced	40.1	38.6	43.2	39.0	...	39.0
Geographic region						
Northeast	35.5	33.5	39.6	35.0	39.2	35.1
Midwest	36.8	34.2	41.8	38.0	46.6	36.6
South	31.9	30.9	33.5	33.3	40.9	31.8
West	44.9	41.6	48.3	51.7	47.2	44.7
Place of residence						
All MSA's	37.9	36.0	41.3	39.6	44.7	37.7
Central city	36.3	35.1	38.6	36.6	40.1	36.3
Outside central city	39.1	36.5	43.1	42.2	47.7	38.7
Not MSA	31.4	28.6	34.7	34.6	38.7	31.0
Respondent-assessed health status						
Excellent or very good	38.2	36.0	44.1	39.7	45.1	38.6
Good	34.3	29.3	38.4	39.7	36.2	33.0
Fair or poor	31.3	31.1	29.1	33.8	44.2	30.4
Weight status						
Not overweight	38.6	36.3	42.5	41.8	---	38.8
Overweight	29.9	27.1	34.4	28.5	---	27.6

¹Age-adjusted by the direct method to the age distribution of the 1980 total adult civilian noninstitutionalized population of the United States (aged 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 75-84, and 85 years and over).

²Education of individual is shown for persons 18 years of age and over, and education of responsible adult is shown for children 2-6 years of age.

NOTE: See table 10 for population.

Table 3. Percent of persons, by sex, age, and type of product used, vitamins, and minerals: United States, 1986

Type of product, vitamins, and minerals	Both sexes					Female				Male			
	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over	Children 2-6 years	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over
	Percent												
Type of product													
Single vitamin	15.0	12.9	17.7	18.2	5.6	16.7	13.9	20.3	19.9	13.2	11.9	14.8	15.8
Vitamin and mineral combination . . .	13.3	12.0	15.0	14.9	4.9	16.8	15.2	19.5	17.6	9.5	8.9	10.1	11.0
All multivitamins	13.8	14.4	13.6	12.1	32.4	14.8	15.7	14.1	12.9	12.9	13.2	13.1	11.0
Multivitamin, multimineral	8.7	9.2	8.1	7.7	5.7	9.2	10.0	8.3	8.3	8.1	8.5	7.9	7.0
Multivitamin plus iron	1.6	1.6	1.8	1.4	7.9	2.2	2.5	2.0	1.6	1.0	0.6	1.6	*1.1
Multivitamin	3.6	3.7	3.7	2.9	18.8	3.4	3.2	3.9	3.0	3.8	4.1	3.5	2.9
Other vitamin combination	4.3	4.1	4.9	4.1	1.2	5.1	4.7	6.2	5.0	3.4	3.5	3.5	2.7
Single mineral	6.9	4.5	10.4	9.9	2.4	10.1	6.9	15.1	12.3	3.6	2.2	5.2	6.4
Other mineral combination	1.2	0.7	1.7	1.8	-	1.6	1.2	2.2	2.2	0.7	*0.3	1.2	*1.1
Multimineral	*0.1	*0.1	-	-	-	*0.1	*0.1	*0.1	-	-	-	-	-
Broad-spectrum	23.6	23.8	23.7	22.4	37.6	26.2	27.1	26.1	24.0	20.7	20.6	21.1	20.1
Specialized	22.0	18.5	27.5	25.8	8.2	26.9	22.0	34.9	29.8	16.9	15.1	19.4	20.1
Vitamins													
Vitamin C	30.8	30.2	32.2	30.8	40.7	33.6	32.7	35.7	33.3	27.8	27.7	28.4	27.2
Thiamin	26.5	26.5	27.2	25.1	38.0	29.5	29.9	30.4	27.2	23.2	23.2	23.7	22.1
Riboflavin	26.4	26.6	27.0	24.7	38.0	29.5	30.0	30.3	26.7	23.0	23.1	23.3	21.9
Vitamin B ₆	26.5	26.6	27.2	25.1	37.5	29.7	30.2	30.5	27.4	23.1	23.1	23.6	21.8
Vitamin B ₁₂	26.2	26.3	26.7	24.8	37.8	29.3	29.8	29.9	26.9	22.8	22.9	23.3	21.8
Niacin	26.2	26.3	26.9	24.6	37.9	29.3	29.7	30.3	26.4	22.9	23.0	23.1	22.0
Vitamin E	26.1	25.4	27.5	26.2	36.9	28.9	28.5	30.3	27.9	23.1	22.4	24.4	23.9
Vitamin A	23.0	22.9	23.5	22.3	38.0	25.9	26.3	26.3	24.4	19.8	19.6	20.5	19.4
Vitamin D	23.9	23.2	25.2	24.3	38.2	27.6	26.7	29.5	27.5	19.9	19.7	20.5	19.6
Folic acid	23.4	24.2	23.1	20.8	37.0	26.0	27.3	25.8	22.2	20.6	21.2	20.2	18.9
Pantothenic acid	22.2	22.4	22.3	21.3	8.9	24.9	25.4	25.3	22.9	19.3	19.5	19.1	19.1
Biotin	17.3	18.0	16.7	15.4	7.5	18.6	19.7	18.5	15.6	15.8	16.4	14.7	15.1
Minerals													
Iron	19.7	20.1	19.3	18.9	17.7	23.1	24.5	22.0	20.7	16.0	15.8	16.3	16.4
Calcium	19.5	17.8	22.3	21.4	7.5	24.7	22.0	29.1	26.3	14.0	13.6	14.8	14.4
Zinc	15.9	15.6	16.2	16.6	8.7	17.2	17.0	17.2	17.9	14.5	14.3	15.1	14.6
Magnesium	15.4	15.2	15.3	16.2	7.9	17.1	16.9	17.1	17.8	13.5	13.5	13.3	13.9
Iodine	14.0	14.1	13.5	14.3	7.6	15.3	15.7	14.3	15.5	12.6	12.6	12.7	12.6
Copper	14.2	14.2	13.8	14.4	6.6	15.2	15.3	14.7	15.6	13.1	13.2	12.9	12.7
Manganese	11.3	11.1	11.2	12.2	4.5	12.4	12.3	12.4	12.7	10.1	9.9	9.8	11.4
Phosphorus	10.2	10.6	9.9	9.6	6.2	11.2	11.8	10.3	10.7	9.2	9.4	9.4	8.0
Potassium	10.4	10.2	10.2	11.6	1.5	11.5	11.2	11.6	12.5	9.3	9.3	8.6	10.2
Chromium	8.5	8.9	7.8	8.6	2.1	9.4	9.9	9.1	8.7	7.6	7.9	6.4	8.5
Selenium	9.2	9.4	8.7	9.6	*0.3	10.3	10.5	10.2	10.2	8.1	8.3	7.1	8.7
Fluoride	*0.1	-	*0.1	*0.3	2.5	*0.1	-	*0.1	*0.4	-	-	*0.1	-

Table 4. Percent of vitamin and mineral supplement users, by sex, age, and type of product used, vitamins, and minerals: United States, 1986

Type of product, vitamins, and minerals	Both sexes					Female				Male			
	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over	Children 2-6 years	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over
Type of product	Percent												
Single vitamin	41.2	37.4	44.4	47.7	13.0	40.4	35.9	44.0	46.9	42.3	39.2	45.1	49.1
Vitamin and mineral combination	36.4	35.0	37.8	39.0	11.4	40.6	39.3	42.2	41.6	30.5	29.5	30.9	34.2
All multivitamins	38.0	42.0	34.2	31.7	74.8	35.7	40.7	30.6	30.4	41.3	43.7	39.9	34.1
Multivitamin or multimineral	23.8	26.8	20.4	20.3	13.1	22.3	25.8	17.9	19.6	26.1	28.0	24.3	21.7
Multivitamin plus iron	4.4	4.5	4.5	3.7	18.2	5.3	6.5	4.2	3.8	3.1	2.1	5.0	*3.4
Multivitamin	9.8	10.7	9.3	7.7	43.4	8.1	8.4	8.4	7.0	12.1	13.6	10.7	9.0
Other vitamin combination	11.8	11.9	12.3	10.7	2.7	12.5	12.2	13.4	11.8	10.8	11.5	10.7	8.5
Single mineral	19.1	13.2	26.1	25.9	5.5	24.4	18.0	32.7	29.0	11.4	7.3	15.9	20.0
Other mineral combination	3.2	2.1	4.3	4.6	*0.1	3.9	3.0	4.7	5.2	2.1	*1.0	3.8	*3.5
Multimineral	*0.1	*0.2	*0.1	-	-	*0.2	*0.4	*0.1	-	-	*0.1	-	-
Broad-spectrum	64.7	69.3	59.6	58.7	86.8	63.5	70.2	56.4	56.7	66.4	68.3	64.6	62.4
Specialized	60.6	53.8	69.1	67.6	18.8	65.0	57.0	75.5	70.4	54.2	49.9	59.2	62.4
Vitamins													
Vitamin C	84.7	87.9	81.0	80.5	94.0	81.4	84.8	77.3	78.5	89.4	91.8	86.9	84.3
Thiamin	72.7	77.1	68.4	65.7	87.6	71.5	77.5	65.9	64.1	74.3	76.6	72.3	68.6
Riboflavin	72.4	77.3	67.8	64.7	87.7	71.4	77.8	65.5	63.0	73.9	76.6	71.3	67.9
Vitamin B ₆	72.8	77.4	68.5	65.7	86.4	72.0	78.1	66.0	64.6	74.0	76.4	72.2	67.7
Vitamin B ₁₂	71.8	76.5	67.2	64.9	87.1	70.9	77.2	64.7	63.4	73.2	75.6	71.1	67.6
Niacin	71.9	76.5	67.5	64.4	87.5	70.8	77.0	65.5	62.3	73.4	76.0	70.6	68.4
Vitamin E	71.7	73.9	69.1	68.7	85.2	69.8	73.9	65.5	65.8	74.2	74.0	74.7	74.3
Vitamin A	63.1	66.6	59.2	58.5	87.7	62.8	68.1	57.0	57.6	63.6	64.8	62.7	60.2
Vitamin D	65.6	67.4	63.3	63.5	88.1	66.8	69.2	63.8	64.9	63.8	65.1	62.6	61.0
Folic acid	64.2	70.5	58.1	54.5	85.4	62.9	70.8	55.8	52.4	66.2	70.1	61.8	58.6
Pantothenic acid	61.1	65.3	56.2	55.8	20.6	60.4	65.9	54.8	54.0	62.1	64.5	58.3	59.2
Biotin	47.4	52.4	42.0	40.3	17.3	45.1	51.0	40.0	36.8	50.7	54.2	45.1	46.9
Minerals													
Iron	54.1	58.5	48.5	49.5	40.8	56.0	63.5	47.6	48.8	51.5	52.3	49.9	51.0
Calcium	53.7	51.7	58.1	56.0	17.2	59.8	57.1	63.0	62.0	45.0	45.0	45.2	44.7
Zinc	43.7	45.5	40.6	43.4	20.1	41.7	44.2	37.2	42.3	46.6	47.1	46.0	45.3
Magnesium	42.2	44.1	38.4	42.3	18.3	41.4	43.8	38.9	41.9	43.3	44.6	40.8	43.2
Iodine	38.4	41.1	34.1	37.4	17.6	37.0	40.6	30.9	36.6	40.5	41.7	38.9	39.0
Copper	38.9	41.5	34.7	37.7	15.2	36.8	39.7	31.7	36.7	41.9	43.7	39.3	39.5
Manganese	31.0	32.4	28.0	31.9	10.3	30.1	31.9	26.9	30.1	32.4	32.9	29.8	35.4
Phosphorus	28.1	30.8	24.8	25.1	14.2	27.1	30.6	22.3	25.3	29.5	31.0	28.7	24.8
Potassium	28.7	29.8	25.6	30.3	3.5	27.9	29.0	25.1	29.6	29.7	30.9	26.3	31.7
Chromium	23.5	25.8	19.6	22.6	4.9	22.8	25.5	19.6	20.6	24.3	26.1	19.5	26.3
Selenium	25.4	27.3	21.9	25.1	*0.6	25.0	27.1	22.1	24.2	25.9	27.6	21.6	26.9
Fluoride	*0.2	*0.1	*0.2	*0.7	5.7	*0.2	-	*0.2	*1.0	*0.1	*0.2	*0.2	-

Table 5. Percent distribution and percents of persons using vitamin and mineral products by number taken and type of product, according to sex and age: United States, 1986

Number taken and type of product	Both sexes					Female				Male			
	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over	Children 2-6 years	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over
	Percent distribution												
Total products taken ¹	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1 product	59.6	63.6	54.5	55.6	85.9	55.1	59.1	49.6	52.7	66.1	69.2	62.1	61.1
2 products	20.8	19.7	22.0	22.0	11.9	22.3	22.2	22.2	22.9	18.5	16.7	21.6	20.4
3-4 products	14.5	12.4	18.0	15.5	*2.2	17.0	13.9	22.7	16.3	11.1	10.6	10.6	13.9
5 products or more	5.1	4.2	5.5	6.9	-	5.6	4.9	5.4	8.1	4.2	3.4	5.7	*4.7
1 product taken²													
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Single vitamin	16.2	15.3	16.3	19.2	6.7	12.1	11.3	11.4	15.8	20.9	19.6	22.2	24.3
Vitamin and mineral combination	30.4	30.5	29.1	32.3	9.6	33.5	34.0	31.6	34.8	26.9	26.9	26.1	28.4
All multivitamins	40.6	44.0	37.3	34.8	80.3	39.1	43.6	33.9	33.2	42.7	44.4	41.6	37.1
Multivitamin, multimineral	25.2	27.7	21.2	22.7	12.9	23.6	27.6	16.5	21.9	27.1	27.8	26.9	24.0
Multivitamin plus iron	4.4	4.4	5.0	3.7	20.4	5.8	6.2	6.1	*4.1	2.8	2.4	*3.6	*3.0
Multivitamin	11.1	11.9	11.1	8.3	47.0	9.7	9.7	11.2	7.2	12.8	14.2	11.0	10.1
Other vitamin combination	6.3	6.7	5.8	5.8	*2.8	5.4	5.6	5.0	*5.4	7.4	7.8	6.7	*6.6
Single mineral	6.0	3.3	11.1	7.6	*0.7	9.6	5.4	17.6	10.6	1.9	*1.1	*3.2	*2.9
Other mineral combination	*0.3	*0.2	*0.4	*0.4	-	*0.3	*0.3	*0.6	*0.2	*0.3	*0.2	*0.2	*0.7
Multimineral	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Broad-spectrum	67.7	72.2	61.3	62.1	92.0	67.1	74.0	57.4	60.3	68.5	70.2	66.0	65.0
Specialized	32.3	27.8	38.7	37.9	8.0	32.9	26.0	42.6	39.8	31.5	29.8	33.9	35.0
2 products taken²													
Percent													
Single vitamin	56.5	57.3	55.1	56.9	51.3	49.9	48.1	49.3	55.7	67.9	72.7	64.4	59.2
Vitamin and mineral combination	39.4	38.0	41.3	40.1	*17.9	44.0	44.0	45.3	41.8	31.6	28.0	34.9	36.7
All multivitamins	38.1	44.8	31.8	29.7	79.7	35.3	40.1	29.8	31.1	43.0	52.7	35.1	26.9
Multivitamin, multimineral	22.8	28.0	18.8	14.9	21.5	21.9	25.0	20.2	16.6	24.3	32.9	16.6	*11.5
Multivitamin plus iron	5.3	6.6	*3.9	*4.0	*15.1	6.0	9.0	*1.9	*4.5	4.0	*2.5	*7.1	*2.8
Multivitamin	10.0	10.2	9.1	10.8	43.1	7.3	6.0	*7.7	*10.0	14.6	17.2	*11.3	*12.4
Other vitamin combination	13.3	12.3	16.2	11.1	*2.5	14.4	14.0	16.9	*11.5	11.4	9.6	15.0	*10.4
Single mineral	24.6	20.0	28.1	31.9	33.4	28.0	26.0	30.4	29.7	18.8	10.1	24.3	36.6
Other mineral combination	4.3	4.1	*4.1	*5.1	*0.8	5.3	4.8	*4.7	*7.6	*2.6	*3.0	*3.2	-
Multimineral	-	-	-	-	-	-	-	-	-	-	-	-	-
Percent distribution													
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Only broad-spectrum	8.6	11.7	5.1	*5.6	*15.7	7.2	9.7	*3.7	*6.0	11.0	15.0	*7.4	*4.9
Only specialized	35.5	28.7	40.5	46.4	*6.7	36.9	29.6	42.4	47.3	33.2	27.2	37.4	44.5
Combination	55.9	59.6	54.3	48.0	77.7	55.9	60.7	53.9	46.7	55.8	57.9	55.1	50.6
3 or more products taken²													
Percent													
Single vitamin	86.1	86.8	84.1	87.9	*70.9	83.8	84.9	81.5	85.5	91.0	89.9	91.3	93.8
Vitamin and mineral combination	52.3	49.7	55.1	53.6	*57.7	54.7	51.6	57.6	56.1	47.2	46.4	48.3	47.8
All multivitamins	38.1	43.1	35.6	30.3	*49.7	34.9	42.1	30.2	28.3	44.7	44.9	50.2	35.2
Multivitamin, multimineral	25.9	29.1	23.5	22.2	*13.7	23.4	27.0	20.9	20.3	31.1	32.7	30.7	*27.1
Multivitamin plus iron	4.2	4.0	4.8	*3.8	*4.0	4.4	5.7	*3.6	*3.1	*3.9	*1.0	*8.2	*5.6
Multivitamin	7.9	10.0	7.2	*4.2	*31.4	7.1	9.3	*5.7	*4.9	9.7	11.2	*11.3	*2.5
Other vitamin combination	27.8	32.8	23.5	23.2	*8.6	28.2	32.2	24.2	27.2	26.8	34.0	21.8	*13.3
Single mineral	49.1	40.5	55.7	57.7	*44.0	53.4	46.5	58.6	58.6	40.0	30.5	48.0	55.6
Other mineral combination	10.7	7.2	13.3	14.6	-	11.2	9.8	11.4	13.9	9.8	*2.8	18.6	*16.7
Multimineral	*0.7	*1.3	*0.4	-	-	*1.0	*1.9	*0.5	-	*0.2	*0.4	-	-

	Percent distribution												
Total	100.0	100.0	100.0	100.0	*100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Only broad-spectrum	*0.7	*0.8	*0.9	-	*4.0	*0.9	*1.0	*1.3	-	*0.3	*0.5	-	-
Only specialized	33.8	30.3	35.7	38.8	*9.1	36.1	31.3	38.7	41.3	29.0	28.4	27.6	32.7
Combination	65.5	68.9	63.4	61.2	*86.9	63.0	67.7	60.0	58.7	70.8	71.0	72.4	67.2

¹Excludes vitamin and mineral supplement users with unknown number of products taken.

²Excludes products of unknown type.

Table 6. Number of vitamin and mineral products used by adults and children and percent distribution by frequency of use, according to type of product: United States, 1986

Type of product	Vitamin and mineral products used by adults 18 years of age and over					Vitamin and mineral products used by children 2-6 years of age				
	All products	Frequency of use				All products	Frequency of use			
		Total ¹	Daily	2-6 days a week	Weekly		Total ¹	Daily	2-6 days a week	Weekly
	Number in thousands	Percent distribution				Number in thousands	Percent distribution			
All vitamin and mineral products ²	111,433	100.0	70.8	24.0	5.2	9,186	100.0	71.2	26.0	*2.8
Single vitamin	32,620	100.0	71.3	22.2	6.5	1,054	100.0	65.1	*30.2	*4.7
Vitamin and mineral combination	24,100	100.0	71.0	24.0	5.0	948	100.0	64.6	*33.1	*2.3
All multivitamins	23,506	100.0	70.6	26.1	3.4	5,917	100.0	75.6	22.1	*2.4
Multivitamin, multimineral	14,746	100.0	70.4	26.7	*2.8	1,043	100.0	65.1	*31.2	*3.7
Multivitamin plus iron	2,710	100.0	71.3	24.4	*4.4	1,432	100.0	81.2	*17.7	*1.1
Multivitamin	6,050	100.0	70.5	25.3	*4.2	3,441	100.0	76.4	21.1	*2.5
Other vitamin combination	7,383	100.0	71.8	23.4	*4.8	*213	*100.0	*67.8	*24.9	*7.3
Single mineral	13,224	100.0	70.1	24.5	5.4	431	100.0	*66.8	*33.2	-
Other mineral combination	1,959	100.0	75.1	*20.0	*5.0	*7	*100.0	*100.0	-	-
Multimineral	*90	*100.0	*65.6	*34.4	-	-	-	-	-	-
Broad-spectrum	40,936	100.0	70.6	25.3	4.1	6,887	100.0	74.5	23.2	*2.3
Specialized	61,946	100.0	71.3	22.9	5.8	1,682	100.0	64.1	31.7	*4.2

¹Excludes vitamin and mineral products with unknown frequency of use.

²Includes vitamin and mineral products of unknown type.

Table 7. Percent of Recommended Dietary Allowances for adults 18 years of age and over, by selected percentiles, age, sex, vitamins, and minerals: United States, 1986

Sex, vitamins, and minerals	Percentile											
	All adults 18 years of age and over			18-44 years			45-64 years			65 years and over		
	Median	90th	95th	Median	90th	95th	Median	90th	95th	Median	90th	95th
Males												
Percent												
Vitamins:												
Vitamin A	150	300	---	150	300	751	150	300	---	150	300	---
Vitamin D	200	251	400	200	250	400	200	250	400	200	262	325
Vitamin E	200	2,666	2,860	200	1,106	2,756	200	2,667	2,867	200	2,667	2,866
Vitamin C	250	1,667	2,084	238	1,667	2,143	333	1,667	2,166	200	1,666	2,000
Folic acid	100	100	175	100	100	200	100	100	175	100	100	100
Thiamin	191	2,500	4,286	161	2,500	4,081	238	3,125	4,761	250	2,381	6,250
Riboflavin	186	1,875	3,571	163	2,187	3,572	213	2,187	3,571	243	1,071	2,214
Niacin	125	625	632	111	556	556	159	625	833	188	625	625
Vitamin B ₆	136	1,786	3,409	136	1,948	3,409	136	1,894	3,409	136	909	3,409
Vitamin B ₁₂	300	1,800	3,332	300	1,667	3,332	300	2,500	3,334	300	833	5,000
Biotin ¹	26	96	200	30	100	200	23	66	106	20	62	200
Pantothenic acid ¹	182	909	1,364	182	909	1,364	182	909	1,364	182	520	909
Minerals:												
Calcium	20	78	116	20	70	100	20	83	125	20	95	138
Phosphorus	15	33	56	15	33	56	16	31	56	15	25	33
Iodine	100	100	157	100	107	200	100	100	150	100	100	100
Iron	180	301	540	180	360	540	180	288	400	212	299	500
Magnesium	29	57	100	29	57	86	29	51	97	29	57	101
Copper ¹	80	120	120	80	120	160	80	120	120	80	120	120
Zinc	100	200	333	100	200	309	100	200	333	100	167	300
Females												
Vitamins:												
Vitamin A	188	375	---	188	375	563	188	375	375	188	375	---
Vitamin D	200	262	343	200	225	325	200	263	357	200	300	400
Vitamin E	250	3,333	3,583	250	2,150	3,458	250	3,571	4,166	250	3,450	5,033
Vitamin C	200	1,666	1,917	167	1,660	1,927	200	1,667	1,833	275	1,664	1,867
Folic acid	100	100	200	100	100	200	100	100	200	100	100	113
Thiamin	225	3,000	6,000	225	3,000	7,500	225	3,000	5,300	249	2,499	5,000
Riboflavin	217	2,083	4,167	217	2,136	5,140	217	2,083	4,166	217	1,417	2,917
Niacin	154	769	846	154	769	846	154	769	1,000	154	769	769
Vitamin B ₆	150	2,381	3,750	150	2,500	5,000	150	1,786	3,750	150	1,250	2,500
Vitamin B ₁₂	250	1,667	3,332	229	1,800	3,333	200	1,667	3,332	300	1,666	3,332
Biotin ¹	30	150	200	30	143	200	30	200	200	30	100	200
Pantothenic acid ¹	182	909	1,429	182	909	1,584	182	818	1,429	182	546	1,169
Minerals:												
Calcium	31	113	150	20	94	125	38	125	156	31	125	150
Phosphorus	16	33	56	16	33	56	16	44	63	16	21	38
Iodine	100	100	143	100	100	143	100	100	150	100	100	114
Iron	150	278	450	100	247	345	180	360	500	270	299	476
Magnesium	33	80	133	33	76	125	33	100	133	33	63	133
Copper ¹	80	120	120	80	120	120	80	120	120	80	120	120
Zinc	100	159	200	100	159	200	100	190	200	100	159	226

¹Pantothenic acid, copper, and biotin are reported as percents of the midrange ESADDI level, as established by the Food and Nutrition Board, owing to lack of RDA's for those nutrients.

NOTES: Includes vitamins and minerals with established RDA (or ESADDI) values.
 The median, 90th, and 95th percentiles are calculated for users of specific nutrients only.
 Excluded are persons who took any prescription vitamin or mineral product or whose average daily intake for a specific nutrient was unknown.

Table 8. Percent of Recommended Dietary Allowances for children 2-6 years of age, by selected percentiles, vitamins, and minerals: United States, 1986

Vitamins and minerals	Percentile		
	Median	90th	95th
Vitamins			
		Percent	
Vitamin A	---	---	375
Vitamin D	100	100	100
Vitamin E	167	333	400
Vitamin C	133	556	769
Folic acid	150	300	400
Thiamin	117	214	250
Riboflavin	119	213	238
Niacin	122	182	222
Vitamin B ₆	82	167	222
Vitamin B ₁₂	180	257	300
Biotin ^{1, 12}	53	124	177
Pantothenic acid ¹	286	333	429
Minerals			
Calcium	11	20	38
Phosphorus	6	16	25
Iodine	153	214	214
Iron	120	180	191
Magnesium	13	40	67
Copper ¹	118	167	167
Zinc	80	150	150

¹Pantothenic acid, copper, and biotin are reported as percents of the midrange ESADDI level, as established by the Food and Nutrition Board, owing to lack of RDA's for those nutrients.

NOTES: Includes vitamins and minerals with established RDA (or ESADDI) values.

The median, 90th, and 95th percentiles are calculated for users of specific nutrients only.

Excluded are persons who took any prescription vitamin or mineral product or whose average daily intake for a specific nutrient was unknown.

Table 9. All persons and persons using vitamin and mineral products, by sex and age: United States, 1986

Age	All persons			Persons using vitamin and mineral products ¹		
	Both sexes	Female	Male	Both sexes	Female	Male
Number in thousands						
All adults 18 years and over	169,587	87,783	81,804	61,749	36,263	25,486
18-44 years	97,541	48,316	49,225	33,525	18,643	14,882
18-24 years	26,098	12,992	13,105	7,316	3,862	3,454
25-34 years	39,486	19,070	20,416	13,924	7,381	6,542
35-44 years	31,957	16,253	15,704	12,286	7,400	4,886
45-64 years	44,660	23,371	21,289	17,763	10,798	6,965
45-54 years	22,587	11,661	10,927	9,054	5,446	3,608
55-64 years	22,073	11,710	10,363	8,710	5,352	3,357
65 years and over	27,386	16,096	11,290	10,461	6,821	3,639
65-74 years	16,906	9,458	7,449	6,779	4,268	2,512
75-84 years	8,652	5,343	3,309	3,065	2,114	952
85 years and over	1,828	1,296	533	616	440	*176
All children 2-6 years	18,162	8,910	9,252	7,873	3,761	4,112
2 years	3,578	1,762	1,816	1,566	751	815
3-4 years	7,177	3,371	3,806	3,346	1,532	1,814
5-6 years	7,407	3,777	3,630	2,961	1,479	1,483

¹Excludes persons who used only prescription vitamin and mineral products.

NOTE: Population figures exclude pregnant and lactating women 18-44 years of age.

Table 10. All persons and persons using vitamin and mineral products, by age and selected characteristics: United States, 1986

Characteristic	All persons					Persons using vitamin and mineral products ¹				
	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over	Children 2-6 years of age	All adults 18 years of age and over	18-44 years	45-64 years	65 years and over	Children 2-6 years of age
Race										
Number in thousands										
White	145,842	82,172	39,064	24,607	14,805	56,096	29,744	16,474	9,878	6,854
Black	18,583	11,821	4,477	2,286	2,711	3,999	2,679	995	325	821
Other	5,162	3,549	1,120	493	646	1,654	1,102	294	258	198
Race and sex										
White:										
Female	75,034	40,207	20,357	14,471	7,174	32,800	16,293	10,054	6,453	3,260
Male	70,808	41,965	18,707	10,136	7,630	23,296	13,451	6,419	3,425	3,594
Black:										
Female	10,211	6,367	2,478	1,366	1,384	2,432	1,648	547	236	422
Male	8,372	5,454	1,998	920	1,327	1,568	1,031	448	*89	398
Hispanic origin										
All non-Hispanic	159,092	90,085	42,379	26,628	16,148	58,732	31,534	17,045	10,153	7,116
All Hispanic	10,495	7,456	2,282	758	2,014	3,017	1,991	718	308	758
Mexican American	5,309	3,969	1,029	312	1,207	1,250	904	255	*92	445
Puerto Rican	1,140	729	343	*68	*162	319	*117	*181	*21	*37
Cuban	927	516	292	*119	*64	203	*79	*66	*58	*17
Other Hispanic	2,733	2,026	501	207	436	1,094	785	186	*122	197
Family income										
Less than \$7,000	14,889	8,135	2,676	4,077	1,928	4,137	2,161	744	1,232	439
\$7,000-\$14,999	24,752	12,257	5,176	7,318	2,674	8,034	3,748	1,575	2,711	1,031
\$15,000-\$24,999	33,138	19,272	8,250	5,615	3,691	11,524	6,207	2,899	2,419	1,631
\$25,000-\$39,999	41,161	26,819	10,874	3,467	4,847	15,985	9,810	4,699	1,476	2,482
\$40,000 or more	33,806	20,737	11,151	1,918	3,200	15,136	8,650	5,637	849	1,609
NHIS Poverty Index										
Below poverty line	17,481	11,534	3,209	2,738	3,362	4,227	2,747	776	704	919
Above poverty line	138,291	79,975	37,602	20,714	13,464	53,584	29,496	15,731	8,358	6,487
Education ²										
Less than 12 years	41,599	15,785	12,356	13,459	2,680	10,596	3,212	3,247	4,137	721
12 years	64,954	38,599	18,388	7,967	6,572	23,407	12,056	7,740	3,611	2,633
13 years or more	62,013	42,764	13,690	5,558	8,865	27,611	18,231	6,752	2,628	4,519
Marital status										
Never married	32,386	29,227	1,628	1,531	...	11,104	9,983	547	573	...
Married	109,299	59,034	35,088	15,176	...	39,446	19,889	13,819	5,738	...
Widowed, separated, or divorced	27,477	9,019	7,825	10,633	...	11,015	3,485	3,381	4,149	...
Geographic region										
Northeast	36,660	19,633	10,297	6,731	3,226	13,004	6,574	4,077	2,353	1,266
Midwest	40,905	23,837	10,473	6,596	4,492	15,033	8,146	4,379	2,508	2,093
South	58,612	34,428	15,104	9,080	6,624	18,719	10,627	5,065	3,027	2,712
West	33,410	19,644	8,787	4,979	3,820	14,993	8,178	4,242	2,573	1,802
Place of residence										
All MSA's	130,787	76,610	34,319	19,859	14,061	49,581	27,550	14,175	7,856	6,284
Central city	54,515	31,379	13,772	9,364	5,538	19,770	11,024	5,317	3,429	2,222
Outside central city	76,272	45,231	20,546	10,495 ^c	8,522	29,811	16,526	8,858	4,427	4,062
Not MSA	38,800	20,931	10,341	7,111	4,101	12,168	5,976	3,588	2,605	1,111

Respondent-assessed health status										
Excellent or very good	105,681	71,405	23,966	10,310	14,305	40,402	25,741	10,573	4,088	6,447
Good	42,039	20,234	12,438	9,367	3,225	14,436	5,937	4,778	3,721	1,168
Fair or poor	21,281	5,610	8,165	7,506	484	6,658	1,742	2,379	2,538	214
Weight status										
Not overweight	128,136	77,491	30,449	20,196	---	49,512	28,116	12,952	8,443	---
Overweight	38,550	18,749	13,414	6,387	---	11,512	5,080	4,615	1,818	---

¹Excludes persons who used only prescription vitamin and mineral products.

²Education of individual is shown for persons 18 years of age and over, and education of responsible adult is shown for children 2-6 years of age.

NOTE: Population figures exclude pregnant and lactating women 18-44 years of age.

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Symbols

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

Technical notes

Source and description of data

This report contains data from the 1986 National Health Interview Survey (NHIS). The NHIS is a continuing cross-sectional nationwide survey of the civilian noninstitutionalized population. Each week a probability sample of households in the United States is interviewed by personnel of the U.S. Bureau of the Census. The interview obtains information on the health and other characteristics of each household member living at the time of interview.

During 1986, NHIS interviews were conducted in 23,838 households, resulting in a sample of 62,052 persons. Interviews were not obtained for an additional 860 eligible households primarily because of respondent refusal or failure to find an eligible respondent at home after repeated attempts, producing a noninterview rate of 3.5 percent of all total eligible households.

The questions on the use of vitamin and mineral products were only asked in the NHIS during the 6-month period from January into July, 1986. The sample consisted of one randomly selected adult 18 years of age or older and, if available, one randomly selected child 2 through 6 years of age, from each interviewed family. With few exceptions, adults responded to the vitamin and mineral questionnaire for themselves. However, any adult family member knowledgeable about the sample child was eligible to respond about the child's use of vitamin and mineral products. The proxy respondent for sample children was usually the mother of the child.

Information about the use of vitamin and mineral products was not obtained for 3.4 percent of this eligible subsample, primarily because of the self-response requirement among adult sample persons. The final interviewed vitamin and mineral sample contained 13,652 persons—11,775

adults and 1,877 children from 11,879 households. The overall response rate, combining response rates for the

household questionnaire and vitamin and mineral questionnaire, was 93.1 percent.

The estimates in this report are actually based on responses for 13,435 sample persons. These data do not include 217 women of childbearing age who reported being pregnant or breastfeeding at the time of the interview. They are excluded from the analysis altogether since their use of vitamin and mineral products was not expected to reflect their usual vitamin and mineral use practices given the special nutrient requirements of pregnant and breastfeeding women. Individuals taking only prescription vitamin and mineral products are included in the analysis but are not classified as vitamin and mineral users.

Item nonresponse for the data discussed in this report ranged from 0.1 percent for whether vitamins and/or minerals were used in the past 2 weeks to 7.9 percent for manufacturer and brand name information used to derive the specific nutrient components of the vitamin and mineral products taken.

Verification of vitamin and mineral products

Several edit checks were performed during data processing for every reported vitamin and mineral product in order to improve the quality of the specific nutrient potency data collected in the 1986 NHIS. All nutrient potency values reported for each product were checked and corrected by comparison with such references as the 1986 edition of the *Physicians' Desk Reference* (PDR) for prescription and nonprescription drugs, company brochures, and independently obtained product labels; through direct contact with companies; and through comparison with nutrient concentration data of other records for the same product. Of the 8,700 individual products upon which the estimates in this report are based, about 84 percent had one or more of these independent accuracy checks made. For the remaining products, the reference information just described was not available, nor were other

products of the same brand name or type reported. In many of these cases, however, the vitamin and mineral product nutrient data recorded by the interviewers were checked and corrected by inserting nutrient data from *similar* products. The nutrient values, as recorded on the questionnaire, were used only when a similar product was not identified.

Sampling errors

Because estimates shown in this report are based on a sample of the population rather than on the entire population, they are subject to sampling error. When an estimate or the numerator or denominator of a percent is small, the sampling error may be relatively high. In addition, the complex sample design of the NHIS has the effect of making the sampling errors larger than they would be had a simple random sample of equal size been used.

Approximate standard errors for the following estimated percents in tables 1, 2, and 3 of this report may be calculated by using the formula

$$SE(p) = p \sqrt{.0000825 + 16,700/x}$$

where p is the estimated percent and $x = pY/100$ with Y = the population denominator.

Table 1: all persons 18 years of age and over, and any combination of the age groups 18–24, 25–34, 35–44, 45–54, 55–64, 65–74, and 75 years and over.

Table 2: the estimated percents by sex, race, sex and race, and for the age groups 18 and over: 18–44, 45–64, and 65 years of age and over.

Table 3: all estimated percents in this table.

Approximate standard errors for all other percents presented in tables 1 and 2 not previously mentioned and all estimated percents in tables 4 and 5 may be calculated by using the formula

$$SE(p) = \frac{\sqrt{16,700(p)(100-p)}}{y}$$

where p is the estimated percent and y , the population denominator.

