
Vital and Health Statistics

Advance Data From Vital and Health Statistics: Numbers 101–110

Series 16: Compilations of Advance Data From Vital and Health Statistics No. 11

Data in this report from health and demographic surveys present statistics by age and other variables on number of discharges and average length of stay from short-stay hospitals; contraception methods; usage of family planning and infertility services; infertility and fecundity statuses of all women of reproductive age; selected estimates for 1982 of diagnosis-related groups based on data from the National Hospital Discharge Survey; the usage of topical antimicrobial medications in the office-based patient care setting; timing of marital sexual intercourse in relation to first marriage, and the timing of marital dissolution and remarriage; wanted and unwanted childbearing; selected characteristics of discharges, diagnoses, and procedures for hospital usage by children; and office-based ambulatory care for patients 75 years old and over. These reports were originally published in 1984 and 1985.

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1983 Summary: National Hospital Discharge Survey

by Edmund J. Graves, Division of Health Care Statistics

Introduction

During 1983 an estimated 38.8 million inpatients, excluding newborn infants, were discharged from short-stay non-Federal hospitals in the United States. These patients were hospitalized an average of 6.9 days and used 268.3 million days of inpatient hospital care. Patients hospitalized during 1983 accounted for 167 discharges and 1,155 days of care per 1,000 civilian population.

These and other statistics presented in this report are based on data collected by means of the National Hospital Discharge Survey, a continuous survey that has been conducted by the National Center for Health Statistics since 1965. In 1983, data were abstracted from the face sheets of medical records of approximately 206,000 patients discharged from 418 short-stay non-Federal hospitals. A brief description of the sample design, data collection procedures, and estimation process, and definitions of terms used in this report can be found in the section entitled "Technical notes." A detailed discussion of these items, as well as the survey form used to collect the data, have been published.^{1,2}

Coding of medical data for patients hospitalized is done according to the *International Classification of Diseases, 9th Revision, Clinical Modification*³ (ICD-9-CM). Up to seven diagnoses and four procedures are coded for each discharge. Although diagnoses included in the ICD-9-CM section entitled "Supplementary classification of external causes of injury and poisoning" (codes E800-E999) are used by the National Hospital Discharge Survey, these diagnoses are excluded from this report. The conditions diagnosed and procedures performed are presented here by chapter of ICD-9-CM. Within these chapters, a few diagnoses and procedures or groups thereof also are shown. These specific categories were selected primarily because of large numbers of occurrences or because they are of special interest. Residual categories of the diagnostic and procedure classes, however, are not included in the tables. More

detailed analyses of these data will be presented in later reports in Series 13 of *Vital and Health Statistics*.

Data highlights

Utilization by patient and hospital characteristics

The number, rate, and average length of stay of patients discharged from short-stay non-Federal hospitals are shown by selected patient and hospital characteristics in tables 1-3. The 38.8 million patients discharged from short-stay hospitals during 1983 included an estimated 15.6 million males and 23.2 million females. The rates per 1,000 population were 139 for males and 193 for females, making the rate for females about 39 percent higher than the rate for males. The number and rate of discharges are always higher for females than for males because of the large number of women in their childbearing years (15-44 years of age) who are hospitalized for deliveries and other obstetrical conditions. Excluding deliveries, the rate for females discharged was 160, or only about 15 percent higher than the rate for males.

The average length of stay was 7.4 days for males and 6.6 days for females during 1983. The length of stay for females was shorter than that for males primarily because the average length of stay of the 4.0 million women who were hospitalized for deliveries was only 3.6 days. The average length of stay for females who were not hospitalized for deliveries during 1983 was 7.2 days.

The number of discharges from short-stay hospitals by geographic region during 1983 ranged from 13.9 million in the South Region to 6.6 million in the West Region, and the rates per 1,000 population ranged from 178 in the North Central Region to 146 in the West Region. Regional differences in the number of discharges are accounted for mainly by variations in population sizes and to a lesser extent by variations in the dis-

charge rates. This is apparent when number of discharges and rate of discharges are compared among the regions. Although the rate of discharges per 1,000 population was highest in the North Central and South Regions with no significant difference between them, the number of discharges and the civilian population in the South Region was about 30 percent higher than in the North Central Region.

Average lengths of stay by geographic region were 5.9 days in the West, 6.6 days in the South, 7.2 days in the North Central, and 8.1 days in the Northeast.

Discharges from short-stay hospitals were about 40 percent male and 60 percent female in every hospital bed-size group; females with deliveries accounted for about 10.3 percent of all discharges regardless of hospital size. The average length of stay increased steadily from 5.8 days in the smallest hospitals (6–99 beds) to 7.8 days in the largest hospitals (500 beds or more) for all patients.

During 1983, voluntary nonprofit hospitals provided medical care to an estimated 26.7 million patients, or 69 percent of all patients hospitalized. Hospitals operated by State and local governments cared for 8.2 million patients, or 21 percent of all discharges, and proprietary hospitals operated for profit cared for 3.9 million patients or 10 percent of all discharges. Average lengths of stay were 7.1 days in voluntary nonprofit hospitals, 6.3 days in State and local government hospitals, and 6.8 days in proprietary hospitals.

Utilization by diagnosis

Diseases of the circulatory system ranked first in 1983 among the ICD–9–CM diagnostic chapters as a principal or first-listed diagnosis among patients discharged from non-Federal short-stay hospitals. These conditions accounted for an estimated 5.7 million discharges. Other leading ICD–9–CM diagnostic chapters were diseases of the digestive system (4.5 million discharges) and supplementary classifications (including females with deliveries) (4.5 million discharges). Almost 40 percent of the patients discharged from non-Federal short-stay hospitals were included in these three ICD–9–CM diagnostic chapters.

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

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

The most frequent first-listed diagnoses for 1983 varied for the different age groups. For patients under 15 years of age, the most frequent diagnoses were acute respiratory infections, ex-

cept influenza and chronic disease of tonsils and adenoids. Excluding females with deliveries, the two most frequent diagnoses for patients 15–44 years of age were abortions and ectopic and molar pregnancies, and fractures, all sites. Patients 45–64 years of age were hospitalized most frequently for heart disease. The most common diagnoses for patients 65 years of age and over were heart disease and malignant neoplasms.

The average length of stay for all patients ranged from a low of 1.8 days for the diagnostic category chronic disease of tonsils and adenoids, 1.9 days for patients admitted for sterilization, and 2.0 days for the diagnostic category abortions and ectopic and molar pregnancies to a high of 18.0 days for the diagnostic category fracture of neck of femur. Although the overall average length of stay for females was shorter than that for males, females stayed in the hospital longer than males for many of the specific diagnostic categories examined in this report. Some categories for which women had substantially longer stays included psychosis; arthropathies and related disorders; intervertebral disc disorders; and fractures, all sites.

The average length of stay increased with increasing age for most categories of diagnoses shown. Overall, the average length of stay ranged from 4.6 days for patients under 15 years of age to 9.7 days for patients 65 and over. By diagnosis, stays were highest (when compared with the average length of stay) for patients with fracture of neck of femur (18.0 days) and psychoses (15.4 days).

Utilization by procedures

One or more surgical or nonsurgical procedures were performed for an estimated 21.2 million of the 38.8 million inpatients discharged from short-stay hospitals during 1983. A total of 35.9 million procedures, or an average of 1.8 per patient who underwent at least one procedure, were recorded in 1983.

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

Operations on the digestive system ranked first among the surgical and nonsurgical procedures (5.8 million) performed during 1983. These were followed by miscellaneous diagnostic and therapeutic procedures (6.3 million).

When grouped by chapters, miscellaneous diagnostic and therapeutic procedures with 6.3 million procedures ranked first among the surgical and nonsurgical procedures performed during 1983. These were followed by operations on the digestive system with 5.8 million procedures performed. Other leading procedures were obstetrical procedures and operations on the female genital organs each with 3.9 million procedures and operations on the musculoskeletal system with 3.8 million procedures. Approximately two thirds of all procedures performed in 1983 were included in these five ICD–9–CM procedure chapters.

The number and rate of all-listed procedures in 1983 for each ICD–9–CM procedure chapter and selected procedure categories are shown by sex and age in tables 7 and 8. Of the 35.9 million procedures performed during 1983, 14.0 million

were for males and 21.9 million were for females. The corresponding rates per 1,000 population were 155 for both sexes, 125 for males, and 183 for females. Of the procedures shown in table 7, the most common ones for males were endoscopies on the urinary system (natural orifice) and repair of inguinal hernia; the most frequently performed procedures for females were episiotomy and cesarean section.

The rate of procedures per 1,000 population increased with advancing age from 44 for patients under 15 years to 358 for patients 65 years of age and over. The most frequently performed procedures for patients under 15 years of age were tonsillectomy with or without adenoidectomy; for patients 15-44 years of age, episiotomy and cesarean section; for patients 45-64 years of age, arteriography and angiocardiology, and cardiac catheterization; and for patients 65 years of age and over, extraction of lens, insertion of prosthetic lens (pseudo-phakos), and endoscopies of the urinary system (natural orifice).

TABLE 1. NUMBER OF INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS BY SELECTED CHARACTERISTICS: UNITED STATES, 1983
(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN INFANTS)

SELECTED CHARACTERISTIC	BOTH SEXES	MALE	FEMALE
NUMBER OF PATIENTS DISCHARGED IN THOUSANDS			
TOTAL.....	38,783	15,573	23,210
AGE			
UNDER 15 YEARS.....	3,654	2,084	1,570
15-44 YEARS.....	15,269	4,524	10,745
45-64 YEARS.....	8,558	4,159	4,400
65 YEARS AND OVER.....	11,302	4,806	6,496
REGION			
NORTHEAST.....	7,793	3,202	4,591
NORTH CENTRAL.....	10,492	4,310	6,183
SOUTH.....	13,884	5,422	8,462
WEST.....	6,614	2,640	3,974
BED SIZE			
6-99 BEDS.....	6,336	2,523	3,812
100-199 BEDS.....	7,481	2,955	4,526
200-299 BEDS.....	5,990	2,454	3,536
300-499 BEDS.....	10,041	4,024	6,017
500 BEDS OR MORE.....	8,934	3,615	5,319
OWNERSHIP			
NONPROFIT.....	26,726	10,665	16,061
STATE AND LOCAL GOVERNMENT.....	8,190	3,336	4,854
PROPRIETARY.....	3,867	1,572	2,295

TABLE 2. RATE OF INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY AGE, GEOGRAPHIC REGION, AND SEX: UNITED STATES, 1983

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN INFANTS)

AGE AND REGION	BOTH SEXES	MALE	FEMALE
RATE OF PATIENTS DISCHARGED PER 1,000 POPULATION			
TOTAL.....	167.0	138.8	193.2
AGE			
UNDER 15 YEARS.....	70.8	79.0	62.3
15-44 YEARS.....	140.3	84.3	194.8
45-64 YEARS.....	192.2	196.6	188.3
65 YEARS AND OVER.....	412.7	437.2	396.3
REGION			
NORTHEAST.....	157.7	136.0	177.5
NORTH CENTRAL.....	178.4	151.1	204.1
SOUTH.....	176.5	143.4	207.3
WEST.....	145.6	118.5	171.7

TABLE 3. AVERAGE LENGTH OF STAY FOR INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS BY SELECTED CHARACTERISTICS: UNITED STATES, 1983

(DISCHARGES FROM NONFEDERAL HOSPITALS. EXCLUDES NEWBORN INFANTS)

SELECTED CHARACTERISTIC	BOTH SEXES	MALE	FEMALE
AVERAGE LENGTH OF STAY IN DAYS			
TOTAL.....	6.9	7.4	6.6
AGE			
UNDER 15 YEARS.....	4.6	4.5	4.6
15-44 YEARS.....	5.0	6.2	4.6
45-64 YEARS.....	7.6	7.6	7.6
65 YEARS AND OVER.....	9.7	9.6	9.8
REGION			
NORTHEAST.....	8.1	8.5	7.8
NORTH CENTRAL.....	7.2	7.5	6.9
SOUTH.....	6.6	7.1	6.2
WEST.....	5.9	6.4	5.5
BED SIZE			
6-99 BEDS.....	5.8	5.9	5.7
100-199 BEDS.....	6.4	6.9	6.1
200-299 BEDS.....	6.8	7.1	6.6
300-499 BEDS.....	7.3	7.8	7.0
500 BEDS OR MORE.....	7.8	8.6	7.3
OWNERSHIP			
NONPROFIT.....	7.1	7.6	6.8
STATE AND LOCAL GOVERNMENT.....	6.3	6.7	6.0
PROPRIETARY.....	6.8	7.1	6.5

TABLE 4. NUMBER OF INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY CATEGORY OF FIRST-LISTED DIAGNOSIS, SEX, AND AGE: UNITED STATES, 1983