Approximate standard errors for all estimated percents in table 6 may be calculated by using the formula

$$SE(p) = \frac{\sqrt{(37,000)p(100-p)}}{y}$$

where p is the estimated percent and y is the population denominator, which in this case is the total number of products shown in column 1.

The estimated parameters for calculating the approximate standard errors for the percentile of RDA's and ESADDI's in tables 7 and 8 of this report are in the process of being generated.

The population numbers for the following age groups in table 9 have been adjusted to official U.S. Bureau of the Census figures and their standard errors are assumed to be 0.0: 18 years of age and over, 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, and 65 years and over.

Similarly, all population figures in table 10 by sex, race, sex and race, and for the age groups 18 years of age and over, 18-44, 45-64, and 65 years of age and over have no sampling error. The approximate SE's for all remaining estimated numbers (x) in tables 9 and 10 can be computed by the formula

$$SE(x) = \sqrt{(.0000825)(x)^2 + (16,700)(x)}$$

The approximate standard error of a difference between percents is given by the formula

$$SE(x_1 - x_2) = \sqrt{SE(x_1)^2 + SE(x_2)^2}$$

where x_1 and x_2 are the two percents being compared, $x_1 - x_2$ is the difference between them, and $SE(x_1)$ and $SE(x_2)$ are the standard errors of the two percents. In this report, a difference was considered statistically significant at the 5-percent level if the difference ($x_1 - x_2$) was at least twice as large as its standard error.

Age-adjusted rates

This report includes data that have been adjusted by the direct

method to the age distribution of the selected standard population, in this case the 1980 civilian noninstitutionalized population of the United States. Age adjustment by the direct method is accomplished by multiplying the age-specific rate for each age group by the population for the corresponding age group in the standard population. The cross products of the multiplications are summed and divided by the total of the standard population to obtain the age-adjusted rate. Eight age groups were used for the age adjustment in this report: 18-24, 25-34, 35-44, 45-54, 55-64, 65-74, 74-84, and 85 years and over.

Definition of terms

Nine product classifications—

Single vitamin: product contains only one vitamin.

Multivitamin: product contains no minerals and vitamins A, D, E, C, B₁, B₂, B₆, B₁₂, folic acid, and niacin.

Other vitamin combination: product contains no minerals, is not a multivitamin, and contains at least two vitamins.

Single mineral: product contains only one mineral.

Multimineral: product contains no vitamins and the following minerals: calcium, phosphorus, iodine, iron, and magnesium.

Other mineral combination: product contains no vitamins, is not a multimineral, and contains at least two minerals.

Multivitamin and multimineral: product contains vitamins A, D, E, C, folic acid, B₁, B₂, B₆, B₁₂, niacin, calcium, phosphorus, iodine, iron, and magnesium.

Multivitamin plus iron: product is a multivitamin as previously defined except that it includes iron.

Other vitamin mineral combination: product is not one of the types of vitamin and mineral products listed above but contains at least one vitamin and one mineral.

*Weight status—*The weight status classification shown in this report for adults is derived from the calculation of body mass index (BMI) using the formula of weight/height² where weight is in kilograms and height is in meters. It is an approximate measure of overweight given that body composition varies among persons of the same height and weight (13). Specifically, the BMI cutoff points used to identify overweight persons were determined by NCHS' National Health and Nutrition Examination Survey II (NHANES II) and are as follows: for males, BMI = 27.8 or greater and for females, BMI = 27.3 or greater.

*Respondent-assessed health status—*The categories related to respondent-assessed health status result from asking the respondent, "Would you say _____'s health is excellent, very good, good, fair, or poor?" As such, it is based on a respondent's opinion and not directly on any clinical evidence.

*NHIS poverty index—*Persons are classified as being above or below the poverty line by using the poverty index as originated at the Social Security Administration in 1964 and revised by Federal interagency committees in 1969 and 1980. The poverty index is based solely on money income and does not reflect the fact that many low-income persons receive noncash benefits such as food stamps, Medicaid, and public housing. The index is based on the Department of Agriculture's 1961 economy food plan and reflects the different consumption requirements of families according to their size and composition. The poverty thresholds are updated every year to reflect changes in the Consumer Price Index. Because NHIS data on family income are collected by income categories rather than by specific amounts of money, the NHIS estimates of persons living in poverty will vary slightly from the Current Population Survey estimates.

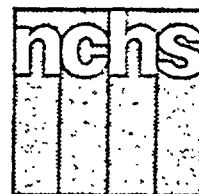
*Race and ethnicity—*Estimates for the white and black populations are based on respondents' reported racial identifications. The Hispanic classification is also based on the respondent's description.

More detailed discussions of the sample design, estimating procedures, procedures for estimating standard errors, nonsampling errors, and definitions of other sociodemographic terms used in this report have been published in Vital and Health Statistics, Series 10, Nos. 160 and 164, and in Series 1, No. 18 (8,14,15).

A public use data file based on the 1986 Vitamin Mineral Supplement questionnaire was released in December 1988. 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.

NOTE: Publication of this report would not have been possible without the contributions of the following persons. Within The National Center for Health Statistics, Sue Hsiung was responsible for constructing and editing the vitamin mineral data tapes from which these data are derived. George Gerhold and Anthony Thomas developed the computer programs that generated the tables for this report. And Catherine Woteki willingly critiqued several versions of the manuscript. Beth Yetley, with the Food and Drug Administration, gave generously of her time throughout the planning and preparation of this report. To all of these persons, the authors express their thanks.

Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

AIDS Knowledge and Attitudes for December 1988

Provisional Data From the National Health Interview Survey

Ann M. Hardy, Dr.P.H. and Deborah A. Dawson, Ph.D., Division of Health Interview Statistics

Introduction

The National Center for Health Statistics (NCHS) has included a special set of supplemental questions on the adult population's knowledge and attitudes about acquired immunodeficiency syndrome (AIDS) in the National Health Interview Survey (NHIS). The first AIDS Knowledge and Attitudes Survey was in the field from August through December 1987. Provisional results of that survey were published on a monthly basis in *Advance Data From Vital and Health Statistics* (Nos. 146, 148, 150, 151, and 153). A public use data tape containing the information collected in 1987 is available from NCHS. During the first 4 months of 1988, the NHIS AIDS questionnaire was revised to meet current program needs for information about AIDS awareness. The revised AIDS Knowledge and Attitudes Survey entered the field in May 1988. Provisional findings for May through November were published in *Advance Data From Vital and Health Statistics*, Nos. 160, 161, 163, 164, and 167. This report presents provisional results for December 1988.

The *Advance Data* reports describing the NHIS AIDS data have been restricted to simple descriptive statistics to facilitate their timely

release. Thus, these reports do not attempt to explain or interpret differences among population subgroups in AIDS knowledge or to examine relationships among various measures of knowledge, attitudes, and perceived risk. The 1987 and 1988 NHIS AIDS data bases permit more complex analyses than those presented in this series of *Advance Data* reports, and such analyses are being undertaken by various groups in the Public Health Service.

The AIDS questionnaires were designed to estimate public knowledge and attitudes about AIDS transmission and prevention of AIDS virus infection. The data were needed as input for the planning and development of AIDS educational campaigns and for monitoring major educational efforts, for example, the series of radio and television public service announcements entitled "America Responds to AIDS" and the brochure "Understanding AIDS," both developed by the Centers for Disease Control.

The 1987 and 1988 AIDS questionnaires were developed by the National Center for Health Statistics and interagency working groups established by the Information, Education and Risk Factor Reduction Subcommittee of the Public Health

Service Executive Task Force on AIDS. The working groups included representatives from the Centers for Disease Control; the National Institutes of Health; the Alcohol, Drug Abuse and Mental Health Administration; and the Health Resources and Services Administration.

The current AIDS questionnaire includes items on sources of AIDS information; self-assessed levels of AIDS knowledge; basic facts about the AIDS virus and how it is transmitted; blood donation experience; awareness of and experience with the blood test for the AIDS virus; perceived effectiveness of selected preventive measures; self-assessed chances of getting the AIDS virus; personal acquaintance with persons with AIDS or the AIDS virus; and willingness to take part in a proposed national seroprevalence survey. A general risk behavior question, similar to that asked by the Red Cross of potential blood donors, is included in the 1988 AIDS questionnaire.

This report presents provisional data for December 1988 for most items included in the AIDS questionnaire. Table 1 displays percent distributions of persons 18 years of age and over by response categories according to age, sex, race, and

education. In most cases, the actual questions asked of the respondents are reproduced verbatim in table 1 along with the coded response categories. In a few cases, questions or response categories have been rephrased or combined for clearer or more concise presentation of results. Refusals and other nonresponse categories are excluded from the denominator in the calculation of estimates, but responses of "don't know" are included.

Selected findings

The following highlights describe various aspects of changes in AIDS knowledge and attitudes as observed in the May–December 1988 data from the NHIS AIDS survey. Any differences cited in the text are statistically significant at the 0.05 level (see table II for approximate standard errors of estimates).

Sources of AIDS information— Eighty percent of adults interviewed in

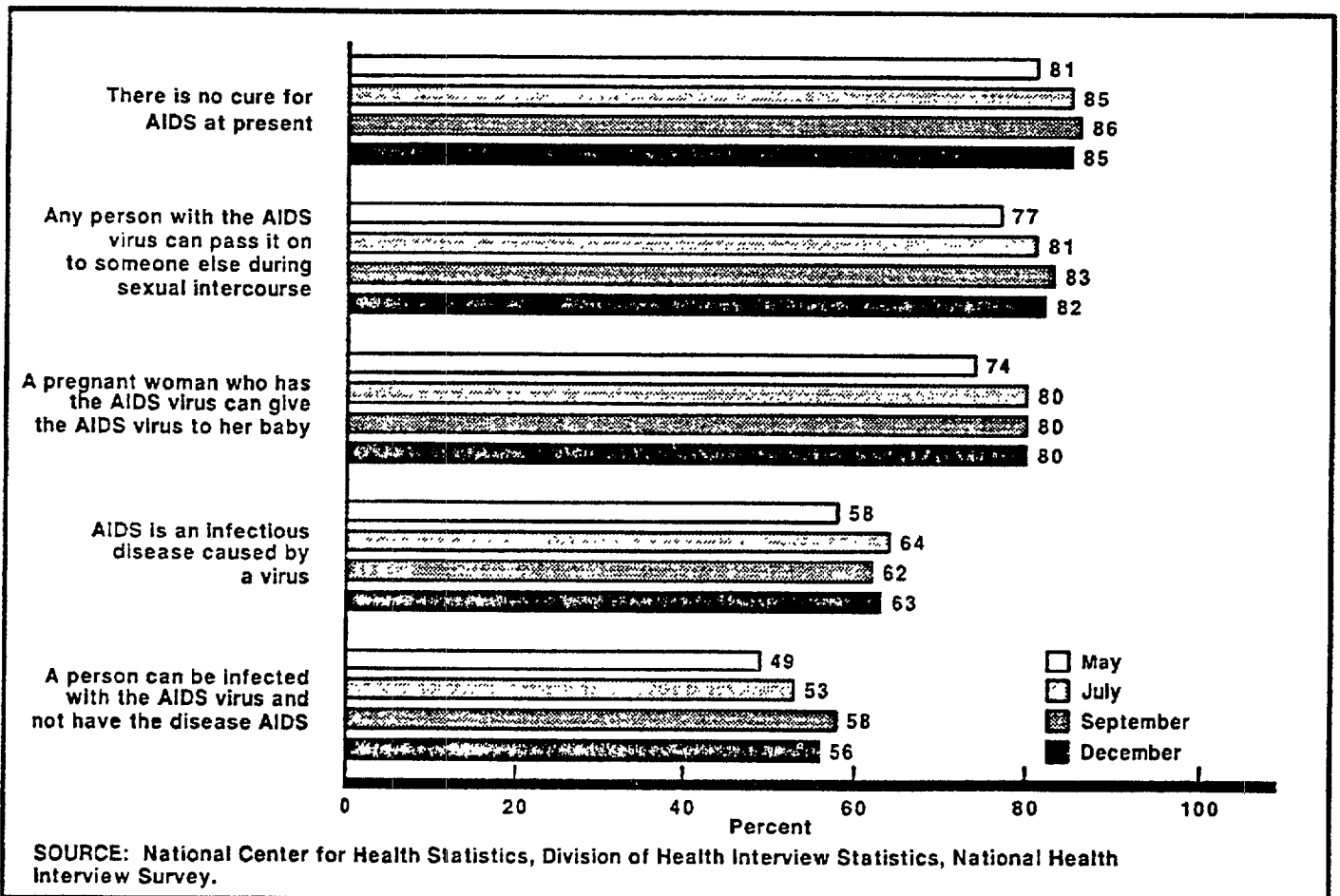
December 1988 reported having seen AIDS public service announcements on television in the past month, and 42 percent reported hearing announcements on the radio. These proportions were slightly lower than the proportions who reported seeing or hearing such announcements between May and July 1988 (84–86 percent saw announcements on television and 48–49 percent heard announcements on the radio). In December, as in previous months in 1988, the proportion of adults who had seen or heard announcements was higher for those with 12 or more years of school than for those with less than 12 years.

In May, 25 percent of adults reported having read brochures in the month before interview; this proportion increased to 52 percent in June and July, coincident with the national mailout of the brochure "Understanding AIDS." From August through December, this figure declined so that by December only 28

percent had recently read brochures. From May to July, the percent of adults who reported ever reading brochures or pamphlets about AIDS increased from 43 to 68 percent. This figure remained between 65 and 67 percent through December.

*Self-assessed knowledge—*In December 1988, 21 percent of adults reported that they knew a lot about AIDS, 44 percent reported some knowledge, 27 percent claimed to know a little, and 8 percent stated that they knew nothing. The proportion of adults in these various response categories did not change from May through December.

*General knowledge—*For many of the general AIDS knowledge questions, increases in the percent of adults giving the correct definitive responses were noted after May 1988. As shown in Figure 1, the proportion who thought it definitely true that there is no cure for AIDS at present increased from 81 percent in May to



SOURCE: National Center for Health Statistics, Division of Health Interview Statistics, National Health Interview Survey.

Figure 1. Provisional estimates of percent of adults who think selected statements about AIDS are definitely true: United States, May, July, September, and December 1988

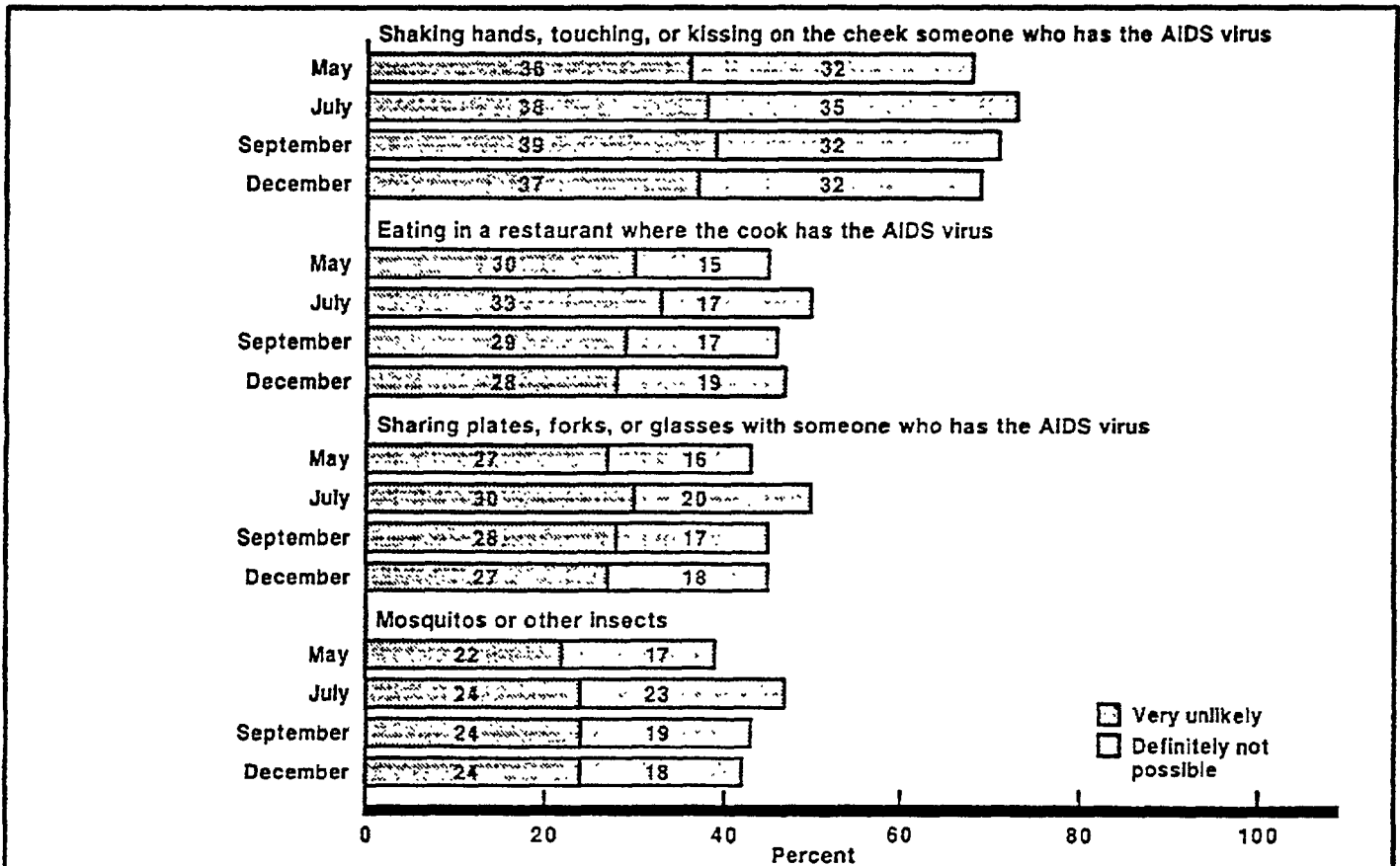
85 percent in December. Similar increases were noted in the proportion who thought it definitely true that any person with the AIDS virus can pass it on to someone else during sexual intercourse (from 77 to 82 percent), that a pregnant women who has the AIDS virus can give the AIDS virus to her baby (from 74 to 80 percent), that AIDS is an infectious disease caused by a virus (from 58 to 63 percent), and that a person can be infected with the AIDS virus and not have the disease AIDS (from 49 to 56 percent). As in the previous months in 1988, the proportion responding correctly to the various AIDS knowledge questions in December increased with education and was higher for those under 50 years of age than for older adults. When the proportions with the correct definitive response were examined by race, the increase in knowledge after May was more pronounced for black adults than for white adults. For some questions, the magnitude of the

difference between the proportion of black and white adults responding correctly decreased. For other questions, racial differentials were completely eliminated. By December, similar proportions of white adults and black adults responded correctly to more than half of the general knowledge questions including those about the major modes of transmission of the AIDS virus (sexual, parenteral, and perinatal).

Misperceptions about transmission of the AIDS virus—A series of questions in the NHIS AIDS survey addressed misperceptions about transmission of the AIDS virus through casual contact. It had been previously noted that accurate knowledge in this area had increased from 1987 to May 1988. From May to June and July 1988, additional increases in knowledge were noted. After July 1988, however, the proportion with the correct responses began to decrease somewhat, so that by

December 1988, the proportion responding correctly to questions about casual transmission was often no different from that observed in May 1988. As shown in figure 2, the percent of adults who thought it was very unlikely or definitely not possible to transmit AIDS by shaking hands increased from 68 percent in May to 73 percent in July and dropped to 71 percent in September and to 69 percent in December. A similar pattern was noted for most of the other conjectured modes of transmission. In December, as in previous months in 1988, the proportion of adults responding correctly to questions about transmission increased with education. However, the pattern described above of an increase in the proportion responding correctly from May to June and July with a decline in subsequent months was noted at all levels of education.

Blood donation and testing—In December 1988, 41 percent of adults



SOURCE: National Center for Health Statistics, Division of Health Interview Statistics, National Health Interview Survey.

Figure 2. Provisional estimates of percent of adults considering it very unlikely or definitely not possible to transmit the AIDS virus in selected ways: United States, May, July, September, and December 1988

stated that they had ever donated blood, 15 percent had donated since March 1985 when routine screening of donated blood for antibodies to HIV began, and 7 percent had donated in the year preceding interview. For all blood donation questions, the percent donating increased with education, and men were more likely to have donated than women.

Three-quarters of all adults had heard of the AIDS blood test as of December 1988. Slightly fewer (67 percent) knew that blood donations are now routinely screened for AIDS virus infection, and less than half (46 percent) thought that the present blood supply was safe for transfusion. These proportions were similar throughout 1988.

Including all blood donors since March 1985, a total of 19 percent of adults in December had had their blood tested for antibodies to the AIDS virus, slightly higher than the 16 percent interviewed in May. This increase in testing between May and December was noted in four specific population subgroups: the 18–29 years age group (from 23 to 29 percent), white adults (from 16 to 20 percent),

those with more than 12 years of school (from 21 to 26 percent), and men (from 20 to 24 percent). Of those who were tested as of December, most (72 percent) had their testing done as part of a blood donation, 16 percent were tested voluntarily, and 12 percent took the test as part of another activity requiring routine testing (such as a physical examination for military induction). These figures were similar to those in earlier months in 1988.

In December, 6 percent of adults reported plans to be tested in the 12 months following the NHIS interview; this figure also remained stable throughout 1988.

Preventive measures—As of December 1988, 84 percent of adults thought that condoms were very or somewhat effective in preventing transmission of the AIDS virus; 82 percent of adults thought that having a monogamous relationship with an individual who is not infected with the AIDS virus was a very effective means of prevention. These proportions did not change from May through December. As in previous months in 1988, over half of all adults in December recognized that the

diaphragm, spermicides, and vasectomy are not effective in preventing AIDS virus transmission. Most of the remainder were uncertain about the effectiveness of these particular methods.

Risk of getting the AIDS virus—Overall, 3 percent of adults in December 1988 stated that they belonged to one or more of the groups with behaviors associated with increased risk for acquiring AIDS (such as intravenous drug users and homosexually active men). This proportion remained stable throughout 1988.

In December, only 1 percent of adults felt that they had a high chance of having or getting the AIDS virus; 2 percent felt that their chance of getting the AIDS virus was medium, 18 percent felt that they had a low chance, 76 percent felt that they had no chance of getting AIDS, and 3 percent could not assess their chances of getting AIDS. The proportion in December believing that they have no chance of acquiring AIDS was slightly higher than that reported in May (71 percent).

Suggested citation

Hardy AM, Dawson DA. AIDS knowledge and attitudes for December 1988: Provisional data from the National Health Interview Survey. *Advance data from vital and health statistics*; no. 175. Hyattsville, Maryland: National Center for Health Statistics. 1989.

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Symbols

- Quantity zero
 - 0 Quantity more than zero but less than 0.05
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Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, December 1988

[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]

AIDS knowledge or attitude	Age				Sex		Race		Education		
	Total	18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
Total	100	100	100	100	100	100	100	100	100	100	100
Percent distribution ¹											
1. In the past month, have you—											
1a. Seen any public service announcements about AIDS on television?											
Yes	80	83	83	76	81	80	81	79	71	82	84
No	17	16	15	21	17	18	16	19	25	16	14
Don't know	2	1	2	3	2	2	2	2	4	2	2
1b. Heard any public service announcements about AIDS on the radio?											
Yes	42	50	46	31	46	38	41	49	35	43	45
No	54	48	49	64	50	57	54	48	60	54	50
Don't know	4	3	5	5	4	5	4	3	5	4	5
2. Were any of those public service announcements called "America Responds to AIDS"?											
Yes	22	32	22	14	22	23	21	27	22	25	20
No	13	13	13	12	14	12	13	12	12	13	13
Don't know	48	41	51	52	48	48	50	44	41	48	54
Neither heard nor saw any public service announcements.	17	13	14	22	16	17	16	17	25	15	13
3. In the past month, have you read any brochures or pamphlets about AIDS?											
Yes	28	34	31	20	25	30	27	33	20	27	34
No	71	66	68	78	74	68	72	66	78	72	65
Don't know	1	0	1	2	1	1	1	1	2	1	1
4. Have you ever read any brochures or pamphlets about AIDS?											
Yes	65	71	72	54	61	69	65	68	46	66	77
No	34	28	27	45	37	30	33	32	52	33	23
Don't know	1	1	1	2	1	1	1	0	2	1	1
5. Where did you get the pamphlets or brochures? ^{1,2}											
Clinic, other than work clinic	3	4	3	2	3	3	3	6	5	3	3
Doctor's office (HMO)	14	15	14	13	11	17	14	17	14	16	12
Drug store	1	1	2	1	1	1	1	2	1	1	1
Public health department	3	4	3	1	2	3	2	3	2	2	3
Received in mail without asking	36	29	35	44	35	37	37	33	38	36	35
Red Cross/Red Cross blood donation	3	4	2	3	3	2	3	1	1	3	4
Other blood donation	1	1	1	0	1	1	1	—	0	1	1
School	11	19	9	4	8	12	10	8	8	8	14
Sent/phoned for/requested it	1	1	1	1	1	1	1	0	1	1	1
Federal/State/local government	21	14	22	27	22	20	21	21	21	20	22
Work, other than clinic or nurse	14	13	17	10	16	12	14	16	7	12	17
Work, nurse or clinic	4	3	6	3	3	5	4	5	2	3	6
Other	14	16	15	11	17	12	13	19	18	14	13
Don't know	4	3	3	4	5	3	4	4	3	4	4
15. Have you ever discussed AIDS with any of your children aged 10-17? ³											
Yes	62	54	63	60	41	78	63	62	53	57	72
No	38	46	37	40	59	22	37	38	47	43	28
Don't know	0	—	0	—	—	0	0	—	—	—	0
16. Have any or all of your children aged 10-17 had instruction at school about AIDS? ³											
Yes	61	51	60	68	54	65	61	56	60	60	62
No	11	13	11	6	13	9	11	9	9	11	12
Don't know	28	36	28	26	33	25	27	35	32	29	26
21. How much would you say you know about AIDS?											
A lot	21	22	27	14	21	21	22	17	10	18	31
Some	44	49	49	35	43	46	45	41	32	47	49
A little	27	26	21	34	28	26	26	28	34	31	18
None	8	3	3	17	8	8	7	13	23	4	2
Don't know	0	—	0	0	0	0	0	0	0	0	0
22. To the best of your knowledge, is there a difference between having the AIDS virus and having the disease AIDS?											
Yes	64	65	72	56	64	65	67	53	43	62	79
No	15	22	15	11	16	15	14	20	17	18	12
Other	0	—	0	0	0	0	0	—	0	0	0
Don't know	20	13	13	33	20	20	18	27	39	19	9
23a. AIDS can reduce the body's natural protection against disease.											
Definitely true	75	77	82	64	76	73	77	62	50	75	88
Probably true	12	13	10	15	13	12	12	14	20	13	7
Probably false	1	2	1	2	1	2	1	4	2	2	1
Definitely false	3	4	2	3	2	4	2	7	5	3	1
Don't know	9	4	5	16	8	9	8	14	22	7	3

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, December 1988—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
Percent distribution ¹											
23m. There is a vaccine available to the public that protects a person from getting the AIDS virus.											
Definitely true	1	2	1	1	1	1	1	2	3	1	1
Probably true	3	3	2	4	2	3	2	6	4	2	2
Probably false	10	11	8	11	10	10	10	9	10	12	8
Definitely false	74	75	82	63	75	72	75	67	56	73	84
Don't know	12	9	7	20	11	13	11	16	27	11	5
23n. There is no cure for AIDS at present.											
Definitely true	85	87	88	81	86	85	86	83	77	87	89
Probably true	7	6	7	8	8	7	7	6	9	7	6
Probably false	1	1	1	1	1	1	1	2	1	1	1
Definitely false	2	3	2	2	2	2	2	3	2	2	2
Don't know	4	3	2	7	4	4	4	6	10	3	1
24. How likely do you think it is that a person will get AIDS or the AIDS virus infection from—											
24a. Living near a hospital or home for AIDS patients?											
Very likely	1	2	1	2	1	1	1	3	3	1	1
Somewhat likely	4	4	4	4	4	4	3	5	6	4	3
Somewhat unlikely	7	8	6	7	8	7	7	9	9	8	6
Very unlikely	39	41	39	37	39	39	39	39	37	40	39
Definitely not possible	41	41	45	37	40	42	43	30	26	42	49
Don't know	7	4	5	13	7	8	6	14	20	5	2
24b. Working near someone with the AIDS virus?											
Very likely	3	3	2	3	2	3	2	4	5	2	1
Somewhat likely	11	12	10	10	10	11	11	9	12	12	9
Somewhat unlikely	13	14	13	12	13	12	12	13	13	14	12
Very unlikely	38	38	40	36	39	37	38	39	33	36	43
Definitely not possible	29	31	30	25	28	29	30	21	20	30	33
Don't know	8	3	5	14	8	7	7	13	18	6	3
24c. Eating in a restaurant where the cook has the AIDS virus?											
Very likely	7	7	5	8	6	7	6	9	10	7	4
Somewhat likely	19	20	18	20	20	18	19	21	19	21	16
Somewhat unlikely	15	17	15	13	16	14	15	16	13	14	17
Very unlikely	28	28	31	24	28	28	29	27	19	27	34
Definitely not possible	19	21	20	14	17	20	19	14	13	19	21
Don't know	13	7	10	21	13	13	13	13	25	12	7
24d. Kissing—with exchange of saliva—a person who has the AIDS virus?											
Very likely	25	22	23	29	23	26	24	29	29	27	21
Somewhat likely	28	28	28	28	28	28	29	26	25	28	30
Somewhat unlikely	13	16	15	9	15	11	14	10	9	13	16
Very unlikely	15	17	19	10	16	15	16	16	10	14	20
Definitely not possible	7	9	7	5	6	8	7	5	5	7	8
Don't know	12	7	9	18	12	11	11	15	21	11	6
24e. Shaking hands, touching, or kissing on the cheek someone who has the AIDS virus?											
Very likely	2	1	2	3	2	2	2	3	4	2	1
Somewhat likely	7	7	6	8	8	6	7	10	10	7	6
Somewhat unlikely	13	14	13	13	14	13	13	15	15	14	12
Very unlikely	37	35	41	35	38	37	38	37	30	39	40
Definitely not possible	32	39	32	27	30	34	33	25	23	32	38
Don't know	8	3	5	14	8	7	7	9	18	6	3
24f. Sharing plates, forks, or glasses with someone who has the AIDS virus?											
Very likely	8	6	8	11	7	9	8	12	12	9	5
Somewhat likely	20	19	20	22	20	20	20	20	20	22	19
Somewhat unlikely	15	17	16	12	16	14	15	12	13	15	17
Very unlikely	27	28	30	23	29	25	27	27	18	26	33
Definitely not possible	18	23	18	13	16	20	18	14	12	18	21
Don't know	12	7	10	19	12	12	12	16	25	11	6
24g. Using public toilets?											
Very likely	6	5	4	8	5	7	5	12	11	7	2
Somewhat likely	13	13	11	14	13	12	12	14	16	14	9
Somewhat unlikely	13	12	13	13	13	12	13	10	12	14	12
Very unlikely	33	34	35	29	33	32	33	31	25	31	39
Definitely not possible	25	28	29	19	25	26	26	22	15	24	33
Don't know	11	8	8	17	11	11	11	11	21	11	6

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, December 1988—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
24h. Sharing needles for drug use with someone who has the AIDS virus?	Percent distribution ¹										
Very likely	94	96	96	91	94	94	95	92	88	95	97
Somewhat likely	3	3	2	3	3	2	3	3	4	3	2
Somewhat unlikely	0	0	0	0	1	0	0	1	0	0	0
Very unlikely	0	0	0	0	0	0	0	1	0	0	0
Definitely not possible	0	0	0	0	0	0	0	0	0	0	0
Don't know	2	1	1	5	2	2	2	3	7	1	1
24i. Being coughed or sneezed on by someone who has the AIDS virus?											
Very likely	7	6	6	10	6	8	6	10	10	8	4
Somewhat likely	21	20	20	24	23	20	21	19	23	22	20
Somewhat unlikely	17	20	18	14	17	17	17	15	14	18	18
Very unlikely	28	29	32	22	29	27	28	29	19	25	35
Definitely not possible	15	19	15	10	13	16	15	13	9	16	16
Don't know	12	7	9	20	12	12	12	14	25	11	6
24j. Attending school with a child who has the AIDS virus?											
Very likely	2	2	2	3	2	2	1	4	4	2	1
Somewhat likely	6	5	6	7	6	6	6	7	8	6	5
Somewhat unlikely	11	11	12	11	11	11	11	10	11	13	9
Very unlikely	39	39	42	37	41	38	40	40	33	39	44
Definitely not possible	33	40	34	26	31	35	34	27	24	34	38
Don't know	8	4	5	16	9	8	7	12	20	6	4
24k. Mosquitoes or other insects?											
Very likely	10	11	9	10	11	9	9	15	17	10	6
Somewhat likely	17	19	17	14	19	15	16	19	18	18	16
Somewhat unlikely	8	10	8	7	9	8	9	6	6	9	10
Very unlikely	24	24	26	21	23	25	25	23	15	25	27
Definitely not possible	18	18	20	16	17	19	19	11	11	16	24
Don't know	23	18	19	31	22	24	22	26	34	23	17
25. Have you ever donated blood?											
Yes	41	35	42	43	52	30	43	29	27	38	51
No	59	65	58	56	48	69	56	71	73	62	49
Don't know	0	-	0	0	0	0	0	-	0	-	0
26a. Have you donated blood since March 1985?											
Yes	15	21	16	8	19	11	16	6	6	13	21
No	85	78	84	92	81	88	83	94	93	87	78
Don't know	0	0	0	1	0	1	0	0	0	0	1
26b. Have you donated blood in the past 12 months?											
Yes	7	10	8	5	10	5	8	1	3	6	11
No	92	90	92	94	90	94	91	98	97	93	88
Don't know	1	0	0	1	0	1	1	0	0	1	1
27. Have you ever heard of a blood test that can detect the AIDS virus infection?											
Yes	75	81	83	63	75	76	77	67	53	77	87
No	20	16	14	31	21	20	19	29	39	18	11
Don't know	4	3	3	6	4	5	4	4	8	4	2
28. To the best of your knowledge, are blood donations routinely tested now for the AIDS virus infection?											
Yes	67	71	74	55	66	68	69	58	44	68	78
No	3	3	4	3	3	4	3	3	2	4	4
Don't know	5	7	5	5	6	5	5	6	7	5	5
Never heard of test ⁴	25	19	17	37	25	24	23	33	47	23	13
29a. Have you ever received counseling or had a talk with a health professional about taking the AIDS virus test?											
Yes	3	5	4	1	4	3	3	4	2	3	4
No	72	77	79	61	71	73	74	63	51	74	83
Don't know	0	-	0	0	0	0	0	-	0	0	0
Never heard of test ⁴	25	19	17	37	25	24	23	33	47	23	13
29b. Was the discussion— ^{1,5}											
With a private doctor?	40	25	47	56	35	46	41	39	32	35	48
At a family-planning clinic?	6	5	8	-	3	9	4	20	22	3	2
On an AIDS hotline?	1	-	3	-	2	1	2	-	6	1	-
At a prenatal clinic?	5	12	1	-	-	12	4	7	7	6	4
At an STD or sexually transmitted disease clinic?	4	5	4	-	5	2	4	3	3	8	1
At an AIDS/HIV counseling and testing site?	10	11	12	-	12	6	11	6	4	10	11
With some other health professional?	44	56	39	31	41	49	39	65	43	46	43
With some other counselor?	18	28	7	29	18	19	19	10	39	31	1
30. During that discussion, did you receive information about how to avoid getting or passing on the AIDS virus? ⁵											
Yes	52	53	57	34	56	47	47	75	43	69	42
No	48	47	43	66	44	53	53	25	57	31	58
Don't know	-	-	-	-	-	-	-	-	-	-	-