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

CATEGORY OF FIRST-LISTED DIAGNOSIS AND ICD-9-CM CODE	TOTAL	SEX		AGE			
		MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
NUMBER OF PATIENTS DISCHARGED IN THOUSANDS							
ALL CONDITIONS.....	38,783	15,573	23,210	3,654	15,269	8,558	11,302
INFECTIOUS AND PARASITIC DISEASES.....001-139	677	319	358	208	237	91	142
NEOPLASMS.....140-239	2,642	1,136	1,506	70	469	918	1,185
MALIGNANT NEOPLASMS.....140-208,230-234	2,024	993	1,031	44	197	729	1,053
MALIGNANT NEOPLASM OF TRACHEA, BRONCHUS, AND LUNG.....162,197.0,197.3	339	210	129	*	12	151	176
MALIGNANT NEOPLASM OF BREAST.....174-175,198.81	244	*	242	*	35	102	107
ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES, AND IMMUNITY DISORDERS.....240-279	1,207	431	776	74	295	365	474
DIABETES MELLITUS.....250	675	255	420	27	156	237	255
DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.....280-289	360	152	209	61	87	63	149
MENTAL DISORDERS.....290-319	1,701	874	827	49	950	424	277
PSYCHOSES.....290-299	576	266	311	*5	294	152	125
NEUROTIC AND PERSONALITY DISORDERS.....300-301	264	88	176	*5	164	60	34
ALCOHOL DEPENDENCE SYNDROME.....303	388	295	93	*	227	131	29
DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.....320-389	1,878	795	1,083	313	355	384	825
DISEASES OF THE CENTRAL NERVOUS SYSTEM.....320-336,340-349	429	210	219	63	140	90	136
CATARACT.....366	594	211	382	*	15	98	478
DISEASES OF THE EAR AND MASTOID PROCESS.....380-389	360	167	193	186	64	56	54
DISEASES OF THE CIRCULATORY SYSTEM.....390-459	5,654	2,896	2,758	38	530	1,842	3,244
ESSENTIAL HYPERTENSION.....401	330	129	201	*	57	138	135
HEART DISEASE.....391-392.0,393-398,402,404,410-416,420-429	3,597	1,911	1,686	25	256	1,231	2,085
ACUTE MYOCARDIAL INFARCTION.....410	676	424	253	*	43	251	382
ATHEROSCLEROTIC HEART DISEASE.....414.0	466	261	205	*	12	151	303
OTHER ISCHEMIC HEART DISEASE.....411-413,414.1-414.9	938	544	394	*	68	437	430
CONGESTIVE HEART FAILURE.....428.0	464	208	255	*	*8	89	363
CEREBROVASCULAR DISEASE.....430-438	860	405	455	*	30	185	641
DISEASES OF THE RESPIRATORY SYSTEM.....460-519	3,632	1,833	1,799	1,076	753	680	1,123
ACUTE RESPIRATORY INFECTIONS, EXCEPT INFLUENZA.....460-465	564	287	277	294	90	63	117
CHRONIC DISEASE OF TONSILS AND ADENOIDS.....474	397	180	217	270	122	*	*
PNEUMONIA, ALL FORMS.....480-486	837	426	411	242	122	138	335
ASTHMA.....493	459	190	269	136	110	119	94
DISEASES OF THE DIGESTIVE SYSTEM.....520-579	4,530	2,110	2,420	460	1,429	1,236	1,405
ULCERS OF THE STOMACH AND SMALL INTESTINE.....531-534	352	176	177	*	84	120	147
GASTRITIS AND DUODENITIS.....535	288	120	169	16	117	91	65
APPENDICITIS.....540-543	261	147	114	70	148	26	17
INGUINAL HERNIA.....550	477	429	48	74	128	150	125
NONINFECTIOUS ENTERITIS AND COLITIS.....555-556,558	584	236	348	186	189	87	122
CHOLELITHIASIS.....574	482	142	340	*	154	160	167
DISEASES OF THE GENITOURINARY SYSTEM.....580-629	3,311	1,080	2,231	136	1,647	760	768
CALCULUS OF KIDNEY AND URETER.....592	330	232	98	*	165	107	55
DISORDERS OF MENSTRUATION AND OTHER ABNORMAL VAGINAL BLEEDING.....626	321	-	321	*	252	66	*
COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM.....1/ 630-675	1,348	...	1,048	*5	1,041	*	...
ABORTIONS AND ECTOPIC AND MOLAR PREGNANCIES.....630-639	492	...	492	*	488	*	...
DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE.....680-709	577	274	303	62	216	145	153
DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE.....710-739	2,432	1,025	1,407	73	984	774	603
ARTHRICPATHIES AND RELATED DISORDERS.....710-719	576	229	347	19	195	165	196
INTERVERTEBRAL DISC DISORDERS.....722	473	266	208	*	254	161	57
CONGENITAL ANOMALIES.....740-759	356	185	171	192	92	47	25
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD.....760-779	209	117	92	209	*	*	-
SYMPTOMS, SIGNS, AND ILL-DEFINED CONDITIONS.....780-799	585	279	306	104	251	140	90
INJURY AND POISONING.....800-999	3,450	1,906	1,544	451	1,617	599	783
FRACTURES, ALL SITES.....800-829	1,090	543	547	147	380	167	396
FRACTURE OF NECK OF FEMUR.....820	230	59	171	*	*9	22	196
SPRAINS AND STRAINS OF BACK (INCLUDING NECK).....846-847	311	154	157	*	192	79	37
INTRACRANIAL INJURIES (EXCLUDING THOSE WITH SKULL FRACTURE).....850-854	275	171	105	69	145	30	31
LACERATIONS AND OPEN WOUNDS.....870-904	309	232	77	45	193	41	31
SUPPLEMENTARY CLASSIFICATIONS.....V01-V82	4,532	159	4,373	73	4,317	87	54
PERSONS ADMITTED FOR STERILIZATION.....V25.2	146	*	142	*	143	*	*
FEMALES WITH DELIVERIES.....V27	3,976	...	3,976	11	3,962	*	...

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

TABLE 5. RATE OF INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY CATEGORY OF FIRST-LISTED DIAGNOSIS, SEX, AND AGE: UNITED STATES, 1983

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

CATEGORY OF FIRST-LISTED DIAGNOSIS AND ICD-9-CM CODE	TOTAL	SEX		AGE			
		MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
RATE OF INPATIENTS DISCHARGED PER 10,000 POPULATION							
ALL CONDITIONS.....	1,669.6	1,388.3	1,932.3	708.3	1,403.5	1,922.3	4,127.1
INFECTIOUS AND PARASITIC DISEASES.....001-139	29.2	28.4	29.8	40.4	21.8	20.4	51.7
NEOPLASMS.....140-239	113.7	101.3	125.4	13.6	43.1	206.2	432.9
MALIGNANT NEOPLASMS.....140-208,230-234	87.1	88.5	85.8	8.6	18.1	163.8	384.5
MALIGNANT NEOPLASM OF TRACHEA, BRONCHUS, AND LUNG.....162,197.0,197.3	14.6	18.7	10.8	*	1.1	34.0	64.1
MALIGNANT NEOPLASM OF BREAST.....174-175,198.81	10.5	*	20.1	*	3.2	22.9	39.1
ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES, AND IMMUNITY DISORDERS.....240-279	52.0	38.4	64.6	14.3	27.1	82.1	173.0
DIABETES MELLITUS.....250	29.0	22.7	34.9	5.2	14.3	53.2	93.2
DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.....280-289	15.5	13.5	17.4	11.9	8.0	14.2	54.5
MENTAL DISORDERS.....290-319	73.2	77.9	68.8	9.5	87.3	95.2	101.3
PSYCHOSES.....290-299	24.8	23.7	25.9	*1.0	27.1	34.1	45.6
NEUROTIC AND PERSONALITY DISORDERS.....300-301	11.3	7.8	14.7	*1.1	15.1	13.5	12.3
ALCOHOL DEPENDENCE SYNDROME.....303	16.7	26.3	7.7	*	20.9	29.4	10.5
DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.....320-389	80.8	70.9	90.1	60.7	32.7	86.3	301.4
DISEASES OF THE CENTRAL NERVOUS SYSTEM.....320-336,340-349	18.5	18.7	18.3	12.2	12.9	20.2	49.7
CATARACT.....366	25.6	18.8	31.8	*	1.4	21.9	174.6
DISEASES OF THE EAR AND MASTOID PROCESS.....380-389	15.5	14.9	16.1	36.0	5.9	12.5	19.9
DISEASES OF THE CIRCULATORY SYSTEM.....390-459	243.4	258.2	229.6	7.4	48.7	413.7	1,184.7
ESSENTIAL HYPERTENSION.....401	14.2	11.5	16.7	*	5.3	30.9	49.3
HEART DISEASE.....391-392.0,393-398,402,404,410-416,420-429	154.9	170.4	140.4	4.9	23.5	276.5	761.2
ACUTE MYOCARDIAL INFARCTION.....410	29.1	37.8	21.1	*	3.9	56.4	139.6
ATHEROSCLEROTIC HEART DISEASE.....414.3	20.1	23.3	17.1	*	1.1	33.9	110.6
OTHER ISCHEMIC HEART DISEASE.....411-413,414.1-414.9	40.4	48.5	32.8	*	6.3	98.2	156.8
CONGESTIVE HEART FAILURE.....428.0	23.0	18.6	21.3	*	*0.8	20.1	132.7
CEREBROVASCULAR DISEASE.....430-438	37.0	36.1	37.9	*	2.8	41.5	234.1
DISEASES OF THE RESPIRATORY SYSTEM.....460-519	156.4	163.4	149.8	208.5	69.2	152.8	410.0
ACUTE RESPIRATORY INFECTIONS, EXCEPT INFLUENZA.....460-466	24.3	25.6	23.1	57.0	8.2	14.1	42.9
CHRONIC DISEASE OF TONSILS AND ADENOIDS.....474	17.1	16.0	18.1	52.4	11.2	*	*
PNEUMONIA, ALL FORMS.....480-486	36.0	38.0	34.2	47.0	11.2	30.9	122.2
ASTHMA.....493	19.8	17.0	22.4	26.4	10.1	26.7	34.2
DISEASES OF THE DIGESTIVE SYSTEM.....520-579	195.0	188.1	201.5	89.2	131.3	277.6	513.1
ULCERS OF THE STOMACH AND SMALL INTESTINE.....531-534	15.2	15.6	14.7	*	7.7	26.9	53.5
GASTRITIS AND DUODENITIS.....535	12.4	10.7	14.0	3.2	10.7	20.4	23.7
APPENDICITIS.....540-543	11.2	13.1	9.5	13.7	13.6	5.8	6.3
INGUINAL HERNIA.....550	20.5	38.3	4.0	14.4	11.8	33.6	45.8
NONINFECTIOUS ENTERITIS AND COLITIS.....555-556,558	25.1	21.1	29.0	36.1	17.4	19.6	44.5
CHOLELITHIASIS.....574	20.8	12.7	28.3	*	14.2	36.0	60.8
DISEASES OF THE GENITOURINARY SYSTEM.....580-629	142.5	96.3	185.7	26.3	151.4	170.7	280.5
CALCULUS OF KIDNEY AND URETER.....592	14.2	20.7	8.1	*	15.2	24.1	20.2
DISORDERS OF MENSTRUATION AND OTHER ABNORMAL VAGINAL BLEEDING.....626	13.8	-	26.7	*	23.2	14.9	*
COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM.....1/ 630-676	45.1	...	87.2	*0.9	95.7	*	...
ABORTIONS AND ECTOPIC AND MOLAR PREGNANCIES.....630-639	21.2	...	40.9	*	44.9	*	...
DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE.....680-709	24.9	24.5	25.2	12.1	19.9	32.7	56.0
DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE.....710-739	104.7	91.4	117.1	14.1	90.4	173.8	220.0
ARTHROPATHIES AND RELATED DISORDERS.....710-719	24.8	20.4	28.9	3.8	17.9	37.1	71.7
INTERVERTEBRAL DISC DISORDERS.....722	20.4	23.7	17.3	*	23.4	36.3	20.9
CONGENITAL ANOMALIES.....740-759	15.3	16.5	14.2	37.2	8.5	10.6	9.1
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD.....760-779	9.0	10.5	7.6	40.4	*	*	-
SYMPTOMS, SIGNS, AND ILL-DEFINED CONDITIONS.....780-799	25.2	24.9	25.5	20.2	23.0	31.4	32.9
INJURY AND POISONING.....800-999	148.5	169.9	128.6	87.4	148.7	134.5	286.0
FRACTURES, ALL SITES.....800-829	46.9	48.4	45.6	28.5	34.9	37.5	144.7
FRACTURE OF NECK OF FEMUR.....820	9.9	5.2	14.3	*	*0.9	4.9	71.5
SPRAINS AND STRAINS OF BACK (INCLUDING NECK).....846-847	13.4	13.8	13.1	*	17.6	17.8	13.4
INTRACRANIAL INJURIES (EXCLUDING THOSE WITH SKULL FRACTURE).....850-854	11.8	15.2	8.7	13.3	13.3	6.9	11.4
LACERATIONS AND OPEN WOUNDS.....870-904	13.3	20.7	6.4	8.7	17.7	9.3	11.2
SUPPLEMENTARY CLASSIFICATIONS.....V01-V82	195.1	14.2	364.1	14.2	396.9	19.5	19.9
PERSONS ADMITTED FOR STERILIZATION.....V25.2	6.3	*	11.8	*	13.2	*	*
FEMALES WITH DELIVERIES.....V27	171.2	...	331.0	2.1	364.2	*	...

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

TABLE 6. AVERAGE LENGTH OF STAY FOR INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY CATEGORY OF FIRST-LISTED DIAGNOSIS, SEX, AND AGE: UNITED STATES, 1983

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

CATEGORY OF FIRST-LISTED DIAGNOSIS AND ICD-9-CM CODE	TOTAL	SEX		AGE			
		MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
AVERAGE LENGTH OF STAY IN DAYS							
ALL CONDITIONS.....	6.9	7.4	6.6	4.6	5.0	7.6	9.7
INFECTIOUS AND PARASITIC DISEASES.....001-139	6.6	6.3	6.8	4.2	4.9	8.3	11.7
NEOPLASMS.....140-239	9.6	10.2	9.2	5.0	6.6	9.1	11.4
MALIGNANT NEOPLASMS.....140-208,230-234	10.7	10.7	10.6	5.7	8.1	9.9	11.9
MALIGNANT NEOPLASM OF TRACHEA, BRONCHUS, AND LUNG.....162,197.0,197.3	10.5	10.3	10.7	*	7.9	10.0	11.1
MALIGNANT NEOPLASM OF BREAST.....174-175,198.81	9.4	*	9.4	*	7.4	8.9	10.5
ENDOCRINE, NUTRITIONAL AND METABOLIC DISEASES, AND IMMUNITY DISORDERS.....240-279	8.7	8.7	8.6	5.5	6.8	8.4	10.5
DIABETES MELLITUS.....250	9.5	9.3	9.6	6.6	7.3	9.3	11.3
DISEASES OF THE BLOOD AND BLOOD-FORMING ORGANS.....280-289	6.7	5.9	7.2	4.2	6.3	6.7	7.9
MENTAL DISORDERS.....290-319	12.4	12.0	12.9	16.3	12.1	11.9	13.5
PSYCHOSES.....290-299	15.4	14.1	16.6	*15.4	15.5	14.9	16.0
NEUROTIC AND PERSONALITY DISORDERS.....300-301	10.1	10.3	10.0	*15.9	10.2	9.8	9.3
ALCOHOL DEPENDENCE SYNDROME.....303	11.5	11.2	12.5	*	11.7	10.8	12.6
DISEASES OF THE NERVOUS SYSTEM AND SENSE ORGANS.....320-389	5.0	5.4	4.7	3.2	5.6	5.5	5.2
DISEASES OF THE CENTRAL NERVOUS SYSTEM.....320-336,340-349	10.5	11.3	9.7	6.9	8.2	11.0	14.2
CATARACT.....366	2.5	2.6	2.5	*	2.4	2.4	2.6
DISEASES OF THE EAR AND MASTOID PROCESS.....380-389	3.0	2.7	3.3	2.3	2.5	3.5	5.1
DISEASES OF THE CIRCULATORY SYSTEM.....390-459	9.1	8.8	9.4	6.3	6.5	8.1	10.1
ESSENTIAL HYPERTENSION.....401	6.3	5.8	6.7	*	5.2	5.8	7.4
HEART DISEASE.....391-392.0,393-398,402,404,410-416,420-429	8.6	8.2	8.9	6.5	6.4	7.7	9.4
ACUTE MYOCARDIAL INFARCTION.....410	10.9	10.8	11.1	*	9.4	10.7	11.2
ATHEROSCLEROTIC HEART DISEASE.....414.0	8.4	7.6	9.4	*	4.7	6.4	9.5
CYTHER ISCHEMIC HEART DISEASE.....411-413,414.1-414.9	6.9	6.5	7.4	*	5.7	6.4	7.6
CONGESTIVE HEART FAILURE.....428.0	9.7	9.4	9.9	*	*5.9	9.3	9.9
CEREBROVASCULAR DISEASE.....430-438	11.7	11.3	12.2	*	12.0	10.7	12.1
DISEASES OF THE RESPIRATORY SYSTEM.....460-519	6.2	6.1	6.2	3.4	4.2	7.2	9.7
ACUTE RESPIRATORY INFECTIONS, EXCEPT INFLUENZA.....460-466	4.9	4.5	5.3	3.4	4.1	6.4	8.6
CHRONIC DISEASE OF TONSILS AND ADENOIDS.....474	1.8	1.8	1.9	1.7	2.0	*	*
PNEUMONIA, ALL FORMS.....480-486	8.0	7.8	8.3	4.8	6.3	8.6	10.8
ASTHMA.....493	5.5	4.9	5.8	3.7	4.5	6.4	7.9
DISEASES OF THE DIGESTIVE SYSTEM.....520-579	6.6	6.0	7.0	3.6	5.2	6.7	8.8
ULCERS OF THE STOMACH AND SMALL INTESTINE.....531-534	7.7	7.4	7.9	*	5.3	6.9	9.7
GASTRITIS AND DUODENITIS.....535	5.3	4.4	6.0	3.7	4.9	5.0	6.9
APPENDICITIS.....540-543	5.4	4.9	5.9	4.8	4.6	7.1	11.4
INGUINAL HERNIA.....550	4.1	4.0	4.6	1.7	3.8	4.2	5.6
NONINFECTIOUS ENTERITIS AND COLITIS.....555-556,558	5.1	5.0	5.3	3.6	5.0	5.7	7.3
CHOLELITHIASIS.....574	8.7	9.4	8.3	*	6.8	8.1	10.9
DISEASES OF THE GENITOURINARY SYSTEM.....580-629	5.6	6.3	5.2	3.6	4.5	5.7	8.2
CALCULUS OF KIDNEY AND URETER.....592	4.5	4.2	5.2	*	3.5	5.0	6.6
DISORDERS OF MENSTRUATION AND OTHER ABNORMAL VAGINAL BLEEDING.....626	3.6	-	3.6	*	3.6	3.9	*
COMPLICATIONS OF PREGNANCY, CHILDBIRTH, AND THE PUERPERIUM.....1/ 630-676	2.5	...	2.5	*1.9	2.5	*	...
ABORTIONS AND ECTOPIC AND MOLAR PREGNANCIES.....630-639	2.0	...	2.0	*	2.0	*	...
DISEASES OF THE SKIN AND SUBCUTANEOUS TISSUE.....680-709	8.1	7.8	8.4	3.9	6.5	8.4	11.9
DISEASES OF THE MUSCULOSKELETAL SYSTEM AND CONNECTIVE TISSUE.....710-739	7.3	6.8	7.7	5.8	5.8	7.5	9.8
ARTHROPATHIES AND RELATED DISORDERS.....710-719	8.3	7.0	9.1	5.9	4.7	9.2	11.2
INTERVERTEBRAL DISC DISORDERS.....722	8.2	7.2	9.4	*	7.6	8.5	9.9
CONGENITAL ANOMALIES.....740-759	5.9	5.8	6.0	5.6	4.9	7.7	8.4
CERTAIN CONDITIONS ORIGINATING IN THE PERINATAL PERIOD.....760-779	12.8	12.7	12.9	12.8	*	*	-
SYMPTOMS, SIGNS, AND ILL-DEFINED CONDITIONS.....780-799	4.2	4.1	4.3	3.2	3.6	4.4	6.5
INJURY AND POISONING.....800-999	7.2	6.4	8.2	4.3	5.7	7.4	11.7
FRACTURES, ALL SITES.....800-829	10.2	8.9	11.5	5.3	8.1	9.1	14.5
FRACTURE OF NECK OF FEMUR.....820	18.0	18.7	17.8	*	*24.7	16.6	17.9
SPRAINS AND STRAINS OF BACK (INCLUDING NECK).....846-847	6.6	5.9	7.3	*	6.3	7.0	7.6
INTRACRANIAL INJURIES (EXCLUDING THOSE WITH SKULL FRACTURE).....850-854	5.5	5.3	5.9	2.9	5.5	7.8	9.0
LACERATIONS AND OPEN WOUNDS.....870-904	4.5	4.3	5.1	3.6	4.3	5.0	6.7
SUPPLEMENTARY CLASSIFICATIONS.....V01-V82	3.5	4.3	3.5	4.3	3.5	4.7	5.3
PERSONS ADMITTED FOR STERILIZATION.....V25.2	1.9	*	1.9	*	1.9	*	*
FEMALES WITH DELIVERIES.....V27	3.6	...	3.6	3.0	3.6	*	...

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

TABLE 7. NUMBER OF ALL-LISTED PROCEDURES FOR INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY PROCEDURE CATEGORY, SEX, AND AGE: UNITED STATES, 1983

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

PROCEDURE CATEGORY AND ICD-9-CM CODE	TOTAL	SEX		AGE			
		MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
NUMBER OF ALL-LISTED PROCEDURES IN THOUSANDS							
ALL PROCEDURES.....	35,939	13,993	21,946	2,293	15,214	8,615	9,816
OPERATIONS ON THE NERVOUS SYSTEM.....01-05	923	453	470	143	332	257	192
OPERATIONS ON THE ENDOCRINE SYSTEM.....06-07	105	28	76	*5	41	36	22
OPERATIONS ON THE EYE.....08-16	1,558	602	956	67	119	295	1,077
EXTRACTION OF LENS.....13.1-13.6	630	227	403	*5	18	106	501
INSERTION OF PROSTHETIC LENS (PSEUDOPHAKOS).....13.7	516	184	333	*	*7	82	427
OPERATIONS ON THE EAR.....18-20	372	206	166	220	83	43	27
MYRINGOTOMY.....20.0	187	108	79	169	10	*5	*
OPERATIONS ON THE NOSE, MOUTH, AND PHARYNX.....21-29	1,503	729	774	451	691	223	138
RHINOPLASTY AND REPAIR OF NOSE.....21.8	263	125	138	13	188	46	15
TONSILLECTOMY WITH OR WITHOUT ADENOIDECTOMY.....28.2-28.3	424	187	237	279	140	*5	*
OPERATIONS ON THE RESPIRATORY SYSTEM.....30-34	970	585	385	74	182	335	378
BRONCHOSCOPY.....33.21-33.23	229	137	91	17	34	76	102
OPERATIONS ON THE CARDIOVASCULAR SYSTEM.....35-39	1,908	1,147	761	117	232	784	775
OPEN HEART SURGERY.....35.1-35.51, 35.53-36.2,36.9,37.10-37.11,37.32-37.33,37.5	275	194	82	18	21	148	88
DIRECT HEART REVASCLARIZATION.....36.1	191	145	46	*	11	112	67
CARDIAC CATHETERIZATION.....37.21-37.23	508	326	182	32	61	277	138
PACEMAKER INSERTION, REPLACEMENT, REMOVAL, REPAIR.....37.7-37.8	189	95	95	-	*9	31	150
OPERATIONS ON THE HEMIC AND LYMPHATIC SYSTEM.....40-41	365	181	185	23	85	106	151
OPERATIONS ON THE DIGESTIVE SYSTEM.....42-54	5,847	2,506	3,341	281	2,003	1,596	1,966
ESOPHAGOSCOPY AND GASTROSCOPY (NATURAL ORIFICE).....42.23,44.13	246	107	139	*9	52	91	95
PARTIAL GASTRECTOMY AND RESECTION OF INTESTINE.....43.5-43.8,45.6-45.8	248	114	134	*5	28	68	148
APPENDECTOMY, EXCLUDING INCIDENTAL.....47.0	282	147	135	75	165	28	15
HEMORRHOIDECTOMY.....49.43-49.46	134	76	59	-	64	50	21
CHOLECYSTECTOMY.....51.2	487	147	340	*	167	162	156
REPAIR OF INGUINAL HERNIA.....53.0-53.1	510	456	54	81	134	155	140
DIVISION OF PERITONEAL ADHESIONS.....54.5	298	38	260	*	180	58	57
OPERATIONS ON THE URINARY SYSTEM.....55-59	1,872	1,098	774	95	422	521	834
ENDOSCOPIES (NATURAL ORIFICE).....55.21-55.22,56.31,57.32,58.22	800	532	268	31	135	222	411
DILATION OF URETHRA.....58.6	163	80	83	13	37	43	70
OPERATIONS ON THE MALE GENITAL ORGANS.....60-64	845	845	...	126	131	178	410
PROSTATECTOMY.....60.2-60.6	357	357	*	81	274
CIRCUMCISION.....64.0	91	91	...	53	19	12	*8
OPERATIONS ON THE FEMALE GENITAL ORGANS.....65-71	3,872	...	3,872	10	2,534	688	240
OPHORECTOMY AND SALPINGO-OPHORECTOMY.....65.3-65.6	512	...	512	*	314	153	44
BILATERAL DESTRUCTION OR OCCLUSION OF FALLOPIAN TUBES.....66.2-66.3	568	...	568	*	564	*	-
HYSTERECTOMY.....68.3-68.7	672	...	672	-	440	180	53
CURETTAGE OF UTERUS TO TERMINATE PREGNANCY.....69.01,69.51	95	...	95	*	93	*	...
DILATION AND CURETTAGE OF UTERUS AFTER DELIVERY OR ABORTION.....69.02	281	...	281	*	281	*	...
DIAGNOSTIC DILATION AND CURETTAGE OF UTERUS.....69.09	632	...	632	*	421	166	44
REPAIR OF CYSTOCELE AND RECTOCELE.....70.5	150	...	150	-	58	56	35
OBSTETRICAL PROCEDURES.....72-75	3,914	...	3,914	10	3,902	*	...
EPISIOTOMY WITH OR WITHOUT FORCEPS OR VACUUM EXTRACTION.....72.1,72.21,72.31,72.71,73.6	1,943	...	1,943	*6	1,937	*	...
CESAREAN SECTION.....74.0-74.2,74.4,74.99	808	...	808	*	805	*	...
REPAIR OF CURRENT OBSTETRIC LACERATION.....75.5-75.6	479	...	479	*	478	-	...
OPERATIONS ON THE MUSCULOSKELETAL SYSTEM.....76-84	3,762	1,826	1,936	249	1,719	964	830
OPEN REDUCTION OF FRACTURE 76.72, 76.74,76.76-76.77,76.79,79.2-79.3,79.5-79.6	423	218	205	30	150	70	133
OTHER REDUCTION OF FRACTURE.....76.70-76.71,76.73,76.75,76.78,79.0-79.1,79.4	237	139	97	70	85	36	42
EXCISION OR DESTRUCTION OF INTERVERTEBRAL DISC AND SPINAL FUSION.....80.5,81.0	258	142	116	*5	143	89	21
EXCISION OF SEMILUNAR CARTILAGE OF KNEE.....80.6	147	97	50	*	91	37	15
ARTHROPLASTY AND REPLACEMENT OF KNEE.....81.41-81.47	147	79	68	*	74	29	41
ARTHROPLASTY AND REPLACEMENT OF HIP.....81.5-81.6	159	51	108	-	*7	34	118
OPERATIONS ON THE INTEGUMENTARY SYSTEM.....85-86	1,830	709	1,122	121	740	559	410
MASTECTOMY.....85.4	116	*6	110	*	17	54	44
SKIN GRAFT (EXCEPT LIP OR MOUTH).....86.6-86.7	154	88	66	18	55	42	40
MISCELLANEOUS DIAGNOSTIC AND THERAPEUTIC PROCEDURES.....87-99	6,292	3,077	3,215	302	1,557	2,027	2,366
COMPUTERIZED AXIAL TOMOGRAPHY.....87.03,87.41,87.71,88.01,88.38	871	431	440	46	212	240	373
PYELOGRAM.....87.73-87.75	453	251	202	18	145	137	153
ARTERIOGRAPHY AND ANGIOCARDIOGRAPHY USING CONTRAST MATERIAL.....88.4-88.5	825	508	317	16	104	389	316
DIAGNOSTIC ULTRASOUND.....88.7	695	264	431	31	225	189	249
RADIOISOTOPE SCAN.....92.0-92.1	685	319	367	14	119	230	322