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, December 1988—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
Percent distribution ¹											
45b. Using a condom?											
Very effective	31	38	33	24	34	29	31	32	22	33	35
Somewhat effective	53	53	55	51	52	54	54	47	46	53	57
Not at all effective	5	4	5	6	5	6	5	6	8	6	3
Don't know how effective	8	3	5	15	7	9	7	11	16	7	4
Don't know method	3	1	1	5	2	3	2	4	8	1	1
45c. Using a spermicidal jelly, foam, or cream?											
Very effective	1	2	1	0	1	1	1	2	1	1	1
Somewhat effective	14	15	15	11	14	13	14	12	8	14	16
Not at all effective	56	60	63	44	55	56	58	48	43	57	61
Don't know how effective	22	16	16	32	21	22	21	27	30	22	17
Don't know method	8	7	5	12	8	8	7	11	18	5	4
45d. Having a vasectomy?											
Very effective	2	3	2	1	2	2	2	3	2	2	1
Somewhat effective	2	3	2	2	3	2	2	4	2	3	2
Not at all effective	70	69	80	60	71	68	73	58	50	70	81
Don't know how effective	19	18	12	26	18	19	17	24	28	19	12
Don't know method	7	7	4	11	6	9	6	11	18	5	3
45e. Two people who do not have the AIDS virus having sex only with each other?											
Very effective	82	84	86	77	83	82	84	75	69	83	89
Somewhat effective	8	10	8	8	8	9	8	11	11	9	6
Not at all effective	2	4	2	2	2	2	2	3	3	2	2
Don't know how effective	5	2	3	11	6	5	5	7	12	4	3
Don't know method	2	0	1	3	1	2	1	3	4	1	1
46. What are your chances of having the AIDS virus?											
High	1	1	1	0	1	1	1	2	1	1	0
Medium	2	3	2	1	2	2	2	3	2	2	2
Low	13	19	15	6	15	11	13	14	9	7	18
None	82	76	81	89	80	85	83	77	84	85	79
Don't know	2	1	2	3	2	2	2	4	5	2	1
47. What are your chances of getting the AIDS virus?											
High	0	0	0	0	0	0	0	0	0	0	0
Medium	2	3	2	1	2	2	2	3	2	2	2
Low	18	27	22	7	21	15	18	18	13	14	26
None	76	67	73	87	72	80	77	71	79	80	71
Don't know	3	2	2	4	4	2	2	6	6	3	1
High chance of already having AIDS virus	1	1	1	0	1	1	1	2	1	1	0
49. Do you say your chance of getting AIDS is high or medium because you— ¹¹											
Have had a blood transfusion?	4	2	7	4	1	8	4	4	3	8	—
Have had sexual contact with someone who might have the virus?	23	27	24	11	21	25	22	29	18	27	21
Some other reason?	53	56	52	45	57	46	53	51	39	57	56
52. Have you ever discussed AIDS with a friend or relative?											
Yes	62	70	71	47	57	67	63	60	43	60	76
No	37	30	29	52	43	33	36	40	56	39	24
Don't know	0	0	0	1	0	0	0	0	1	0	0
53. When was the last time you discussed AIDS with a friend or relative?											
0-3 days ago	6	6	8	5	6	7	6	10	5	6	8
4-7 days ago	8	10	10	5	7	9	8	9	7	7	10
8-14 days ago	7	7	8	5	6	8	7	8	4	7	7
15-31 days ago	14	16	16	11	14	15	15	12	8	14	17
More than 31 days ago	22	28	25	15	20	24	23	17	15	21	28
Don't know	4	2	4	6	4	4	5	4	4	5	4
Never discussed ¹²	38	31	29	53	43	33	37	40	57	40	25
54. Have you ever personally known anyone with AIDS or the AIDS virus?											
Yes	11	9	15	7	10	11	11	12	4	8	17
No	88	89	83	92	89	87	88	85	93	90	82
Don't know	2	2	2	1	1	2	1	2	3	2	1
55. How long has it been since you saw this person?											
Within past 2 weeks	1	1	2	1	1	1	1	2	1	1	2
2 weeks-less than 1 month	0	0	1	0	1	0	0	1	0	0	1
1 month-less than 3 months	1	1	2	0	1	1	1	2	1	1	1
3 months-less than 6 months	1	1	1	1	1	1	1	2	1	1	2
6 months or more	7	6	9	5	6	7	7	6	2	5	11
Don't know	0	0	0	0	0	0	0	0	0	0	0
Never knew anyone with AIDS ¹³	89	91	85	93	90	89	89	88	96	92	83

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, December 1988—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
Percent distribution ¹											
56. How well do you know this person?											
Very well	1	1	2	1	1	1	1	2	1	1	2
Fairly well	3	3	4	1	3	3	3	5	1	3	4
Not very well	4	3	6	3	4	4	4	3	2	2	7
Don't really know personally	2	2	2	1	1	2	1	3	1	2	2
Other	1	0	2	0	1	1	1	0	—	0	2
Don't know how well	—	—	—	—	—	—	—	—	—	—	—
Never knew anyone with AIDS ¹³	89	91	85	93	90	89	89	88	96	92	83
57. Is any of these statements true for you?											
a. You have hemophilia and have received clotting factor concentrates since 1977.											
b. You are a native of Haiti or Central or East Africa who has entered the United States since 1977.											
c. You are a man who has had sex with another man at some time since 1977, even 1 time.											
d. You have taken illegal drugs by needle at any time since 1977.											
e. Since 1977, you are or have been the sex partner of any person who would answer yes to any of the items above (57 a-d).											
f. You have had sex for money or drugs at any time since 1977.											
Yes to at least 1 statement	3	5	3	1	3	2	2	7	3	3	3
No to all statements	97	95	96	99	96	97	97	93	97	97	97
Refused	0	0	0	0	0	0	0	—	0	0	0
Don't know	0	0	0	0	0	0	0	0	0	0	0
58. The U.S. Public Health Service has said that AIDS is one of the major health problems in the country but exactly how many people it affects is not known. The Surgeon General has proposed that a study be conducted and blood samples be taken to help find out how widespread the problem is. If you were selected in this national sample of people to have their blood tested with assurances of privacy of test results, would you have the test?											
Yes	70	76	73	63	71	70	71	72	62	72	74
No	21	17	19	28	21	21	21	19	27	20	19
Other	1	1	1	1	1	1	1	1	1	1	1
Don't know	7	6	7	8	7	7	6	8	9	6	6
59. Why wouldn't you take part in the test? ¹⁴											
Don't want to know if I have AIDS	4	8	4	3	4	5	4	7	3	6	4
Don't want any counseling about AIDS	2	1	2	2	2	2	2	3	3	2	1
Fear I'll get AIDS	6	9	6	5	6	6	5	9	8	6	5
Don't like to give blood	12	18	12	9	11	12	12	14	9	15	11
Don't trust Government programs	8	5	11	7	10	6	8	15	6	9	8
It is a waste of money	4	2	3	5	4	3	4	1	3	3	4
Don't believe AIDS can really be cured anyway	2	—	3	2	2	2	2	1	2	2	2
Other	51	44	49	55	50	52	54	41	45	46	60
Don't know	0	1	0	—	0	0	0	—	—	1	0
61. When Federal public health officials give information about AIDS, do you believe what they say or are you doubtful about the information they give?											
Believe	66	75	67	59	66	66	66	63	55	67	72
Doubtful	28	22	30	30	28	27	28	28	32	28	25
Don't know	6	3	4	11	6	6	6	8	12	5	3
62. When they [public health officials] give advice about how to help keep from getting AIDS, do you believe their advice or are you doubtful about what they say?											
Believe	80	86	82	73	81	78	80	76	69	83	83
Doubtful	16	13	16	19	15	17	16	20	22	15	14
Don't know	4	2	2	8	4	5	4	5	9	3	3

¹Multiple responses may sum to more than 100.
²Based on persons answering yes to question 4 (includes yes to question 3).
³Based on persons answering yes to question 11, "Do you have any children aged 10 through 17?" Question 12 was "How many do you have?"
⁴Persons answering no or don't know to question 27.
⁵Based on persons answering yes to question 29a.
⁶Includes persons answering yes to question 26a and no or don't know to questions 27 and 33.
⁷Based on yes answers to question 33. See footnote 6.
⁸Persons answering no or don't know to questions 26a, 27, and 33.
⁹Based on persons answering yes to question 33; excludes persons answering yes to question 26a.
¹⁰Based on persons answering yes to question 41.
¹¹Based on persons answering high or medium to question 46.
¹²Based on persons answering no or don't know to question 52.
¹³Based on persons answering no or don't know to question 54.
¹⁴Based on persons not answering yes to question 58.

Technical notes

The National Health Interview Survey (NHIS) is a continuous, cross-sectional household interview survey. Each week, a probability sample of 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. Supplemental information is collected for all or a sample of household members. The 1988 National Health Interview Survey of AIDS Knowledge and Attitudes was asked of a single randomly chosen adult 18 years of age or over in each family. The estimates in this report are based on completed interviews with 4,118 persons, or about 89 percent of eligible respondents.

Table I contains the estimated population size of each of the demo-

graphic subgroups included in table 1 to allow readers to derive provisional estimates of the number of people in the United States with a given characteristic, for example, the number of men who have had their blood tested for the AIDS virus. The population figures in table I are based on 1987 data from the NHIS; they are not official population estimates.

Table II shows approximate standard errors of estimates presented in table 1. Both the estimates in table 1 and the standard errors in table II are provisional. They may differ slightly from estimates made using the final data file because they were calculated using a simplified weighting procedure that does not adjust for all the factors used in weighting the final data file. A final data file covering the entire data collection period for 1988 will be available later in 1989.

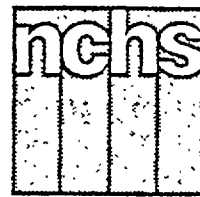
Table I. Sample sizes for the 1988 National Health Interview Survey of AIDS Knowledge and Attitudes and estimated adult population 18 years of age and over, by selected characteristics: United States, December 1988

<i>Characteristic</i>	<i>Sample size</i>	<i>Estimated population in thousands</i>
All adults	4,118	175,260
Age		
18-29 years	1,023	47,500
30-49 years	1,564	66,900
50 years and over	1,531	60,860
Sex		
Male	1,706	83,073
Female	2,412	92,187
Race		
White	3,381	148,154
Black	526	19,168
Education		
Less than 12 years	965	40,061
12 years	1,506	68,055
More than 12 years	1,627	65,333

Table II. Standard errors, expressed in percentage points, of estimated percents from the National Health Interview Survey of AIDS Knowledge and Attitudes, by selected characteristics: United States, December 1988

<i>Estimated percent</i>	<i>Total</i>	<i>Age</i>			<i>Sex</i>		<i>Race</i>		<i>Education</i>		
		<i>18-29 years</i>	<i>30-49 years</i>	<i>50 years and over</i>	<i>Male</i>	<i>Female</i>	<i>White</i>	<i>Black</i>	<i>Less than 12 years</i>	<i>12 years</i>	<i>More than 12 years</i>
5 or 95	0.4	0.9	0.7	0.7	0.7	0.6	0.5	1.2	0.9	0.7	0.7
10 or 90	0.6	1.2	1.0	1.0	0.9	0.8	0.7	1.7	1.2	1.0	1.0
15 or 85	0.7	1.4	1.2	1.2	1.1	0.9	0.8	2.0	1.5	1.2	1.1
20 or 80	0.8	1.6	1.3	1.3	1.2	1.0	0.9	2.2	1.7	1.3	1.3
25 or 75	0.9	1.7	1.4	1.4	1.3	1.1	1.0	2.4	1.8	1.4	1.4
30 or 70	0.9	1.8	1.5	1.5	1.4	1.2	1.0	2.6	1.9	1.5	1.5
35 or 65	1.0	1.9	1.6	1.6	1.5	1.2	1.1	2.7	2.0	1.6	1.5
40 or 60	1.0	2.0	1.6	1.6	1.5	1.3	1.1	2.7	2.0	1.6	1.6
45 or 55	1.0	2.0	1.6	1.6	1.6	1.3	1.1	2.8	2.1	1.6	1.6
50	1.0	2.0	1.6	1.6	1.6	1.3	1.1	2.8	2.1	1.7	1.6

Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

AIDS Knowledge and Attitudes for January–March 1989

Provisional Data From the National Health Interview Survey

by Deborah A. Dawson, Ph.D., Division of Health Interview Statistics

Introduction

The National Center for Health Statistics (NCHS) has included a special set of supplemental questions on the adult population's knowledge and attitudes about acquired immunodeficiency syndrome (AIDS) in the National Health Interview Survey (NHIS). The first AIDS Knowledge and Attitudes Survey was in the field from August through December 1987. Provisional results of that survey were published on a monthly basis in *Advance Data From Vital and Health Statistics* (Nos. 146, 148, 150, 151, and 153). A public use data tape containing the information collected in 1987 is available from NCHS.

During the first 4 months of 1988, the NHIS AIDS questionnaire was revised to meet current program needs for information about AIDS awareness. The revised AIDS Knowledge and Attitudes Survey entered the field in May 1988. Provisional findings for the remainder of 1988 were published periodically (*Advance Data From Vital and Health Statistics* Nos. 160, 161, 163, 164, 167, and 175); in addition, two special reports focusing on minority populations were published from the 1988 data (*Advance Data From Vital and Health Statistics* Nos. 165 and 166). A public use data tape of the 1988 AIDS Knowledge

and Attitudes Survey will be available at the end of the year. The NHIS AIDS questionnaire used in 1988 will be continued throughout 1989. Reports based on the 1989 data will be issued on a quarterly basis. This report presents provisional data for the period January–March 1989.

The *Advance Data* reports describing the NHIS AIDS data have been restricted to simple descriptive statistics to facilitate their timely release. Thus, these reports do not attempt to explain or interpret differences among population subgroups or to examine relationships among various measures of knowledge and AIDS-related behavior (e.g., testing). The NHIS AIDS data bases permit more complex analyses than those presented in this series of *Advance Data* reports, and such analyses are being undertaken by various groups in the Public Health Service.

The AIDS questionnaires were designed to estimate public knowledge about AIDS virus (HIV) transmission and its prevention. The data were needed as input for the planning and development of AIDS educational campaigns and for monitoring major educational efforts, for example, the series of radio and television public service announcements entitled "American Responds to AIDS" and

the brochure "Understanding AIDS," both developed by the Centers for Disease Control.

The NHIS AIDS questionnaires were developed by the National Center for Health Statistics and interagency working groups established by the Information, Education and Risk Factor Reduction Subcommittee of the Public Health Service Executive Task Force on AIDS. The working groups included representatives from the Centers for Disease Control; the National Institutes of Health; the Alcohol, Drug Abuse and Mental Health Administration; and the Health Resources and Services Administration.

The current AIDS questionnaire includes items on sources of AIDS information; self-assessed levels of AIDS knowledge; basic facts about the AIDS virus (HIV) and how it is transmitted; blood donation experience; awareness of and experience with the blood test for HIV; personal acquaintance with persons with AIDS or HIV; and willingness to take part in a proposed national seroprevalence survey. A general risk behavior question, similar to that asked by the Red Cross of potential blood donors, is included in the current AIDS questionnaire.

This report presents provisional data for January–March 1989 for most

items included in the AIDS questionnaire. Table 1 displays percent distributions of persons 18 years of age and over by response categories according to age, sex, race, and education. In most cases, the actual questions asked of the respondents are reproduced verbatim in table 1 along with the coded response categories. In a few cases, questions or response categories have been rephrased or combined for clearer or more concise presentation of results. Refusals and other nonresponse categories (generally comprising less than 1 percent of total responses) are excluded from the denominator in the calculation of estimates, but responses of "don't know" are included.

The NHIS AIDS questionnaire uses the phrase "the AIDS virus" rather than "HIV," because it was felt that the general population might not be familiar with the more scientific terminology at the time the survey began. In this report, the two terms will be used synonymously.

Selected findings

The following highlights describe various aspects of AIDS knowledge and attitudes as observed in the January–March 1989 data from the NHIS AIDS survey. Unless otherwise noted in the text, all measures described remained stable over this 3-month period. Any differences cited in the text are statistically significant at the .05 level (see table II for provisional standard errors of estimates).

Sources of AIDS information—In the first quarter of 1989, there were no changes in the proportions of U.S. adults who reported having seen or heard public service announcements (PSAs) about AIDS on television (80 percent) or on the radio (44 percent). As was true in 1988, less than one-fourth of those adults who had seen such PSAs stated that the announcements were part of the series entitled "America Responds to AIDS;" almost half did not remember. There was a decline in the percentage of adults who reported having read any brochures or pamphlets about AIDS in the month preceding interview—24 percent in

January–March compared to 28 percent in December. There was a smaller decrease in the proportion of adults who said they had ever read brochures or pamphlets about AIDS, from 65 percent in December to 63 percent in January–March.

Sociodemographic differentials in exposure to media coverage of AIDS generally remained the same in the first quarter of 1989 as throughout 1988. Reported exposure to AIDS messages in print, on television, and on the radio decreased with age and increased with education. Black adults and men were more likely than white adults and women to have heard PSAs on the radio. Black individuals were more likely than white individuals to have read brochures or pamphlets in the month preceding interview but equally likely ever to have done so.

Sixty-three percent of adults with children age 10–17 years reported having discussed AIDS with these children; 60 percent stated that their children age 10–17 years had received AIDS education in school. Sixty-one percent of adults said they had discussed AIDS with friends or relatives. These percentages have remained fairly stable for many months.

Self-assessed knowledge—During the period January–March 1989, 24 percent of U.S. adults reported knowing a lot about AIDS, up from 21 percent in December 1988. Forty-three percent reported some knowledge, 25 percent claimed to know a little, and 8 percent said they knew nothing about AIDS. Increases in self-assessed knowledge were of similar magnitude in all categories of age, sex, race, and education.

General knowledge—Despite the rise in the level of self-assessed knowledge, there was little or no change in most objective measures of general knowledge about AIDS and HIV. The one improvement was in the proportion of adults who thought it definitely false that "looking at a person is enough to tell if he or she has the AIDS virus," which increased from 66 to 70 percent. The gains in this aspect of knowledge were particularly large among persons age 18–29 years (up from 71 to 78 percent

responding correctly), black adults (from 55 to 64 percent), and persons with less than 12 years of school (from 47 to 52 percent).

Awareness of the main modes of HIV transmission remained at the high levels previously observed. Eighty-three percent of adults thought it definitely true that "any person with the AIDS virus can pass it on to someone else during sexual intercourse," and 80 percent said it was definitely true that "a pregnant woman who has the AIDS virus can give the AIDS virus to her baby." In addition, 94 percent thought it very likely that HIV could be transmitted by sharing needles for drug use. As was the case in 1988, the great majority of adults realized that "there is no cure for AIDS at present" (87 percent responding definitely true) and that "AIDS leads to death" (85 percent). Three-quarters (75 percent) thought it definitely false that "there is a vaccine available to the public that protects a person from getting the AIDS virus."

Misperceptions about HIV transmission—The NHIS AIDS survey includes a series of questions addressing misperceptions about HIV transmission by means of various forms of casual contact. Accurate knowledge in this area, as expressed by the proportion of adults who thought it very unlikely or definitely not possible to spread HIV through casual contact, improved throughout 1987 and between May and July 1988. After that, the proportions of adults responding correctly to these questions declined slightly, so that by December 1988, responses were similar to those recorded in May of that year. In January–March 1989, there were improvements in several of these measures (figure 1). The proportion of adults who thought it very unlikely or definitely not possible to become infected with HIV by "living near a hospital or home for AIDS patients" increased from 80 to 83 percent. With respect to "working near someone with the AIDS virus," the increase was from 67 to 71 percent. Other increases were in the proportions of adults who thought it very unlikely or definitely not possible to get HIV by "shaking

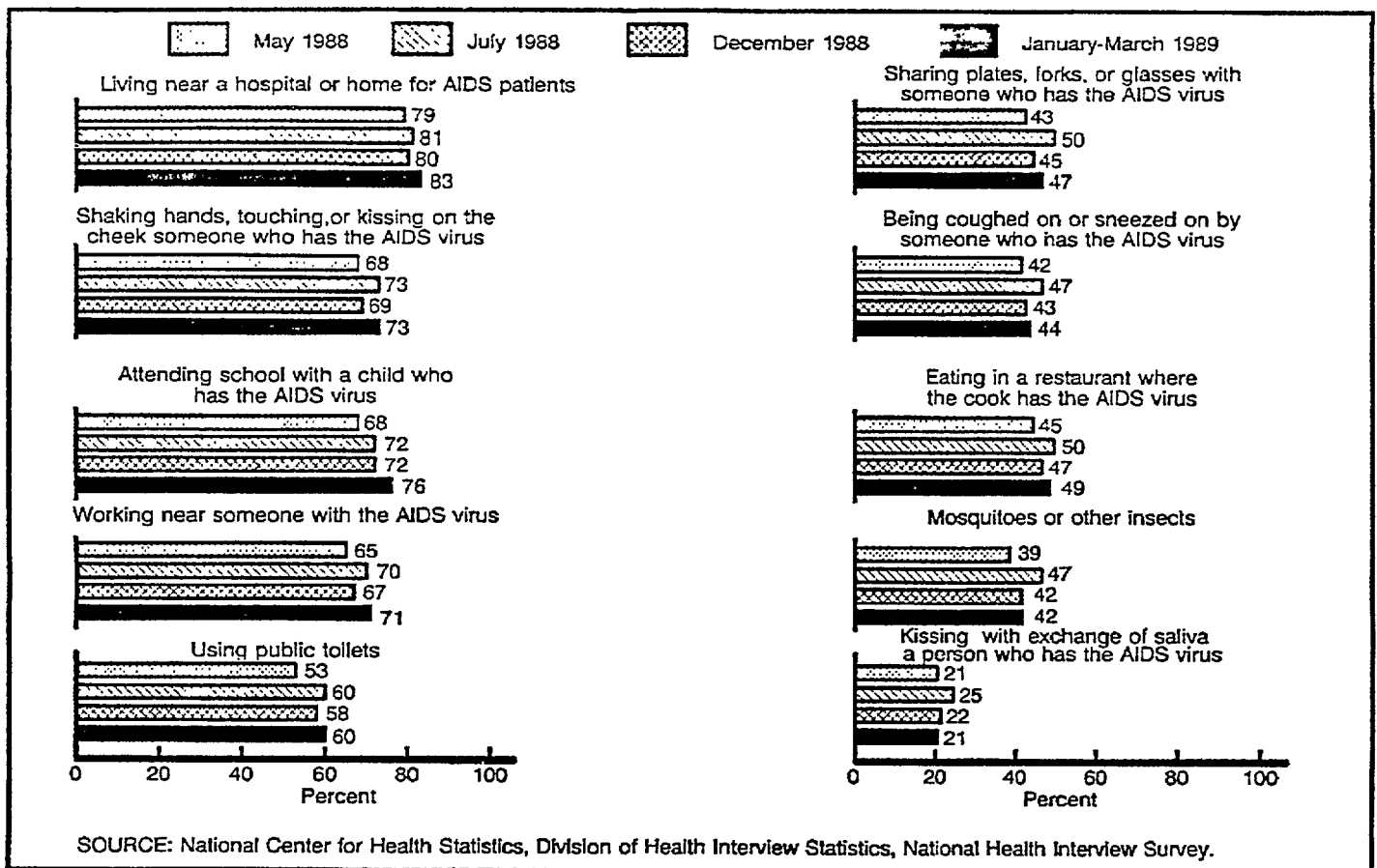


Figure 1. Provisional estimates of percent of adults who thought it very unlikely or definitely not possible to become infected with HIV in selected ways: United States, selected months, 1988 and 1989

hands, touching, or kissing on the cheek someone who has the AIDS virus" (up from 69 to 73 percent) and by "attending school with a child who has the AIDS virus" (from 72 to 76 percent). For the other conjectured modes of transmission shown in figure 1, there were no changes in knowledge during the period January–March 1989.

Blood donation and testing—In January–March 1989, 40 percent of adults reported ever having donated blood. This includes 14 percent who donated blood since March 1985, when routine screening for HIV antibodies began, and 6 percent who claimed to have donated blood in the preceding year. Almost three-fourths of adults had heard of the blood test for the AIDS virus (i.e., the test to detect HIV antibodies), and two-thirds thought blood donations are routinely tested. Six percent of adults said that they had received a blood transfusion between 1977, when HIV is thought to have entered the United States, and

1985, when routine screening began. About half (48 percent) of all adults thought the present supply of blood is safe for transfusions. All of these estimates are similar to those reported in December 1988.

Likewise, there was no change in the proportion of adults estimated to have had their blood tested for HIV, 19 percent in January–March 1989. This figure is fairly evenly divided between persons who reported having been tested (10 percent) and those who did not report testing but had donated blood since automatic screening of donations was initiated (9 percent). The proportion of adults tested decreased sharply with age, from 26 percent of those age 18–29 years to 9 percent of those 50 years of age and over. Seventy-one percent of the individuals who had been tested for HIV reported being tested as a part of blood donation and 2 percent as part of a blood transfusion. Seventeen percent voluntarily sought testing, and 14 percent were tested as

part of some other activity that requires a routine blood test.

Seven percent of adults reported plans to have their blood tested in the year following interview, about the same as in December. This proportion declined with age, from 11 percent of persons age 18–29 years to 8 and 2 percent, respectively, of those age 30–49 years and 50 years and over. Men were almost twice as likely as women to report plans to be tested, 9 versus 5 percent. Of persons who reported plans to be tested, 52 percent said that the test would be sought voluntarily as opposed to performed routinely in connection with some other activity. This is a significant increase over December, when the figure was 43 percent. The increase was especially large for adults age 18–29 years, 60 percent in January–March compared to 43 percent in December.

Preventive measures—There was no change between December 1988 and January–March 1989 in the

perceived effectiveness of various methods of preventing HIV transmission. Eighty-three percent of adults rated "two people who do not have the AIDS virus having sex only with each other" as very effective, and 31 percent thought condom use to be very effective. Fifty-four percent considered condom use somewhat effective in preventing HIV transmission during sexual intercourse. More than half of all adults stated that diaphragms, spermicides, and vasectomy were not at all effective.

Risk of getting HIV—During January–March 1989, 2 percent of

adults reported belonging to one or more of the groups with behaviors associated with increased risk of AIDS (e.g., hemophiliacs, intravenous drug users, and homosexual men). This proportion has not varied since the question was introduced in May 1988.

Eighty-three percent of U.S. adults felt there was no chance of their already being infected with HIV, i.e., of "having the AIDS virus." Thirteen percent assessed their chances of having HIV as low, 2 percent as medium, and less than 1 percent as high. Seventy-eight percent of adults felt that they had no chance

of becoming infected, i.e., "of getting the AIDS virus." This proportion has risen steadily since 1987. The proportions who stated that their chances of getting HIV were low, medium, and high were 17, 2 and less than 1 percent, respectively.

One adult in every 8 (12 percent) reported knowing someone with AIDS or HIV. This percentage has doubled since August 1987. Adults age 30–49 years were the most likely to report knowing someone with AIDS/HIV (16 percent), followed by persons 18–29 years (11 percent) and those 50 years of age and over (8 percent).

Suggested citation

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Symbols

- Quantity zero
 - 0 Quantity more than zero but less than 0.5
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Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1989 National Health Interview Survey, by selected characteristics: United States, January—March 1989

[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]

AIDS knowledge or attitude	Age				Sex		Race		Education		
	Total	18-29	30-49	50 years	Male	Female	White	Black	Less than		More than
		years	years	and over					12 years	12 years	12 years
	Percent distribution ¹										
Total	100	100	100	100	100	100	100	100	100	100	100
1. In the past month, have you—											
1a. Seen any public service announcements about AIDS on television?											
Yes	80	82	83	76	80	80	80	81	74	82	82
No	18	17	16	21	18	18	18	18	24	16	16
Don't know	2	1	2	3	2	2	2	2	2	2	2
1b. Heard any public service announcements about AIDS on the radio?											
Yes	44	53	48	34	49	40	43	51	36	44	50
No	52	44	48	62	47	56	53	46	61	52	46
Don't know	4	3	4	4	4	4	4	3	3	4	5
2. Were any of those public service announcements called "America Responds to AIDS"?											
Yes	22	33	24	13	21	24	21	31	23	23	22
No	12	14	12	11	13	11	12	12	11	12	13
Don't know	49	39	51	55	50	48	51	40	44	50	51
Neither heard nor saw any public service announcements	16	14	14	21	16	17	16	16	23	15	14
3. In the past month, have you read any brochures or pamphlets about AIDS?											
Yes	24	30	27	16	23	26	23	32	17	22	30
No	75	69	72	83	76	74	76	67	81	77	69
Don't know	1	1	1	1	1	1	1	1	2	1	1
4. Have you ever read any brochures or pamphlets about AIDS?											
Yes	63	71	70	49	61	65	63	61	44	62	75
No	36	29	29	50	38	34	36	39	55	37	24
Don't know	1	0	1	1	1	1	1	1	1	1	1
5. Where did you get the pamphlets or brochures?^{1,2}											
Clinic, other than work clinic	3	4	2	2	2	3	2	5	4	2	2
Doctor's office (HMO)	18	19	19	15	14	21	18	19	17	18	18
Drug store	2	2	2	1	1	2	2	3	2	2	2
Public health department	3	3	3	3	3	3	3	6	4	3	3
Received in mail without asking	29	21	29	39	29	29	31	21	30	30	29
Red Cross/Red Cross blood donation	3	3	3	1	3	2	3	1	1	2	3
Other blood donation	1	0	1	0	1	1	1	0	0	0	1
School	12	22	10	4	12	11	11	14	12	9	14
Sent/phonred for/requested it	1	0	1	0	0	1	1	0	0	1	0
Federal/State/local government	19	12	21	24	20	18	20	12	17	19	20
Work, other than clinic or nurse	13	10	17	10	15	11	12	16	7	12	16
Work, nurse or clinic	4	3	5	2	2	6	4	6	1	4	5
Other	16	17	16	14	17	15	15	19	17	16	16
Don't know	3	3	2	5	5	2	3	3	4	3	3
15. Have you ever discussed AIDS with any of your children aged 10-17?³											
Yes	63	58	64	58	49	75	64	63	52	61	70
No	37	42	35	44	50	25	36	37	47	39	29
Don't know	0	2	0	-	1	0	0	-	0	0	0
16. Have any or all of your children aged 10-17 had instruction at school about AIDS?³											
Yes	60	48	60	59	53	66	59	64	58	59	61
No	13	24	13	13	13	14	14	12	18	12	13
Don't know	27	28	27	28	34	20	27	23	24	29	26
21. How much would you say you know about AIDS?											
A lot	24	24	30	16	24	23	24	19	13	19	35
Some	43	49	47	34	42	44	44	37	30	48	47
A little	25	24	19	33	25	25	24	29	35	29	15
None	8	3	3	17	8	8	7	15	23	5	2
Don't know	0	0	-	0	0	0	0	-	0	-	-
22. To the best of your knowledge, is there a difference between having the AIDS virus and having the disease AIDS?											
Yes	65	66	73	55	64	65	67	57	42	65	80
No	16	23	15	11	18	14	15	18	18	18	13
Other	0	-	0	0	0	0	0	0	0	0	0
Don't know	19	11	12	33	17	20	18	25	40	18	7
23a. AIDS can reduce the body's natural protection against disease.											
Definitely true	74	77	82	63	76	72	76	61	50	76	88
Probably true	12	12	9	16	12	12	12	12	18	13	8
Probably false	2	3	1	2	2	2	2	4	4	2	1
Definitely false	3	3	2	3	2	3	2	6	5	3	2
Don't know	9	6	5	16	8	10	8	17	23	7	2

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1989 National Health Interview Survey, by selected characteristics: United States, January–March 1989—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]

<i>AIDS knowledge or attitude</i>	<i>Age</i>			<i>Sex</i>		<i>Race</i>		<i>Education</i>			
	<i>Total</i>	<i>18–29 years</i>	<i>30–49 years</i>	<i>50 years and over</i>	<i>Male</i>	<i>Female</i>	<i>White</i>	<i>Black</i>	<i>Less than 12 years</i>	<i>12 years</i>	<i>More than 12 years</i>
Percent distribution ¹											
23b. AIDS is especially common in older people.											
Definitely true	1	1	1	1	1	1	1	2	2	1	0
Probably true	2	2	2	1	2	2	1	3	3	1	1
Probably false	17	18	14	18	17	17	17	14	18	16	17
Definitely false	74	75	78	68	74	74	75	71	62	76	79
Don't know	7	4	5	11	7	7	6	11	14	6	3
23c. AIDS can damage the brain.											
Definitely true	25	22	25	28	26	24	24	33	27	25	25
Probably true	29	29	28	31	30	29	30	26	30	30	28
Probably false	11	13	13	7	11	10	11	6	6	10	14
Definitely false	9	11	11	4	9	8	9	7	5	8	12
Don't know	26	25	23	30	24	28	26	28	33	27	20
23d. AIDS usually leads to heart disease.											
Definitely true	8	6	8	10	8	8	7	13	11	8	6
Probably true	22	20	22	24	23	22	22	21	23	23	21
Probably false	18	20	21	13	19	17	19	10	10	17	24
Definitely false	17	21	19	10	18	15	17	16	10	15	23
Don't know	35	32	30	42	32	38	34	40	45	37	26
23e. AIDS is an infectious disease caused by a virus.											
Definitely true	62	66	69	50	64	59	62	62	48	59	73
Probably true	19	20	17	21	18	20	19	19	20	21	16
Probably false	2	2	2	3	2	3	2	2	2	3	1
Definitely false	5	4	5	5	5	5	5	4	4	6	4
Don't know	12	8	7	21	11	13	12	13	25	11	5
23f. Teenagers cannot get AIDS.											
Definitely true	1	1	1	2	1	1	1	1	1	1	1
Probably true	1	1	1	1	1	1	1	0	1	1	0
Probably false	3	2	3	6	3	4	3	5	6	4	2
Definitely false	92	96	95	87	93	92	93	88	84	93	97
Don't know	2	1	1	5	2	3	2	6	7	1	0
23g. AIDS leads to death.											
Definitely true	85	86	86	85	84	86	85	89	86	87	83
Probably true	11	11	12	11	12	10	12	7	8	10	14
Probably false	1	1	0	1	1	1	1	1	1	1	1
Definitely false	1	1	1	1	1	1	1	1	0	1	1
Don't know	2	1	1	3	1	2	1	3	4	1	1
23h. A person can be infected with the AIDS virus and not have the disease AIDS.											
Definitely true	55	54	63	47	55	55	57	46	39	54	67
Probably true	21	23	20	22	21	21	21	21	20	24	20
Probably false	4	6	3	4	4	4	4	5	5	5	3
Definitely false	5	7	5	4	6	4	4	7	6	5	4
Don't know	15	10	9	24	13	16	13	21	30	13	6
23i. Looking at a person is enough to tell if he or she has the AIDS virus.											
Definitely true	2	2	2	2	3	2	2	4	3	2	2
Probably true	4	3	4	6	5	4	4	5	7	4	3
Probably false	14	12	13	17	14	14	14	13	17	16	11
Definitely false	70	78	76	57	70	70	71	64	52	70	80
Don't know	10	5	5	18	9	10	9	14	22	8	3
23j. Any person with the AIDS virus can pass it on to someone else during sexual intercourse.											
Definitely true	83	88	84	79	82	84	83	84	82	85	83
Probably true	12	9	12	14	13	11	12	8	10	11	14
Probably false	1	1	1	1	1	1	1	0	1	1	1
Definitely false	1	1	1	1	1	1	1	1	0	1	1
Don't know	3	1	2	6	3	3	3	6	7	3	1
23k. A person who has the AIDS virus can look and feel healthy and well.											
Definitely true	48	55	55	35	51	45	49	43	32	45	61
Probably true	28	27	28	30	27	29	29	25	25	31	27
Probably false	8	6	6	10	7	8	7	8	11	9	4
Definitely false	5	5	5	7	5	6	5	8	10	5	3
Don't know	11	7	7	19	10	12	10	16	22	10	5
23l. A pregnant woman who has the AIDS virus can give the AIDS virus to her baby.											
Definitely true	80	83	83	75	79	82	81	80	76	80	84
Probably true	14	14	13	16	15	13	14	13	15	15	13
Probably false	0	0	1	0	0	0	0	1	0	1	0
Definitely false	0	0	0	0	1	0	0	0	0	0	0
Don't know	5	2	3	8	5	4	4	6	9	4	2