TABLE 8. RATE OF ALL-LISTED PROCEDURES FOR INPATIENTS DISCHARGED FROM SHORT-STAY HOSPITALS, BY PROCEDURE CATEGORY, SEX, AND AGE: UNITED STATES, 1983

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

PROCEDURE CATEGORY AND ICD-9-CM CODE	TOTAL	SEX		AGE			
		MALE	FEMALE	UNDER 15 YEARS	15-44 YEARS	45-64 YEARS	65 YEARS AND OVER
RATE OF ALL-LISTED PROCEDURES PER 100,000 POPULATION							
ALL PROCEDURES.....	15,471.8	12,474.5	18,271.1	4,445.7	13,984.4	19,351.1	35,846.6
OPERATIONS ON THE NERVOUS SYSTEM.....01-05	397.5	404.1	391.4	276.3	305.0	577.7	700.4
OPERATIONS ON THE ENDOCRINE SYSTEM.....06-07	45.1	25.3	63.5	*10.1	37.9	80.9	81.3
OPERATIONS ON THE EYE.....08-16	670.9	537.1	795.8	129.5	109.4	663.7	3,933.4
EXTRACTION OF LENS.....13.1-13.6	271.1	202.2	335.5	*9.8	16.6	238.4	1,827.9
INSERTION OF PROSTHETIC LENS (PSEUDOPHAKOS).....13.7	222.3	163.7	277.1	*	*6.8	183.3	1,560.5
OPERATIONS ON THE EAR.....18-20	160.2	184.1	138.0	425.7	76.7	95.7	96.8
MYRINGOTOMY.....20.0	80.6	96.3	65.8	326.7	9.5	*11.0	*
OPERATIONS ON THE NOSE, MOUTH, AND PHARYNX.....21-29	646.9	649.9	644.1	874.9	634.7	500.4	504.0
RHINOPLASTY AND REPAIR OF NOSE.....21.8	113.1	111.4	114.8	25.2	173.1	104.3	55.0
TONSILLECTOMY WITH OR WITHOUT ADENOIDECTOMY.....28.2-28.3	182.7	167.1	197.3	541.2	128.3	*10.9	*
OPERATIONS ON THE RESPIRATORY SYSTEM.....30-34	417.5	521.5	320.4	142.7	167.6	753.5	1,381.7
BRONCHOSCOPY.....33.21-33.23	98.5	122.5	76.0	33.6	31.5	169.7	370.8
OPERATIONS ON THE CARDIOVASCULAR SYSTEM.....35-39	821.3	1,022.4	633.5	227.0	212.9	1,760.7	2,830.6
OPEN HEART SURGERY.....35.1-35.51, 35.53-36.2, 36.5, 37.10-37.11, 37.32-37.33, 37.5	118.6	172.7	68.0	35.3	19.4	332.2	322.1
DIRECT HEART REVASCULARIZATION.....36.1	82.4	129.3	38.5	*	9.7	252.3	246.3
CARDIAC CATHETERIZATION.....37.21-37.23	218.8	290.4	151.8	62.4	55.7	622.9	504.2
PACEMAKER INSERTION, REPLACEMENT, REMOVAL, REPAIR.....37.7-37.8	81.5	84.3	78.9	-	*8.0	69.1	547.6
OPERATIONS ON THE HEMIC AND LYMPHATIC SYSTEM.....40-41	157.3	161.0	153.9	44.0	78.5	238.2	552.4
OPERATIONS ON THE DIGESTIVE SYSTEM.....42-54	2,517.0	2,233.9	2,781.5	545.0	1,841.2	3,585.7	7,179.8
ESOPHAGOSCOPY AND GASTROSCOPY (NATURAL ORIFICE).....42.23, 44.13	106.0	95.2	116.1	*17.7	47.6	203.5	345.7
PARTIAL GASTRECTOMY AND RESECTION OF INTESTINE.....43.5-43.8, 45.6-45.8	106.9	102.0	111.4	*8.9	25.5	153.4	539.4
APPENDECTOMY, EXCLUDING INCIDENTAL.....47.0	121.4	131.5	112.0	144.9	151.4	62.5	54.1
HEMORRHOIDECTOMY.....49.43-49.46	57.8	67.5	48.8	-	58.8	111.5	75.6
CHOLECYSTECTOMY.....51.2	209.6	131.0	283.0	*	153.8	364.1	570.1
REPAIR OF INGUINAL HERNIA.....53.0-53.1	219.5	406.7	44.6	156.4	123.4	348.5	510.5
DIVISION OF PERITONEAL ADHESIONS.....54.5	128.2	33.5	216.6	*	165.1	130.8	207.1
OPERATIONS ON THE URINARY SYSTEM.....55-59	806.0	979.1	644.4	183.2	388.3	1,170.7	3,046.0
ENDOSCOPES (NATURAL ORIFICE).....55.21-55.22, 56.31, 57.32, 58.22	344.2	474.1	223.0	60.2	123.9	499.7	1,501.9
DILATION OF URETHRA.....58.5	70.4	71.6	69.2	25.3	34.3	96.6	255.9
OPERATIONS ON THE MALE GENITAL ORGANS.....60-64	363.8	753.4	...	244.7	120.2	400.6	1,496.4
PROSTATECTOMY.....60.2-60.6	153.6	318.1	*	183.0	999.1
CIRCUMCISION.....64.0	39.3	81.5	...	102.4	17.4	26.0	*29.2
OPERATIONS ON THE FEMALE GENITAL ORGANS.....65-71	1,666.9	...	3,223.6	19.8	2,697.0	1,545.0	875.7
OOPHORECTOMY AND SALPINGO-OOPHORECTOMY.....65.3-65.5	220.5	...	426.4	*	288.7	343.4	160.5
BILATERAL DESTRUCTION OR OCCLUSION OF FALLOPIAN TUBES.....66.2-66.3	244.4	...	472.7	*	518.6	*	-
HYSTERECTOMY.....68.3-68.7	289.4	...	559.7	-	404.1	404.0	192.7
CURETTAGE OF UTERUS TO TERMINATE PREGNANCY.....69.01, 69.51	41.0	...	79.3	*	85.8	*	...
DILATION AND CURETTAGE OF UTERUS AFTER DELIVERY OR ABORTION.....69.02	121.0	...	234.0	*	257.9	*	...
DIAGNOSTIC DILATION AND CURETTAGE OF UTERUS.....69.09	272.1	...	526.3	*	387.2	372.7	161.1
REPAIR OF CYSTOCELE AND RECTOCELE.....70.5	64.5	...	124.8	-	53.5	126.5	129.5
OBSTETRICAL PROCEDURES.....72-75	1,685.1	...	3,258.7	19.6	3,586.5	*	...
EPISIOTOMY WITH OR WITHOUT FORCEPS OR VACUUM EXTRACTION.....72.1, 72.21, 72.31, 72.71, 73.6	836.5	...	1,617.8	*11.6	1,780.1	*	...
CESAREAN SECTION.....74.0-74.2, 74.4, 74.99	347.6	...	672.3	*	740.4	*	...
REPAIR OF CURRENT OBSTETRIC LACERATION.....75.5-75.6	206.3	...	399.0	*	438.9	-	...
OPERATIONS ON THE MUSCULOSKELETAL SYSTEM.....76-84	1,619.5	1,628.3	1,611.4	483.4	1,579.9	2,165.3	3,029.7
OPEN REDUCTION OF FRACTURE.....76.72, 76.74, 76.76-76.77, 76.79, 79.2-79.3, 79.5-79.6	182.1	194.1	170.8	58.4	174.6	157.7	484.2
OTHER REDUCTION OF FRACTURE.....76.70-76.71, 76.73, 76.75, 76.78, 79.0-79.1, 79.4	101.9	124.3	80.9	135.2	81.6	81.0	153.7
EXCISION OR DESTRUCTION OF INTERVERTEBRAL DISC AND SPINAL FUSION.....80.5, 81.0	111.1	126.7	96.5	*10.1	131.5	199.3	76.8
EXCISION OF SEMILUNAR CARTILAGE OF KNEE.....80.6	63.4	86.5	41.7	*	84.0	83.9	54.9
ARTHROPLASTY AND REPLACEMENT OF KNEE.....81.41-81.47	63.2	70.0	56.9	*	68.4	65.2	149.0
ARTHROPLASTY AND REPLACEMENT OF HIP.....81.5-81.6	68.4	45.8	89.6	-	*6.7	76.5	429.3
OPERATIONS ON THE INTEGUMENTARY SYSTEM.....85-86	788.0	631.6	934.0	234.5	680.2	1,255.7	1,498.5
MASTECTOMY.....85.4	50.0	*5.4	91.7	*	15.6	120.5	162.5
SKIN GRAFT (EXCEPT LIP OR MOUTH).....86.6-86.7	66.3	78.6	54.8	35.0	50.1	93.8	144.7
MISCELLANEOUS DIAGNOSTIC AND THERAPEUTIC PROCEDURES.....87-99	2,708.7	2,742.8	2,676.9	585.3	1,468.3	4,552.3	8,639.7
COMPUTERIZED AXIAL TOMOGRAPHY.....87.03, 87.41, 87.71, 88.01, 88.38	374.8	384.2	366.1	88.4	195.3	538.1	1,362.2
PYEOGRAM.....87.73-87.75	195.0	223.4	168.6	34.2	133.3	307.7	560.0
ARTERIOGRAPHY AND ANGIOCARDIOGRAPHY USING CONTRAST MATERIAL.....88.4-88.5	355.2	453.0	263.9	31.3	55.8	874.2	1,152.4
DIAGNOSTIC ULTRASOUND.....88.7	299.0	235.0	358.8	60.9	206.9	424.8	909.0
RADIOISOTOPE SCAN.....92.0-92.1	295.0	284.0	305.2	28.0	109.2	516.1	1,176.5

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

Symbols

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

Technical notes

Source of data

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

The universe of the survey consisted of 6,965 short-stay hospitals contained in the 1963 Master Facility Inventory of Hospitals and Institutions. New hospitals were sampled for inclusion in the survey in 1972, 1975, 1977, 1979, 1981, and 1983. In all, 553 hospitals were sampled in 1983. Of these hospitals, 78 refused to participate, and 57 were out of scope. The 418 participating hospitals provided approximately 206,000 abstracts of medical records.

Sample design

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

Sample discharges were selected within the hospitals using the daily listing sheet of discharges as the sampling frame. These discharges were selected by a random technique, usually on the basis of the terminal digit or digits of the patient's medical record number, a number assigned when the patient was admitted to the hospital. The within-hospital sampling ratio for selecting sample discharges varied inversely with the probability of selection of the hospital.

Data collection and estimation

The sample selection and the transcription of information from the hospital records for abstract forms were performed by the hospital staff or by representatives of the National Center for Health Statistics or by both. The data were abstracted from the face sheets of the medical records. All discharge diagnoses and procedures were listed on the abstract in the order of the principal one, or the first-listed one if the principal one was not identified, followed by the order in which all other diagnoses or procedures were entered on the face sheet of the medical record.

Statistics produced by the NHDS are derived by a complex estimating procedure. The basic unit of estimation is the sample inpatient discharge abstract. The estimating procedure used to produce essentially unbiased national estimates in the NHDS has three principal components: inflation by reciprocals of the probabilities of sample selection, adjustment for nonresponse,

and ratio adjustment to fixed totals. These components of estimation are described in appendix I of two earlier publications.^{4,5}

Sampling errors and rounding of numbers

The standard error is a measure of the sampling variability that occurs by chance because only a sample, rather than an entire universe, is surveyed. The relative standard error of the estimate is obtained by dividing the standard error by the estimate itself and is expressed as a percent of the estimate. Relative standard errors for discharges and first-listed diagnoses are shown in table I, relative standard errors for days of care are shown in table II, and relative standard errors for procedures are shown in table III.

Table I. Approximate relative standard errors of estimated numbers of discharges, first-listed diagnosis, and all-listed diagnoses, by selected patient and hospital characteristics: United States, 1983

Size of estimate	Ownership of hospital		
	Proprietary or State and local government	Nonprofit	All other characteristics
	Relative standard error		
5,000	29.6	15.7	15.1
10,000	25.3	14.1	12.6
50,000	18.3	11.4	8.8
100,000	16.2	10.5	7.7
300,000	13.7	9.4	6.4
500,000	12.7	8.9	5.9
1,000,000	11.6	8.4	5.3
3,000,000	11.2	7.8	4.6
5,000,000	9.7	7.5	4.3
10,000,000	9.1	7.2	4.0
20,000,000	8.6	6.9	3.8
30,000,000	8.3	6.8	3.6
40,000,000	8.1	6.7	3.5

Table II. Approximate relative standard errors of estimated numbers of days of care by selected patient and hospital characteristics: United States, 1983

Size of estimate	Proprietary hospitals	All other characteristics
10,000	36.6	24.8
30,000	29.1	18.8
50,000	26.2	16.6
100,000	23.0	14.1
300,000	18.8	10.9
500,000	17.2	9.8
1,000,000	15.4	8.4
3,000,000	13.0	6.8
5,000,000	12.1	6.1
10,000,000	11.0	5.4
50,000,000	9.1	4.1
100,000,000	8.4	3.7
200,000,000	7.8	3.3

NOTE: A list of references follows the text.