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1989 National Health Interview Survey, by selected characteristics: United States, January—March 1989—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
23m. There is a vaccine available to the public that protects a person from getting the AIDS virus.	Percent distribution ¹										
Definitely true	2	2	1	2	1	2	1	3	3	1	1
Probably true	2	2	2	3	2	2	2	3	3	3	1
Probably false	9	10	8	10	9	9	9	10	12	9	8
Definitely false	75	77	82	65	77	73	77	65	58	75	85
Don't know	12	9	7	21	10	14	11	19	25	11	5
23n. There is no cure for AIDS at present.											
Definitely true	87	88	89	83	86	87	88	82	80	87	91
Probably true	6	5	6	8	7	6	6	5	6	7	5
Probably false	1	1	1	1	1	1	1	2	2	1	1
Definitely false	2	2	2	2	2	2	2	2	2	2	1
Don't know	4	3	2	7	4	4	3	9	10	3	1
24. How likely do you think it is that a person will get AIDS or the AIDS virus infection from—											
24a. Living near a hospital or home for AIDS patients?											
Very likely	1	1	1	2	2	1	1	2	2	1	1
Somewhat likely	3	4	2	3	4	2	3	4	3	4	2
Somewhat unlikely	6	6	6	7	7	6	6	8	9	6	5
Very unlikely	39	40	38	40	41	38	40	38	36	42	39
Definitely not possible	44	44	49	37	42	46	45	36	33	42	52
Don't know	6	4	4	12	6	7	5	13	16	5	2
24b. Working near someone with the AIDS virus?											
Very likely	2	2	2	2	2	2	2	3	3	2	1
Somewhat likely	9	9	8	10	10	9	9	8	11	10	8
Somewhat unlikely	11	12	11	12	11	11	11	12	13	12	10
Very unlikely	40	40	41	39	41	39	41	36	33	41	43
Definitely not possible	31	34	34	24	30	31	31	30	24	30	35
Don't know	7	3	4	13	6	7	6	12	16	6	3
24c. Eating in a restaurant where the cook has the AIDS virus?											
Very likely	7	6	6	8	7	7	7	8	10	7	5
Somewhat likely	18	17	16	19	19	17	18	18	21	18	15
Somewhat unlikely	15	17	15	12	15	15	15	14	12	15	16
Very unlikely	30	30	32	27	31	29	31	24	22	29	36
Definitely not possible	19	22	21	14	18	20	19	18	13	18	23
Don't know	12	7	9	20	11	13	11	18	22	12	6
24d. Kissing—with exchange of saliva—a person who has the AIDS virus?											
Very likely	26	21	26	31	26	27	26	30	30	28	22
Somewhat likely	30	30	30	29	31	29	31	26	27	30	31
Somewhat unlikely	12	14	13	9	13	11	12	10	8	11	15
Very unlikely	15	18	17	11	15	15	16	11	11	14	19
Definitely not possible	6	9	7	4	6	7	6	8	5	6	7
Don't know	10	8	7	16	9	12	10	14	18	11	5
24e. Shaking hands, touching, or kissing on the cheek someone who has the AIDS virus?											
Very likely	2	2	1	3	2	2	2	3	4	2	1
Somewhat likely	7	6	6	7	8	6	6	8	9	7	5
Somewhat unlikely	12	11	13	13	13	12	13	12	13	13	12
Very unlikely	39	38	39	39	40	38	40	35	33	40	41
Definitely not possible	34	40	36	26	32	35	34	30	25	32	40
Don't know	7	3	4	13	6	7	6	12	16	6	2
24f. Sharing plates, forks, or glasses with someone who has the AIDS virus?											
Very likely	9	8	9	10	9	9	9	11	13	9	7
Somewhat likely	20	18	20	21	20	20	20	19	21	20	19
Somewhat unlikely	13	14	14	13	14	12	13	12	11	14	15
Very unlikely	29	31	29	27	30	28	29	27	20	29	33
Definitely not possible	18	23	21	12	17	19	18	16	14	18	22
Don't know	11	7	8	17	10	11	10	14	21	10	5
24g. Using public toilets?											
Very likely	6	6	5	8	6	6	6	7	11	6	3
Somewhat likely	12	11	11	15	11	13	12	12	16	13	9
Somewhat unlikely	12	13	12	11	12	12	12	14	11	13	12
Very unlikely	34	34	35	32	36	32	35	30	23	35	39
Definitely not possible	26	29	29	19	26	26	26	21	18	24	32
Don't know	10	7	7	16	9	11	9	15	21	9	5

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1989 National Health Interview Survey, by selected characteristics: United States, January–March 1989—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]

AIDS knowledge or attitude	Age			Sex		Race		Education				
	Total	18–29 years	30–49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years	
	Percent distribution ¹											
24h. Sharing needles for drug use with someone who has the AIDS virus?												
Very likely	94	96	96	91	94	94	95	91	89	95	97	
Somewhat likely	3	2	2	4	3	3	3	4	4	2	2	
Somewhat unlikely	0	0	0	0	0	0	0	0	1	0	0	
Very unlikely	0	0	0	1	0	1	0	1	1	0	0	
Definitely not possible	0	1	0	0	0	0	0	0	0	0	0	
Don't know	2	1	1	4	2	2	2	4	5	1	1	
24i. Being coughed or sneezed on by someone who has the AIDS virus?												
Very likely	7	5	5	10	6	7	6	10	10	7	5	
Somewhat likely	21	18	20	24	21	21	21	20	24	21	18	
Somewhat unlikely	16	17	17	15	17	16	17	14	12	17	19	
Very unlikely	29	32	31	24	30	28	29	24	21	28	34	
Definitely not possible	15	19	18	9	15	15	15	15	10	15	18	
Don't know	12	9	9	19	11	13	12	17	23	12	6	
24j. Attending school with a child who has the AIDS virus?												
Very likely	2	2	2	3	2	2	2	4	4	2	1	
Somewhat likely	5	4	5	5	5	5	5	6	6	5	4	
Somewhat unlikely	10	9	9	11	10	9	10	8	10	11	9	
Very unlikely	42	41	43	41	44	40	43	36	35	43	45	
Definitely not possible	34	40	37	27	32	36	34	32	27	34	39	
Don't know	7	4	5	13	7	8	6	14	18	6	3	
24k. Mosquitoes or other insects?												
Very likely	10	11	9	9	10	9	9	14	14	10	6	
Somewhat likely	17	19	16	16	18	15	16	19	19	18	14	
Somewhat unlikely	8	9	9	7	9	8	8	8	6	9	9	
Very unlikely	24	25	26	22	26	23	26	19	18	23	29	
Definitely not possible	18	18	20	15	17	19	18	16	12	16	22	
Don't know	23	18	20	31	21	26	23	24	30	24	18	
25. Have you ever donated blood?												
Yes	40	33	43	42	51	30	41	32	29	37	50	
No	60	67	57	58	49	70	58	68	71	63	50	
Don't know	0	0	0	0	0	0	0	0	1	0	0	
26a. Have you donated blood since March 1985?												
Yes	14	19	17	7	17	12	15	9	5	13	21	
No	86	80	83	93	83	88	85	91	94	87	79	
Don't know	0	0	0	1	1	0	0	0	1	0	0	
26b. Have you donated blood in the past 12 months?												
Yes	6	8	8	3	8	5	7	4	2	5	10	
No	93	92	91	96	92	94	92	96	97	94	89	
Don't know	1	0	1	1	1	0	1	0	1	0	1	
27. Have you ever heard of a blood test that can detect the AIDS virus infection?												
Yes	73	79	82	59	74	73	75	64	53	74	86	
No	22	18	15	34	22	22	21	31	41	21	11	
Don't know	5	3	3	7	4	5	4	5	6	5	3	
28. To the best of your knowledge, are blood donations routinely tested now for the AIDS virus infection?												
Yes	65	70	73	52	65	65	66	56	45	67	76	
No	4	5	4	2	4	3	4	3	2	3	5	
Don't know	5	5	5	5	5	5	5	5	6	4	5	
Never heard of test ⁴	27	21	18	41	26	27	25	36	47	26	14	
29a. Have you ever received counseling or had a talk with a health professional about taking the AIDS virus test?												
Yes	4	6	5	1	4	4	4	5	2	3	5	
No	69	73	77	58	70	69	71	59	50	71	80	
Don't know	0	0	0	0	0	0	0	—	0	0	0	
Never heard of test ⁴	27	21	18	41	26	27	25	36	47	26	14	
29b. Was the discussion— ^{1,5}												
With a private doctor?	53	51	51	74	51	54	54	55	58	55	50	
At a family-planning clinic?	7	10	5	10	5	9	6	13	12	9	5	
On an AIDS hotline?	4	3	3	11	4	4	5	—	3	6	3	
At a prenatal clinic?	8	14	5	2	1	15	9	7	14	11	6	
At an STD or sexually transmitted disease clinic?	4	5	3	4	7	1	4	2	1	3	5	
At an AIDS/HIV counseling and testing site?	10	9	10	16	17	5	10	12	2	14	10	
With some other health professional?	38	34	42	33	39	37	38	45	30	39	40	
With some other counselor?	13	10	14	15	17	9	13	9	6	17	12	
30. During that discussion, did you receive information about how to avoid getting or passing on the AIDS virus? ⁵												
Yes	60	66	56	60	64	57	57	77	56	63	59	
No	39	34	44	40	36	42	42	23	44	37	40	
Don't know	1	1	1	—	—	1	1	—	—	—	1	

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes, from the 1989 National Health Interview Survey, by selected characteristics: United States, January–March 1989—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
Percent distribution ¹											
31. Have you ever been advised by a health professional not to have the blood test for the AIDS virus infection?											
Yes	0	0	1	0	0	0	0	0	0	0	1
No	73	79	82	59	74	72	74	64	53	74	85
Don't know	0	0	0	0	0	0	0	0	0	0	0
Never heard of test ⁴	27	21	18	41	26	27	25	36	47	26	14
32. Have you ever been advised by friends or relatives not to have the blood test for the AIDS virus infection?											
Yes	1	1	1	0	1	1	1	1	0	0	1
No	73	78	81	59	73	72	74	63	52	74	85
Don't know	0	0	0	—	0	0	0	—	0	0	0
Never heard of test ⁴	27	21	18	41	26	27	25	36	47	26	14
33. Have you had your blood tested for the AIDS virus infection?											
Yes	19	26	23	9	22	16	19	15	9	17	26
No	55	54	60	50	53	57	56	50	44	57	60
Don't know	1	1	1	2	1	1	2	1	1	2	2
Never heard of test ⁴	25	18	16	40	24	26	23	35	46	24	13
35a. How many times have you had your blood tested for the AIDS virus infection? ⁷											
Once	6	8	7	2	6	5	6	7	4	5	8
Twice	1	2	1	0	1	1	1	1	1	1	1
3-5 times	1	2	1	1	1	1	1	0	0	1	2
6-12 times	1	1	1	0	1	0	1	0	0	0	1
More than 12 times	0	0	0	0	0	0	0	—	—	0	0
Don't know	10	14	11	5	12	8	11	7	4	10	14
Never heard of or never took test ⁸	81	74	78	92	78	84	81	85	91	83	74
35b. How many times in the past 12 months have you had your blood tested for the AIDS virus infection? ⁷											
None in the past 12 months	2	3	3	1	3	2	2	2	1	2	4
Once	5	7	6	2	5	4	5	6	3	4	6
More than once	2	2	3	1	2	1	2	1	1	1	3
Don't know	10	14	11	5	11	8	10	7	4	10	14
Never heard of or never took test ⁸	81	74	77	92	78	84	81	85	91	83	74
36. Was the test/were any of the tests, including those you had before the past 12 months— ¹											
Part of a blood donation?	71	67	72	74	71	70	73	56	55	70	74
Part of a blood transfusion? ³	2	0	2	4	2	2	2	3	2	1	2
Voluntarily sought? ⁹	17	19	16	13	14	20	15	29	27	17	14
Part of some other activity that requires a blood sample?	14	16	14	10	17	10	14	16	18	14	13
38. Did you get the results of your test/any of your tests? ³											
Yes	56	67	51	45	52	62	55	71	72	56	53
No	43	33	47	53	47	38	45	27	27	44	46
Don't know	1	—	1	2	1	0	1	2	2	1	1
41. Do you expect to have a blood test for the AIDS virus infection in the next 12 months?											
Yes	7	11	8	2	9	5	6	9	6	6	8
No	63	63	70	55	61	64	65	49	43	65	74
Don't know	4	5	4	2	4	4	3	6	4	4	4
Never heard of test ⁴	27	21	18	41	26	27	25	36	47	26	14
42. Will the test be— ^{1,10}											
Part of a blood donation?	41	34	49	33	43	38	46	20	23	39	51
Voluntarily sought? ⁹	52	60	45	53	49	57	46	79	76	56	38
Part of some other activity that requires a blood sample?	16	20	13	16	17	14	17	11	10	16	19
44a. Did you have a blood transfusion at any time between 1977 and 1985?											
Yes	6	3	6	8	6	6	6	5	7	5	6
No	93	97	93	90	93	93	93	93	91	93	93
Don't know	1	1	1	2	1	1	1	1	2	1	1
44b. Do you think the present supply of blood is safe for transfusions?											
Yes	48	52	52	42	53	44	51	36	35	48	57
No	27	29	27	27	25	29	26	35	33	28	23
Other	0	0	0	0	0	0	0	0	—	0	0
Don't know	24	19	21	31	22	26	23	28	32	23	20
45. Here are some methods people use to prevent getting the AIDS virus through sexual activity. How effective is—											
45a. Using a diaphragm?											
Very effective	2	2	2	3	2	2	2	4	3	2	1
Somewhat effective	12	14	10	13	13	11	12	12	11	12	12
Not at all effective	58	62	68	44	58	59	60	47	40	59	70
Don't know how effective	21	17	15	31	20	22	21	26	33	21	14
Don't know method	6	6	4	9	7	6	5	10	13	5	3

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1989 National Health Interview Survey, by selected characteristics: United States, January–March 1989—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]

AIDS knowledge or attitude	Age				Sex		Race		Education		
	Total	18–29	30–49	50 years	Male	Female	White	Black	Less than	12 years	More than
		years	years	and over								12 years	12 years
Percent distribution ¹											
45b. Using a condom?											
Very effective	31	37	34	22	35	28	31	29	25	29	36
Somewhat effective	54	54	55	52	53	54	54	47	45	56	56
Not at all effective	5	5	5	5	5	6	5	7	7	6	4
Don't know how effective	8	3	4	16	6	10	8	12	18	7	3
Don't know method	2	1	1	4	2	3	2	5	5	2	1
45c. Using a spermicidal jelly, foam, or cream?											
Very effective	2	3	2	1	2	1	1	4	2	2	1
Somewhat effective	14	14	14	13	14	14	14	11	9	13	18
Not at all effective	56	63	63	42	56	55	56	51	43	57	62
Don't know how effective	23	15	17	34	22	23	23	26	34	23	16
Don't know method	6	5	4	10	7	6	6	9	13	6	3
45d. Having a vasectomy?											
Very effective	2	3	2	1	2	2	2	3	2	2	2
Somewhat effective	2	4	2	2	2	2	2	4	3	2	2
Not at all effective	72	71	83	61	74	71	75	57	52	74	84
Don't know how effective	17	15	10	26	15	18	16	25	29	16	10
Don't know method	7	7	3	10	6	7	6	11	14	6	3
45e. Two people who do not have the AIDS virus having sex only with each other?											
Very effective	83	85	88	77	84	82	85	70	71	84	90
Somewhat effective	8	8	6	9	7	8	7	12	10	7	6
Not at all effective	2	3	2	2	3	2	2	5	4	2	1
Don't know how effective	5	3	3	9	4	6	5	10	11	5	2
Don't know method	2	1	1	3	1	2	1	3	4	1	1
46. What are your chances of having the AIDS virus?											
High	0	0	0	0	0	0	0	1	1	0	0
Medium	2	3	2	1	2	2	2	3	2	2	2
Low	13	18	15	6	15	11	13	13	8	12	16
None	83	77	81	90	81	85	84	79	85	85	81
Don't know	2	1	2	2	2	2	1	4	5	1	1
47. What are your chances of getting the AIDS virus?											
High	0	1	0	0	1	0	0	1	1	0	0
Medium	2	3	2	1	2	2	2	4	2	2	2
Low	17	24	19	8	19	15	17	15	9	15	23
None	78	70	76	87	75	81	79	74	83	80	74
Don't know	2	2	2	3	3	2	2	4	5	2	1
High chance of already having AIDS virus	0	0	0	0	0	0	0	1	1	0	0
49. Do you say your chance of getting AIDS is high or medium because you— ¹¹											
Have had a blood transfusion?	4	1	6	6	2	6	2	8	12	2	—
Have had sexual contact with someone who might have the virus?	21	28	18	10	26	13	23	16	24	17	23
Some other reason?	59	55	66	52	51	70	61	55	44	64	65
52. Have you ever discussed AIDS with a friend or relative?											
Yes	61	69	71	45	58	64	62	59	41	60	75
No	38	31	29	55	41	36	38	41	58	39	25
Don't know	0	0	0	1	0	0	0	0	0	0	0
53. When was the last time you discussed AIDS with a friend or relative?											
0–3 days ago	7	8	8	5	7	7	6	9	5	6	9
4–7 days ago	8	8	9	6	7	8	8	9	6	7	10
8–14 days ago	6	7	7	4	6	6	6	6	4	6	7
15–31 days ago	13	15	15	9	12	13	13	12	8	13	16
More than 31 days ago	23	27	27	16	22	24	24	19	14	23	29
Don't know	4	4	4	5	4	5	4	4	4	4	4
Never discussed ¹²	39	31	29	55	42	36	38	42	59	40	25
54. Have you ever personally known anyone with AIDS or the AIDS virus?											
Yes	12	11	16	8	11	12	11	13	5	10	17
No	87	89	83	91	88	87	88	86	94	89	81
Don't know	1	1	1	1	1	1	1	1	1	1	1
55. How long has it been since you saw this person?											
Within past 2 weeks	1	1	1	0	1	1	1	1	0	1	1
2 weeks—less than 1 month	1	1	1	0	1	1	1	1	0	1	1
1 month—less than 3 months	1	1	1	0	1	1	1	1	0	0	2
3 months—less than 6 months	1	1	1	1	1	1	1	1	1	1	1
6 months or more	8	7	10	5	7	8	8	8	3	7	12
Don't know	0	0	0	0	0	0	0	0	0	0	0
Never knew anyone with AIDS ¹³	89	89	84	92	89	88	89	87	95	90	83

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1989 National Health Interview Survey, by selected characteristics: United States, January–March 1989—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]

AIDS knowledge or attitude	Age			Sex		Race		Education		
	Total	18-29	30-49	50 years and over		White	Black	Less than 12 years	12 years	More than 12 years
		years	years	Male	Female					
Percent distribution ¹										
56. How well do you know this person?										
Very well	1	2	2	1	1	2	1	1	1	2
Fairly well	3	3	3	1	2	3	3	3	2	4
Not very well	4	4	6	3	4	4	4	5	2	7
Don't really know personally	2	2	3	1	2	2	2	2	1	3
Other	1	0	2	1	1	1	1	2	0	2
Don't know how well	0	—	0	—	0	—	0	—	0	—
Never knew anyone with AIDS ³	88	89	84	92	89	88	89	87	95	83
57. Is any of these statements true for you?										
a. You have hemophilia and have received clotting factor concentrates since 1977.										
b. You are a native of Haiti or Central or East Africa who has entered the United States since 1977.										
c. You are a man who has had sex with another man at some time since 1977, even 1 time.										
d. You have taken illegal drugs by needle at any time since 1977.										
e. Since 1977, you are or have been the sex partner of any person who would answer yes to any of the items above (57 a-d).										
f. You have had sex for money or drugs at any time since 1977.										
Yes to at least 1 statement	2	3	3	0	3	2	2	3	2	3
No to all statements	98	96	97	99	97	98	98	97	98	98
Refused	0	0	0	—	0	0	0	—	0	0
Don't know	0	0	0	0	0	0	0	0	0	0
58. The U.S. Public Health Service has said that AIDS is one of the major health problems in the country but exactly how many people it affects is not known. The Surgeon General has proposed that a study be conducted and blood samples be taken to help find out how widespread the problem is. If you were selected in this national sample of people to have their blood tested with assurances of privacy of test results, would you have the test?										
Yes	72	78	76	63	73	71	73	72	66	73
No	22	17	19	29	21	22	21	21	27	19
Other	1	1	1	1	1	1	1	1	1	1
Don't know ¹⁴	5	5	5	6	5	6	5	6	6	4
59. Why wouldn't you take part in the test? ¹⁴										
Don't want to know if I have AIDS	4	9	6	2	4	4	4	6	3	6
Don't want any counseling about AIDS	1	1	0	1	1	1	1	0	0	1
Fear I'll get AIDS	6	6	5	5	6	5	5	5	7	4
Don't like to give blood	13	18	13	10	11	14	13	13	11	12
Don't trust Government programs	6	6	9	4	9	4	6	8	4	9
It is a waste of money	4	2	3	4	4	3	4	2	2	3
Don't believe AIDS can really be cured anyway	2	1	2	1	1	2	2	1	1	1
Other	55	44	54	60	55	54	55	53	55	57
Don't know	1	2	1	2	1	2	1	3	2	1
61. When Federal public health officials give information about AIDS, do you believe what they say or are you doubtful about the information they give?										
Believe	67	72	68	60	67	66	67	62	58	67
Doubtful	28	24	28	31	28	28	27	31	31	25
Don't know	6	4	4	9	5	6	5	7	11	3
62. When they [public health officials] give advice about how to help keep from getting AIDS, do you believe their advice or are you doubtful about what they say?										
Believe	80	84	82	75	81	79	81	76	71	85
Doubtful	16	14	16	18	15	16	15	19	20	12
Don't know	4	2	2	7	3	5	4	5	9	2

¹Multiple responses may sum to more than 100.
²Based on persons answering yes to question 4 (includes yes to question 3).
³Based on persons answering yes to question 11, "Do you have any children aged 10 through 17?" Question 12 was "How many do you have?"
⁴Persons answering no or don't know to question 27.
⁵Based on persons answering yes to question 29a.
⁶Includes persons answering yes to question 26a and no or don't know to questions 27 and 33.
⁷Based on yes answers to question 33. See footnote 6.
⁸Persons answering no or don't know to questions 26a, 27, and 33.
⁹Based on persons answering yes to question 33; excludes persons answering yes to question 26a.
¹⁰Based on persons answering yes to question 41.
¹¹Based on persons answering high or medium to question 46.
¹²Based on persons answering no or don't know to question 52.
¹³Based on persons answering no or don't know to question 54.
¹⁴Based on persons not answering yes to question 58.

Technical notes

The National Health Interview Survey (NHIS) is a continuous, cross-sectional household interview survey. Each week, a probability sample of 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. Information on special health topics is collected for all or a sample of household members. The 1989 National Health Interview Survey of AIDS Knowledge and Attitudes is asked of one randomly chosen adult 18 years of age or over in each family. The estimates in this report are based on completed interviews with 8,735 persons, or about 89 percent of eligible respondents.

Table I contains the estimated population size of each of the demo-

graphic subgroups included in table 1 to allow readers to derive provisional estimates of the number of people in the United States with a given characteristic, for example, the number of men who have had their blood tested for HIV. The population figures in table I are based on 1987 data from the NHIS; they are not official population estimates. Table II shows approximate standard errors of estimates presented in table 1. Both the estimates in table 1 and the standard errors in table II are provisional. They may differ slightly from estimates made using the final data file because they were calculated using a simplified weighting procedure that does not adjust for all the factors used in weighting the final data file. A final data file covering the entire data collection period for 1989 will be available at the end of 1990.

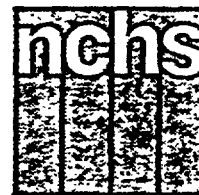
Table I. Sample sizes for the 1989 National Health Interview Survey of AIDS Knowledge and Attitudes and estimated adult population 18 years of age and over, by selected characteristics: United States, January-March 1989

Characteristic	Sample size	Estimated population in thousands
All adults	8,735	175,260
Age		
18-29 years	2,194	47,500
30-49 years	3,446	66,900
50 years and over	3,095	60,860
Sex		
Male	3,751	83,073
Female	4,984	92,187
Race		
White	7,253	148,154
Black	1,166	19,168
Education		
Less than 12 years	2,070	40,061
12 years	3,203	68,055
More than 12 years	3,412	65,333

Table II. Standard errors, expressed in percentage points, of estimated percents from the National Health Interview Survey of AIDS Knowledge and Attitudes, by selected characteristics: United States, January-March 1989

Estimated percent	Total	Age			Sex		Race		Education		
		18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
5 or 95	0.3	0.6	0.5	0.5	0.5	0.4	0.3	0.8	0.6	0.5	0.5
10 or 90	0.4	0.8	0.7	0.7	0.6	0.5	0.5	1.1	0.8	0.7	0.7
15 or 85	0.5	1.0	0.8	0.8	0.8	0.7	0.5	1.3	1.0	0.8	0.8
20 or 80	0.6	1.1	0.9	0.9	0.8	0.7	0.6	1.5	1.1	0.9	0.9
25 or 75	0.6	1.2	0.9	1.0	0.9	0.8	0.7	1.6	1.2	1.0	1.0
30 or 70	0.6	1.3	1.0	1.1	1.0	0.8	0.7	1.7	1.3	1.0	1.0
35 or 65	0.7	1.3	1.0	1.1	1.0	0.9	0.7	1.8	1.3	1.1	1.1
40 or 60	0.7	1.3	1.1	1.1	1.0	0.9	0.7	1.8	1.4	1.1	1.1
45 or 55	0.7	1.4	1.1	1.2	1.0	0.9	0.8	1.9	1.4	1.1	1.1
50	0.7	1.4	1.1	1.2	1.1	0.9	0.8	1.9	1.4	1.1	1.1

Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

Utilization of Controlled Drugs in Office-Based Ambulatory Care: National Ambulatory Medical Care Survey, 1985

by Hugo Koch, M.H.A., Division of Health Care Statistics, and Dee A. Knapp, Ph.D., University of Maryland at Baltimore

Introduction

An increasingly important issue in current health care and social policy is the use of medications having significant potential for drug dependence or abuse and their possible diversion into illicit channels. Under Federal law, the Controlled Substances Act of 1970, special regulatory controls have been placed on the manufacture, distribution, and dispensing of these drugs. Each controlled drug is placed in one of five schedules, depending on its potential for abuse, its medical usefulness, and the degree of dependence it can produce.

Schedule I. The drug has a high potential for abuse and no current accepted medical usefulness for treatment in the United States. Examples are heroin and LSD. Schedule I drugs are outside the scope of this report.

Schedule II. The drug has a currently accepted medical use in the United States, but its abuse may lead to severe dependence. Included are certain narcotics (e.g., morphine), short-acting barbiturates, and certain stimulants,

such as the amphetamines and cocaine. Prescriptions for these drugs are nonrefillable. Emergency telephone orders for limited quantities of these drugs are permitted, but the prescriber must provide a written, signed prescription to the pharmacy within 72 hours.

Schedule III. The drug has an accepted medical use in the United States, but its abuse may lead to moderate dependence. Included are opiates in fixed-ingredient combination with such other substances as acetaminophen or aspirin, and certain anorexiant. Prescriptions may be oral or written and may be refilled up to five times within 6 months after the date of issue, if authorized by the prescriber.

Schedule IV. The drug has a currently accepted medical use in the United States, but its abuse may lead to limited dependence. Included are the benzodiazepines (minor tranquilizers), phenobarbital, pentazocine, propoxyphene, and certain anorexiant. The same prescription requirements pertain as with Schedule III drugs.

Schedule V. The drug has a currently accepted medical use in the United States, but its abuse may lead to some dependence. The most important are fixed-ingredient combinations containing nonopioid drugs and limited quantities of opioids. There are no limitations on prescriptions or refills, other than those specified by the prescriber. Depending upon State and local regulation, some Schedule V products are available without a prescription.

This report describes the utilization of controlled drugs (Schedules II, III, IV, V) in office-based ambulatory care. The report relies on findings from the National Ambulatory Medical Care Survey (NAMCS), a sample survey of non-Federal, office-based physicians conducted in the coterminous United States over the 12-month period March 1985 through February 1986.

The term *utilization* is limited to the prescribing or providing of a controlled drug by a doctor of medicine or osteopathy in the course of an office visit. It does not embrace ultimate patient compliance with the doctor's instruction.

Because the estimates presented in this report are based on a sample rather than on the entire universe of office visits or drug mentions, the data are subject to sampling variability. The technical notes at the end of the report provide guidelines for judging the precision of the estimates. They also supply a brief description of the sample design and survey methodology and a copy of the chief data collection instrument, the patient record (figure 1).

General findings

From March 1985 through February 1986, 636.4 million office visits were made to physicians within the NAMCS scope, resulting in an estimated 693.4 million drug entries (mentions). This report centers attention on the estimated 47,192,000 office visits in which one or more controlled drugs were ordered or provided (controlled drug visits) and on the 51,877,000 mentions of controlled drugs that these visits

produced. The controlled drug mentions were distributed among the schedules as shown in table 1.

NAMCS findings reveal that, between 1980 and 1985, there was a decrease of roughly 11 percent in the overall number of controlled drug mentions. The smaller groups, Schedules II and V, showed the greatest decreases; mentions in each fell off by about 30 percent. The use of Schedule IV drugs registered a modest decline (7 percent) over the period, in large part the result of a

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		Department of Health and Human Services Centers for Disease Control Public Health Service National Center for Health Statistics		B	
1. DATE OF VISIT ____/____/____ Month Day Year		PATIENT RECORD		OMB No. 0920-0234 Expires 8-31-89 (PHS) 6105B	
NATIONAL AMBULATORY MEDICAL CARE SURVEY					
2. ZIP CODE _____	4. SEX 1 <input type="checkbox"/> FEMALE 2 <input type="checkbox"/> MALE	5. COLOR OR RACE 1 <input type="checkbox"/> WHITE 2 <input type="checkbox"/> BLACK 3 <input type="checkbox"/> ASIAN/PACIFIC ISLANDER 4 <input type="checkbox"/> AMERICAN INDIAN/ESKIMO/ALEUT	6. ETHNICITY 1 <input type="checkbox"/> HISPANIC ORIGIN 2 <input type="checkbox"/> NOT HISPANIC	7. EXPECTED SOURCE(S) OF PAYMENT <i>[Check all that apply]</i> 1 <input type="checkbox"/> SELF-PAY 4 <input type="checkbox"/> BLUE CROSS/BLUE SHIELD 7 <input type="checkbox"/> NO CHARGE 2 <input type="checkbox"/> MEDICARE 5 <input type="checkbox"/> OTHER COMMERCIAL INSURANCE 8 <input type="checkbox"/> OTHER <i>[Specify]</i> 3 <input type="checkbox"/> MEDICAID 6 <input type="checkbox"/> PRE-PAID PLAN HMO/PA/PPO	8. WAS PATIENT REFERRED FOR THIS VISIT BY ANOTHER PHYSICIAN? 1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO
3. DATE OF BIRTH ____/____/____ Month Day Year		9. PATIENT'S COMPLAINT(S), SYMPTOM(S), OR OTHER REASON(S) FOR THIS VISIT <i>[In patient's own words]</i> a. MOST IMPORTANT _____ b. OTHER _____		10. PHYSICIAN'S DIAGNOSES a. PRINCIPAL DIAGNOSIS/PROBLEM ASSOCIATED WITH ITEM 9a. _____ b. OTHER SIGNIFICANT CURRENT DIAGNOSES _____	11. HAVE YOU SEEN PATIENT BEFORE? 1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO ↓ IF YES, FOR THE CONDITION IN ITEM 10a? 1 <input type="checkbox"/> YES 2 <input type="checkbox"/> NO
12. DIAGNOSTIC/SCREENING SERVICES <i>[Check all ordered or provided]</i> 1 <input type="checkbox"/> NONE 7 <input type="checkbox"/> BLOOD PRESSURE CHECK 13 <input type="checkbox"/> ORAL GLUCOSE TOL. 2 <input type="checkbox"/> PAP TEST 8 <input type="checkbox"/> URINALYSIS 14 <input type="checkbox"/> CHOLESTEROL MEASURE 3 <input type="checkbox"/> PELVIC EXAM 9 <input type="checkbox"/> CHEST X-RAY 15 <input type="checkbox"/> HIV SEROLOGY 4 <input type="checkbox"/> BREAST PALPATION 10 <input type="checkbox"/> DIGITAL RECTAL EXAM 16 <input type="checkbox"/> OTHER BLOOD TEST 5 <input type="checkbox"/> MAMMOGRAM 11 <input type="checkbox"/> PROCT/SIGMOIDOSCOPY 17 <input type="checkbox"/> OTHER <i>[Specify]</i> 6 <input type="checkbox"/> VISUAL ACUITY 12 <input type="checkbox"/> STOOL BLOOD EXAM			13. COUNSELING/ADVICE <i>[Check all ordered or provided]</i> 1 <input type="checkbox"/> NONE 2 <input type="checkbox"/> WEIGHT REDUCTION 3 <input type="checkbox"/> CHOLESTEROL REDUCTION 4 <input type="checkbox"/> SMOKING CESSATION 5 <input type="checkbox"/> HIV TRANSMISSION 6 <input type="checkbox"/> BREAST SELF-EXAM 7 <input type="checkbox"/> OTHER		14. NON-MEDICATION THERAPY <i>[Check all ordered or provided]</i> 1 <input type="checkbox"/> NONE 2 <input type="checkbox"/> PSYCHOTHERAPY 3 <input type="checkbox"/> CORRECTIVE LENSES 4 <input type="checkbox"/> AMBULATORY SURGERY 5 <input type="checkbox"/> PHYSIOTHERAPY 6 <input type="checkbox"/> OTHER <i>[Specify]</i>
15. MEDICATION THERAPY <i>[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. Include immunizing and desensitizing agents.]</i> IF NONE, CHECK HERE <input type="checkbox"/>			16. DISPOSITION THIS VISIT <i>[Check all that apply]</i> 1 <input type="checkbox"/> NO FOLLOW-UP PLANNED 2 <input type="checkbox"/> RETURN AT SPECIFIED TIME 3 <input type="checkbox"/> RETURN IF NEEDED, P R N 4 <input type="checkbox"/> TELEPHONE FOLLOW-UP PLANNED 5 <input type="checkbox"/> REFERRED TO OTHER PHYSICIAN 6 <input type="checkbox"/> RETURNED TO REFERRING PHYSICIAN 7 <input type="checkbox"/> ADMIT TO HOSPITAL 8 <input type="checkbox"/> OTHER <i>[Specify]</i>		17. DURATION OF THIS VISIT <i>[Time actually spent with physician]</i> _____ Minutes
1. _____			a. NEW MEDICATION? YES NO b. FOR DX IN ITEM 10a? YES NO		
2. _____			1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>		
3. _____			1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>		
4. _____			1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>		
5. _____			1 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/>		

Figure 1. National Ambulatory Medical Care Survey Patient Record

decrease in the utilization of diazepam. Schedule III drugs were the only controlled drugs to hold their own—indeed, they showed a modest increase (5 percent) in utilization during the period.

Table 2 offers a ranked listing of the 20 controlled drugs most frequently prescribed by the office-based practitioner. This group of 20 accounted for about two-thirds of all controlled drug mentions. In table 3, the 51.9 million controlled mentions are classified by the therapeutic effect that each was intended to produce. It is noteworthy that narcotic analgesics dominate the drugs prescribed in schedules II and III; they accounted for an estimated 16.1 million mentions, a substantial 31 percent of all controlled drug mentions.

Another finding that merits attention is the dominance of the benzodiazepines (e.g., alprazolam, diazepam, and lorazepam) among the therapeutic family, anxiolytics, sedatives, and hypnotics, at the expense of other agents, chiefly barbiturates, which have more potential adverse effects, drug interactions, lethality, and abuse or dependence liability. With 18.1 million mentions, the benzodiazepines accounted for the largest single proportion (35 percent) of all controlled drug mentions.

Symptoms and diagnoses associated with controlled drug therapy

The findings in table 2 and 3 indicate an application of controlled drugs in the management of pain, anxiety, cough, insomnia, and diarrhea. Table 4 shows the predominance of pain symptoms, which elicited more than one-half of the controlled drug mentions on the list.

Tables 5 and 6 describe the diagnostic correlates of controlled drug therapy, table 5 by listing the 15 principal diagnoses most frequently treated using controlled medications and table 6 by showing the volume of controlled drug mentions associated with each of the major diagnostic groups.

Table 1. Number and percent distribution of all drug mentions and of controlled drugs by control schedule: United States, 1985

Control status	Number of drug mentions in thousands	All drug mentions	Controlled drugs
			Percent distribution
All drugs	693,355	100.0	...
Controlled drugs	51,877	7.5	100.0
Schedule II drugs	4,070	0.6	7.8
Schedule III drugs	12,621	1.8	24.3
Schedule IV drugs	28,089	4.1	54.2
Schedule V drugs	7,097	1.0	13.7
Noncontrolled drugs	594,865	85.8	...
Undetermined residual	46,613	6.7	...

Table 2. Number, percent, and therapeutic use of the 20 most prescribed controlled drugs, by frequency of mention and control schedule: United States, 1985

Controlled drugs most frequently prescribed	Control schedule	Number of mentions in thousands	Percent	Therapeutic use
All controlled drug mentions . . . . .	...	51,877	100.0	...
Tylenol with codeine (acetaminophen, codeine)	III	5,081	9.8	Pain relief
Xanax (alprazolam)	IV	4,071	7.8	Anxiety relief
Valium (diazepam)	IV	3,672	7.1	Anxiety relief
Darvocet-N (propoxyphene, acetaminophen)	IV	3,610	7.0	Pain relief
Ativan (lorazepam)	IV	2,306	4.4	Anxiety relief
Tranxene (clorazepate)	IV	1,698	3.3	Anxiety relief
Dalmane (flurazepam)	IV	1,478	2.8	Insomnia relief
Haicion (triazolam)	IV	1,271	2.5	Insomnia relief
Librium (chlordiazepoxide)	IV	1,215	2.3	Anxiety relief
Lomotil (diphenoxylate, atropine)	V	1,137	2.2	Antidiarrhea
Restoril (temazepam)	IV	1,103	2.1	Insomnia relief
Phenobarbital	IV	1,096	2.1	Anticonvulsant, insomnia relief
Phenergan expectorant with codeine (promethazine, codeine, phenylephrine)	V	1,062	2.0	Cough relief
Florinal (butalbital, caffeine, aspirin)	III	970	1.9	Migraine relief
Tuss-Organidin (codeine, iodinated glycerol)	V	965	1.9	Cough relief
Percocet-5 (oxycodone, acetaminophen)	II	772	1.5	Pain relief
Fastin (phentermine)	IV	737	1.4	Appetite suppressant
Percodan (oxycodone, aspirin)	II	672	1.3	Pain relief
Demerol (meperidine)	II	631	1.2	Pain relief
Hycamine (hydrocodone, phenylpropanolamine)	III	553	1.1	Cough relief

Table 3. Number and percent distribution of controlled drug mentions by therapeutic category, according to applicable control schedule: United States, 1985

Therapeutic category	All mentions	Schedule II	Schedule III	Schedule IV	Schedule V
Number of mentions in thousands	51,877	4,070	12,621	28,089	7,097
Percent distribution					
Total	100.0	100.0	100.0	100.0	100.0
Anxiolytics, sedatives, and hypnotics	39.0	*4.4	*1.4	70.7	-
Analgesics and antipyretics	35.0	72.5	73.7	20.1	*3.3
Antitussives, expectorants, and mucolytic agents	14.4	-	20.5	-	68.4
Respiratory and cerebral stimulants	5.6	15.9	*2.2	7.1	-
Gastrointestinal drugs	3.9	-	*0.7	-	27.3
Antidepressants	0.9	-	-	*1.7	-
Major tranquilizers and antimanic drugs	*0.5	*7.2	-	-	-
Other categories and unknown	*0.7	-	*1.5	*0.4	*1.0

¹Based on American Hospital Formulary Service Classification System, American Society of Hospital Pharmacists, Inc., Bethesda, MD, 1985.

Table 4. Number and percent of the 20 symptoms most frequently associated with controlled drug mentions, by frequency of controlled drug mention: United States, 1985

Symptoms most frequently associated with controlled drug mentions ¹	Controlled drug mentions	
	Number in thousands	Percent
All controlled drug mentions	51,877	100.0
Cough	3,651	7.0
Headache	2,630	5.1
Upper back symptoms ²	2,512	4.8
Anxiety and nervousness	1,955	3.8
Depression	1,511	2.9
Low back symptoms ²	1,450	2.8
Chest pain (not referable to body system)	1,370	2.6
Head cold, upper respiratory infection	1,215	2.3
Sore throat	1,033	2.0
Abdominal pain, cramps, spasms	1,026	2.0
Diarrhea	963	1.9
Neck symptoms ²	888	1.7
Disturbances of sleep	777	1.5
Weight gain	736	1.4
Leg symptoms ²	641	1.2
Knee symptoms ²	637	1.2
Shoulder symptoms ²	632	1.2
Vertigo	582	1.1
Tiredness, exhaustion	515	1.0
Pain, site not referable to a specific body system	*483	*0.9

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

²Chiefly pain, ache, or soreness.

Table 5. Number and percent of controlled drug mentions for the 15 principal diagnoses most frequently associated with controlled drug mentions, by frequency of mention: United States, 1985

Principal diagnoses most frequently associated with controlled drug mentions	ICD-9-CM ¹	Controlled drug mentions ²	
		Number in thousands	Percent
All principal diagnoses	-	40,914	100.0
Neurotic disorders	300	3,387	8.3
Acute upper respiratory infections	465	1,753	4.3
Obesity and other hyperalimentation	278	1,526	3.7
Bronchitis, not specified as acute or chronic	490	1,487	3.6
Other and unspecified disorders of back	724	1,278	3.1
Other noninfectious gastroenteritis and colitis	558	1,256	3.1
Affective psychoses	296	1,117	2.7
Essential hypertension	401	957	2.4
Sprains and strains of other and unspecified parts of back	847	941	2.3
General symptoms ³	780	821	2.0
Intervertebral disc disorders	722	780	1.9
Migraine	346	763	1.9
Acute bronchitis and bronchiolitis	466	724	1.8
Acute pharyngitis	462	611	1.5
Special symptoms or syndromes, not elsewhere classified ⁴	307	594	1.5

¹International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM).

²Includes only those drug mentions that were specifically intended for a principal (first-listed) diagnosis. Drug mentions associated with other-listed diagnoses or utilized for any other reason are not included.

³Includes convulsions not otherwise specified, malaise and fatigue, dizziness, sleep disturbances, pyrexia of unknown origin, syncope, and collapse.

⁴Chiefly psychogenic pain.

Some points require clarification or emphasis:

- The controlled drugs used in the treatment of obesity were not the Schedule II amphetamines, but rather the Schedule IV stimulants phentermine and diethylpropion.
- Seven diagnostic groups are seen to be above average in the

proportion of their overall drug utilization that resulted from the use of a controlled drug. In rank order, these are:

- Mental disorders.
- Injury and poisoning.
- Symptoms, signs, and ill-defined conditions.
- Diseases of the musculoskeletal system and connective tissue.

- Diseases of the digestive system.
- Neoplasms.
- Endocrine, nutritional, and metabolic diseases and immunity disorders.

Patient characteristics

Viewed as a proportion of all drug therapy within a given age group, the utilization of controlled substances increases with age until it reaches its maximum proportion in the age group 25–44 years (table 7). It then begins a decline among patients in the remaining years of life.

Median patient age is seen to vary according to the controlled schedule utilized, as follows:

Schedule	Median patient age in years
All controlled mentions	45.2
Schedule II drugs	44.0
Schedule III drugs	39.6
Schedule IV drugs	50.8
Schedule V drugs	31.0

In absolute numbers, controlled drug mentions for female patients outnumbered those for males by a substantial 15 million (table 7). In terms of relative utilization, however, the 1-percent difference that favored all female patients was not statistically significant.

Data on racial and ethnic patient groups did not vary strongly enough from the overall norms of controlled drug therapy to warrant comment (table 8).

Physician characteristics

Table 9 examines the utilization of controlled drugs in terms of the physicians who prescribe them. The following findings merit attention:

- Osteopathic physicians somewhat exceeded doctors of medicine in their proportionate prescribing of controlled drugs. This is due in part to their relatively greater concern with musculoskeletal pain and thus with the opiate analgesics in Schedule III, but chiefly to their more intensive prescribing of the drugs in Schedule V.
- In terms of absolute numbers of controlled drug mentions, it is noteworthy that primary care physicians accounted for about

two-thirds of the total 51.9 million, with general or family physicians alone accounting for 43 percent.

- In relative terms, however—that is, when the 13 most-visited specialties are examined in terms of their proportionate use of controlled drug therapy—five specialties were found to exceed average utilization. In rank order of intensity of use, these were:

1. Psychiatry
2. Orthopedic surgery
3. Neurology
4. General surgery
5. General or family practice

Between the 1980 and the 1985 NAMCS, three specialties demonstrated the largest variations in their proportionate use of the controlled drugs. These were psychiatry, with an increase from 24 percent in 1980 to 31 percent in 1985; neurology, with an increase from 15 percent in 1980 to 20 percent in 1985; and general surgery, with a decrease from 16 percent in 1980 to 9 percent in 1985.

Other aspects of controlled drug therapy

Are physicians more cautious in prescribing a controlled drug for a new patient than for a patient whom they already know? The differences in relative utilization presented in table 10 are not large enough to answer this question conclusively.

Table 11 examines the extent to which nondrug treatment techniques were used concomitantly with controlled drug therapy. In a clear majority (68 percent) of visits involving the utilization of a controlled drug (controlled drug visits), no nondrug therapy is seen to have been ordered or provided. The most frequent nonpharmacologic treatment in concomitant use was psychotherapy; its use in controlled drug visits was three times as great as its use in all visits.

Table 6. Number of all drug mentions and number and percent of controlled drug mentions, by major diagnostic group: United States, 1985

Major diagnostic group	ICD-9-CM code ¹	All drugs mentions in thousands	Controlled drug mentions	
			Number in thousands	Percent of all drug mentions
All principal diagnoses		² 534,627	² 40,914	7.7
Infectious and parasitic diseases . . .	001-139	22,051	1,046	4.7
Neoplasms	140-239	9,717	988	10.2
Endocrine, nutritional and metabolic diseases, and immunity disorders . . .	240-279	21,901	1,957	8.9
Mental disorders	290-319	20,835	7,301	35.0
Diseases of nervous system and sense organs	320-389	52,995	2,435	4.6
Diseases of circulatory system	390-459	85,552	2,228	2.6
Diseases of respiratory system	460-519	106,836	7,395	6.9
Diseases of digestive system	520-579	21,700	2,574	11.9
Diseases of genitourinary system . . .	580-629	26,932	953	3.5
Diseases of skin and subcutaneous tissue	680-709	38,048	623	1.6
Diseases of musculoskeletal system	710-739	38,943	5,050	13.0
Symptoms, signs, and ill-defined conditions	780-799	16,066	2,353	14.6
Injury and poisoning	800-999	27,883	4,149	14.9
Diagnosis other or unknown . . . . .	...	45,168	1,862	4.1

¹International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM).

²Includes only those drug mentions that were specifically intended for a principal (first-listed) diagnosis. Drug mentions associated with other-listed diagnoses or utilized for any other reason are not included.

Table 7. Number of all drug mentions and number and percent of controlled drug mentions, by patient age and sex: United States, 1985

Age and sex	All drug mentions in thousands	Controlled drug mentions	
		Number in thousands	Percent of all drug mentions
All office patients	693,355	51,877	7.5
Age			
Under 15 years	107,018	3,912	3.7
15-24 years	60,288	3,809	6.3
25-44 years	156,234	17,392	11.2
45-64 years	171,234	14,758	8.6
65 years and over	198,582	12,006	6.0
Sex			
Female	426,653	33,586	7.9
Male	266,702	18,291	6.9
Sex-age groups			
Female:			
Under 15 years	53,107	1,727	3.3
15-24 years	40,255	2,593	6.4
25-44 years	107,079	11,464	10.7
45-64 years	103,173	9,668	9.4
65 years and over	123,040	8,135	6.6
Male:			
Under 15 years	53,911	2,185	4.1
15-24 years	20,034	1,216	6.1
25-44 years	49,155	5,928	12.1
45-64 years	68,061	5,090	7.5
65 years and over	75,542	3,872	5.1

With its data on disposition instructions at the end of the office visit, table 12 supplies some final insights into the nature of office-based prescribing of controlled drugs. Possibly reflecting a desire to maintain closer-than-usual surveillance of a group of drugs that have their own unique hazards of use, the utilization of some form of followup is seen to be the rule, somewhat exceeding the followup norms found in overall office practice.

Table 8. Number of all drug mentions and number and percent of controlled drug mentions, by patient race and ethnicity: United States, 1985

<i>Race and ethnicity</i>	<i>All drug mentions in thousands</i>	<i>Controlled drug mentions</i>	
		<i>Number in thousands</i>	<i>Percent of all drug mentions</i>
All patients	693,355	51,877	7.5
Race			
White	614,585	46,263	7.5
Black	66,394	4,530	6.8
Other ¹	12,376	1,085	8.8
Ethnicity			
Hispanic	43,325	4,114	9.5
Non-Hispanic	650,030	47,764	7.3

¹Asian, Pacific Islander, American Indian, or Alaskan native.

Table 9. Number of all drug mentions and number and percent of controlled drug mentions, by prescriber characteristic: United States, 1985

<i>Prescriber characteristic</i>	<i>All drug mentions in thousands</i>	<i>Controlled drug mentions</i>	
		<i>Number in thousands</i>	<i>Percent of all drug mentions</i>
All prescribers	693,355	51,877	7.5
Professional identity			
Doctor of Medicine	650,353	47,686	7.3
Doctor of Osteopathy	43,002	4,191	9.7
Selected specialties			
General or family practice ¹	250,119	22,513	9.0
Internal medicine ¹	126,219	8,642	6.8
Pediatrics ¹	68,856	2,551	3.7
Obstetrics and gynecology ¹	33,832	1,259	3.7
Dermatology	29,253	*106	*0.3
Cardiovascular disease	26,812	1,077	4.0
Ophthalmology	25,820	*175	*0.6
General surgery	18,774	1,689	9.0
Psychiatry	14,826	4,566	30.8
Orthopedic surgery	12,080	3,068	25.4
Otolaryngology	10,761	565	5.3
Urological surgery	6,737	*330	*4.9
Neurology	4,664	935	20.0

¹Primary care specialty.

Table 10. Number of all office visits and number and percent of controlled drug visits, by patient prior visits status: United States, 1985

<i>Prior visit status</i>	<i>All office visits in thousands</i>	<i>Controlled drug visits¹</i>	
		<i>Number in thousands</i>	<i>Percent of all office visits</i>
All patients	636,386	47,193	7.4
New patient	107,624	6,911	6.4
Old patient	528,762	40,282	7.6
New problem	144,634	11,490	7.9
Old problem	384,128	28,792	7.5

¹Controlled drug visit: A visit at which one or more controlled drugs was prescribed.

Table 11. Number and percent of all visits and of controlled drug visits, by selected nonmedication therapy: United States, 1985

<i>Nonmedication therapy</i>	<i>All visits</i>	<i>Controlled drug visits¹</i>
Number in thousands	636,386	47,192
	Percent	
None	68.9	62.8
Physiotherapy	4.2	5.8
Ambulatory surgery	6.6	4.0
Psychotherapy	3.4	10.6
Diet counseling	6.5	8.2
Other counseling	9.3	11.0

¹Controlled drug visit: A visit at which one or more controlled drugs was prescribed.

Table 12. Number and percent of all visits and of controlled drug visits, by selected forms of disposition: United States, 1985

<i>Disposition</i>	<i>All visits</i>	<i>Controlled drug visits¹</i>
Number in thousands	636,386	47,192
	Percent	
No followup planned	9.8	5.5
Return at specified time	61.5	62.7
Return if needed	22.9	26.3
Telephone followup	4.0	4.6
Referred to another physician	3.2	3.0
Admit to hospital	1.6	1.3

¹Controlled drug visit: A visit at which one or more controlled drugs was prescribed.

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

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 (NAMCS) from March 1985 through February 1986. The target universe of the NAMCS consists of office visits made by ambulatory patients to non-Federal physicians who are principally engaged in office practice within the coterminous United States. The specialties of anesthesiology, pathology, and radiology are excluded from the survey scope, as are any telephone contacts with patients or nonoffice visits.

The NAMCS utilizes a multistage probability sample design that involves a sample of primary sampling units and patient visits within physicians' practices. Physician specialty was used as a stratification variable. For 1985, a sample of 5,032 non-Federal, office-based physicians was selected from master files maintained by the American Medical Association and the American Osteopathic Association. For the 4,104 physicians who proved to be in scope, the response rate was

70 percent. Sampled physicians were asked to complete patient records (figure 1) for a systematic random sample of office visits taking place during a randomly assigned 1-week reporting period. Responding physicians completed a total of 71,594 patient records; they recorded 71,182 drug mentions in item 14, medication therapy, of which 5,692 were the mentions of controlled drugs that provided a base for most of the estimates in this report. Characteristics of the physician's practice, such as primary specialty, were obtained during an induction interview.

Reliability of estimates

The standard error (SE) is primarily a measure of sampling variability that occurs by chance because only a sample rather than the entire universe of office visits or drug mentions is surveyed. The chances are about 68 in 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 in 100 that the difference would be less than twice the standard error, and about 99 in 100 that it would be less than 2½ times as large.

The relative standard error (RSE) is that percentage of the estimate represented by the standard error. In this report, an asterisk (*) precedes any estimate with more than a 30-percent relative standard error.

Relative standard errors for visit numbers may be calculated using the following formula, where *x* is the visit number in thousands:

$$RSE(x) = \frac{\sqrt{0.001493373 + \frac{28.258848}{x}}}{x} \cdot 100$$

$$SE(x) = RSE(x) \cdot x$$

For example, the RSE of the estimated 47,192,000 controlled drug visits (visits in which one or more controlled drugs were utilized) equals 4.6 percent. The SE therefore equals 2,171,000 visits.

Relative standard errors for numbers of drug mentions may be calculated using the following formula, where *x* is the number of drug mentions in thousands:

$$RSE(x) = \frac{\sqrt{0.001884167 + \frac{46.903471}{x}}}{x} \cdot 100$$

$$SE(x) = RSE(x) \cdot x$$

For example, the RSE of the estimated 51,877,000 controlled drug mentions equals 5.3 percent. The SE therefore equals 2,750,000 mentions.

Relative standard errors (in percent) for estimates of percents may be calculated using the following formulas, where p is the percent of interest and x is the denominator of the percent in thousands.

I. For percents of visit numbers,

$$\text{RSE } (p) = \frac{\sqrt{28.258848 \cdot (1-p)} \cdot 100}{p \cdot x}$$

$$\text{SE } (p) = \text{RSE } (p) \cdot p$$

For example, psychotherapy was utilized in an estimated 10.6 percent of the 47,192,000 controlled drug visits. The RSE of this 10.6 percent equals 7.1 percent. The SE therefore equals 0.8 percent.

II. For percents of drug mentions,

$$\text{RSE } (p) = \frac{\sqrt{46.903471 \cdot (1-p)} \cdot 100}{p \cdot x}$$

$$\text{SE } (p) = \text{RSE } (p) \cdot p$$

For example, controlled drug mentions accounted for an estimated 7.5 percent of all the 693,355,000 drug mentions in the 1985 NAMCS. The RSE of this 7.5 percent equals 2.9 percent. The SE therefore equals 0.2 percent.

Tests of significance and rounding

In this report, the determination of statistical significance is based on a two-sided t -test with a critical value of 1.96 (0.05 level of confidence). Terms relating to difference, such as "greater than" or "less than," indicate that the difference is statistically significant. In the tables, estimates of office visits and drug mentions have been rounded to the nearest thousand. Consequently, estimates will not always add to totals.

Definitions of terms

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

A *drug mention* is the physician's entry of a pharmaceutical agent prescribed or provided—by any route of administration—for prevention, diagnosis, or treatment. Generic names as well as brand names are included, as are nonprescription as well as prescription drugs. Along with all new drugs, the physician also records any continued medication if the patient was specifically instructed during the visit to continue medication.

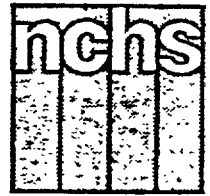
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Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

Firearm Mortality Among Children and Youth

by Lois A. Fingerhut, M.A. and Joel C. Kleinman, Ph.D., Division of Analysis

Introduction

In a recent comparison of U.S. childhood mortality with mortality in eight other industrialized countries, it was noted that the United States ranked about midway for natural causes of death but highest or second highest for death rates from injuries and violence (1). In particular, the teenage homicide rate was much higher than in any of the other countries. In 1986 the total homicide rate for males 15–19 years of age in the United States was 15.1 deaths per 100,000 population. For white males it was 8.6 and for black males 51.5 per 100,000—18 times higher than the next highest rate of 2.9 for males in Australia. In the United States the homicide rate for females was lower, 4.7, than for males. However, the rate for black females, 12.1, was nearly 4 times higher than the rate for white females, 3.3, and 8 times higher than the next highest rate of 1.4 for females in Canada (2).

In addition to having the highest overall homicide rate, the United States has an unusually large proportion of homicides attributed to

firearms (3). In this report we examine the contribution of firearms to childhood mortality from homicide, suicide, and unintentional injury.

Data sources and definitions

Mortality data for the 50 States and the District of Columbia are based on data from death certificates provided to NCHS by the States where the death certificates are filed (4). Population data are from the Bureau of the Census (4). Data for eight other countries are based on tabulations provided by the World Health Organization and from individual country reports.

Firearm deaths for 1979–87 are a combination of four categories of deaths classified under the International Classification of Diseases, Ninth Revision (4), as follows: (1) E965.0–E965.4-homicide deaths that are caused by firearms; (2) E955.0–E955.4-suicide deaths that are caused by firearms; (3) E922-unintentional deaths or accidents that are caused by firearms; and (4) E985.0–E985.4-deaths caused by

firearms for which the intent was unknown. For 1968–78 the Eighth Revision of the ICD was used to classify deaths. In the eighth revision these causes were coded using three digits rather than four so that firearms could not be distinguished from explosives. However, in 1986 explosives accounted for only 27 out of 31,701 deaths (all ages) from these causes.

While fourth digit Ninth Revision ICD codes are available to identify the type of firearm that was used, the vast majority of weapon types are coded as "other and unspecified", making it impossible to determine the type of weapon responsible for the death. Based on reports to the Federal Bureau of Investigation, an estimated 44 percent of all "murders" were attributable to handguns and 74 percent of all firearm-related "murders" were caused by handguns (5).

Cause-of-death ranking in this report differs from that used in other publications (4). The major difference is that "motor vehicle accidents" are disaggregated from "accidents and adverse effects" in this report.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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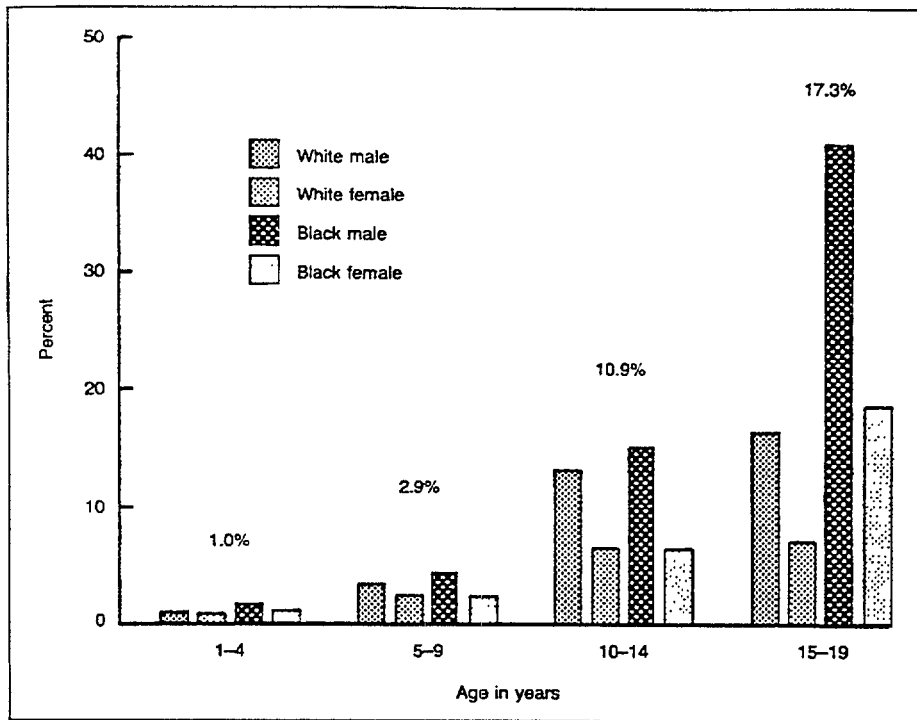


Figure 1. Percent of all childhood deaths resulting from firearms: United States, 1987

Results

In 1987, 3,392 children aged 1-19 years died from firearm-related injuries and violence. This represented 11 percent of childhood deaths. The proportion rises rapidly with age from 1.0 percent at ages 1-4 years to 2.9 percent to 10.9 percent to 17.3 percent among teenagers. The proportion varies considerably by race and sex, especially for the two older groups. For black male teenagers 40.8 percent of the deaths were associated with firearms, compared with 16.2 percent among white males (figure 1).

Within each age group the distribution of firearm deaths by manner of death is different. Homicide and unintentional deaths each account for about half of the 203 firearm deaths among children 1-9 years of age. At 10-14 years of age suicide, homicide, and unintentional deaths each account for about 1/3 of the 484 firearm deaths. Among teenagers, homicide accounts for 48 percent of the deaths, suicide for another 42 percent, and unintentional deaths for 8 percent.

From the other perspective, the proportion of homicide deaths that are

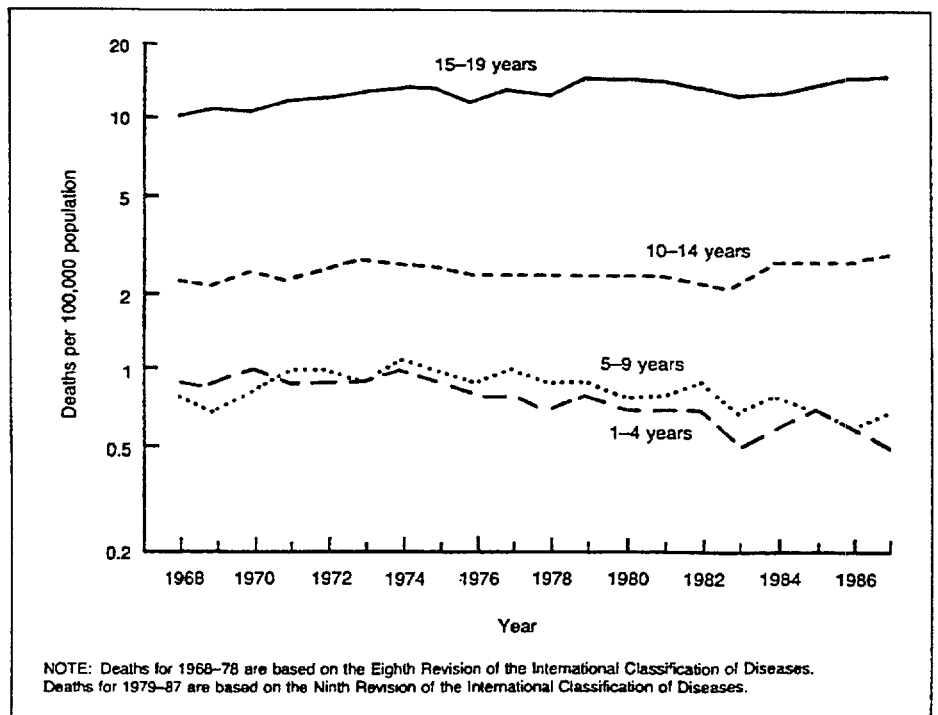
firearm-related rises from 12 percent at 1-4 years of age to 39 percent at ages 5-9 to 65 percent at ages 10-14 to 71 percent of the 1,838 homicide deaths among teenagers 15-19 years. Among black males 15-19 years of

age, 82 percent of homicide deaths are associated with firearms. Similarly, 60 percent of suicide deaths among males 10-14 years of age and 15-19 years of age result from firearms.

From 1968 to 1987, little overall change occurred in total firearm-related mortality in the United States except among teenagers for whom the death rate rose from 10.1 per 100,000 in 1968 to 14.7 in 1987. Among the youngest children (1-4 years of age) there was a decrease in the overall rate during this period (figure 2).

Within each age group, and especially among those ages 5-19 years, firearm-related death rates are much higher for males than for females. The male/female ratio rises from 2.5 for 5-9 years to 3.8 for those 10-14 years of age and to 5.9 for teenagers 15-19 years of age. Because of the concentration of firearm mortality among teenage males, trends in this group will be considered in more detail (table 1).

Among white males 15-19 years of age, motor vehicle injuries have been the leading cause of death for the past several decades, with death rates 3 times higher than the next leading cause, suicide (figure 3).



NOTE: Deaths for 1968-78 are based on the Eighth Revision of the International Classification of Diseases. Deaths for 1979-87 are based on the Ninth Revision of the International Classification of Diseases.

Figure 2. Firearm death rates for children 1-19 years of age: United States, 1968-87

Table 1. Firearm- and nonfirearm-related death rates associated with homicide, suicide and unintentional injury among teenagers 15–19 years according to race and sex: United States, 1968–1987

Race, sex, and year	Homicide		Suicide		Unintentional firearm	Race, sex, and year	Homicide		Suicide		Unintentional firearm
	Firearm	Nonfirearm	Firearm	Nonfirearm			Firearm	Nonfirearm	Firearm	Nonfirearm	
Total Deaths per 100,000 population 15–19 years						White female Deaths per 100,000 population 15–19 years					
1968	4.6	2.2	2.7	2.3	2.7	1968	0.9	0.7	0.9	1.3	0.4
1969	5.3	2.4	2.9	2.7	2.6	1969	0.8	1.1	1.0	1.6	0.4
1970	5.6	2.4	2.8	3.1	2.1	1970	1.2	0.9	1.0	1.9	0.3
1971	5.8	2.6	3.3	3.2	2.4	1971	1.1	1.0	1.2	1.8	0.4
1972	6.1	2.7	3.7	3.1	2.5	1972	1.2	1.6	1.1	1.6	0.5
1973	6.2	2.8	3.8	3.1	2.4	1973	1.4	1.7	1.2	1.9	0.3
1974	6.7	2.9	4.3	2.8	2.3	1974	1.6	1.6	1.7	1.5	0.4
1975	6.5	2.9	4.5	3.0	2.0	1975	1.6	1.6	1.7	1.3	0.3
1976	5.7	2.7	4.2	3.0	1.7	1976	1.3	1.6	1.7	1.6	0.4
1977	5.8	3.1	5.5	3.3	1.8	1977	1.3	1.8	1.9	1.6	0.3
1978	5.9	2.9	4.9	2.9	1.5	1978	1.6	1.8	1.9	1.4	0.3
1979	6.6	3.6	5.3	3.1	1.7	1979	1.7	1.9	1.7	1.7	0.3
1980	7.0	3.6	5.4	3.1	1.8	1980	1.7	2.2	1.9	1.4	0.4
1981	6.8	3.3	5.5	3.2	1.5	1981	1.6	1.9	2.2	1.7	0.3
1982	6.3	3.5	5.5	3.2	1.4	1982	1.4	2.0	2.1	1.3	0.1
1983	5.3	3.2	5.4	3.3	1.4	1983	1.4	1.5	2.0	1.5	0.2
1984	5.4	2.9	5.3	3.7	1.4	1984	1.5	1.7	1.9	1.9	0.3
1985	5.7	2.9	6.0	3.9	1.3	1985	1.2	1.5	2.0	2.1	0.2
1986	6.7	3.3	6.2	4.0	1.3	1986	1.5	1.9	1.9	2.2	0.3
1987	7.0	2.9	6.1	4.2	1.2	1987	1.2	1.8	1.9	2.5	0.1
White male						Black female					
1968	3.4	1.6	4.8	3.4	4.2	1968	5.8	4.0	0.7	1.1	1.3
1969	3.3	1.5	4.9	4.0	4.1	1969	8.6	3.0	1.2	1.8	1.5
1970	3.7	1.5	4.9	4.5	3.4	1970	6.9	3.7	1.1	1.8	1.3
1971	3.7	1.8	5.7	4.6	3.8	1971	8.2	5.6	0.9	2.5	1.2
1972	4.4	1.9	6.4	4.6	3.7	1972	8.0	4.2	1.4	1.7	0.8
1973	4.8	2.2	6.8	4.5	3.9	1973	9.0	4.8	0.6	1.5	0.9
1974	5.6	2.1	7.3	4.4	3.7	1974	9.6	5.4	1.3	1.2	0.8
1975	5.8	2.3	7.8	5.1	3.5	1975	8.9	6.5	0.7	0.8	0.7
1976	5.2	2.2	7.1	4.6	2.9	1976	6.7	4.6	1.0	1.4	0.3
1977	5.7	2.5	9.9	5.2	3.4	1977	6.1	7.1	1.2	1.1	0.5
1978	6.1	2.5	8.9	4.6	2.6	1978	6.1	4.7	0.5	0.8	0.6
1979	6.8	3.7	9.7	4.6	3.0	1979	6.9	5.2	1.1	1.1	0.5
1980	7.2	3.7	9.8	5.2	3.1	1980	6.2	4.8	0.6	1.0	0.7
1981	6.9	3.1	9.8	5.1	2.6	1981	5.8	5.0	1.2	0.4	0.4
1982	6.2	2.9	10.2	5.3	2.4	1982	5.3	5.9	0.3	1.2	0.6
1983	4.8	2.8	9.9	5.2	2.6	1983	4.8	5.7	0.7	1.0	0.1
1984	5.1	2.4	9.7	6.1	2.5	1984	5.2	4.9	0.8	0.9	0.1
1985	4.9	2.4	11.0	6.3	2.1	1985	4.9	5.4	0.7	0.9	0.4
1986	5.8	2.9	11.7	6.5	2.3	1986	6.6	5.6	1.0	1.1	0.2
1987	5.1	2.2	11.1	6.6	2.1	1987	7.2	4.8	1.3	1.4	0.4
Black male											
1968	38.5	15.2	2.3	1.4	9.2						
1969	47.0	16.6	3.0	1.4	8.3						
1970	47.9	17.3	2.5	2.2	7.2						
1971	48.9	16.1	2.7	2.3	8.0						
1972	47.4	12.0	4.9	3.2	9.1						
1973	43.9	11.2	3.6	2.1	7.5						
1974	43.7	13.5	3.3	1.6	5.9						
1975	40.2	11.1	4.3	1.8	4.4						
1976	34.7	11.2	4.5	2.5	3.4						
1977	32.7	10.3	3.0	3.0	2.6						
1978	30.0	8.9	3.0	2.6	2.5						
1979	34.8	12.0	3.6	3.1	2.9						
1980	38.4	10.4	3.4	2.2	2.9						
1981	37.5	10.7	3.2	2.3	2.6						
1982	34.8	12.3	3.2	3.0	2.3						
1983	31.7	11.0	3.8	2.8	1.9						
1984	29.6	9.6	3.4	2.5	2.3						
1985	36.4	10.0	5.3	2.9	3.2						
1986	41.0	10.4	4.6	2.4	2.1						
1987	49.2	10.8	6.3	2.6	2.9						

SOURCE: National Center for Health Statistics: Data computed by the Division of Analysis from data compiled by the Division of Vital Statistics.

Suicide rates have been increasing since 1968, more than doubling during the following 19 years. Most of the increase, however, occurred by 1977. Homicide mortality increased sharply from 1968 to 1980. Since then it has

decreased to the levels of the mid-1970's. It now ranks as the third leading cause of death for this age group. Death rates for malignant neoplasms and drowning continue to decline.

Among white male teenagers firearms have been responsible for about 60–65 percent of all suicides over the period 1968 through 1987. Both the firearm and nonfirearm-related suicide rates doubled between

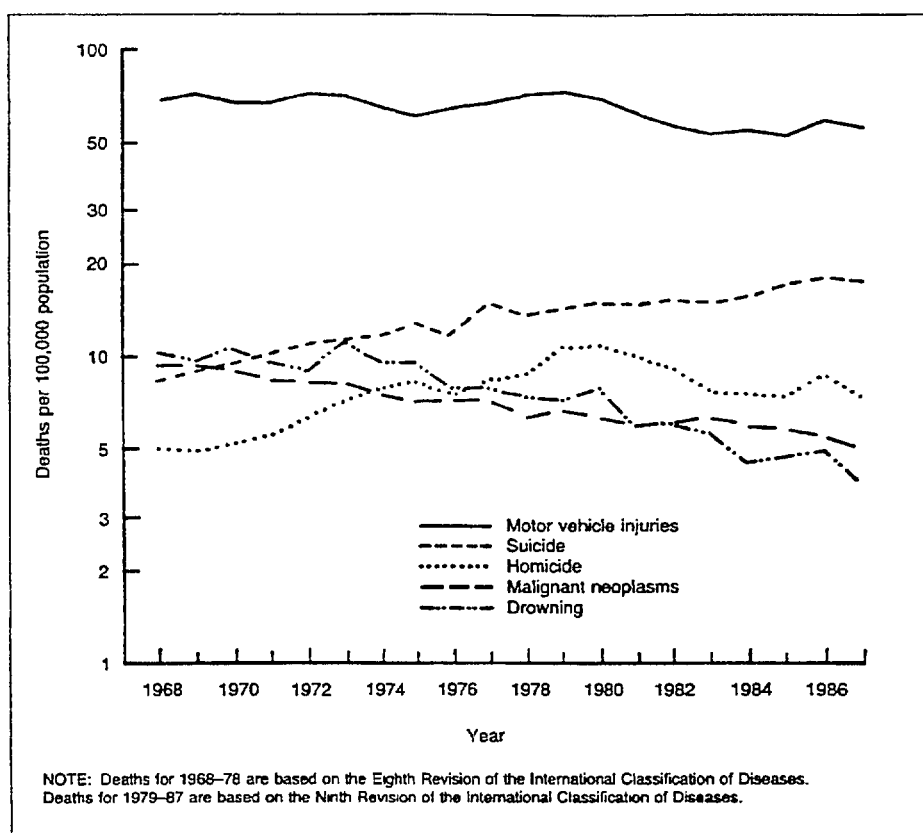


Figure 3. Trends in leading causes of death among white males 15-19 years of age: United States, 1968-87

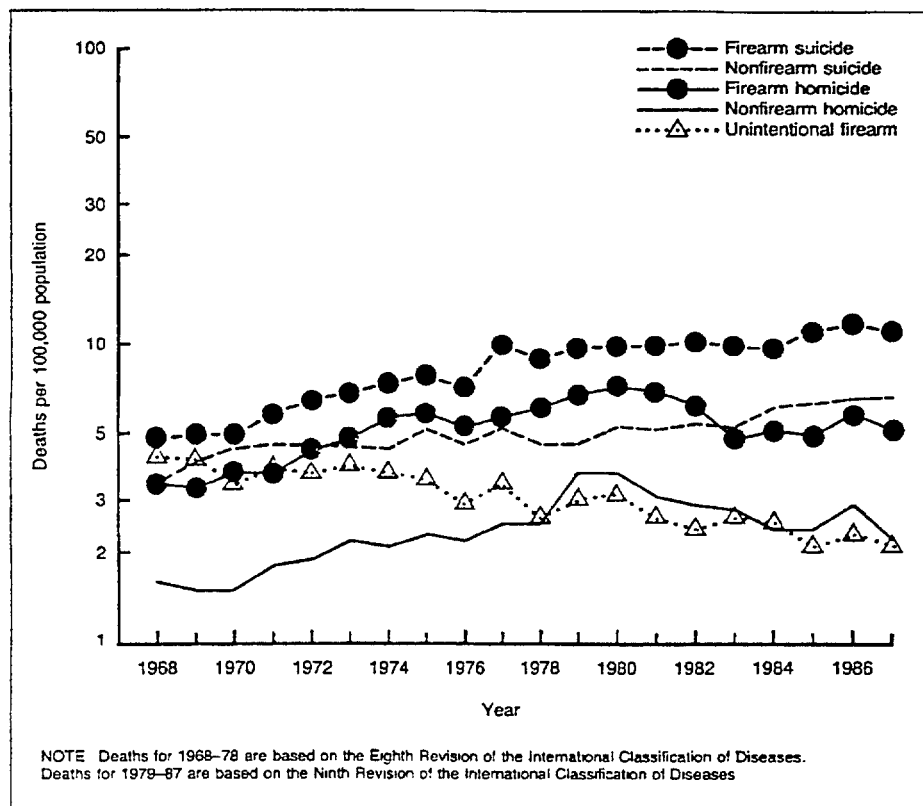


Figure 4. Firearm- and nonfirearm-related death rates for suicide, homicide, and unintentional injury, white males 15-19 years of age: United States, 1968-87

1968 and 1987 (figure 4). Similarly, firearms have been involved in nearly 70 percent of all homicides since 1968. Trends in firearm and nonfirearm homicide mortality have been parallel since 1968. Both rates increased between 1968 and 1980, then declined. Unintentional firearm injury death rates are now the lowest of the firearm death rates for white male teenagers. In the late 1960's the rate from this manner of death was similar to those for firearm-related homicides and suicides. The rate for unintentional firearm injuries has been halved since 1968.