Table III. Approximate relative standard errors of estimated numbers of all-listed procedures: United States, 1983

Size of estimate	Relative standard error
5,000	15.9
10,000	13.7
25,000	11.5
50,000	10.2
100,000	9.2
500,000	7.4
1,000,000	6.8
3,000,000	6.1
5,000,000	5.8
10,000,000	5.4
15,000,000	5.2
20,000,000	5.1
25,000,000	5.0

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

Tests of significance

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

Definition of terms

Hospitals and hospital characteristics

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

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

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

- *Voluntary nonprofit*—Hospitals operated by a church or another nonprofit organization.
- *Government*—Hospitals operated by a State or local government.

- *Proprietary*—Hospitals operated by individuals, partnerships, or corporations for profit.

Terms relating to hospitalization

Patient—A person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment. In this report the number of patients refers to the number of discharges during the year including any multiple discharges of the same individual from one or more short-stay hospitals. Infants admitted on the day of birth, directly or by transfer from another medical facility, with or without mention of disease, disorder, or immaturity, are included. All newborn infants, defined as those admitted by birth to the hospital, are excluded from this report. The terms “patient” and “inpatient” are used synonymously.

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

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

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

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

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

Terms relating to diagnoses

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

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

First-listed diagnosis—The coded diagnosis identified as the principal diagnosis or listed first on the face sheet of the

NOTE: A list of references follows the text.

medical record if the principal diagnosis cannot be identified. The number of first-listed diagnoses is equivalent to the number of discharges.

Procedure—One or more surgical or nonsurgical operations, procedures, or special treatments assigned by the physician to patients discharged from the inpatient service of short-stay hospitals. In the NHDS all terms listed on the face sheet (summary sheet) of the medical record under the captions “operation,” “operative procedures,” “operations and/or special treatment,” and the like are transcribed in the order listed. A maximum of four procedures are coded.

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

Demographic terms

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

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

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

Use of Contraception in the United States, 1982

by Christine A. Bachrach, Ph.D., and William D. Mosher, Ph.D., Division of Vital Statistics

During the period 1973–82, use of sterilization as a contraceptive method increased and use of the oral contraceptive pill declined among wives in the childbearing ages (15–44 years). By 1982, sterilization had become the leading method of contraception for ever married women. The method most commonly used by never married women in 1982 was the pill. These findings are based on preliminary data from the National Survey of Family Growth, Cycle III.

The National Survey of Family Growth is conducted periodically by the National Center for Health Statistics on topics related to childbearing, family planning, and related aspects of maternal and child health. Most of the statistics in this report are based on Cycle III of this survey, which included interviews with a sample of 7,969 women 15–44 years of age in the noninstitutional population of the conterminous United States in 1982. Survey design and sampling variability are discussed further in the Technical notes.

Data on the contraceptive status of all women of childbearing age, regardless of marital status, are presented for the first time in this report. Statistics for married women update those presented in reports based on previous cycles of the National Survey of Family Growth.¹⁻³

All women

In 1982, about 54 percent of American women 15–44 years of age were using some method of contraception: 18 percent were using contraceptive sterilization and 37 percent, other methods (table 1). Some women were not using contraception because they were not exposed to the risk of unintended pregnancy: 9 percent were sterile for noncontraceptive reasons (8 percent surgically sterile and 2 percent nonsurgically sterile), 5 percent were pregnant or had been pregnant within 2 months of the interview (post partum), 4 percent were trying to become pregnant, 14 percent had never had sexual intercourse, and 6 percent had not had intercourse in the 3 months before the

interview. Another 7 percent were exposed to the risk of unintended pregnancy but were not using contraception for other reasons, such as indifference to the possibility of pregnancy, or health or religious concerns. This last group also included some women who had had sexual intercourse within 3 months of the interview but reported that they were not currently having intercourse. Such women are considered exposed to the risk of unintended pregnancy in order to include in the exposed population women with intermittent patterns of sexual intercourse. Of women who were at risk of an unintended pregnancy—those who had had sexual intercourse during the 3 months prior to interview and were not pregnant, post partum, seeking pregnancy, or nonsurgically or noncontraceptively sterile—88 percent were using a method of contraception and 12 percent were not (calculated from table 1).

The most widely used method of contraception in 1982 was sterilization (either male or female), used by 18 percent of women, followed in order of popularity by the pill (16 percent), condom (7 percent), diaphragm (5 percent), and IUD (4 percent). About 2 percent of women used some form of periodic abstinence: rhythm by calendar, temperature methods, or natural family planning. Each of several other methods, such as withdrawal, douche, foam, and suppositories were used by about 1 percent or less of women.

Black women were less likely than white women to be using some method of contraception (51 percent compared with 55 percent, including sterilization), and more likely to be having intercourse in the 3 months before the interview but not using a method (13 percent compared with 6 percent). Female contraceptive sterilization was more common among black than white women (14 percent compared with 12 percent), while male contraceptive sterilization was more commonly relied upon by white women. Use of male or female sterilization as a contraceptive method was higher for white women (18 percent) than for black women (15 percent). A higher proportion of black women (20 percent) than white women

Table 1. Number of women 15–44 years of age and percent distribution by current contraceptive status and method, according to age and race: United States, 1982

[Preliminary data based on a sample of the household population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms]

Contraceptive status and method	15–44 years			15–29 years			30–44 years		
	All races ¹	White	Black	All races ¹	White	Black	All races ¹	White	Black
	Number in thousands								
All women	54,099	45,367	6,985	30,413	25,239	4,223	23,686	20,128	2,762
	Percent distribution								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sterile	27.3	27.8	23.7	8.0	7.7	9.5	52.0	52.9	45.4
Surgically sterile	25.7	26.2	22.3	7.1	6.8	8.8	49.7	50.5	42.9
Contraceptively sterile	17.9	18.4	15.0	5.6	5.4	7.0	33.6	34.6	27.1
Female	12.0	11.6	14.2	3.7	3.1	6.6	22.6	22.3	25.8
Male	5.9	6.7	*0.7	2.0	2.3	*0.4	11.0	12.4	*1.3
Noncontraceptively sterile	7.9	7.8	7.3	1.5	1.4	1.8	16.1	15.9	15.7
Female	7.4	7.3	7.3	1.4	1.3	1.8	15.0	14.8	15.7
Male	0.5	*0.5	0.0	*0.1	*0.1	-	1.0	*1.1	0.0
Nonsurgically sterile	1.5	1.6	*1.4	0.9	*1.0	*0.7	2.3	2.4	*2.5
Pregnant, post partum	5.0	4.9	5.6	6.9	6.6	8.3	2.4	2.6	*1.4
Seeking pregnancy	4.2	4.0	5.4	4.6	4.6	4.6	3.7	3.3	6.5
Other nonusers	27.0	26.3	29.6	37.3	37.1	36.0	13.7	12.7	19.9
Never had intercourse	13.7	13.9	10.3	22.7	23.4	16.6	2.0	2.0	*0.8
No intercourse in last 3 months	6.0	6.0	5.9	6.2	6.3	5.6	5.7	5.6	6.4
Intercourse in last 3 months	7.3	6.4	13.4	8.4	7.4	13.9	6.0	5.0	12.6
Nonsurgical contraceptors	36.6	37.1	35.7	43.2	43.9	41.5	28.1	28.5	26.7
Pill	15.5	15.1	19.8	23.3	22.9	27.8	5.6	5.3	7.7
IUD	3.9	3.8	4.7	3.1	2.9	4.1	5.0	5.0	5.7
Diaphragm	4.5	5.0	1.8	5.2	5.9	*1.2	3.6	3.9	2.8
Condom	6.7	7.2	3.2	6.1	6.5	3.5	7.5	8.0	2.8
Foam	1.3	1.4	1.4	1.0	1.1	*0.8	1.7	1.7	*2.2
Periodic abstinence	2.2	2.2	1.6	1.8	1.9	*1.5	2.6	2.7	*1.8
Natural family planning	0.3	*0.4	*0.1	*0.3	*0.3	*0.1	*0.4	*0.4	*0.3
Withdrawal	1.1	1.2	*0.7	1.4	1.6	*0.7	*0.6	*0.7	*0.7
Douche	*0.1	0.0	*0.7	*0.1	-	*0.6	*0.1	0.0	*0.9
Other	1.3	1.2	1.7	1.2	1.3	*1.4	1.3	1.2	*2.2
Suppositories	0.7	0.6	*1.0	*0.5	*0.4	*1.0	*0.9	*0.9	*1.1

¹Includes white, black, and other races.

(15 percent) used the oral contraceptive pill. By contrast, white women were more likely than black women to rely on the diaphragm (5 percent compared with 2 percent) and condom (7 percent compared with 3 percent). Differences by race in use of the pill and diaphragm were significant among women aged 15–29, but not among older women.

A smaller proportion of women 15–29 years of age compared with women 30–44 years of age was using a method of contraception (49 compared with 62 percent, including sterilization). This difference occurs because of substantial differences in the proportions of younger and older women who had never had sexual intercourse (23 and 2 percent, respectively), or were pregnant, post partum, or seeking pregnancy (12 and 6 percent); and despite the fact that younger women are less likely than older women to be nonusers because they are sterile for noncontraceptive reasons (2 and 18 percent, respectively). To some extent, the lower proportion of younger than older women using a method also reflects the greater predominance of unmarried women among younger women; as discussed in a later section, unmarried women are more likely than currently married women to be having intercourse but not using a method.

Use of contraceptive sterilization and oral contraceptives

differed markedly by age. About 23 percent of women 15–29 years of age were using the pill, compared with less than 6 percent of women aged 30–44. By contrast, less than 6 percent of women aged 15–29, compared with about 34 percent of women aged 30–44, used sterilization as a method of contraception. These differences in method choices probably reflect a number of factors, including the greater probability that older women had completed their families and were able to choose permanent methods of contraception, and concerns about the health effects of pill use among older women.⁴

Trends among currently married women

Table 2 presents data on the contraceptive status and method choices of currently married women for the years 1973, 1976, and 1982. This table focuses on currently married women because never married women were not fully represented in the surveys conducted in 1973 and 1976 (see Technical notes). "Other nonusers"—women who were not using contraception for reasons other than pregnancy or noncontraceptive sterility—are not differentiated in table 2 by whether they ever or recently had sexual intercourse, because data are not available for the

Table 2. Number of currently married women 15–44 years of age and percent distribution by current contraceptive status and method, according to race: United States, 1973, 1976, and 1982

[Statistics are based on samples of the household population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms. Data for 1982 are preliminary]

Contraceptive status and method	All races ¹			White			Black		
	1982	1976 ²	1973 ²	1982	1976 ²	1973 ²	1982	1976 ²	1973 ²
Number in thousands									
All currently married women	28,231	27,488	26,646	25,195	24,795	24,249	2,130	2,169	2,081
Percent distribution									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Sterile	40.9	30.0	23.9	41.1	30.7	24.0	37.8	24.4	22.7
Surgically sterile	38.9	28.2	22.9	38.9	29.0	23.2	36.3	21.6	20.8
Contraceptively sterile	27.9	18.6	16.4	28.2	19.3	16.5	23.2	12.7	14.6
Female	17.4	9.5	8.6	17.0	9.6	8.2	21.0	10.9	13.6
Male	10.4	9.0	7.8	11.2	9.7	8.4	2.2	*1.7	1.0
Noncontraceptively sterile	11.1	9.7	6.5	10.7	9.7	6.6	13.2	9.0	6.2
Female	10.1	8.9	6.3	9.8	8.9	6.3	13.1	8.7	6.1
Male	*1.0	0.7	0.2	*1.0	0.8	0.3	*0.1	-	*0.1
Nonsurgically sterile	*2.0	1.7	0.9	*2.1	1.7	0.8	*1.4	2.7	1.9
Pregnant, post partum	7.2	6.8	7.3	7.2	6.8	7.4	6.1	6.8	6.8
Seeking pregnancy	6.7	6.5	7.0	6.6	5.9	6.8	8.5	9.6	7.1
Other nonusers	5.0	7.6	8.7	4.5	7.1	7.8	9.8	13.3	17.9
Nonsurgical contraceptors	40.1	49.2	53.2	40.6	49.5	54.0	37.8	45.9	45.4
Pill	13.5	22.5	25.1	13.4	22.6	25.1	15.6	22.2	26.3
IUD	4.8	6.3	6.7	4.8	6.3	6.6	5.9	6.2	7.6
Diaphragm	4.5	2.9	2.4	4.7	3.0	2.5	3.3	1.8	1.2
Condom	9.8	7.3	9.4	10.2	7.5	9.9	4.3	4.6	3.2
Foam	2.0	3.0	3.5	2.0	2.9	3.5	*2.1	3.8	3.0
Periodic abstinence	3.2	3.4	2.8	3.3	3.5	2.9	*2.4	*1.4	*0.8
Withdrawal	*1.2	2.0	1.5	*1.2	2.1	1.6	*0.1	1.8	*0.4
Douche	*0.1	0.7	0.6	0.0	0.6	0.5	*1.0	2.7	1.8
Other	*1.0	1.0	1.3	*0.9	1.0	1.4	*2.1	*1.4	1.0

¹Includes white, black, and other races.