Among black males 15-19 years of age, the leading cause of death since 1968 has been homicide, followed by motor vehicle injuries (figure 5). From 1969 to 1978 the homicide rate declined by 39 percent. Over the next 6 years the rate increased 24 percent, then fell by nearly the same amount. From 1984 through 1987 the homicide rate increased by 53 percent to 60.0 deaths per 100,000, the same high level it had reached in the early 1970's. Death rates for motor vehicle injuries declined steadily from 1968 until 1983. From 1983 through 1987 the rate increased 44 percent to 27.2, still substantially lower than it was in 1968. Drowning mortality has decreased almost continually. Suicide is now the fourth leading cause of death among black male teenagers, bypassing mortality associated with malignant neoplasms. Since 1968 the suicide rate has more than doubled from 3.8 in 1968 to 8.9 in 1987.

Firearms have been responsible for 75-80 percent of all black male teenage homicides since 1968. Between 1984 and 1987 the firearm-related homicide rate increased by 66 percent from 29.6 to 49.2 while the nonfirearm-related homicide rate increased by only 13 percent from 9.6 to 10.8 (figure 6). This recent increase in firearm-related homicides accounts for 95 percent of the increase in the total homicide rate for the 1984-87 period among black males 15-19 years of age. Firearm and nonfirearm suicide trends, on the other hand, have been erratic and the death rates remain relatively low. It is noteworthy however,

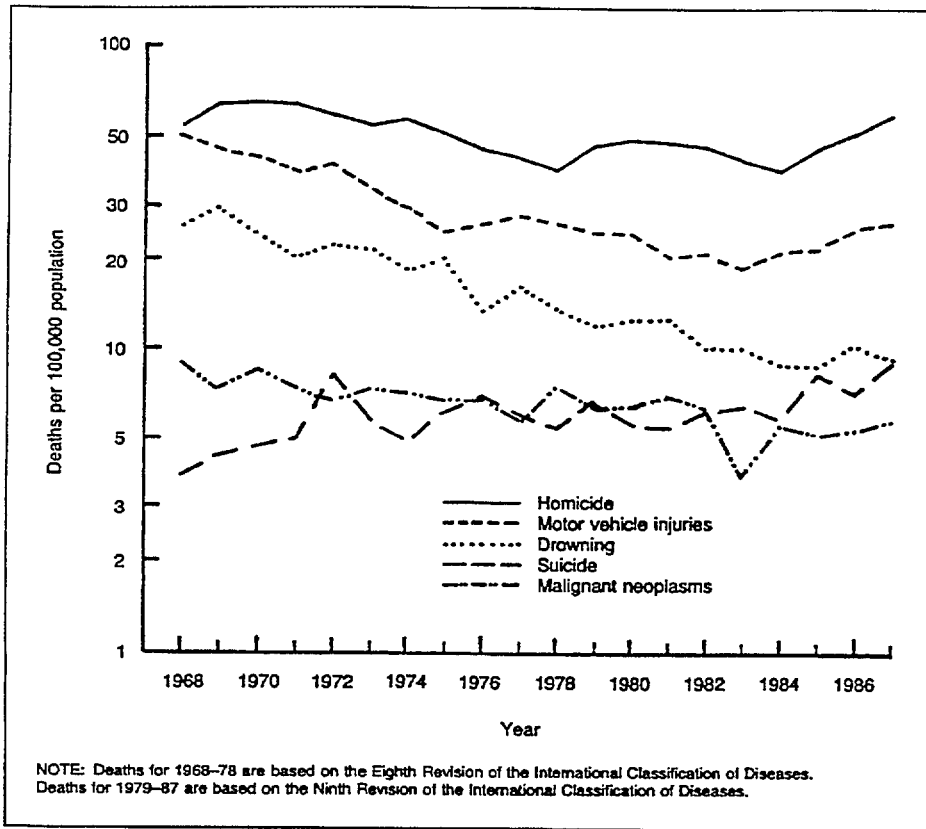


Figure 5. Trends in leading causes of death among black males 15-19 years of age: United States, 1968-87

that during the 1980's firearm-related suicides have accounted for steadily increasing proportions of all black teenage male suicides—from 52 percent in 1982 to 71 percent in 1987. Furthermore, between 1982 and 1987 the firearm-related suicide rate doubled. The death rate for unintentional firearm injuries decreased from 9.2 to 2.9 from 1968 through 1987, with most of the decline occurring between 1972 and 1978. Similar to white males, the rate is the lowest of the firearm-related death rates.

Conclusion

Clearly, firearms have played a major role in U.S. childhood mortality. In 1987 there were 3,392 firearm-related deaths among children 1-19 years of age, 11 percent of all childhood deaths. Comparisons with eight other countries demonstrate that the United States is unique with respect to this problem. In 1986 there were 1,043 firearm-related homicides (out of a total of 1,432) among U.S. males aged 15-19 years—447 among

white males and 575 among black males. In contrast, in Canada there were 6 firearm-related homicides out of a total of 21 and in Japan 2 of 21 homicides among males 15-19 years of age were firearm-related. In 1985 there were no firearm-related homicides among teenage males in England and Wales (out of 11 total homicides) or in Sweden (out of 2) while in the Federal Republic of Germany 5 out of 16 homicides were firearm-related as were 6 of 18 in Australia. Only in France did the proportion of homicides from firearms approach the U.S. level but the numbers were far lower (12 out of 18). (Data are from individual country reports.) These data are based on deaths from firearms. It is likely that case-fatality rates have declined over the past two decades due to improvements in emergency medical treatment. Thus, the increase in firearm-related mortality among teenagers probably masks an even larger increase in the incidence of firearm-related injuries.

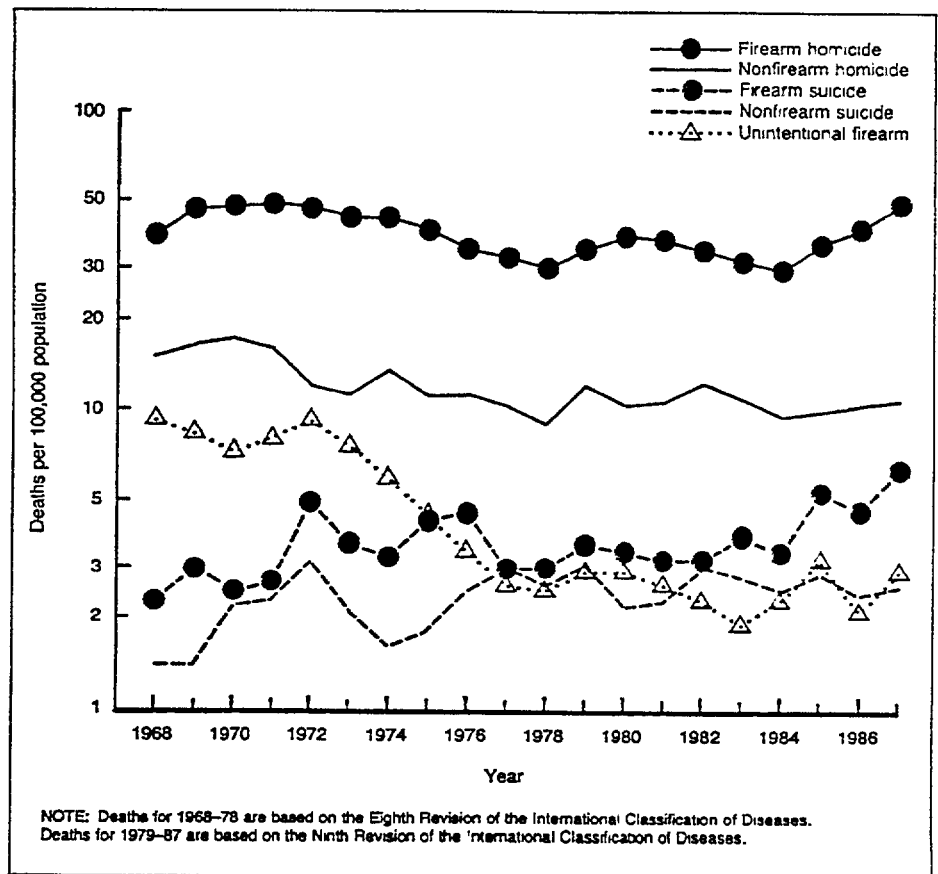


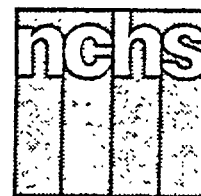
Figure 6. Firearm- and nonfirearm-related death rates for homicide, suicide, and unintentional injury, black males 15-19 years of age: United States, 1968-87

The Public Health Service has targeted violence as a priority concern. Two of the 1990 Health Objectives for the United States include lowering the homicide rate among black males 15–24 years of age as well as the suicide rate for all persons 15–24 years of age. There is a separate objective to reduce the number of handguns in private ownership (6). Additionally, the American Medical Association has recognized the need to “treat this public health matter [firearm injuries and deaths] with as much urgency as any dread disease” (7). The data presented in this report underscore these concerns.

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Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

AIDS Knowledge and Attitudes for April–June 1989

Provisional Data From the National Health Interview Survey

by Ann M. Hardy, Dr.P.H., Division of Health Interview Statistics

Introduction

The National Center for Health Statistics (NCHS) has included a special set of supplemental questions on the adult population's knowledge and attitudes about acquired immunodeficiency syndrome (AIDS) in the National Health Interview Survey (NHIS). The first AIDS Knowledge and Attitudes Survey was in the field from August through December 1987. Provisional results of that survey were published on a monthly basis in *Advance Data From Vital and Health Statistics* (Nos. 146, 148, 150, 151, and 153). A public use data tape containing the information collected in 1987 is available from NCHS.

During the first 4 months of 1988, the NHIS AIDS questionnaire was revised to meet changing program needs and the new survey entered the field in May 1988. Provisional findings for 1988 were published periodically (*Advance Data From Vital and Health Statistics*, Nos. 160, 161, 163, 164, 167, and 175); in addition, two special reports focusing on minority populations were published using the 1988 data (*Advance Data From Vital and Health Statistics*, Nos. 165 and 166). A public use data tape of the 1988 AIDS Knowledge and Attitudes Survey will be available at the end of this year.

The NHIS AIDS questionnaire used in 1988 is being continued throughout 1989. Reports based on the 1989 data will be issued on a quarterly basis; *Advance Data From Vital and Health Statistics* No. 176 summarized data from the first quarter of 1989. This report presents provisional data for second quarter (April–June) of 1989.

The *Advance Data* reports describing the NHIS AIDS data have been restricted to simple descriptive statistics to facilitate their timely release. Thus, these reports do not attempt to explain or interpret differences among population subgroups or to examine relationships among various measures of knowledge and AIDS-related behavior (e.g., testing). The NHIS AIDS data bases permit more complex analyses than those presented in this series of *Advance Data* reports, and such analyses are being undertaken by various groups in the Public Health Service.

The AIDS questionnaires were designed to estimate public knowledge about AIDS virus (HIV) transmission and its prevention. These data are needed to plan and develop AIDS educational campaigns and to monitor major educational efforts, for example, the series of radio and television public service announcements entitled "America Responds to AIDS" and the

brochure "Understanding AIDS," both developed by the Centers for Disease Control.

The NHIS AIDS questionnaires were developed by the National Center for Health Statistics and interagency working groups established by the Information, Education and Risk Factor Reduction Subcommittee of the Public Health Service Executive Task Force on AIDS. The working groups included representatives from the Centers for Disease Control; the National Institutes of Health; the Alcohol, Drug Abuse and Mental Health Administration; and the Health Resources and Services Administration.

The current AIDS questionnaire includes items on sources of AIDS information; self-assessed levels of AIDS knowledge; basic facts about the AIDS virus (HIV) and how it is transmitted; blood donation experience; awareness of and experience with the blood test for HIV; self-assessed chances of getting HIV; personal acquaintance with persons with AIDS or HIV; and willingness to take part in a proposed national seroprevalence survey. A general risk behavior question, similar to that asked by the Red Cross of potential blood donors, is also included.

This report presents provisional data for April–June 1989 for most



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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items included in the AIDS questionnaire. Table 1 displays percent distributions of persons 18 years of age and over by response categories according to age, sex, race, and education. In most cases, the actual questions asked of the respondents are reproduced verbatim in table 1 along with the coded response categories. In a few cases, questions or response categories have been rephrased or combined for clearer or more concise presentation of results. Refusals and other nonresponse categories (generally comprising less than 1 percent of total responses) are excluded from the denominator in the calculation of estimates, but responses of "don't know" are included.

The NHIS AIDS questionnaire uses the phrase "the AIDS virus" rather than "HIV," because it was felt that the general population might not be familiar with the more scientific terminology at the time the survey began. In this report, the two terms are used synonymously.

Selected findings

The following highlights describe various aspects of AIDS knowledge and attitudes as observed in the April–June 1989 data from the NHIS AIDS survey. Unless otherwise noted in the text, all measures described remained stable over this 3-month period. Any differences cited in the text are statistically significant at the 0.05 level (see table II for provisional standard errors of estimates).

Sources of AIDS information—Eighty percent of adults interviewed in April–June 1989 reported having seen AIDS public service announcements on television in the past month, and 45 percent reported hearing announcements on the radio. These proportions were similar to the proportions who reported seeing or hearing such announcements in the first quarter of 1989. As in previous months, the proportion of adults who had seen or heard announcements was higher for those with 12 or more years of school than for those with less than 12 years. The proportion who reported having read AIDS brochures or pamphlets in the previous month (23 percent) and

the proportion who had ever read such material (62 percent) remained essentially unchanged between the first quarter and second quarter of 1989.

Sixty-two percent of adults said they had discussed AIDS with a friend or relative in the past. For about one-third of these persons, the discussion had occurred more than one month before interview. Sixty-two percent of parents with children between the ages of 10 and 17 reported having discussed AIDS with them. All of these figures have remained stable for many months. The percent of adults who reported that their children aged 10–17 had received instruction about AIDS in school increased slightly from 60 percent in the first quarter of 1989 to 64 percent in the second quarter. This figure has risen steadily from 35 percent in August 1987 when the AIDS survey began.

Self-assessed knowledge—The distribution of adults by level of self-assessed knowledge about AIDS did not change between the first quarter and second quarter of 1989 with 67 percent of the adult population claiming to know at least something about AIDS and the remaining one-third saying they knew little or nothing. The proportion who claimed little or no knowledge increased with decreasing years of school and was over 50 percent for those with less than a high school education. This proportion was also higher for those over 49 years of age than for those who were younger (49 percent compared with 24 percent) and higher for black adults than white adults (41 percent compared with 31 percent).

General knowledge—The responses to questions dealing with general AIDS knowledge remained essentially the same in the second quarter of 1989 as in the first quarter. A large proportion of adults (75 percent or more) in all the sociodemographic subgroups examined responded correctly to questions about the three major modes of HIV transmission (sexual, through contaminated needles, and from mother to baby during pregnancy). Awareness was particularly high for transmission

by sharing needles for drug use; 90 percent or more in all subgroups thought it very likely that AIDS could be transmitted this way. The majority of adults (85 percent) also recognized that there is no cure at present for AIDS and 93 percent knew that the statement that teens cannot get AIDS was definitely false. Awareness of these two facts was also high (79 percent or more with the correct response) in all demographic subgroups.

For the other questions about AIDS, there was more variability among the demographic subgroups in the proportion with the correct response. In general, those who were more educated and those who were less than 50 years old were more likely to give the correct definitive response. As in the past, the two statements that dealt with the pathophysiology of AIDS had the lowest proportions with the correct definitive response. Only 26 percent of adults definitely knew that AIDS can damage the brain and only 16 percent responded "definitely false" to the statement that AIDS usually leads to heart disease. These two statements also had higher proportions responding "don't know" than any other general knowledge question (25 and 36 percent, respectively).

Misperceptions about transmission of the AIDS virus—A series of questions in the NHIS AIDS survey addressed misperceptions about HIV transmission through casual contact. In general, there were no changes between the first and second quarter of 1989 in the proportion of adults who thought it very unlikely or definitely not possible to spread HIV by casual contact. As indicated by responses to these transmission questions, kissing with the exchange of saliva was the most likely to be viewed as an actual mode of transmission. Over half of U.S. adults (56 percent) felt this was somewhat or very likely to transmit AIDS. Misperceptions also existed for other potential exposures to saliva (such as being coughed or sneezed on or sharing eating utensils with an HIV infected person) and for transmission by mosquitoes or other insects; 26–29 percent of persons

thought these methods were at least somewhat likely to spread AIDS. Fewer persons (11 percent or less) felt that other, more indirect contacts with infected individuals (such as in school or at work) would be likely modes of transmission. In general, black adults, those 50 years and older, and those with less than 12 years of school were less likely to correctly assess the low or nonexistent risk of transmission by casual contact than white adults, those less than 50 years, and those with at least a high school education.

Blood donation and testing—As in the first quarter of 1989, 40 percent of adults interviewed in April–June 1989 reported ever having donated blood, 15 percent had donated since March 1985 when routine screening of donated blood for antibodies to HIV began, and 7 percent had donated in the year preceding interview. Three-fourths of adults were aware of the AIDS blood test, 66 percent thought that blood donations are routinely screened, while less than half (48 percent) felt that the present blood supply was safe for transfusions. These figures have remained stable for many months.

Including all blood donors since March 1985, 20 percent of adults in April–June 1989 had had their blood tested for antibodies to HIV. This figure has risen slightly but steadily from 16 percent in May 1988. When the 3 months in the second quarter of 1989 were examined separately, an increase was observed from 19 percent tested for those interviewed in both April and May 1989 to 22 percent

tested for those interviewed in June 1989. Within the demographic subgroups, a slight increase in those tested between the first and second quarter of 1989 occurred among black adults (from 15 percent to 19 percent). While the proportion tested has increased over the last year, there has been no change in the distribution of those tested by circumstance. In April–June 1989, the majority of persons tested (69 percent) had their testing done as part of a blood donation, 18 percent were tested voluntarily, and 15 percent took the test as part of another activity requiring routine testing (such as a physical examination for military induction).

In the second quarter of 1989, as in the first quarter, 7 percent of adults indicated that they plan to have the HIV antibody test in the next year. The proportion who planned testing differed by sex and race. Men were more likely than women to indicate plans for testing (9 percent compared with 5 percent) and black adults were more likely than white adults to plan testing (13 percent compared with 6 percent). The proportion of black persons with future testing plans increased from 9 percent in January–March 1989.

Preventive measures—As in the first quarter of 1989, a high proportion (more than 80 percent) felt that condoms and a monogamous relationship between two uninfected persons were two methods that were at least somewhat effective in preventing

transmission of the AIDS virus. Even within various demographic subgroups, at least 72 percent of persons recognized the effectiveness of these methods and few (5 percent or less) were unfamiliar with them. Over half of all adults felt that the diaphragm, spermicides, and vasectomy were not effective in preventing AIDS virus transmission. Most of the remainder were uncertain about the effectiveness of these particular methods.

Risk of getting the AIDS virus—Overall, 2 percent of adults in April–June 1989 stated that they belonged to one or more of the groups with behaviors associated with increased risk for acquiring AIDS (such as intravenous drug users and homosexually active men). This figure is not different from that reported in the first quarter of 1989. Less than 1 percent of adults felt that they had a high chance of having or getting the AIDS virus. Most felt their chances were low or nonexistent for either having or getting HIV infection (96 percent and 95 percent, respectively).

As in the first quarter of 1989, 12 percent of adults in the second quarter reported knowing someone with AIDS or HIV infection, including 5 percent who said they knew this person very or fairly well. Black adults were more likely than white adults to know a person with AIDS. This proportion also increased with education and was higher for those 30–49 years than for those who were either younger or older.

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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Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, April-June 1989

[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]

AIDS knowledge or attitude	Total	Age			Sex		Race		Education			
		18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years	
Total	100	100	100	100	100	100	100	100	100	100	100	
		Percent distribution ¹										
1. In the past month, have you—												
1a. Seen any public service announcements about AIDS on television?												
Yes	80	82	82	78	80	80	80	82	75	82	82	
No	17	17	17	19	18	17	17	16	23	16	15	
Don't know	2	1	2	4	2	2	2	2	3	2	2	
1b. Heard any public service announcements about AIDS on the radio?												
Yes	45	52	49	35	50	40	44	53	36	45	50	
No	51	44	47	61	46	56	52	44	59	51	46	
Don't know	4	4	4	4	4	4	4	4	4	4	4	
2. Were any of those public service announcements called "America Responds to AIDS"?												
Yes	22	32	23	14	22	23	20	34	23	23	21	
No	12	12	12	12	13	12	12	11	10	12	14	
Don't know	49	42	50	54	50	49	51	42	45	50	52	
Neither heard nor saw any public service announcements	16	14	15	20	16	17	16	13	21	15	14	
3. In the past month, have you read any brochures or pamphlets about AIDS?												
Yes	23	26	26	15	21	24	21	30	17	21	28	
No	77	73	73	84	78	75	78	70	83	78	72	
Don't know	1	0	1	1	1	1	1	0	1	1	1	
4. Have you ever read any brochures or pamphlets about AIDS?												
Yes	62	70	70	48	60	65	62	63	45	61	74	
No	37	30	29	50	39	34	37	36	54	38	25	
Don't know	1	1	1	2	1	1	1	1	1	1	1	
5. Where did you get the pamphlets or brochures? ^{1,2}												
Clinic, other than work clinic	3	4	2	2	2	3	2	6	5	2	2	
Doctor's office (HMO)	21	22	23	17	18	24	22	18	20	23	20	
Drug store	2	2	2	1	2	2	2	3	2	2	1	
Public health department	3	3	3	2	2	3	2	5	3	3	2	
Received in mail without asking	27	19	26	37	26	28	28	23	27	28	26	
Red Cross/Red Cross blood donation	3	4	4	1	4	2	3	1	1	3	3	
Other blood donation	1	1	1	0	1	1	1	0	0	1	1	
School	13	24	11	4	12	13	12	13	10	11	15	
Sent/phoned for/requested it	1	0	1	1	0	1	1	0	1	0	1	
Federal/State/local government	15	11	16	19	16	15	16	8	12	14	17	
Work, other than clinic or nurse	13	9	17	10	15	11	13	16	8	11	16	
Work, nurse or clinic	4	3	6	3	3	5	4	5	2	4	6	
Other	17	18	16	16	17	16	15	23	19	16	16	
Don't know	5	3	4	7	5	4	5	3	6	4	5	
15. Have you ever discussed AIDS with any of your children aged 10-17? ³												
Yes	62	51	64	54	48	74	63	61	49	64	67	
No	38	48	36	45	51	25	37	39	50	36	32	
Don't know	0	1	0	1	0	0	0	-	0	0	0	
16. Have any or all of your children aged 10-17 had instruction at school about AIDS? ³												
Yes	64	53	64	66	59	68	64	60	52	67	66	
No	12	19	12	6	11	13	13	10	12	11	13	
Don't know	24	28	24	28	31	19	23	30	35	22	21	
21. How much would you say you know about AIDS?												
A lot	23	23	29	17	23	23	24	20	11	18	35	
Some	44	50	48	34	44	43	45	38	31	48	47	
A little	25	24	20	32	25	25	24	29	36	28	16	
None	8	3	3	17	8	8	7	12	22	5	2	
Don't know	0	0	0	0	0	0	0	0	-	0	0	
22. To the best of your knowledge, is there a difference between having the AIDS virus and having the disease AIDS?												
Yes	64	63	72	56	65	64	66	57	42	62	80	
No	16	23	16	10	16	16	15	18	17	18	12	
Other	0	0	0	0	0	0	0	0	0	0	0	
Don't know	20	14	12	33	19	21	19	25	41	20	7	
23a. AIDS can reduce the body's natural protection against disease.												
Definitely true	74	77	81	64	76	73	76	63	54	74	87	
Probably true	11	11	10	13	12	11	11	13	15	12	8	
Probably false	2	2	1	2	1	2	1	3	2	2	1	
Definitely false	3	3	3	4	3	4	3	6	5	4	2	
Don't know	10	7	5	17	8	11	9	14	24	8	2	

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, April-June 1989-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]

AIDS knowledge or attitude	Total	Age			Sex		Race		Education		
		18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
Percent distribution ¹											
23b. AIDS is especially common in older people.											
Definitely true	1	1	1	1	1	1	1	2	1	1	1
Probably true	1	1	1	2	1	1	1	2	2	1	1
Probably false	16	18	14	16	16	16	16	13	15	15	17
Definitely false	75	75	79	70	75	75	76	74	67	77	78
Don't know	7	5	5	11	7	7	6	9	14	6	4
23c. AIDS can damage the brain.											
Definitely true	26	22	27	29	27	26	26	33	27	26	26
Probably true	30	31	30	29	30	29	29	32	29	31	29
Probably false	10	13	11	7	11	10	11	6	5	10	14
Definitely false	9	10	10	5	9	8	9	6	6	8	11
Don't know	25	24	21	30	23	27	25	23	32	26	20
23d. AIDS usually leads to heart disease.											
Definitely true	9	7	11	10	9	10	9	14	13	10	7
Probably true	21	20	21	23	21	21	21	26	20	23	20
Probably false	18	21	20	12	19	16	19	11	9	15	26
Definitely false	16	20	19	10	17	15	16	13	9	14	21
Don't know	36	32	29	45	33	38	36	36	48	38	26
23e. AIDS is an infectious disease caused by a virus.											
Definitely true	63	67	70	50	64	61	63	60	50	61	72
Probably true	19	19	16	21	19	18	19	19	20	21	16
Probably false	2	2	2	3	2	3	2	3	3	2	2
Definitely false	5	5	4	5	4	5	5	4	4	5	4
Don't know	12	7	7	20	10	13	11	13	23	11	6
23f. Teenagers cannot get AIDS.											
Definitely true	1	1	1	1	1	1	1	2	1	1	1
Probably true	0	0	0	1	0	0	0	1	1	0	0
Probably false	3	2	2	4	3	3	2	5	5	2	2
Definitely false	93	95	96	89	93	94	94	89	87	95	96
Don't know	2	1	1	5	2	2	2	4	7	2	1
23g. AIDS leads to death.											
Definitely true	85	84	86	84	84	86	85	89	87	88	81
Probably true	11	12	11	11	13	10	12	7	8	9	15
Probably false	1	1	0	0	1	0	1	0	0	0	1
Definitely false	1	2	1	1	1	1	1	1	1	1	2
Don't know	2	1	1	4	2	2	2	2	4	1	1
23h. A person can be infected with the AIDS virus and not have the disease AIDS.											
Definitely true	57	58	64	47	56	57	58	51	40	56	67
Probably true	20	19	19	22	21	19	20	20	19	21	20
Probably false	4	5	4	3	4	4	4	4	4	4	3
Definitely false	5	6	5	4	6	5	4	8	6	5	4
Don't know	15	12	9	24	14	16	14	18	31	14	6
23i. Looking at a person is enough to tell if he or she has the AIDS virus.											
Definitely true	3	3	3	3	3	2	2	4	4	2	2
Probably true	4	4	3	5	4	4	4	6	6	4	3
Probably false	14	13	13	16	15	13	14	14	16	15	12
Definitely false	69	73	76	58	68	70	71	63	51	69	79
Don't know	10	6	6	18	10	10	9	13	23	9	4
23j. Any person with the AIDS virus can pass it on to someone else during sexual intercourse.											
Definitely true	83	85	84	80	81	85	83	82	79	85	83
Probably true	12	11	12	12	14	10	12	13	12	11	13
Probably false	1	1	1	1	1	1	1	1	1	1	1
Definitely false	1	1	1	1	1	1	1	1	1	1	1
Don't know	3	2	2	6	3	4	3	4	7	3	2
23k. A person who has the AIDS virus can look and feel healthy and well.											
Definitely true	49	53	56	38	51	47	50	43	33	46	61
Probably true	27	28	27	27	27	27	27	27	24	29	27
Probably false	7	7	6	10	7	8	7	7	10	8	5
Definitely false	5	5	4	6	5	6	5	9	9	6	3
Don't know	11	7	7	19	10	12	11	14	23	11	5
23l. A pregnant woman who has the AIDS virus can give the AIDS virus to her baby.											
Definitely true	81	84	83	76	78	83	81	82	75	81	84
Probably true	14	13	13	15	16	12	14	12	16	14	13
Probably false	0	0	0	0	0	0	0	0	0	0	0
Definitely false	0	1	1	0	1	0	0	1	0	0	1
Don't know	5	3	3	8	5	4	4	5	9	4	3

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, April-June 1989—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18-29	30-49	50 years	Male	Female	White	Black	Less than	12 years	More than
		years	years	and over					12 years		12 years
Percent distribution ¹											
23m. There is a vaccine available to the public that protects a person from getting the AIDS virus.											
Definitely true	2	2	1	2	2	1	1	4	3	2	1
Probably true	2	2	2	3	2	2	2	4	4	2	1
Probably false	9	9	8	9	9	8	9	8	9	9	8
Definitely false	75	76	82	67	76	74	78	64	60	76	84
Don't know	12	10	7	19	11	13	11	19	25	11	6
23n. There is no cure for AIDS at present.											
Definitely true	85	84	88	83	85	86	87	79	80	86	88
Probably true	7	8	6	8	8	6	7	8	8	7	7
Probably false	1	2	1	1	1	1	1	1	1	1	1
Definitely false	2	2	2	2	2	2	2	3	2	2	2
Don't know	4	4	2	6	4	4	3	8	9	4	2
24. How likely do you think it is that a person will get AIDS or the AIDS virus infection from—											
24a. Living near a hospital or home for AIDS patients?											
Very likely	2	1	1	2	2	2	1	3	3	2	1
Somewhat likely	3	4	3	3	4	3	3	5	5	3	2
Somewhat unlikely	6	6	6	6	6	6	6	11	7	7	5
Very unlikely	38	40	38	38	41	36	39	35	35	39	39
Definitely not possible	44	44	48	39	42	46	46	35	35	43	51
Don't know	7	4	4	12	7	7	6	10	16	6	2
24b. Working near someone with the AIDS virus?											
Very likely	2	2	2	3	3	2	2	4	4	2	1
Somewhat likely	9	8	8	10	8	9	8	10	10	10	7
Somewhat unlikely	11	12	11	11	12	11	11	13	10	11	11
Very unlikely	40	41	41	37	41	38	41	35	32	40	43
Definitely not possible	31	33	33	27	30	32	32	29	27	30	34
Don't know	7	4	4	13	7	7	6	9	16	6	2
24c. Eating in a restaurant where the cook has the AIDS virus?											
Very likely	6	6	6	8	6	6	6	11	11	6	4
Somewhat likely	18	18	18	19	19	17	18	18	19	20	16
Somewhat unlikely	15	17	15	11	16	13	15	13	11	14	17
Very unlikely	29	30	32	26	29	29	30	26	21	29	34
Definitely not possible	19	21	20	16	18	20	19	17	16	18	21
Don't know	13	8	9	20	12	14	12	15	22	13	7
24d. Kissing—with exchange of saliva—a person who has the AIDS virus?											
Very likely	26	21	25	31	25	27	25	31	31	28	21
Somewhat likely	30	28	30	30	31	29	30	29	27	31	30
Somewhat unlikely	12	16	13	8	14	11	13	10	9	11	16
Very unlikely	15	18	17	11	15	15	16	11	10	14	19
Definitely not possible	6	9	7	4	6	7	6	7	6	6	7
Don't know	10	8	8	16	9	11	10	13	18	10	6
24e. Shaking hands, touching, or kissing on the cheek someone who has the AIDS virus?											
Very likely	2	2	2	3	2	2	2	5	4	2	1
Somewhat likely	6	5	6	7	7	6	6	9	9	7	5
Somewhat unlikely	11	11	12	12	12	11	11	12	12	12	10
Very unlikely	39	41	40	37	41	38	40	36	33	41	41
Definitely not possible	34	37	36	29	32	36	35	29	26	32	40
Don't know	7	4	4	12	7	7	6	9	15	6	2
24f. Sharing plates, forks, or glasses with someone who has the AIDS virus?											
Very likely	9	8	9	10	9	9	9	13	13	10	7
Somewhat likely	20	17	20	22	20	20	20	22	22	22	17
Somewhat unlikely	14	15	14	11	14	13	14	13	12	14	15
Very unlikely	28	29	30	24	29	27	29	23	20	28	33
Definitely not possible	18	23	20	14	18	19	19	18	14	17	22
Don't know	11	7	7	18	10	12	11	11	20	11	6
24g. Using public toilets?											
Very likely	6	5	5	8	5	7	5	10	10	6	3
Somewhat likely	12	11	10	14	11	12	11	13	17	12	8
Somewhat unlikely	12	12	12	11	12	12	12	11	10	12	12
Very unlikely	34	34	36	31	35	32	35	28	23	35	38
Definitely not possible	27	30	30	20	27	26	27	23	20	24	33
Don't know	11	7	7	17	9	12	10	15	20	10	5

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, April–June 1989—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18–29	30–49	50 years	Male	Female	White	Black	Less than	12 years	More than
		years	years	and over					12 years		12 years
Percent distribution ¹											
24h. Sharing needles for drug use with someone who has the AIDS virus?											
Very likely	95	97	96	91	95	95	95	92	90	96	97
Somewhat likely	2	2	2	4	2	3	2	4	4	2	2
Somewhat unlikely	0	0	0	0	0	0	0	0	0	0	0
Very unlikely	0	0	1	0	0	0	0	0	0	0	0
Definitely not possible	0	0	0	0	0	0	0	0	0	0	0
Don't know	2	0	1	4	2	2	2	3	5	1	1
24i. Being coughed or sneezed on by someone who has the AIDS virus?											
Very likely	7	5	6	10	7	7	7	10	11	7	4
Somewhat likely	19	16	18	23	20	19	19	20	21	20	18
Somewhat unlikely	17	19	18	13	18	16	17	15	13	17	19
Very unlikely	30	34	32	23	30	29	31	26	20	30	36
Definitely not possible	15	18	17	11	15	15	15	14	13	14	17
Don't know	12	9	8	19	11	13	12	14	22	12	6
24j. Attending school with a child who has the AIDS virus?											
Very likely	2	2	2	2	2	2	2	5	4	2	1
Somewhat likely	5	4	5	5	5	5	4	7	7	5	4
Somewhat unlikely	9	8	10	9	9	9	9	9	9	10	9
Very unlikely	42	43	44	40	45	40	43	37	35	44	45
Definitely not possible	34	39	36	29	32	36	35	32	29	32	39
Don't know	7	4	4	13	7	8	7	10	17	7	3
24k. Mosquitoes or other insects?											
Very likely	10	10	9	10	10	9	8	16	14	10	6
Somewhat likely	17	19	16	15	17	16	16	19	19	18	15
Somewhat unlikely	8	9	9	6	9	7	8	9	6	8	9
Very unlikely	24	24	26	23	26	23	25	20	19	23	29
Definitely not possible	18	17	20	16	17	18	19	13	12	16	23
Don't know	24	20	20	31	22	26	24	22	30	25	18
25. Have you ever donated blood?											
Yes	40	33	42	43	51	30	41	34	29	37	44
No	60	67	58	57	49	70	58	66	71	62	56
Don't know	0	0	0	0	0	0	0	0	0	0	0
26a. Have you donated blood since March 1985?											
Yes	15	22	17	7	18	12	15	11	7	13	21
No	85	78	83	93	81	88	84	89	93	86	78
Don't know	0	1	0	0	1	0	0	0	0	0	0
26b. Have you donated blood in the past 12 months?											
Yes	7	8	8	3	8	5	7	4	3	6	9
No	93	91	91	97	91	95	93	96	97	94	90
Don't know	0	1	0	0	1	0	0	0	0	0	1
27. Have you ever heard of a blood test that can detect the AIDS virus infection?											
Yes	75	81	83	61	76	74	76	66	55	76	86
No	21	17	14	33	20	22	20	29	38	21	11
Don't know	4	2	3	7	4	4	4	4	7	3	3
28. To the best of your knowledge, are blood donations routinely tested now for the AIDS virus infection?											
Yes	66	71	76	52	67	65	68	56	46	67	78
No	4	6	3	3	3	4	3	5	3	4	4
Don't know	5	4	4	6	5	5	5	6	7	5	4
Never heard of test ⁴	25	19	17	39	24	26	24	34	45	24	14
29a. Have you ever received counseling or had a talk with a health professional about taking the AIDS virus test?											
Yes	4	6	6	1	5	4	4	7	3	4	6
No	70	74	77	59	71	69	72	59	52	72	80
Don't know	0	0	0	0	0	0	0	0	0	0	—
Never heard of test ⁴	25	19	17	39	24	26	24	34	45	24	14
29b. Was the discussion— ^{1,5}											
With a private doctor?	52	42	55	73	52	52	52	51	59	46	53
At a family-planning clinic?	9	13	8	2	4	14	9	10	10	14	6
On an AIDS hotline?	2	0	3	—	2	2	1	3	—	1	3
At a prenatal clinic?	4	6	4	—	0	8	3	6	6	4	3
At an STD or sexually transmitted disease clinic?	4	4	4	—	4	4	3	8	1	4	5
At an AIDS/HIV counseling and testing site?	11	9	13	5	12	9	10	14	5	11	13
With some other health professional?	41	43	42	31	42	40	40	48	29	38	49
With some other counselor?	11	9	13	10	12	11	9	21	9	11	12
30. During that discussion, did you receive information about how to avoid getting or passing on the AIDS virus? ⁵											
Yes	57	62	57	39	60	54	51	84	48	59	59
No	42	36	42	59	39	44	48	15	51	40	39
Don't know	2	1	2	3	1	2	2	0	2	1	2

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, April–June 1989—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18–29 years	30–49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
31. Have you ever been advised by a health professional not to have the blood test for the AIDS virus infection?	Percent distribution ¹										
Yes	0	0	0	0	0	0	0	0	0	0	1
No	74	80	83	61	76	73	76	66	55	75	85
Don't know	0	0	0	0	0	0	0	0	0	0	0
Never heard of test ⁴	25	19	17	39	24	26	24	34	45	24	14
32. Have you ever been advised by friends or relatives not to have the blood test for the AIDS virus infection?											
Yes	0	1	0	0	0	0	0	0	0	0	0
No	74	80	83	61	76	73	76	66	55	75	85
Don't know	0	0	0	0	0	0	0	0	0	0	0
Never heard of test ⁴	25	19	17	39	24	26	24	34	45	24	14
33. Have you had your blood tested for the AIDS virus infection?											
Yes ⁵	20	29	23	9	24	17	20	19	11	18	27
No	55	53	59	52	53	57	56	48	44	58	59
Don't know	2	1	2	2	2	1	2	1	1	2	2
Never heard of test ⁴	23	17	15	37	21	25	22	32	43	22	12
35a. How many times have you had your blood tested for the AIDS virus infection? ⁷											
Once	6	10	7	2	6	6	6	7	4	5	8
Twice	2	2	2	1	2	1	1	2	1	2	2
3–5 times	1	2	2	1	2	1	1	1	1	1	2
6–12 times	0	1	1	0	1	0	1	0	0	1	1
More than 12 times	0	0	0	0	0	0	0	0	0	0	0
Don't know ⁶	10	15	12	6	13	8	11	8	5	10	14
Never heard of or never took test ⁸	80	71	77	91	76	83	80	82	89	82	73
35b. How many times in the past 12 months have you had your blood tested for the AIDS virus infection? ⁷											
None in the past 12 months	3	4	3	2	3	3	3	2	1	3	4
Once	5	8	7	2	6	4	5	7	4	4	7
More than once	2	2	3	1	2	1	2	1	0	2	2
Don't know ⁸	10	15	11	5	12	8	10	8	5	9	14
Never heard of or never took test ⁸	80	71	77	91	76	83	80	81	89	82	73
36. Was the test/were any of the tests, including those you had before the past 12 months— ¹											
Part of a blood donation? ⁹	69	68	68	73	71	66	72	51	58	69	72
Part of a blood transfusion? ⁹	1	1	1	2	1	1	1	2	2	2	1
Voluntarily sought? ⁹	18	17	18	19	15	21	16	29	21	19	17
Part of some other activity that requires a blood sample? ⁹	15	18	16	6	16	14	14	23	21	15	14
38. Did you get the results of your test/any of your tests? ⁹											
Yes	58	62	57	53	55	62	55	81	74	55	57
No	41	38	42	47	45	37	45	19	25	45	43
Don't know	0	0	0	—	0	0	0	—	1	1	—
41. Do you expect to have a blood test for the AIDS virus infection in the next 12 months?											
Yes	7	11	8	3	9	5	6	13	5	7	9
No	64	64	70	56	62	65	67	47	46	65	73
Don't know	4	6	5	2	5	3	3	7	5	3	4
Never heard of test ⁴	25	19	17	39	24	26	24	34	45	24	14
42. Will the test be— ^{1,10}											
Part of a blood donation?	40	38	46	30	42	38	49	15	15	40	48
Voluntarily sought?	52	58	45	60	47	60	44	73	76	52	45
Part of some other activity that requires a blood sample?	16	16	17	14	19	11	15	20	11	17	17
44a. Did you have a blood transfusion at any time between 1977 and 1985?											
Yes	5	4	5	7	5	5	5	6	7	5	5
No	94	96	94	91	94	94	94	93	92	94	95
Don't know	1	0	1	1	1	1	1	1	1	1	1
44b. Do you think the present supply of blood is safe for transfusions?											
Yes	48	52	51	41	53	44	50	38	34	47	57
No	27	28	26	27	23	31	26	35	33	27	23
Other	0	0	0	0	0	0	0	0	0	0	0
Don't know	25	19	22	31	23	26	24	27	32	26	19
45. Here are some methods people use to prevent getting the AIDS virus through sexual activity. How effective is—											
45a. Using a diaphragm?											
Very effective	2	3	2	2	3	2	2	4	3	2	2
Somewhat effective	12	14	12	13	12	13	12	13	11	13	13
Not at all effective	57	60	65	46	56	58	59	48	41	57	67
Don't know how effective	21	17	16	30	22	21	21	24	30	22	15
Don't know method	7	6	6	10	8	7	6	11	15	6	3

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, April–June 1989—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18–29 years	30–49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
Percent distribution ¹											
45b. Using a condom?											
Very effective	33	39	36	25	36	30	33	31	25	32	39
Somewhat effective	52	51	55	51	52	53	54	49	47	54	54
Not at all effective	5	4	4	6	4	6	5	7	8	5	3
Don't know how effective	8	4	4	14	7	8	7	10	16	7	3
Don't know method	2	1	1	4	1	2	2	3	5	2	0
45c. Using a spermicidal jelly, foam, or cream?											
Very effective	2	2	2	1	2	1	1	3	2	1	2
Somewhat effective	15	17	15	13	15	15	15	16	10	14	18
Not at all effective	55	61	61	45	54	57	56	50	44	55	62
Don't know how effective	22	17	17	31	23	21	21	24	30	23	15
Don't know method	6	4	5	10	6	6	6	7	13	6	3
45d. Having a vasectomy?											
Very effective	2	3	1	1	2	2	2	3	2	2	2
Somewhat effective	3	4	2	2	3	3	2	3	3	3	3
Not at all effective	72	71	81	63	73	72	75	61	55	72	82
Don't know how effective	17	17	11	24	17	17	16	22	26	18	11
Don't know method	6	5	5	9	6	7	5	11	14	6	3
45e. Two people who do not have the AIDS virus having sex only with each other?											
Very effective	84	85	87	79	85	83	86	73	73	84	90
Somewhat effective	8	9	7	9	7	9	7	14	11	8	7
Not at all effective	2	3	2	2	2	2	2	4	3	2	1
Don't know how effective	5	3	3	8	5	4	4	7	10	4	2
Don't know method	1	0	1	3	1	2	1	2	3	1	0
46. What are your chances of having the AIDS virus?											
High	0	0	0	0	0	0	0	1	1	0	0
Medium	2	3	2	1	2	2	2	4	2	2	2
Low	12	18	14	6	14	11	12	16	8	11	16
None	84	77	82	90	81	86	85	75	85	85	81
Don't know	2	2	1	3	2	2	1	4	4	1	1
47. What are your chances of getting the AIDS virus?											
High	0	0	0	0	0	0	0	1	0	0	0
Medium	2	3	2	1	3	2	2	4	2	2	2
Low	17	24	20	8	20	15	17	19	10	16	23
None	78	69	75	87	74	81	79	71	81	80	73
Don't know	2	2	2	3	2	2	2	5	5	2	1
High chance of already having AIDS virus	0	0	0	0	0	0	0	1	1	0	0
49. Do you say your chance of getting AIDS is high or medium because you— ¹¹											
Have had a blood transfusion?	7	6	6	11	6	9	9	—	8	10	4
Have had sexual contact with someone who might have the virus?	21	19	26	12	21	19	23	15	25	25	13
Some other reason?	57	57	57	57	54	62	57	56	44	50	71
52. Have you ever discussed AIDS with a friend or relative?											
Yes	62	70	72	47	59	66	63	64	46	61	74
No	37	30	28	53	41	34	37	36	53	39	26
Don't know	0	0	0	0	0	0	0	0	0	0	0
53. When was the last time you discussed AIDS with a friend or relative?											
0–3 days ago	7	8	8	4	6	7	7	9	6	6	8
4–7 days ago	8	8	9	6	7	8	7	11	5	8	9
8–14 days ago	7	7	7	5	6	7	7	7	5	6	8
15–31 days ago	13	14	15	9	12	13	13	12	9	12	16
More than 31 days ago	24	29	27	16	23	25	24	20	17	24	28
Don't know ¹²	5	4	5	5	5	4	5	4	5	5	4
Never discussed	38	30	28	54	41	34	37	36	54	39	26
54. Have you ever personally known anyone with AIDS or the AIDS virus?											
Yes	12	11	16	8	11	14	12	16	7	10	18
No	86	88	82	91	88	85	87	81	92	89	81
Don't know	1	1	2	1	1	1	1	3	1	1	1
55. How long has it been since you saw this person?											
Within past 2 weeks	1	1	1	1	1	1	1	1	0	1	1
2 weeks—less than 1 month	1	1	1	0	1	0	0	0	0	0	1
1 month—less than 3 months	1	1	1	1	1	1	1	1	0	1	1
3 months—less than 6 months	1	1	1	1	1	1	1	2	1	1	1
6 months or more	9	8	12	6	8	9	8	12	5	7	13
Don't know	0	0	0	0	0	0	0	0	1	0	0
Never knew anyone with AIDS ¹³	88	89	84	92	89	87	88	84	93	90	82

See footnotes at end of table.

Table 1. Provisional estimates of the percent of persons 18 years of age and over with selected AIDS knowledge and attitudes from the 1988 National Health Interview Survey, by selected characteristics: United States, April-June 1989—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]

AIDS knowledge or attitude	Age			Sex		Race		Education			
	Total	18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
	Percent distribution ¹										
56. How well do you know this person?											
Very well	2	2	2	1	1	2	2	3	1	1	.2
Fairly well	3	2	4	2	2	3	2	5	1	2	4
Not very well	5	4	6	3	4	5	5	4	2	3	7
Don't really know personally	2	2	3	2	2	2	2	3	1	2	3
Other	1	1	1	1	1	1	1	1	0	1	1
Don't know how well	—	—	—	—	—	—	—	—	—	—	—
Never knew anyone with AIDS ¹³	88	89	84	92	89	87	88	84	93	90	82
57. Is any of these statements true for you?											
a. You have hemophilia and have received clotting factor concentrates since 1977.											
b. You are a native of Haiti or Central or East Africa who has entered the United States since 1977.											
c. You are a man who has had sex with another man at some time since 1977, even 1 time.											
d. You have taken illegal drugs by needle at any time since 1977.											
e. Since 1977, you are or have been the sex partner of any person who would answer yes to any of the items above (57 a-d).											
f. You have had sex for money or drugs at any time since 1977.											
Yes to at least 1 statement	2	3	2	1	3	2	2	3	2	2	2
No to all statements	98	97	97	99	97	98	98	97	97	98	98
Refused	0	—	0	0	0	0	0	—	0	—	0
Don't know	0	0	0	0	0	0	0	—	0	0	0
58. The U.S. Public Health Service has said that AIDS is one of the major health problems in the country but exactly how many people it affects is not known. The Surgeon General has proposed that a study be conducted and blood samples be taken to help find out how widespread the problem is. If you were selected in this national sample of people to have their blood tested with assurances of privacy of test results, would you have the test?											
Yes	73	78	75	65	75	70	73	72	67	73	75
No	20	16	18	26	18	22	20	21	24	20	19
Other	1	1	1	1	1	1	1	1	1	1	2
Don't know	6	5	6	7	5	7	6	6	8	6	5
59. Why wouldn't you take part in the test? ¹⁴											
Don't want to know if I have AIDS	4	6	5	2	4	3	4	6	4	4	4
Don't want any counseling about AIDS	1	0	1	1	1	1	1	3	1	1	1
Fear I'll get AIDS	6	7	6	6	7	6	6	12	8	7	4
Don't like to give blood	12	18	14	8	11	13	12	13	10	13	13
Don't trust Government programs	6	6	8	5	9	5	6	7	4	7	8
It is a waste of money	3	2	2	3	3	2	3	1	2	3	3
Don't believe AIDS can really be cured anyway	2	1	2	1	2	1	1	3	2	1	1
Other	53	43	51	59	51	54	55	46	48	51	59
Don't know	2	1	1	3	2	2	2	4	3	2	1
61. When Federal public health officials give information about AIDS, do you believe what they say or are you doubtful about the information they give?											
Believe	67	75	67	60	67	67	67	63	59	66	72
Doubtful	28	22	29	31	28	27	28	29	31	29	25
Don't know	6	3	4	9	5	6	5	8	10	5	3
62. When they [public health officials] give advice about how to help keep from getting AIDS, do you believe their advice or are you doubtful about what they say?											
Believe	80	86	82	75	81	80	81	76	72	80	86
Doubtful	16	12	15	19	16	15	16	18	20	17	12
Don't know	4	2	3	7	3	5	3	6	8	3	2

¹Multiple responses may sum to more than 100.

²Based on persons answering yes to question 4 (includes yes to question 3).

³Based on persons answering yes to question 11, "Do you have any children aged 10 through 17?" Question 12 was "How many do you have?"

⁴Persons answering no or don't know to question 27.

⁵Based on persons answering yes to question 29a.

⁶Includes persons answering yes to question 26a and no or don't know to questions 27 and 33.

⁷Based on yes answers to question 33. See footnote 6.

⁸Persons answering no or don't know to questions 26a, 27, and 33.

⁹Based on persons answering yes to question 33; excludes persons answering yes to question 26a.

¹⁰Based on persons answering yes to question 41.

¹¹Based on persons answering high or medium to question 46.

¹²Based on persons answering no or don't know to question 52.

¹³Based on persons answering no or don't know to question 54.

¹⁴Based on persons not answering yes to question 58.

Technical notes

The National Health Interview Survey (NHIS) is a continuous, cross-sectional household interview survey. Each week, a probability sample of 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. Supplemental information is collected for all or a sample of household members. The 1989 National Health Interview Survey of AIDS Knowledge and Attitudes was asked of a single randomly chosen adult 18 years of age or over in each family. The estimates in this report are based on completed interviews with 10,590 persons, or about 89 percent of eligible respondents.

Table I contains the estimated population size of each of the demographic subgroups included in table 1

to allow readers to derive provisional estimates of the number of people in the United States with a given characteristic, for example, the number of men who have had their blood tested for the AIDS virus. The population figures in table I are based on 1988 data from the NHIS; they are not official population estimates. Table II shows approximate standard errors of estimates presented in table 1. Both the estimates in table 1 and the standard errors in table II are provisional. They may differ slightly from estimates made using the final data file because they were calculated using a simplified weighting procedure that does not adjust for all the factors used in weighting the final data file. A final data file covering the entire data collection period for 1989 will be available at the end of 1990.

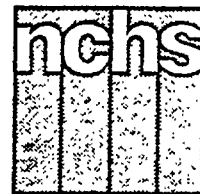
Table I. Sample sizes for the 1988 National Health Interview Survey of AIDS Knowledge and Attitudes and estimated adult population 18 years of age and over, by selected characteristics: United States, April-June, 1989

Characteristic	Sample size	Estimated population in thousands
All adults	10,590	177,321
Age		
18-29 years	2,429	46,957
30-49 years	4,288	68,986
50 years and over	3,873	61,377
Sex		
Male	4,480	84,131
Female	6,110	93,190
Race		
White	8,586	149,510
Black	1,552	19,457
Education		
Less than 12 years	2,506	39,502
12 years	3,913	68,301
More than 12 years	4,094	67,872

Table II. Standard errors, expressed in percentage points, of estimated percents from the National Health Interview Survey of AIDS Knowledge and Attitudes, by selected characteristics: United States, April-June, 1989

Estimated percent	Total	Age			Sex		Race		Education		
		18-29 years	30-49 years	50 years and over	Male	Female	White	Black	Less than 12 years	12 years	More than 12 years
5 or 95	0.3	0.5	0.4	0.4	0.4	0.3	0.3	0.7	0.5	0.4	0.4
10 or 90	0.4	0.8	0.6	0.6	0.6	0.5	0.4	0.9	0.7	0.6	0.6
15 or 85	0.4	0.9	0.7	0.7	0.7	0.6	0.5	1.1	0.9	0.7	0.7
20 or 80	0.5	1.0	0.8	0.8	0.7	0.6	0.5	1.3	1.0	0.8	0.8
25 or 75	0.5	1.1	0.8	0.9	0.8	0.7	0.6	1.4	1.1	0.9	0.8
30 or 70	0.6	1.2	0.9	0.9	0.8	0.7	0.6	1.4	1.1	0.9	0.9
35 or 65	0.6	1.2	0.9	0.9	0.9	0.8	0.6	1.5	1.2	0.9	0.9
40 or 60	0.6	1.2	0.9	1.0	0.9	0.8	0.7	1.5	1.2	1.0	0.9
45 or 55	0.6	1.2	0.9	1.0	0.9	0.8	0.7	1.6	1.2	1.0	1.0
50	0.6	1.3	0.9	1.0	0.9	0.8	0.7	1.6	2.1	1.0	1.0

Advance Data



From Vital and Health Statistics of the National Center for Health Statistics

Characteristics of Persons Dying From Cerebrovascular Diseases

Preliminary Data From the 1986 National Mortality Followback Survey

by Eve Powell-Griner, Ph.D., Office of Vital and Health Statistics Systems

Introduction

Cerebrovascular diseases have a major impact on mortality and morbidity in the United States, and the identification of the characteristics of persons dying from these chronic diseases is of great interest. This report uses preliminary data from the 1986 National Mortality Followback Survey (NMFS) to compare the characteristics of adult decedents who died from Cerebrovascular diseases (ICD-9 nos. 430-438) with those who died from all other causes. In this report, the terms "cerebrovascular diseases" and "stroke" are used interchangeably for editorial convenience.

Cerebrovascular diseases, the third leading cause of death in the United States, accounted for 7 percent of all deaths in 1986 (1). Although stroke mortality declined during the past several decades, it remains a major contributor to years of potential life lost each year. Stroke resulted in an estimated 246,000 years of potential life lost before age 65 in

1986, representing 1.2 years lost per 1,000 persons under 65 years of age (2).

In addition to causing many deaths, stroke has a major impact on morbidity. An estimated 11.9 persons per 1,000 population reported having cerebrovascular disease in 1986. Nearly 40 percent of persons with this disease reported that it limited their activities. Cerebrovascular disease resulted in an average of 36 days of restricted activity per person with the condition (3).

Data from the 1986 NMFS provide detailed information on the lifestyle, care in the last year of life, and antecedents of and circumstances surrounding death for a nationally representative sample of adults dying from cerebrovascular diseases and other causes in 1986.

The data

The 1986 NMFS is a stratified random sample consisting of 18,733 deaths in 1986 of U.S. residents 25

years of age and over. These deaths constitute approximately 1 percent of all resident deaths in the United States. The next of kin or others familiar with the decedent's lifestyle were asked to provide the following information: use of medical and other care facilities in the decedent's last year of life, sources of medical care payment, impairments in daily activities, medical conditions, health practices and behaviors, social and economic characteristics, and the identity of all health facilities in which the decedent stayed overnight during the last year of life.

The 1986 NMFS includes data on 1,121 persons who died from cerebrovascular diseases and 17,612 who died from other causes. The sample deaths represent an estimated 149,699 deaths from stroke and an estimated 1,837,168 deaths from all other causes. All estimates in this report are national estimates for deaths in 1986 of adults 25 years of age and over. Brief descriptions of the study and the analytic methods used are in the technical notes.



U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Center for Health Statistics
Manning Feinleib, M.D., Dr. P.H., Director

Social, demographic, and economic characteristics

Age, sex, and race

Most people who died from stroke were over the age of 75 (table 1). Only 13 percent of stroke deaths were to persons under 65 years of age, while approximately 69 percent were to persons aged 75 years and over. This contrasts sharply with deaths from all other causes: Approximately 27 percent of other deaths, or about two times the proportion for cerebrovascular deaths, were to persons under 65 years of age. An estimated 48 percent of deaths due to other causes involved persons 75 years of age and over.

Women accounted for a larger proportion of deaths from stroke than men did: an estimated 89,996 (60 percent) for cerebrovascular deaths and 867,124 (47 percent) for deaths from other causes. The differences in age distribution by cause of death noted above apply to both males and females, however.

More than 80 percent of all deaths were to persons of races other than black. An estimated 16,694 (11.2 percent) of the cerebrovascular deaths were to persons who were black, in addition to 211,309 of the deaths from other causes (11.5 percent). Comparison of the age distribution of deaths by cause of death shows that the distributions for decedents of races other than black are similar to those for all persons combined: that is, larger proportions of cerebrovascular than of other deaths involved older persons. For deaths of black persons, however, the only significant differences in age distribution by cause of death were at ages 25–54 years and at ages 85 and over. Compared with all other causes of death, a smaller proportion of stroke deaths involved persons aged 25–54, while a larger proportion of stroke deaths involved persons aged 85 and over.

Marital status

Regardless of cause of death, more than 90 percent of adults dying

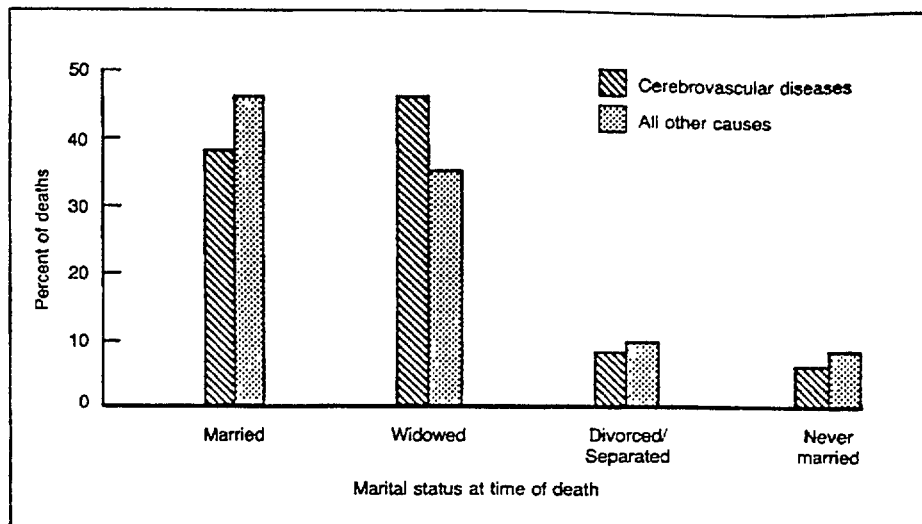


Figure 1. Percent distribution of deaths from cerebrovascular diseases and all other causes, by marital status: United States, 1986

in 1986 had been married at some point in their life (figure 1). However, there were differences in current marital status by cause of death. The largest proportion of persons who died from stroke were widowed at the time of death, but the largest proportion of persons who died from other causes were married (47 percent and 46 percent, respectively). A somewhat smaller proportion of persons who died from stroke than from other causes had never been married, but there was no significant difference by cause of death in the proportion of decedents who were divorced or separated (table 2).

Regardless of cause of death, female decedents were about three times more likely to be widowed at the time of death than were their male counterparts, and they were only about one-third as likely to be currently married. For persons dying from stroke, there were no significant differences by sex in the proportion of decedents who were divorced, separated, or never married. The proportion of men divorced, separated, or never married at the time of death was slightly larger than that for women for persons dying from all other causes.

Compared with women dying of other causes, female decedents who died of stroke were somewhat less likely to be married at the time of

death, but there were no significant differences in other marital status categories for women. Compared with men who died from other causes, males who died of cerebrovascular diseases were somewhat less likely to have never been married.

Education

Most adults who died in 1986 were reported to have less than a high school education (table 3). There were no significant differences in level of education by cause of death—with one exception: A slightly larger proportion of persons dying from stroke than of other causes had completed 4 years or more of college.

There were no differences in educational attainment between men and women dying of cerebrovascular diseases. Of persons dying from other causes, men were somewhat less likely (62 percent) to have completed high school than were women (54 percent). Females who died from other causes were slightly more likely to have finished high school or to have completed 1 to 3 years of college than were men, but they were somewhat less likely to have completed 4 years or more of college.

Occupation

Information on longest-held occupation was available for approximately 93 percent of male and

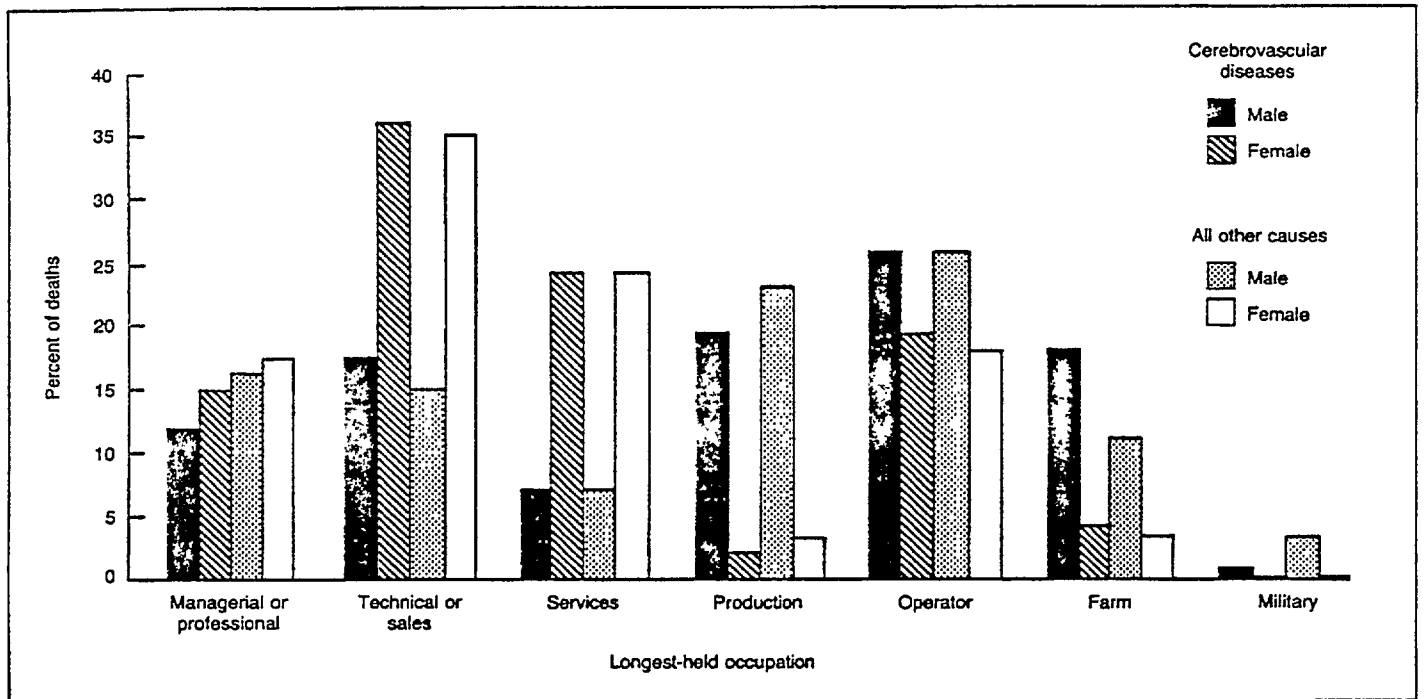


Figure 2. Percent distribution of deaths from cerebrovascular diseases and all other causes by longest-held occupation, according to sex: United States, 1986

75 percent of female decedents. For decedents reporting occupation, the largest proportions had worked in technical or sales and in operator occupations (figure 2). Persons who died of stroke were slightly less likely to be in a precision production or military occupation and were slightly more likely to be in a farming, fishery, or forestry occupation. Regardless of cause of death, women who had worked in a paid occupation were somewhat more likely to have been in a technical and sales or in a service occupation than were males. Women were less likely than men to have been in a precision production, operator, farm, or armed forces occupation.

Living arrangements

Regardless of cause of death, most adults dying in 1986 had lived with relatives during the 1985 calendar year. However, there were differences by cause of death in living arrangements during 1985 (figure 3). Compared with persons dying from other causes, a somewhat larger proportion of persons who died from stroke had resided in an institution in 1985. For females, a smaller propor-

tion dying from stroke than from other causes had lived with one or more relatives. Regardless of cause of death, females were at least twice as likely as males to have resided in an institution during 1985. Females were much less likely than their male counterparts to have lived with relatives. There were no significant differences by cause of death in the living arrangements of male decedents. Compared with women dying from other causes, those dying of stroke were nearly two times as likely to have resided in an institution during 1985. Female decedents dying of stroke were somewhat less likely than other female decedents to have resided with relatives during this same period.

Income and assets

Most decedents in the NMFS had family incomes of less than \$25,000 in 1985 (figure 4). There was no significant difference by cause of death in the distribution of decedents' income. Regardless of cause of death, larger proportions of female than of male decedents had family incomes under \$5,000. There were no other significant differences by sex in income

for decedents dying of stroke. For decedents dying from other causes, a larger proportion of males than of females had 1985 incomes of \$9,000 or more.

There were no differences by cause of death in assets, but there were differences by sex within each cause group (figure 5). For persons dying of stroke, a larger proportion of male than of female decedents had assets of \$25,000–\$49,999 at death. For those dying from other causes, a larger proportion of male than of female decedents had assets of \$5,000 or more.

Health care use and source of payment

Most adults who died in 1986 had seen a physician five times or more in the year prior to death (table 4). Persons dying from stroke were more likely than were persons dying from other causes to have no physician visits or 1–4 visits. There were no differences in the number of physician visits between male and female decedents who died from stroke. For those dying from other causes, female decedents were less likely than male

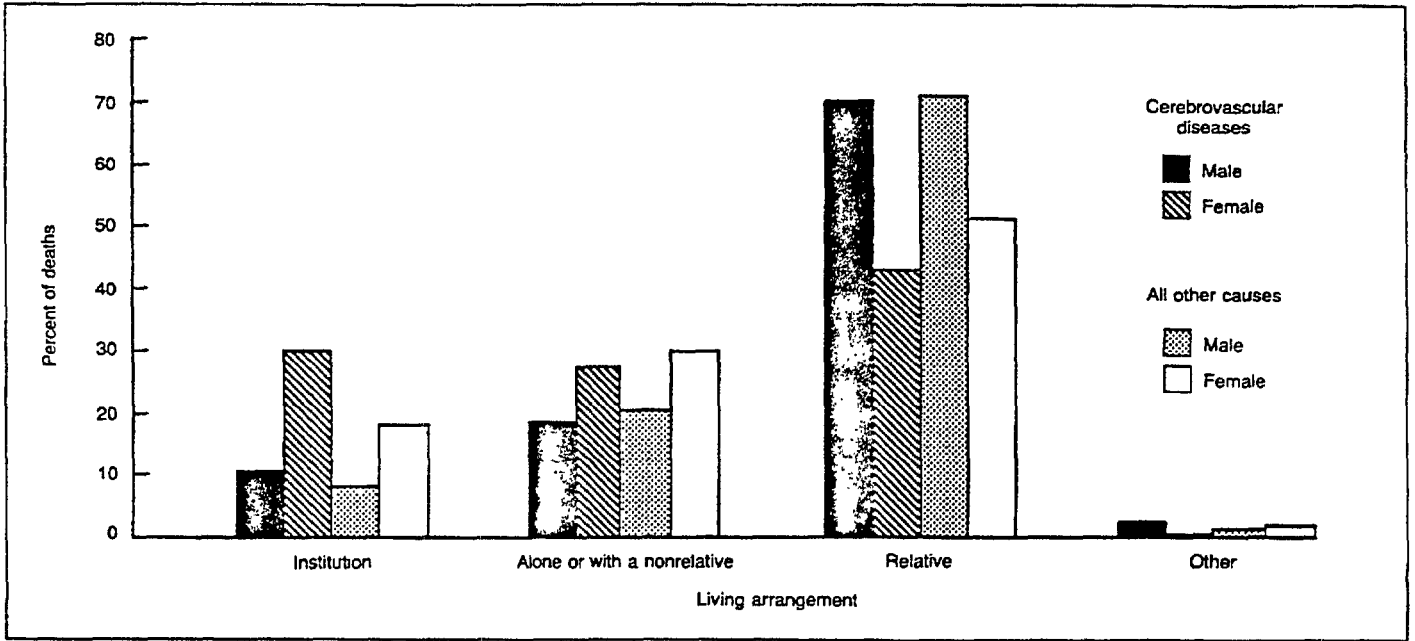


Figure 3. Percent distribution of deaths from cerebrovascular diseases and all other causes by living arrangements in 1985, according to sex: United States, 1986

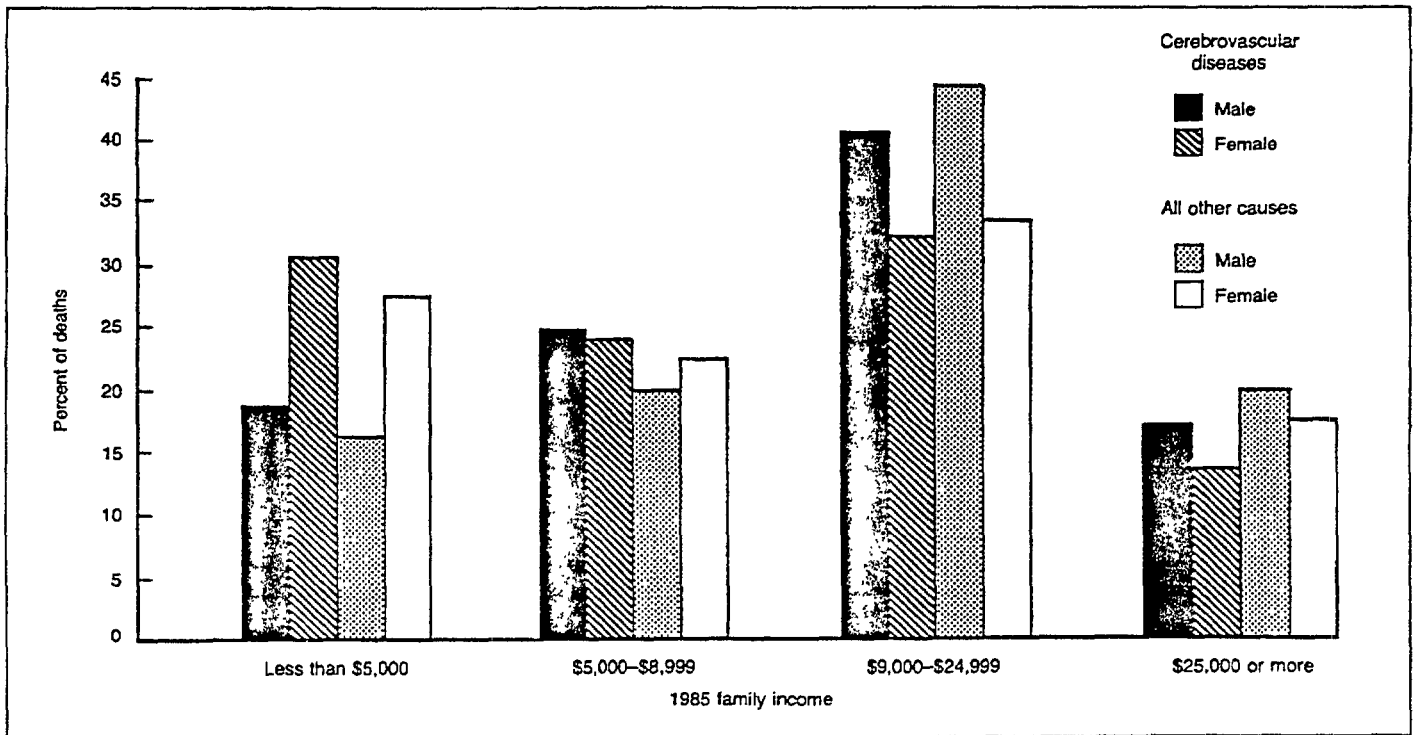


Figure 4. Percent distribution of deaths from cerebrovascular diseases and all other causes by 1985 family income, according to sex: United States, 1986

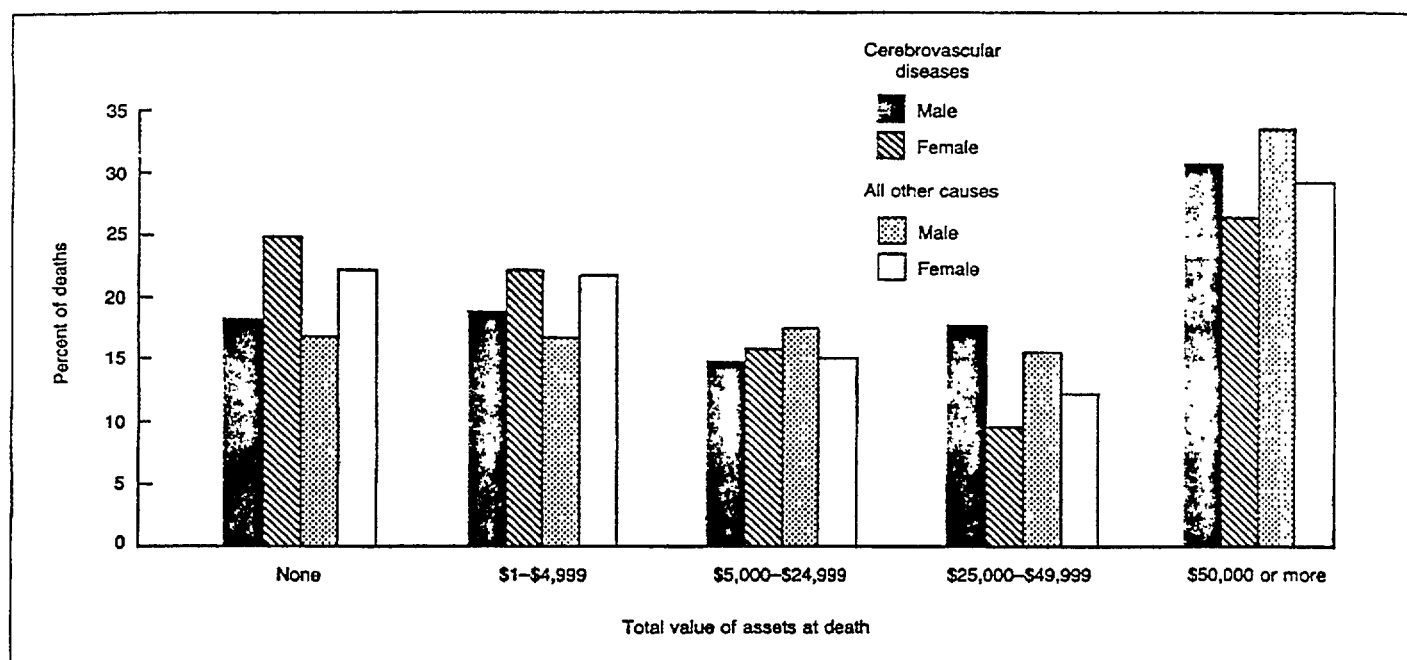


Figure 5. Percent distribution of deaths from cerebrovascular diseases and all other causes by total value of assets at death, according to sex: United States, 1986

decedents to have had fewer than five visits to a physician during the last year of life.