²Includes unmarried women living with a partner.

previous cycles, and, in 1982, virtually all currently married women had had intercourse within the last 3 months.

During the period 1973–82, the proportion of currently married women who were other nonusers declined from about 9 percent in 1973 to 5 percent in 1982. The proportions pregnant or post partum, or seeking pregnancy did not change significantly over the decade, while the proportion surgically sterile for noncontraceptive reasons increased. The percent of all wives using a method (including sterilization) remained about the same. However, among wives at risk of an unintended pregnancy (excluding those who were pregnant or post partum, seeking pregnancy, or nonsurgically or noncontraceptively sterile), the proportion using contraception increased from 89 percent in 1973 to 93 percent in 1982 (calculated from table 2).

As reported elsewhere,^{3,5} the rather substantial increase in noncontraceptive surgical sterility between 1973 and 1976 was largely or entirely due to a change in the wording of a question concerning the contraceptive intent of sterilizing operations (see Technical notes). If surgical sterilizations had been classified in 1976 and 1982 by the same question as in 1973, we would expect the percents using contraceptive sterilization and using any method of contraception in 1976 and 1982 to be somewhat higher.

During the period 1973–82, the proportion of currently married women using the pill declined substantially, from 25 to

14 percent, while the proportion using contraceptive sterilization increased substantially, from 16 to 28 percent. These changes occurred mainly between 1976 and 1982. The increase in sterilization between 1976 and 1982 was limited mainly to female operations (10 percent of wives in 1976 and 17 percent in 1982). Use of the IUD declined slightly between 1973 and 1982, from 7 to 5 percent, while use of the diaphragm increased slightly, from 2 to 5 percent. The proportion of wives using the condom declined from 9 percent in 1973 to 7 percent in 1976, and then increased again to 10 percent in 1982.

Never married women

As table 3 shows, one half of never married women either had never had sexual intercourse (39 percent), or were not having intercourse during the 3 months prior to the interview (an additional 11 percent). Very few of the never married women were pregnant, post partum, or seeking pregnancy (4 percent), and even fewer were noncontraceptively sterile (2 percent, data not shown). About 35 percent were using some method of contraception, including sterilization, and 10 percent had had intercourse in the 3 months before the interview but were not using a method.

The proportion of never married women using contraception is largely determined by the proportions who have ever had sexual intercourse, and who have had intercourse recently

Table 3. Number of never married women 15–44 years of age and percent distribution by current contraceptive status and method, according to age and race: United States, 1982

[Preliminary data based on a sample of the household population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms]

Contraceptive status and method	15–19 years											
	15–44 years			Total			15–17 years			20–44 years		
	All races ¹	White	Black	All races ¹	White	Black	All races ¹	White	Black	All races ¹	White	Black
	Number in thousands											
All never married women. . . .	19,162	14,948	3,543	8,839	7,193	1,377	4,968	3,971	818	10,323	7,755	2,166
	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
Sterile	3.3	2.0	8.6	*0.5	*0.6	*0.4	*0.5	*0.5	*0.4	5.6	3.4	13.8
Contraceptively sterile	1.8	*1.0	5.3	*0.1	*0.1	-	-	-	-	3.2	*1.9	8.6
Female	1.1	*0.3	5.1	-	-	-	-	-	-	2.1	*0.5	8.3
Male	*0.6	*0.8	*0.2	*0.1	*0.1	-	-	-	-	*1.1	*1.4	*0.3
Pregnant, post partum, seeking pregnancy	3.7	2.3	10.3	4.0	3.0	9.2	*3.6	*2.5	9.1	3.5	*1.6	10.9
Other nonusers	59.9	63.5	43.1	73.6	75.5	61.7	82.9	84.8	72.3	48.2	52.2	31.3
Never had intercourse	38.7	42.4	20.3	57.1	59.8	42.1	69.6	72.1	55.9	22.8	26.1	6.5
No intercourse in last 3 months	11.3	12.5	7.2	6.5	6.9	*3.6	4.9	5.0	*3.8	15.4	17.7	9.4
Intercourse in last 3 months	10.0	8.6	15.5	10.0	8.8	15.8	8.3	7.7	12.6	10.0	8.4	15.4
Nonsurgical contraceptors	33.1	32.2	38.0	21.9	21.0	28.7	13.1	12.2	18.2	42.7	42.7	44.0
Pill	18.5	17.2	25.5	13.7	12.6	20.5	8.3	7.6	11.8	22.7	21.4	28.7
IUD	1.8	*1.2	3.5	*0.2	0.0	*1.2	*0.2	*0.0	*0.8	3.1	*2.4	4.9
Diaphragm	4.8	5.7	*1.1	*1.4	*1.6	*0.6	*0.5	*0.5	*0.3	7.6	9.5	*1.5
Condom	4.1	4.3	3.4	4.9	5.2	*3.7	*3.3	*3.5	*2.6	3.4	3.5	3.2
Foam	*0.4	*0.3	*1.1	*0.1	-	*0.6	*0.1	-	*0.4	*0.7	*0.5	*1.4
Periodic abstinence	*0.9	*0.8	*1.0	*0.5	*0.5	*0.7	*0.2	*0.1	*0.6	*1.2	*1.0	*1.2
Natural family planning	*0.1	*0.1	-	-	-	-	-	-	-	*0.1	*0.2	-
Withdrawal	1.2	1.4	*0.6	*0.7	*0.8	*0.5	*0.5	*0.4	*0.6	*1.6	*2.0	*0.7
Douché	*0.1	-	*0.6	*0.1	-	*0.4	*0.1	-	*0.6	*0.1	-	*0.7
Other	1.3	1.4	*1.2	*0.3	*0.3	*0.5	*0.1	-	*0.4	2.1	*2.4	*1.7
Suppositories	*0.4	*0.3	*0.8	*0.1	*0.1	*0.3	*0.0	-	*0.1	*0.7	*0.6	*1.1

¹Includes white, black, and other races.

(in the 3 months prior to interview). These proportions vary sharply by the age and race of never married women. About 70 percent of women aged 15–17, 57 percent of women aged 15–19, and 23 percent of women aged 20–44 had never had intercourse. An additional 5, 7, and 15 percent of these women, respectively, had not had intercourse in the 3 months prior to the interview. Black, never married women were more likely than white women to have had intercourse, both ever and in the 3 months prior to interview.

Table 4 shows the percent of never married women using a method of contraception among those who were exposed to the risk of unintended pregnancy (that is, contraceptors and non-contraceptors who had sexual intercourse in the 3 months before the interview and were not noncontraceptively sterile, pregnant, post partum, or seeking pregnancy). Among these women, white and black women were about equally likely to be using a method of contraception (77 and 73 percent, respectively). Women 20–44 years of age were more likely to be using a method than women 15–19 years of age (80 percent compared with 68 percent).

Table 4 also shows that over half of never married women who used some method of contraception used the oral contra-

ceptive pill (53 percent). The diaphragm and condom were next in popularity, used by 14 and 12 percent of contraceptors, respectively. About 5 percent of never married contraceptors used sterilization, and 5 percent used the IUD. About 11 percent used other methods, including withdrawal (3 percent), periodic abstinence (3 percent), foam (1 percent), and suppositories (1 percent, data not shown).

As in the case of all women, the method choices of never married women differed appreciably by age and race. Younger women (aged 15–19) were more likely than older women (aged 20–44) to use the pill or condom, while older women were more likely to use a diaphragm, IUD, or sterilization. White women were more likely than black women to use the diaphragm. Race differences for other individual methods were not statistically significant, but taken as a group, the more effective methods (pill, IUD, or sterilization) were more commonly used by black than white women.

Compared with currently married women, never married women who were apparently at risk of an unintended pregnancy were less likely to be using a method of contraception. Excluding noncontracepting women who had never had intercourse; had not had intercourse during the 3 months prior to interview;

Table 4. Number of never married women 15–44 years of age who were exposed to the risk of an unintended pregnancy, and percent using a method of contraception, by race and age, and percent distribution of contraceptors by method of contraception, according to race and age: United States, 1982

[Preliminary data based on a sample of the household population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms]

Race and age	Exposed ¹	Using a method	Method of contraception						
			All methods	Sterilization	Pill	IUD	Diaphragm	Condom	Other methods ²
	Number in thousands	Percent	Percent distribution						
All races³									
15–44.....	8,727	76.1	100.0	5.1	53.2	5.0	13.7	11.8	11.2
15–19.....	2,872	67.6	100.0	*0.4	62.2	*0.9	*6.4	22.3	*7.6
15–17.....	1,081	60.0	100.0	-	63.7	*1.3	*3.6	25.0	*6.4
20–44.....	5,855	80.3	100.0	7.0	49.5	6.7	16.6	7.5	12.7
White									
15–44.....	6,372	77.4	100.0	*3.1	51.6	*3.7	17.1	13.0	11.4
15–19.....	2,188	69.0	100.0	*0.6	59.6	*0.1	*7.8	24.7	*7.3
15–17.....	803	60.2	100.0	-	62.4	*0.3	*4.4	*28.6	*4.2
20–44.....	4,184	81.8	100.0	*4.2	48.1	*5.4	21.2	7.9	13.2
Black									
15–44.....	2,098	73.0	100.0	12.1	58.9	8.0	*2.6	7.9	10.4
15–19.....	618	63.9	100.0	-	71.4	*4.2	*2.0	*13.0	*9.5
15–17.....	253	58.7	100.0	-	65.1	*4.5	*1.5	*14.5	*14.3
20–44.....	1,480	76.9	100.0	16.3	54.6	9.4	*2.9	6.1	10.7

¹Includes women using contraception and those not using contraception who had sexual intercourse in the last 3 months and were not pregnant, post partum, seeking pregnancy, or noncontraceptively sterile.

²Includes foam, periodic abstinence, withdrawal, douche, suppositories, and other methods.

³Includes white, black, and other races.

were noncontraceptively sterile; or were pregnant, post partum, or seeking pregnancy, 93 percent of currently married women, compared with 76 percent of never married women, were using a method. Never married women who used a method were about as likely as currently married contraceptors to use one of

the more effective methods—the pill, IUD, or sterilization (63 versus 68 percent, respectively). However, pill use was much more common among never married women, and sterilization was much more common among currently married women, reflecting differences in age and previous childbearing experience.

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Technical notes

Survey design

The National Survey of Family Growth is conducted periodically by the National Center for Health Statistics to collect data on fertility, family planning, and related aspects of maternal and child health. Field work for Cycle I was conducted under contract in 1973 by the National Opinion Research Center. Field work for Cycles II and III was conducted by Westat, Inc., in 1976 and 1982, respectively.

In all cycles, personal interviews were conducted with a multistage area probability sample of women 15–44 years of age in the noninstitutional population of the conterminous United States. In Cycles I and II, ever married women and never married women with offspring living in the household were eligible for the survey. In Cycle III, all women 15–44 years were eligible regardless of marital status or the presence of offspring. Women living in group quarters (such as college dormitories) were excluded from the samples in Cycles I and II, but included in Cycle III. Interviews were conducted with 9,797 women in Cycle I, 8,611 in Cycle II, and 7,969 in Cycle III. The sample designs of Cycles I and II are described in more detail in other reports of the National Center for Health Statistics.^{6,7}

Field work for Cycle III was conducted between August 1982 and February 1983. Black women and women aged 15–19 were oversampled. Interviews were conducted by trained female interviewers and lasted an average of one hour. The interview focused on a woman's pregnancy history; use of contraceptives in each pregnancy interval; ability to bear children; future childbearing expectations; use of family planning and infertility services; marital history; labor force participation; and a wide range of social, economic, and demographic characteristics.

Reliability of estimates

Because the statistics presented in this report are based on a sample, they may differ from the statistics that would result if all 54 million women represented by the National Survey of Family Growth had been interviewed. The standard error of an estimate (SE) is a measure of such differences. The standard error of an estimated number or percent presented in this report may be calculated by using the appropriate values of *A* and *B* from table I in the equations,

$$SE_{(N')} = \left(A + \frac{B}{N'} \right)^{1/2} \times N'$$

and

$$SE_{(P')} = \left(B \times P' \times \frac{100 - P'}{X'} \right)^{1/2}$$

where *N'* is the number of women, *P'* is the percent, and *X'* is the number of women in the denominator of the percent. Approximate standard errors for estimated percents of women of all races in Cycle III are shown in table II.

Table I. Estimates of *A* and *B* for calculating standard errors, by cycle, marital status, and race: National Survey of Family Growth

Cycle, marital status, and race	A	B
CYCLE I		
Currently married women		
All races and white	0.000017613	4493.7916
Black	0.000040219	1600.4393
CYCLE II		
Currently married women		
All races	-0.000185899	6751.0619
White and other	-0.000205624	7021.1665
Black	-0.000631040	2798.6440
CYCLE III		
Ever married women		
All races and white	-0.001097329	39809.1677
Black	-0.000908632	6346.0484
Never married women		
All races and white	-0.000935104	17608.8833
Black	-0.000908632	6346.0484

Table II. Approximate standard errors for estimated percents (expressed in percent) for women of all races: National Survey of Family Growth, Cycle III

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
100,000	6.5	10.1	13.8	18.5	21.2	22.6	23.1
500,000	2.9	4.5	6.2	8.3	9.5	10.1	10.3
1,000,000	2.0	3.2	4.4	5.8	6.7	7.2	7.3
5,000,000	0.9	1.4	2.0	2.6	3.0	3.2	3.3
10,000,000	0.6	1.0	1.4	1.8	2.1	2.3	2.3
30,000,000	0.4	0.6	0.8	1.1	1.2	1.3	1.3
50,000,000	0.3	0.4	0.6	0.8	0.9	1.0	1.0

The chances are about 68 in 100 that a sample estimate would fall within one standard error, and about 95 in 100 that it would fall within two standard errors of a statistic based on a complete count of the population represented by the National Survey of Family Growth. Differences between percents discussed in this report were found to be statistically significant at the 95-percent confidence level using a two-tailed *t*-test with 39 degrees of freedom. This means that in repeated samples of the same type and size, a difference as large as the one observed would occur in only 5 percent of samples, if there were, in fact, no difference between the percents in the population.