Medicare was reported as the primary source of payment for health care in the last year of life for the largest proportion of decedents, regardless of the cause of death (table 5). Self or family was reported as the primary source of health care payment for a somewhat larger proportion of persons dying from stroke than from other causes. Coverage by a health maintenance organization (HMO) or private insurance was reported more often for those dying from other causes than for those dying of stroke. There were few differences in primary source of payment by cause of death within each of the sex categories. Males who died from stroke were somewhat more likely than those dying from other causes to have had Medicare as their primary source of health care payment, and they were less likely to have had an HMO or private insurance as their primary payment source. Females who died from stroke were somewhat less likely than were other female decedents to have had an HMO or private insurance as their

primary source of health care payment.

Most adults who died in 1986 had spent less than \$2,000 of their own money for health care in the last year of life, but approximately one-fifth had spent \$5,000 or more (table 6). There was little difference by cause of death in the amount of the decedents' own money spent for care. Persons dying from stroke were somewhat more likely than other decedents to have spent \$5,000 or more of their own money for care. Regardless of cause of death, female decedents were somewhat more likely than male decedents to have spent \$5,000 or more of their own funds for health care.

Health status and risk factors for cerebrovascular diseases

Assistance in activities of daily living or in home medical care was not received by a majority of persons who died in 1986 (table 7). Of those who received help, larger numbers were assisted by family only than by unrelated persons or by a combination of relatives and nonrelatives. For both sexes combined, there were no

significant differences by cause of death in the proportion who received help in daily activities or medical care. There were few differences by sex in the proportion of those dying from stroke who received help, and there were also few differences between the sexes in the relationship of the caregiver(s) to the decedent. For persons dying from other causes, males were somewhat less likely than females to receive help in daily activities or home medical care.

In addition to cerebrovascular diseases, many of the decedents had other serious health problems (figure 6). Compared with all other causes of death, a larger proportion of persons dying from stroke had high blood pressure. Persons dying from other causes were more likely to have had one or more heart attacks, asthma, or other lung conditions.

There was little difference by sex in the type of other health problems for persons dying of stroke. However, males dying from cerebrovascular diseases were more than twice as likely as females to have had other lung conditions. There were no significant differences in other health conditions by sex for decedents who

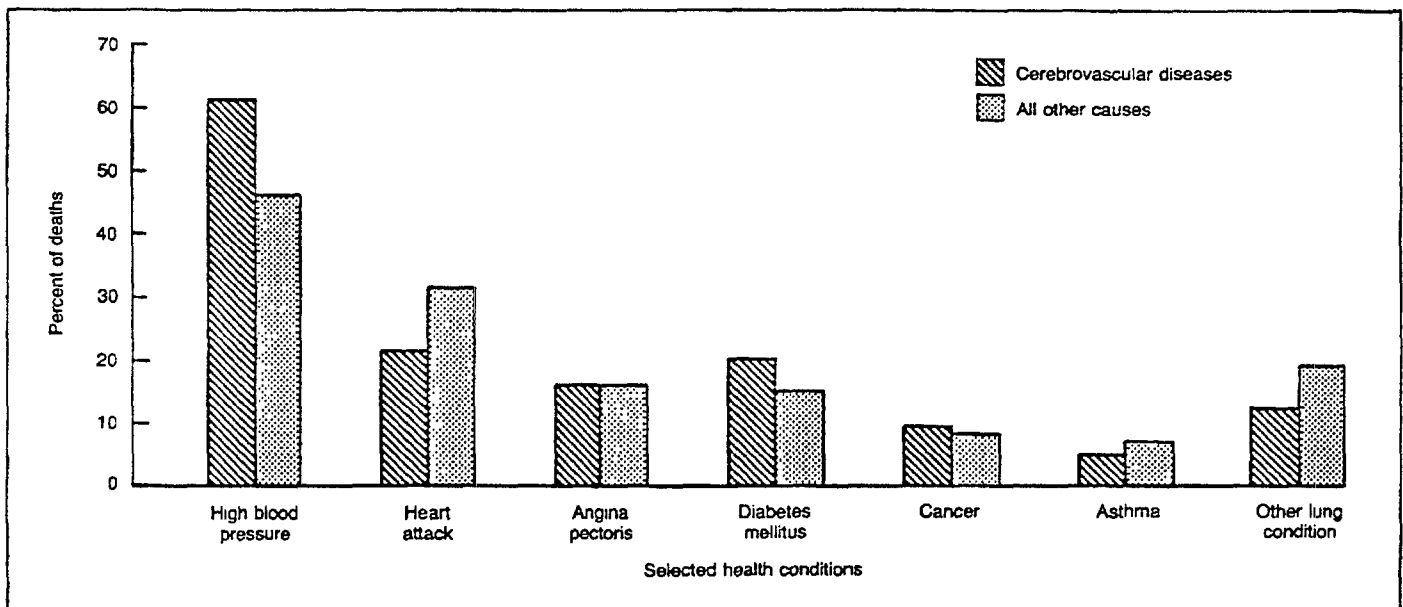


Figure 6. Percent distribution of deaths from cerebrovascular diseases and all other causes, by presence of selected health conditions: United States, 1986

were black, but decedents who were not black showed the same pattern of a higher proportion of males than of females with other lung conditions.

For persons dying from other causes, a larger proportion of females than of males had high blood pressure, diabetes, or cancer. Smaller proportions of male than of female decedents had experienced one or more heart attacks or had lung conditions other than asthma. This pattern generally applied to black decedents as well as to those who were not black.

Cigarette smoking is another known risk factor for cerebrovascular diseases. Use of cigarettes and length of time the decedent smoked are shown in table 8. An estimated 827,899 (45 percent) of the decedents were reported never to have smoked cigarettes. The majority of decedents 25 years of age and over who were reported to have smoked cigarettes had done so for 20 years or more. For all decedents 25 years of age and over, there were differences in smoking status between those dying from stroke and those dying from other causes. Persons dying from stroke were somewhat less likely than those dying from all other causes to have smoked cigarettes. Of those who smoked, slightly smaller proportions of decedents dying from stroke than from

all other causes had smoked for 20 years or more. When the decedent's age was held constant, there were no significant differences in smoking behavior by cause of death for those aged 25-74 years. At age 75 and over a somewhat smaller proportion of persons dying from stroke than from all other causes had smoked for 20 years or more.

Summary

The 1,121 persons sampled in the NMFS who died of cerebrovascular diseases represent an estimated 149,699 such deaths, or approximately 7 percent of all persons 25 years of age and over who died in the United States during 1986. Persons who died of stroke tended to be older than those dying of all other causes, and more of them were female. Partly because of their age and sex, adults dying from stroke were more likely than others to be widowed at the time of death and to have resided in an institution during the year prior to death. A larger proportion of decedents dying from stroke than from all other causes were reported to have hypertension, a known risk factor for cerebrovascular disease.

More detailed information from the 1986 NMFS and comparisons of other major causes of death will be

found in subsequent publications from the National Center for Health Statistics (NCHS).

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Table 1. Estimated number and percent distribution of deaths from cerebrovascular diseases and all other causes by age, according to sex and race: United States, 1986

<i>Cause of death, race, and age</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>
Cerebrovascular diseases						
	Estimated number			Percent distribution		
All races:						
25 years and over	149,699	59,703	89,996	100.0	100.0	100.0
25-54 years	7,909	3,953	3,956	5.3	6.6	4.4
55-64 years	11,892	6,344	5,548	7.9	10.6	6.2
65-74 years	26,993	14,544	12,448	18.0	24.4	13.8
75-84 years	52,046	21,248	30,798	34.8	35.6	34.2
85 years and over	50,860	13,614	37,246	34.0	22.8	41.4
Black:						
25 years and over	16,694	7,812	8,882	100.0	100.0	100.0
25-54 years	2,780	1,659	*1,121	16.7	21.2	*12.6
55-64 years	2,775	1,558	*1,217	16.6	19.9	*13.7
65-74 years	3,960	1,717	2,243	23.7	22.0	25.3
75-84 years	4,239	1,802	2,437	25.4	23.1	27.4
85 years and over	2,941	*1,077	1,864	17.6	*13.8	21.0
Races other than black:						
25 years and over	133,005	51,891	81,115	100.0	100.0	100.0
25-54 years	5,129	2,294	2,835	3.9	4.4	3.5
55-64 years	9,118	*4,786	*4,332	6.9	*9.2	*5.3
65-74 years	23,033	12,828	10,206	17.3	24.7	12.6
75-84 years	47,806	19,446	28,360	35.9	37.5	35.0
85 years and over	47,920	12,537	35,382	36.0	24.2	43.6
All other causes						
All races:						
25 years and over	1,837,168	970,044	867,124	100.0	100.0	100.0
25-54 years	231,839	154,991	76,848	12.6	16.0	8.9
55-64 years	264,358	164,241	100,117	14.4	16.9	11.5
65-74 years	453,032	265,178	187,854	24.7	27.3	21.7
75-84 years	516,568	258,140	258,428	28.1	26.6	29.8
85 years and over	371,371	127,494	243,877	20.2	13.1	28.1
Black:						
25 years and over	211,309	115,482	95,827	100.0	100.0	100.0
25-54 years	49,780	32,481	17,299	23.6	28.1	18.1
55-64 years	38,368	22,626	15,742	18.2	19.6	16.4
65-74 years	51,113	28,567	22,547	24.2	24.7	23.5
75-84 years	46,504	22,523	23,981	22.0	19.5	25.0
85 years and over	25,544	9,285	16,259	12.1	8.0	17.0
Races other than black:						
25 years and over	1,625,860	854,563	771,297	100.0	100.0	100.0
25-54 years	182,060	122,510	59,550	11.2	14.3	7.7
55-64 years	225,990	141,615	84,375	13.9	16.6	10.9
65-74 years	401,919	236,612	165,307	24.7	27.7	21.4
75-84 years	470,064	235,617	234,447	28.9	27.6	30.4
85 years and over	345,827	118,209	227,618	21.3	13.8	29.5

NOTE: Numbers and percents may not add to totals because of rounding. Oregon not included in the 1986 National Mortality Followback Survey.

Table 2. Estimated number and percent distribution of deaths from cerebrovascular diseases and all other causes by marital status, according to sex: United States, 1986

<i>Cause of death and marital status</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>
Cerebrovascular diseases						
	Estimated number			Percent distribution		
All marital statuses	146,662	58,184	88,478	100.0	100.0	100.0
Married	56,231	36,413	19,818	38.3	62.6	22.4
Widowed	68,226	12,934	55,292	46.5	22.2	62.5
Divorced or separated	13,246	5,657	7,589	9.0	9.7	8.6
Never married	8,959	3,180	5,779	6.1	5.5	6.5
All other causes						
All marital statuses	1,800,216	946,314	853,902	100.0	100.0	100.0
Married	834,919	593,158	241,761	46.4	62.7	28.3
Widowed	634,323	159,130	475,193	35.2	16.8	55.6
Divorced or separated	179,960	103,451	76,509	10.0	10.9	9.0
Never married	151,015	90,575	60,439	8.4	9.6	7.1

NOTE: Numbers and percents may not add to totals because of rounding. Oregon not included in the 1986 National Mortality Followback Survey.

Table 3. Estimated number and percent distribution of deaths from cerebrovascular diseases and all other causes by level of education, according to sex: United States, 1986

Cause of death and level of education	Estimated number			Percent distribution		
	Both sexes	Male	Female	Both sexes	Male	Female
Cerebrovascular diseases						
All levels of education	136,594	55,075	81,519	100.0	100.0	100.0
Less than high school	78,101	34,237	43,864	51.7	53.0	50.2
High school	35,566	11,704	23,862	29.0	26.4	31.8
1-3 years of college	14,078	4,891	9,187	10.7	10.4	11.1
4 years of college or more	8,849	4,243	4,606	8.7	10.2	7.0
All other causes						
All levels of education	1,698,582	900,363	798,219	100.0	100.0	100.0
Less than high school	877,422	477,070	400,352	57.2	62.2	53.8
High school	491,808	238,049	253,759	26.0	21.3	29.3
1-3 years of college	181,923	93,634	88,290	10.3	8.9	11.3
4 years of college or more	147,429	91,611	55,818	6.5	7.7	5.7

NOTE: Numbers and percents may not add to totals because of rounding. Oregon not included in the 1986 National Mortality Followback Survey.

Table 4. Estimated number and percent distribution of deaths from cerebrovascular diseases and all other causes by number of doctor visits, according to sex: United States, 1986

Cause of death and number of doctor visits	Estimated number			Percent distribution		
	Both sexes	Male	Female	Both sexes	Male	Female
Cerebrovascular diseases						
All doctor visits	137,986	54,607	83,379	100.0	100.0	100.0
No visits	23,708	8,149	15,559	17.2	14.9	18.7
1-4 visits	37,659	15,130	22,529	27.3	27.7	27.0
5-14 visits	48,297	20,759	27,538	35.0	38.0	33.0
15 visits or more	28,322	10,569	17,753	20.5	19.4	21.3
All other causes						
All doctor visits	1,694,793	891,862	802,931	100.0	100.0	100.0
No visits	216,560	108,556	108,004	12.8	12.2	13.5
1-4 visits	393,433	235,782	157,651	23.2	26.4	19.6
5-14 visits	580,191	295,676	284,515	34.2	33.2	35.4
15 visits or more	504,609	251,848	252,761	29.8	28.2	31.5

NOTE: Numbers and percents may not add to totals because of rounding. Oregon not included in the 1986 National Mortality Followback Survey.

Table 5. Estimated number and percent distribution of deaths from cerebrovascular diseases and all other causes by primary health care payment source, according to sex: United States, 1986

Cause of death and primary health care payment source	Estimated number			Percent distribution		
	Both sexes	Male	Female	Both sexes	Male	Female
Cerebrovascular diseases						
All sources of payment	118,034	46,303	71,731	100.0	100.0	100.0
Self or family	19,223	6,831	12,392	16.3	14.8	17.3
Medicare	60,322	25,849	34,473	51.1	55.8	48.1
Medicaid	12,770	*2,297	10,473	10.8	*5.0	14.6
HMO or insurance	17,855	7,168	10,687	15.1	15.5	14.9
Other sources	7,864	4,158	*3,706	6.7	9.0	*5.2
All other causes						
All sources of payment	1,483,881	778,824	705,057	100.0	100.0	100.0
Self or family	189,666	88,882	100,784	12.8	11.4	14.3
Medicare	698,940	355,796	343,144	47.1	45.7	48.7
Medicaid	132,549	50,598	81,951	8.9	6.5	11.6
HMO or insurance	330,864	189,274	141,590	22.3	24.3	20.1
Other sources	131,862	94,274	37,588	8.9	12.1	5.3

NOTE: Numbers and percents may not add to totals because of rounding. Oregon not included in the 1986 National Mortality Followback Survey. HMO is Health Maintenance Organization.

Table 6. Estimated number and percent distribution of deaths from cerebrovascular diseases and all other causes by own money spent for health care, according to sex: United States, 1986

<i>Cause of death and own money spent</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>
Cerebrovascular diseases						
	Estimated number			Percent distribution		
All amounts spent	120,802	47,004	73,798	100.0	100.0	100.0
Less than \$500	45,320	19,320	26,000	37.5	41.1	35.2
\$500-\$999	13,211	5,953	7,258	10.9	12.7	9.8
\$1,000-\$1,999	15,679	6,348	9,331	13.0	13.5	12.6
\$2,000-\$4,999	20,269	7,679	12,590	16.8	16.3	17.1
\$5,000 or more	26,323	7,704	18,619	21.8	16.4	25.2
All other causes						
All amounts spent	1,492,997	781,893	711,104	100.0	100.0	100.0
Less than \$500	608,035	338,813	269,222	40.7	43.3	37.9
\$500-\$999	201,554	110,706	90,848	13.5	14.2	12.8
\$1,000-\$1,999	184,660	99,298	85,362	12.4	12.7	12.0
\$2,000-\$4,999	238,897	120,983	117,914	16.0	15.5	16.6
\$5,000 or more	259,851	112,093	147,758	17.4	14.3	20.8

NOTE: Numbers and percents may not add to totals because of rounding. Oregon not included in the 1988 National Mortality Followback Survey.

Table 7. Estimated number and percent distribution of deaths from cerebrovascular diseases and all other causes by assistance received in daily living and medical care, according to age and sex: United States, 1986

Cause of death, age, and assistance received in daily living and medical care	Estimated number			Percent distribution		
	Both sexes	Male	Female	Both sexes	Male	Female
Cerebrovascular diseases						
25 years and over:						
Assistance in daily living	107,682	47,741	59,941	100.0	100.0	100.0
No help received.	59,267	27,357	31,910	55.0	57.3	53.2
Family helped only	24,281	11,298	12,983	22.5	23.7	21.7
Nonrelatives helped only.	*5,189	*1,512	*3,677	*4.8	*3.2	*6.1
Family and nonrelatives helped	18,945	7,574	11,371	17.6	15.9	19.0
25-54 years:						
Assistance in daily living	7,445	3,629	3,816	100.0	100.0	100.0
No help received.	6,550	3,155	3,395	88.0	87.0	89.0
Family helped only	*475	*273	*201	*6.4	*7.5	*5.3
Nonrelatives helped only.	*61	*0	*61	*0.8	*0.0	*1.6
Family and nonrelatives helped	*358	*200	*158	*4.8	*5.5	*4.1
55-74 years:						
Assistance in daily living	34,072	17,803	16,270	100.0	100.0	100.0
No help received.	20,653	10,854	9,799	60.6	61.0	60.2
Family helped only	7,093	*3,877	3,216	20.8	*21.8	19.8
Nonrelatives helped only.	*1,268	*854	*414	*3.7	*4.8	*2.5
Family and nonrelatives helped	5,058	*2,217	*2,841	14.8	*12.5	*17.5
75 years and over:						
Assistance in daily living	66,166	26,310	39,856	100.0	100.0	100.0
No help received.	32,064	13,348	18,716	48.5	50.7	47.0
Family helped only	16,713	7,147	9,566	25.3	27.2	24.0
Nonrelatives helped only.	*3,859	*658	*3,202	*5.8	*2.5	*8.0
Family and nonrelatives helped	13,530	5,157	8,373	20.4	19.6	21.0
25 years and over:						
Assistance in medical care.	107,764	48,265	59,499	100.0	100.0	100.0
No help received.	59,267	26,601	32,666	55.0	55.1	54.9
Family helped only	24,912	12,580	12,332	23.1	26.1	20.7
Nonrelatives helped only.	*5,119	*1,643	*3,476	*4.8	*3.4	*5.8
Family and nonrelatives helped	18,466	7,441	11,025	17.1	15.4	18.5
25-54 years:						
Assistance in medical care.	7,533	3,717	3,816	100.0	100.0	100.0
No help received.	6,282	3,179	3,103	83.4	85.5	81.3
Family helped only	*734	*338	*396	*9.7	*9.1	*10.4
Nonrelatives helped only.	*61	*0	*61	*0.8	*0.0	*1.6
Family and nonrelatives helped	*455	*200	*256	*6.0	*5.4	*6.7
55-74 years:						
Assistance in medical care.	34,170	18,237	15,934	100.0	100.0	100.0
No help received.	20,401	10,487	9,914	59.7	57.5	62.2
Family helped only	7,221	4,338	*2,883	21.1	23.8	*18.1
Nonrelatives helped only.	*1,388	*974	*414	*4.1	*5.3	*2.6
Family and nonrelatives helped	5,160	*2,438	*2,722	15.1	*13.4	*17.1
75 years and over:						
Assistance in medical care.	66,061	26,312	39,749	100.0	100.0	100.0
No help received.	32,583	12,934	19,649	49.3	49.2	49.4
Family helped only	16,958	7,905	9,053	25.7	30.0	22.8
Nonrelatives helped only.	*3,670	*669	*3,001	*5.6	*2.5	*7.5
Family and nonrelatives helped	12,850	4,803	8,047	19.5	18.3	20.2
All other causes						
25 years and over:						
Assistance in daily living	1,511,461	846,250	665,211	100.0	100.0	100.0
No help received.	821,932	513,610	308,322	54.4	60.7	46.3
Family helped only	345,386	184,869	160,517	22.9	21.8	24.1
Nonrelatives helped only.	60,298	21,757	38,541	4.0	2.6	5.8
Family and nonrelatives helped	283,845	126,014	157,831	18.8	14.9	23.7
25-54 years:						
Assistance in daily living	218,613	146,487	72,125	100.0	100.0	100.0
No help received.	157,984	116,346	41,638	72.3	79.4	57.7
Family helped only	30,364	16,291	14,073	13.9	11.1	19.5
Nonrelatives helped only.	4,822	3,276	1,546	2.2	2.2	2.1
Family and nonrelatives helped	25,443	10,575	14,868	11.6	7.2	20.6
55-74 years:						
Assistance in daily living	652,329	392,456	259,874	100.0	100.0	100.0
No help received.	366,143	241,970	124,173	56.1	61.7	47.8
Family helped only	152,315	89,705	62,610	23.3	22.9	24.1
Nonrelatives helped only.	18,144	7,807	10,336	2.8	2.0	4.0
Family and nonrelatives helped	115,728	52,974	62,754	17.7	13.5	24.1

Table 7. Estimated number and percent distribution of deaths from cerebrovascular diseases and all other causes by assistance received in daily living and medical care, according to age and sex: United States, 1986—Con.

<i>Cause of death, age, and assistance received in daily living and medical care</i>	<i>Estimated number</i>			<i>Percent distribution</i>		
	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>	<i>Both sexes</i>	<i>Male</i>	<i>Female</i>
All other causes—Con.						
75 years and over:						
Assistance in daily living	640,519	307,307	333,212	100.0	100.0	100.0
No help received.	297,805	155,294	142,511	46.5	50.5	42.8
Family helped only	162,708	78,874	83,834	25.4	25.7	25.2
Nonrelatives helped only.	37,333	10,674	26,659	5.8	3.5	8.0
Family and nonrelatives helped	142,674	62,465	80,209	22.3	20.3	24.1
25 years and over:						
Assistance in medical care.	1,509,129	844,877	664,251	100.0	100.0	100.0
No help received.	796,561	475,397	321,164	52.8	56.3	48.3
Family helped only	370,087	215,744	154,343	24.5	25.5	23.2
Nonrelatives helped only.	61,330	23,733	37,596	4.1	2.8	5.7
Family and nonrelatives helped	281,151	130,003	151,148	18.6	15.4	22.8
25–54 years:						
Assistance in medical care.	218,187	146,048	72,139	100.0	100.0	100.0
No help received.	152,974	110,690	42,284	70.1	75.8	58.6
Family helped only	34,922	20,577	14,344	16.0	14.1	19.9
Nonrelatives helped only.	5,194	3,526	1,667	2.4	2.4	2.3
Family and nonrelatives helped	25,098	11,254	13,844	11.5	7.7	19.2
55–74 years:						
Assistance in medical care.	652,648	393,075	259,573	100.0	100.0	100.0
No help received.	352,044	222,574	129,470	53.9	56.6	49.9
Family helped only	166,660	107,906	58,754	25.5	27.5	22.6
Nonrelatives helped only.	19,005	8,597	10,408	2.9	2.2	4.0
Family and nonrelatives helped	114,939	53,998	60,941	17.6	13.7	23.5
75 years and over:						
Assistance in medical care.	638,295	305,756	332,539	100.0	100.0	100.0
No help received.	291,544	142,134	149,410	45.7	46.5	44.9
Family helped only	168,505	87,261	81,245	26.4	28.5	24.4
Nonrelatives helped only.	37,131	11,610	25,521	5.8	3.8	7.7
Family and nonrelatives helped	141,115	64,752	76,364	22.1	21.2	23.0

NOTE: Numbers and percents may not add to totals because of rounding. Oregon not included in the 1986 National Mortality Followback Survey.

Table 8. Estimated number and percent distribution of deaths from cerebrovascular diseases and all other causes by smoking status, according to age: United States, 1986

Cause of death and smoking status	Age							
	25 years and over	25-54 years	55-74 years	75 years and over	25 years and over	25-54 years	55-74 years	75 years and over
Cerebrovascular diseases				Percent distribution				
All smoking statuses	137,538	7,267	34,936	95,334	100.0	100.0	100.0	100.0
Never smoked cigarettes	78,665	2,043	12,796	63,825	57.2	28.1	36.6	66.9
Smoked 0-4 years	7,184	*642	*1,746	4,796	5.2	*8.8	*5.0	5.0
Smoked 5-9 years	*2,849	*279	*481	*2,088	*2.1	*3.8	*1.4	*2.2
Smoked 10-14 years	*2,326	*443	*319	*1,565	*1.7	*6.1	*0.9	*1.6
Smoked 15-19 years	*2,829	*539	*335	*1,955	*2.1	*7.4	*1.0	*2.1
Smoked 20 years or more	43,686	3,322	19,259	21,104	31.8	45.7	55.1	22.1
All other causes				Percent distribution				
All smoking statuses	1,694,713	213,520	659,950	821,243	100.0	100.0	100.0	100.0
Never smoked cigarettes	749,234	59,736	189,550	499,948	44.2	28.0	28.7	60.9
Smoked 1-4 years	87,520	15,287	30,977	41,256	5.2	7.2	4.7	5.0
Smoked 5-9 years	28,520	10,598	10,709	7,212	1.7	5.0	1.6	0.9
Smoked 10-14 years	57,980	21,457	20,165	16,359	3.4	10.0	3.1	2.0
Smoked 15-19 years	43,785	19,857	15,148	8,781	2.6	9.3	2.3	1.1
Smoked 20 years or more	727,674	86,585	393,402	247,687	42.9	40.6	59.6	30.2

NOTE: Numbers and percents may not add to totals because of rounding. Oregon not included in the 1986 National Mortality Followback Survey.

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
 - * Estimate based on fewer than 30 sample deaths and does not meet standards of reliability or precision
 - # Figure suppressed to comply with confidentiality requirements
-

Technical notes

Sources of data and sample design

The NMFS sample was selected from the Current Mortality Sample (CMS). The CMS is a systematic 10-percent sample of death certificates received each month in the vital statistics offices of the 50 States, the District of Columbia, and the independent registration area of New York City (4). Although part of the CMS, Oregon was not included in the 1986 NMFS because of respondent consent requirements. Thus, the estimates in this report are representative of deaths in the United States excluding Oregon. Oregon accounts for about 1 percent of all deaths in the United States.

Oversampling of death certificates by race and age permitted the study of race differentials in mortality and yielded the characteristics of persons who died at younger ages. Deaths for persons under 55 years of age were oversampled 3.1 times and deaths for black persons were oversampled 2.9 times. In addition, approximately 2,500 deaths were selected with certainty to permit special studies of certain causes of death or populations. Deaths selected with certainty from the CMS included all women 25–54 years of age and all men 35–64 years of age who died from ischemic heart disease; all deaths of American Indians, Aleuts, and Eskimos; all deaths from asthma; and all deaths from certain rare cancers (nasopharynx, liver, male breast, lip and oral, nasal, small intestine, and other endocrine cancers). Death certificates in the CMS that were eligible for the 1986 NMFS were sequentially assigned to one of 18 sampling strata. The strata formation was based on the decedents' age, sex, race, and cause of death.

The 1986 NMFS data were obtained through questionnaires mailed to the next of kin or other person listed on the death certificate as providing the personal information on the decedent's death certificate. Questionnaires were mailed by the U.S. Bureau of the Census about 6

months after death occurred. A reminder letter was mailed 10 days after the first mailing, followed by a second mailing 1 month after the initial mailing. Telephone or personal visits were made by Census Bureau interviewers to nonrespondents 1 month after the second mailing.

The overall response rate for the survey was 89 percent, yielding 16,589 completed questionnaires. Eighty-two percent of the respondents who completed the NMFS questionnaire were close relatives of the decedent—spouses, parents, siblings, or adult children—and another 12 percent were more distant relatives. Only 6 percent of the respondents were unrelated to the decedent.

Information for each decedent on the underlying cause of death and all other causes contributing to the death was obtained from the Mortality Vital Statistics Multiple Cause-of-Death Statistical File compiled by NCHS. Records from this multiple cause-of-death file were matched to the data from the NMFS informant questionnaire for each decedent in the survey. The overall match rate was 99.9 percent.

Estimation procedures

Statistics produced from the NMFS are derived by a complex estimating procedure. The estimating procedure used to produce essentially unbiased national estimates from the NMFS has three principal components: inflation by reciprocals of the probabilities of sample selection, adjustment for nonresponse, and a ratio adjustment to fixed totals. The ratio adjustment factors make NMFS estimates of decedents in 18 age-race-sex categories equal to the number of resident deaths in 1986 for the United States, excluding Oregon. Although the final weights applied to the NMFS adjust for differential sampling by race, sex, and age, no adjustment was made for cause of death. Hence, NMFS counts of death by cause will not necessarily equal counts obtained from the vital statistics file.

Sampling errors

Because the estimates for this report are based on a sample, they may differ from figures that would have been obtained had a complete census been taken using the same schedules, instructions, and procedures. The standard error is primarily a measure of the variability that occurs by chance because only a sample, rather than the entire population, is surveyed. The standard error also reflects part of the measurement error, but it does not measure any systematic biases in the data. The chances are 95 in 100 that an estimate from the sample differs by less than twice the standard error from the value that would be obtained from a complete census.

The standard errors used in this report were approximated using the balanced-repeated-replication procedure. This method yields the overall variability through observation of variability among random subsamples of the total sample. A description of the development and evaluation of the replication technique for error estimation has been published (5).

It would be impracticable to present exact standard error estimates for all statistics used in this report. Thus, a generalized variance function was produced for aggregated estimates by fitting the data into 18 curves corresponding to the strata using the empirically determined relationship between the size of an estimate X and its relative variance ($\text{rel var } X$). This relationship is expressed as

$$\begin{aligned} \text{rel var } X &= \frac{S_x^2}{X^2} \\ &= a + \frac{b}{x} \end{aligned}$$

where a and b are regression estimates determined by an iterative procedure. These regression estimates are presented in table I.

Table 1. Parameters used to approximate the relative standard errors for estimates based on the 1986 National Mortality Followback Survey, by domain of study

Domain of study	Parameters	
	A	B
All decedents	-0.000088	173.472799
Decedents 25-34 years of age	-0.000725	40.250787
Decedents 35-54 years of age	-0.000306	57.187500
Decedents 55-69 years of age	-0.000325	189.139047
Decedents 70-84 years of age	-0.000219	200.749692
Decedents 85 years of age and over	-0.000430	181.208646
All black decedents	-0.000250	57.315899
Decedents 25-34 years of age	-0.002721	36.923295
Decedents 35-54 years of age	-0.001278	48.883512
Decedents 55-69 years of age	-0.000863	64.860422
Decedents 70-84 years of age	-0.000688	59.820841
Decedents 85 years of age and over	-0.001911	54.630073
All other decedents	-0.000106	184.663690
Decedents 25-34 years of age	-0.000948	39.640859
Decedents 35-54 years of age	-0.000419	62.024668
Decedents 55-69 years of age	-0.000411	214.015461
Decedents 70-84 years of age	-0.000253	211.433987
Decedents 85 years of age and over	-0.000484	190.261795

In this report, the determination of statistical inference is based on testing differences between two statistics. The standard error of a difference between two statistics is approximately the square root of the sum of the squares of the standard errors of the individual statistics. This formulation of the standard error of the difference of two statistics quite accurately approximates the standard error for the difference between two uncorrelated statistics; however, it only roughly approximates the standard error in most other cases.

Although the exact number of degrees of freedom in the NMFS sampling variance is not known, the number of degrees of freedom may be approximated by the number of pseudostrata used in the balanced-repeated-replication procedure (6). Accordingly, hypotheses about differences between estimates are tested using 18 degrees of freedom for the two-tailed *t*-tests. Terms relating to differences such as "higher" and "less" indicate that the differences are statistically significant at the 0.05 level. Terms such as "similar" and "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.

Rounding of numbers and percents

Numbers and percents within the tables and text were rounded to the nearest whole number or tenth of a percent. Therefore, the estimates may not add to the totals. In addition, the total estimated number of decedents varies from one table to another because of the exclusion of decedents with "no answer" responses.

NOTE: Nine other Federal agencies signed interagency agreements with NCHS to cosponsor the 1986 NMFS. These agencies are the National Heart, Lung, and Blood Institute; the National Institute of Child Health and Human Development; the National Cancer Institute; the National Institute of Aging; the National Institute of Mental Health; the Health Care Financing Administration; the U.S. Department of Veterans Affairs; the Indian Health Service; and the Office of the Secretary for Planning and Evaluation in the Department of Health and Human Services.

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