The relative standard error of a statistic is the ratio of the standard error to the statistic and is usually expressed as a percent of the estimate. In this report, statistics with relative standard errors of 30 percent or larger are indicated with an asterisk (*). These estimates are considered unreliable by themselves, but may be combined with other estimates to make comparisons of greater precision.

Statistics in this report also may be subject to nonsampling error, that is, errors or omissions in responding to the interview, recording answers, and processing data. The data have been adjusted for nonsampling error resulting from nonresponse by means of adjustments to the sample weights assigned to each case. Other types of nonsampling error were minimized by a series of stringent quality control measures similar to those used in Cycles I and II.^{6,7}

Definitions of terms

Contraceptive status

Sterile—A currently married woman was classified as sterile for the purposes of determining current contraceptive status if she reported that it was impossible for her and her husband to have a baby. An unmarried woman was classified as sterile if she reported that it was impossible for her to have a baby, or if her current method of contraception was male sterilization.

Nonsurgical—A woman (or couple) was classified as nonsurgically sterile if she reported that it was impossible for her to have a baby for any reason other than surgical sterilization. Reported nonsurgical reasons for sterility included menopause and sterility resulting from accident, illness, or congenital causes.

Surgical—A woman (or couple) was classified as surgically sterile if she or her husband were completely sterile due to an operation.

Because surgical sterilizations are very frequently obtained exclusively or partly as methods of contraception; that is, because of their complete effectiveness against conception rather than for purely therapeutic reasons, they have been further classified as contraceptive and noncontraceptive. In Cycle I, a sterilizing operation was contraceptive if the respondent answered "yes" to the question "Was the operation done at least partly so that you would not have any more children?" The question was reworded in Cycles II and III to "Was one reason for the operation because you had all the children you wanted?"

The percents of women contraceptively and noncontraceptively sterile are not fully comparable between Cycle I and Cycles II and III. The rewording of the question cited above probably reduced the percent of sterilizing operations classified as contraceptive, because an operation done to prevent a pregnancy that would be dangerous to the woman's health usually would have been reported as contraceptive in Cycle I, but as noncontraceptive in Cycles II and III. Also, in Cycle I, if a couple had had more than one sterilizing operation—for example, a vasectomy followed a few years later by a hysterectomy—the interviewer coded the earliest operation. In Cycles II and III, however, the woman's operation was given priority. Both of these factors tended to increase the proportion of sterilizing operations classified as noncontraceptive in 1976 and 1982 compared with 1973.

It should be noted that the estimates of male contraceptive sterilization reflect the numbers of *women* relying on this method, and not necessarily the numbers of men who have been sterilized for contraceptive reasons.

Pregnant—A woman (or couple) was classified as pregnant if she replied affirmatively to the question "Are you pregnant now?" or, for those in doubt, "Do you think you probably are pregnant or not?" However, a woman who reported that the onset of her last menstrual period was within the 30 days prior to the interview was automatically considered not pregnant.

Seeking pregnancy—A woman (or couple) was classified as seeking pregnancy if she reported she was not using a method at the time of interview because she wanted to become pregnant.

Post partum—A woman (or couple) was classified as post partum if she reported she was not currently using a method, was not seeking a pregnancy, and her last pregnancy had terminated within 2 months before the date she was interviewed.

Other nonusers—Women (or couples) who reported they were currently using no contraceptive method and could not be classified in any of the preceding categories of noncontraceptors were classified here. Among these are women who had never had intercourse, had not had intercourse in the last 3 months, were indifferent to the chances of pregnancy, had a very low risk of pregnancy due to some fecundity impairment, or objected to contraceptive methods for personal or religious reasons.

Never had intercourse—A woman (or couple) was classified as never having had intercourse if she was not currently using a method and she had never had sexual intercourse at any time up to the time of interview, or if she had had sexual intercourse but not since her menstrual periods began.

No intercourse in last 3 months—A woman (or couple) was classified as not having had intercourse in the last 3 months if she was not currently using a method and reported not having sexual intercourse in any of the 3 months before the interview.

Intercourse in last 3 months—A woman (or couple) was classified as having intercourse in the last 3 months if she was not currently using a method and was having sexual intercourse currently or in any of the 3 months preceding the interview.

Contraceptors—A woman (or couple) who reported use of a contraceptive method other than a surgical sterilization at the date of interview was classified according to the specific method used. Methods used by extremely small proportions of the population such as jelly, cream, suppositories, or abstinence, not in combination with any other methods, were grouped in the category "Other." Where more than one method was reported in current use, the method generally considered the most effective was used for classification purposes.

Demographic terms

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

Race—Race refers to the race of the woman interviewed and is reported as black, white, or other. In Cycle III, race was classified according to the woman's report of which race best described her. In Cycles I and II, race was classified by the observation of the interviewer. Comparisons of Cycle III data indicate that results using either method of classification are very similar.

Marital status—Persons were classified by marital status as married, widowed, divorced, separated, or never married. In Cycles I and II, informally married women—women who volunteered that they were sharing living quarters with their sexual

partner—were classified as currently married. These women constituted about 2 percent of currently married respondents in Cycle I and 3 percent in Cycle II. In Cycle III, such women were classified according to their legal marital status. Thus, statistics on currently married women for 1982 shown in this report are not strictly comparable to those for 1973 and 1976. However, reclassifying women in the 1973 and 1976 surveys

according to the 1982 definition of marital status makes little difference in the distributions of currently married women by contraceptive status for these years.

In all cycles, women who were married but separated from their spouse were classified as separated if the reason for the separation was marital discord, and as currently married otherwise.

Use of Services for Family Planning and Infertility: United States, 1982

by Marjorie C. Horn, M.A., and William D. Mosher, Ph.D., Division of Vital Statistics

In 1982, the annual rate of visits for family planning services was 1,077 visits per 1,000 nonsterile women. Never married women made greater use of family planning services in that year than did women who had been married (1,227 visits compared with 1,010 visits per 1,000 women, respectively). Many providers of family planning services also offer services or make referrals for infertile couples. Over 6 million ever married women in 1982 had used infertility services at some time during their reproductive years.

These and related statistics on the use of family planning and infertility services presented in this report for 1982 are preliminary results from Cycle III of the National Survey of Family Growth (NSFG), conducted by the National Center for Health Statistics. Comparative data for 1973 and 1976 are from Cycles I and II, respectively, of the NSFG.^{1,2} For Cycle III, data were collected through personal interviews with a multistage area probability sample of 7,969 women aged 15–44 years in the noninstitutional population of the conterminous United States. Between August 1982 and February 1983, interviews were conducted with 3,201 black women and 4,768 women of other races. Because the estimates of statistics in this report are based on a sample, they are subject to sampling variability. Sampling variability, the design of the survey, and definitions of terms used in this report are discussed in the Technical notes.

Use of family planning services by currently married women

In the 1982 survey, a detailed series of questions was asked to obtain relatively complete estimates of the extent and type of family planning services received. The specific services included in these questions are listed in the Technical notes. Statistics on family planning services are limited to women who were able to conceive 3 years before the interview date. A woman

was classified as not able to conceive (sterile) if she reported that it was impossible for her or her husband to conceive as a result of (1) an operation that occurred more than 3 years before the interview or (2) nonsurgical factors known to the respondent 3 years or more before the interview. All other women were assumed to be able to conceive at the beginning of the period for which use of family planning services was reported. These women are referred to as "nonsterile," although some will have become sterile because of an operation or nonsurgical conditions during the 3 years before the interview.

Table 1 shows the number of currently married, nonsterile women 15–44 years of age by race, Hispanic origin, and poverty level income, and the percent who used family planning services in the 3 years before the survey. Overall, 79 percent of currently married nonsterile women reported using some type of family planning service during the previous 3 years. Although white wives may have been more likely to have used family planning services (79 percent) than black (75 percent) or Hispanic (77 percent) wives, neither of these differences was statistically significant. There were no significant differences between the two income groups.

In previous cycles of the survey, use of family planning services was measured by the single question: "During the past 3 years, has a doctor or other trained person prescribed, or talked with you about a method for delaying or preventing pregnancy?" This was found to be an inadequate question because respondents apparently felt it excluded services other than formal discussions about contraception. In 1982, many women who answered "no" to the above question (the old question) nonetheless reported in response to the new series of questions using other family planning services, including pregnancy tests, and getting or renewing a method of contraception.

As a result, the older measure seriously underestimated use of family planning services, which is demonstrated by comparing the estimates based on the old and new questions. As

Table 1. Number of currently married women 15–44 years of age who were not sterile 3 years before the date of interview, percent who used family planning services in the last 3 years, and percent who talked to a doctor or other trained person about contraception in the last 3 years, by race, Hispanic origin, and poverty level income: United States, 1973, 1976, and 1982

[Statistics are based on a sample of the household population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms. Data for 1982 are preliminary]

Race, Hispanic origin, and poverty level income	Currently married			Used family planning services in last 3 years	Talked about contraception in last 3 years		
	1982	1976	1973	1982	1982	1976	1973
	Number in thousands			Percent			
All women ¹	² 20,813	² 22,923	23,863	² 78.8	² 49.5	² 58.6	51.2
Race							
White.....	18,489	20,553	21,711	79.2	50.0	59.9	51.9
Black.....	1,639	1,896	1,868	74.9	44.4	46.9	44.1
Hispanic origin							
Hispanic.....	1,847	1,519	1,504	77.0	42.6	51.8	48.1
Non-Hispanic.....	18,386	21,357	22,359	78.7	50.3	59.0	51.3
Poverty level income							
Less than 150 percent.....	3,095	3,001	3,693	82.0	47.6	58.3	52.6
150 percent or more.....	15,029	17,513	20,170	78.7	50.7	60.4	50.9

¹Includes white, black, and other races.

²Includes Hispanic origin and poverty level income not stated.

shown in table 1, in 1982, only about 50 percent of the women had discussed contraception with a medical professional according to the old question, compared with 79 percent of the women who used family planning services according to the new, more comprehensive questions.

Despite the inadequacies of the old question, it was retained in Cycle III to permit examination of changes over time. Thus, table 1 also shows the percents of women in 1973, 1976, and 1982 who reported a discussion about contraception in the 3 years before the surveys. In 1982, approximately 10 million women reported a discussion about contraception, a decrease of about 3 million women since 1976. One-third of this difference resulted from a reduction in the number of currently married nonsterile women, and two-thirds from a decline in the percent of women who had discussed contraception. (The decrease in the number of currently married, nonsterile women results almost entirely from an increase in contraceptive sterility between the 1976 and 1982 surveys. Preliminary findings on contraception and on reproductive impairments, which will include data on sterility, will be reported in other *Advance Data* reports.)

The change between 1976 and 1982 in the percent of wives reporting a family planning discussion appears to be due primarily to changes among white wives, who reported a decline of almost 10 percentage points. The percents of black and Hispanic wives reporting a discussion about contraception may have declined as well, but the differences between 1976 and 1982 were not statistically significant. The decreases from 1976 to 1982 for white and non-Hispanic wives were about the same size as the increases between 1973 and 1976. A similar pattern was found for black and Hispanic women. As a result, there were no significant changes between 1973 and 1982 in the percent of white, black, Hispanic, or non-Hispanic women who

had a discussion about contraception. The same applies to income groups: the percents increased from 1973 to 1976 and decreased between 1976 and 1982.

Given the limitations of the older measure of family planning services, the changes over time are difficult to interpret. They may represent real changes, or be artifacts of reporting errors. Specifically, it cannot be assumed that a similar trend over time characterized by a sharp peak in 1976 would have been found with the new measure. However, the proportions receiving family planning services were probably higher in 1973 and 1976 than is indicated by the old measure.

In all three survey years, white wives appeared more likely than black or Hispanic wives to have talked with a medical professional about contraception, as did wives with higher incomes compared with those with lower incomes. However, the differences between white women (50 percent) and black women (44 percent) were not statistically significant in 1982, while those between white and Hispanic wives were significant only in 1976. The percents in the income groups did not differ significantly in any of the three surveys.

Annual family planning visit rates

In addition to information on use of family planning services in the past 3 years, data were collected in Cycle III on use of services in the 12 months before the survey, to produce annual rates of family planning visits. Further, the inclusion of never married childless women made it possible to compute these rates for all women who had ever had intercourse.

Table 2 presents rates per 1,000 women for family planning visits made during the 12 months before the interview by source of service, race, age, and marital status. As in table 1, statistics in table 2 also refer to women who were not sterile 3 years or

Table 2. Number of women 15–44 years of age who ever had sexual intercourse and were not sterile 3 years before the date of interview and number of family planning visits in the last 12 months, by race, age, and marital status, and number of family planning visits in the last 12 months per 1,000 women, by source of service, race, age, and marital status: United States, 1982

[Preliminary data based on a sample of the household population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms]

Race, age, and marital status	Women	Visits	Source of services			
			All sources	Private medical services	Clinics	Counselors
ALL WOMEN ¹						
	Number in thousands		Visits per 1,000 women			
15–44 years	37,488	40,369	1,077	656	385	36
15–24 years	13,452	19,462	1,447	702	673	71
15–19 years	4,465	7,059	1,581	609	867	105
25–34 years	16,639	17,362	1,043	743	280	*21
35–44 years	7,397	3,545	479	377	95	*7
White						
15–44 years	31,111	32,125	1,033	670	323	39
15–24 years	10,912	15,192	1,392	738	573	81
15–19 years	3,512	5,352	1,524	661	736	127
25–34 years	14,009	14,024	1,001	748	232	*21
35–44 years	6,190	2,909	470	375	88	*8
Black						
15–44 years	5,277	7,039	1,334	556	754	*24
15–24 years	2,192	3,791	1,729	530	1,162	*37
15–19 years	833	1,555	1,867	451	1,387	*29
25–34 years	2,128	2,671	1,255	632	604	*19
35–44 years	956	577	*603	*444	153	*6
MARITAL STATUS						
Never married	11,529	14,143	1,227	534	636	*56
Currently married	20,806	21,212	1,020	741	251	27
Widowed, divorced, or separated	5,153	5,014	973	586	361	*26

¹Includes white, black, and other races.

more before interview; however, unlike table 1, which includes only currently married women, table 2 refers to all women who ever had intercourse regardless of marital status. A family planning visit means that a woman went to a clinic, private medical source, or counselor to obtain one or more family planning services. (Family planning services and sources are defined in the Technical notes).

Differences in family planning visit rates by age, race, and marital status reflect the different distributions of contraceptive methods used in these groups, which are described in another NSFG report.³ For example, the oral contraceptive pill is the leading method among young and never married women, and it requires repeated visits to a doctor or clinic to renew the prescription and check for side effects. Sterilization, the leading method among older married women, requires fewer visits. Contracepting black women rely more on methods requiring medical services (except the diaphragm) than white women, and this is reflected in the visit rates by race.

Nonsterile women aged 15–44 who had ever had sexual intercourse used family planning services of all types at the rate of 1,077 visits per 1,000 women per year. Teenagers had the highest annual visit rate (1,581 per thousand) of any age group for all sources of family planning services combined. Visit rates declined sharply with age, from 1,447 at 15–24 years to 479 at

ages 35–44. Similar declines with age also were found in the visit rates for white and black women separately. Nevertheless, the annual visit rate for black women (1,334 per 1,000 women) was significantly higher than the rate for white women (1,033). Visit rates for black women also were higher than those for white women within each age group (although for ages 35–44 the difference is not significant). The highest overall visit rate in table 2 was for black women 15–19 years of age (1,867 per 1,000 women).

The visit rate of 1,227 per 1,000 never married women was higher than that for either currently married or previously married women (1,020 and 973, respectively). This suggests that the observed differences in visit rates by age may reflect, in part, the effects of marital status, because a large majority of the youngest age group has never been married. It also may be the case that visit rates are higher among never married women because they are younger, as a group, than ever married women.

Nearly two-thirds of all family planning visits were to private medical sources. Teenagers of all races had higher family planning service visit rates to clinics than to private medical services, as did black women aged 15–24 years. White teenagers also may have been more likely to obtain services from clinics than from private medical services (736 compared with 661 visits

per 1,000), but the difference was not significant. White women aged 20 years and older had higher visit rates to private medical services than to clinics.

Visit rates to private medical services were higher among women aged 25–34 than among women 15–19 years and 35–44 years old. Visit rates to clinics were highest among 15–19 year olds. A similar pattern was found when rates by age were examined separately for white and black women, but not every difference was statistically significant.

Never married women had higher visit rates to clinics than currently or formerly married women. Currently married women were more likely than either never or previously married women to obtain family planning services from private medical sources.

In each age and race category, women were least likely to obtain family planning services from counselors, who are not able to offer as wide a range of services as doctors and clinics. The highest visit rates to counselors were found for teenagers, perhaps because teenage women may be more likely than other women to turn to nonmedical counselors for information about family planning methods.

Overall, white women had higher visit rates to private medical services than black women (at the 0.10 level of significance), while black women had higher visit rates to clinics. These differences by race were statistically significant for teenagers separately and for women aged 15–24. In addition, clinic visit rates for black women were higher than rates for white women among women 25–34 years of age.

Infertility services

Family planning includes infertility services as well as services for limiting the number and planning the spacing of births. Data also were collected in 1982 on use of medical services for infertility by women who had difficulty in conceiving or in carrying a pregnancy to term. About 1 million ever married women had one or more infertility visits in the 12 months before the interview; about 825,000 of these were to private medical services. During the 3 years before interview, about 1.9 million women had infertility visits, 1.5 million of which were to private medical services. Table 3 shows the percent of ever married women who had used services for infertility at any time, according to the most recent source of those services, race, Hispanic origin, and age. The statistics include infertility visits made at any time in the past because there were not enough cases to make statistically reliable estimates of infertility visits in the last 12 months or 3 years for the subgroups of the population shown in table 3.

About 6.3 million ever married women 15–44 years of age had used infertility services at some time. The percents ever using services were higher for women aged 25–34 years and 35–44 years compared with younger women. The same pattern is reflected when white women are considered separately. A higher proportion of white women (19 percent) than black women

Table 3. Number of ever married women 15–44 years of age, percent who ever used services for infertility, and percent distribution by most recent source of services, according to race, Hispanic origin, and age: United States, 1982

[Preliminary data based on a sample of the household population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms]

Race, age, and Hispanic origin	Ever married women	Most recent source of services		
		All sources	Private medical services	Clinics
ALL WOMEN¹	Number in thousands	Percent		
15–44 years	34,937	18.1	14.9	3.2
15–24 years	5,500	10.7	*7.0	*3.8
15–19 years	682	*3.1	*1.4	*1.8
25–34 years	15,998	18.9	15.4	3.5
35–44 years	13,439	20.2	17.7	*2.5
White				
15–44 years	30,419	18.6	15.7	2.9
15–24 years	4,975	10.5	*7.0	*3.6
15–19 years	621	*3.4	*1.5	*1.9
25–34 years	13,819	19.2	16.3	*2.9
35–44 years	11,626	21.3	18.8	*2.5
Black				
15–44 years	3,442	13.5	9.0	4.5
15–24 years	427	*10.7	*3.9	*6.9
15–19 years	39	0.0	0.0	0.0
25–34 years	1,630	14.8	8.7	6.1
35–44 years	1,385	12.8	10.9	*1.8
HISPANIC ORIGIN				
Hispanic				
15–44 years	2,790	*13.6	*9.7	*3.9
15–29 years	1,240	*11.8	*7.0	*4.8
30–44 years	1,550	*15.0	*12.0	*3.1
Non-Hispanic				
15–44 years	31,191	18.5	15.4	3.1
15–29 years	11,525	14.9	11.6	*3.3
30–44 years	19,666	20.7	17.7	2.9

¹Includes white, black, and other races; also includes origin not stated.

(14 percent) had ever used infertility services. This difference is due primarily to the high percent of white women aged 35–44 who had used infertility services; comparisons between other age groups yield no significant differences. Although non-Hispanic women appeared more likely than Hispanic women to have used infertility services, none of the comparisons yielded significant differences. For all ever married women, as well as for white and black women separately, infertility services were much more likely to be secured from private medical sources than from clinics.

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Technical notes

Survey design

The National Survey of Family Growth (NSFG) is conducted periodically by the National Center for Health Statistics to collect data on fertility, family planning, and related aspects of maternal and child health. Field work for Cycle I was conducted under contract in 1973 by the National Opinion Research Center. Field work for Cycles II and III was conducted by Westat, Inc., in 1976 and 1982, respectively.

In all cycles, personal interviews were conducted with a multistage area probability sample of women 15–44 years of age in the noninstitutional population of the conterminous United States. In Cycles I and II, ever married women and never married women with offspring living in the household were eligible for the survey. In Cycle III, all women aged 15–44 years were eligible regardless of marital status or the presence of offspring. Women living in group quarters (such as college dormitories) were excluded from the samples in Cycles I and II, but included in Cycle III. Interviews were conducted with 9,797 women in Cycle I, 8,611 women in Cycle II, and 7,969 women in Cycle III. The sample designs of Cycles I and II are described in more detail in other NCHS reports.^{4,5}

Field work for Cycle III was conducted between August 1982 and February 1983. Black women and women aged 15–19 years were oversampled. Interviews were conducted by trained female interviewers and lasted an average of 1 hour. The interview focused on a woman's pregnancy history; use of contraceptives in each pregnancy interval; ability to bear children; future childbearing expectations; use of family planning and infertility services; marital history; labor force participation; and a wide range of social, economic, and demographic characteristics.

Reliability of estimates

Because the statistics presented in this report are based on a sample, they may differ from the statistics that would result if all 54 million women represented by the NSFG had been interviewed. The standard error of an estimate is a measure of such differences. The standard error of an estimated number or percent presented in this report may be calculated by using the appropriate values of A and B from table I in the equations

$$SE_{(N')} = \left(A + \frac{B}{N'} \right)^{1/2} \cdot N'$$

Table I. Parameters used to compute estimated standard errors and relative standard errors of numbers and percents of women, by marital status, age, and race: National Survey of Family Growth

Year, race, marital status, and age	Parameter	
	A	B
1982		
White; all races:		
All marital statuses.....	-0.0003935957	21306.4134
Ever married.....	-0.0010973290	39809.1677
Never married.....	-0.0009351043	17608.8833
15-19 years.....	-0.0014564930	13862.1044
Black:		
All marital statuses; ever married; never married.....	-0.0009086323	6346.0484
15-19 years.....	-0.0033223630	4727.0569
1976		
Currently married:		
All races.....	-0.0001858989	6751.0619
White.....	-0.0002056235	7021.1665
Black.....	-0.0006310400	2798.6440
1973		
Currently married:		
All races; white.....	0.0000176130	4493.7916
Black.....	0.0000402190	1600.4393

and

$$SE_{(P)} = \left(B \cdot P' \cdot \frac{100 - P'}{N'} \right)^{1/2}$$

where N' is the number of women, P' is the percent, and X' is the number of women in the denominator of the percent. Approximate standard errors for estimated percents of women of all races in Cycle III are shown in table II.

The chances are about 68 in 100 that a sample estimate would fall within one standard error, and about 95 in 100 that it would fall within two standard errors of a statistic based on a complete count of the population represented by the NSFG. Differences between percents discussed in this report were found to be statistically significant at the 95-percent confidence level using a two-tailed t-test with 39 degrees of freedom. This means that in repeated samples of the same type and size, a difference as large as the one observed would occur in only 5 percent of

Table II. Approximate standard errors for estimated percents expressed in percentage points for women of all races: National Survey of Family Growth, Cycle III

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
100,000.....	6.4	10.0	13.8	18.4	21.1	22.6	23.0
500,000.....	2.9	4.5	6.2	8.2	9.4	10.1	10.3
1,000,000....	2.0	3.2	4.4	5.8	6.7	7.1	7.3
5,000,000....	0.9	1.4	2.0	2.6	3.0	3.2	3.3
10,000,000...	0.6	1.0	1.4	1.8	2.1	2.3	2.3
30,000,000...	0.4	0.6	0.8	1.1	1.2	1.3	1.3
50,000,000...	0.3	0.4	0.6	0.8	0.9	1.0	1.0

samples, if there were in fact no difference between the percents in the population.

The relative standard error of a statistic is the ratio of the standard error to the statistic and is usually expressed as a percent of the estimate. In this report, statistics with relative standard errors of 30 percent or larger are indicated with an asterisk (*). These estimates are considered unreliable by themselves, but may be combined with other estimates to make comparisons of greater precision.

Statistics in this report also may be subject to nonsampling error, that is, errors or omissions in responding to the interview, recording answers, and processing data. The data have been adjusted for nonsampling error due to nonresponse by means of adjustments to the sample weights assigned to each case. Other types of nonsampling error were minimized by a series of stringent quality control measures similar to those used in Cycles I and II.^{4,5}

Definitions of terms

Family planning services—In Cycle III, to obtain more complete estimates of the extent and types of family planning services, women were asked a series of questions about their use of specific services. These included the following: (1) advice or counseling about any problems or worries about sexual intercourse, an unwanted pregnancy or one that occurred at a bad time, having a sterilization operation, or birth control; (2) check-up or medical test to check for correct use, fit, or position of a birth control method; health problems from using a birth control method; or pregnancy; and (3) visit to a doctor or clinic to renew a method of birth control the woman was already using or to obtain a new method of birth control. Women who reported receiving one or more of these services were classified as having used family planning services. This is the basis for the statistics on use of family planning services reported in table 1 and for the visit rates in table 2. The new family planning use measure based on these services will be retained in future cycles.

Talked about contraception in the last 3 years—In Cycles II and III, women were asked, “During the past 3 years, has a doctor or other trained person prescribed, or talked with you about a method for delaying or preventing a pregnancy?” In Cycle I, women were asked the same question except that a period of 5 years was specified rather than 3 years. Women who answered that question affirmatively also were asked, “When was the last time you talked about methods of family planning with a doctor or trained person?” Women who answered that question with a date less than 3 years before the interview were considered to have made a family planning visit in the last 3 years. This measure was retained in 1982 to produce time series data between 1973 and 1982. It will be replaced in future cycles by the measure based on the full range of family planning services.

Source of family planning services—Women who had received family planning services in the last 12 months were shown a card containing the following list of types of places: “Clinics” included hospital, family planning, community health center, public health department, military health service, and student

NOTE: A list of references follows the text.

health service clinics; "private medical sources" included visits to private doctors, private group practices, co-ops, or privately owned clinics; service providers classified as "counselors" included minister, priest, religious counselor, school counselor, family and social service agency, and youth center.

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

Race—Race refers to the race of the woman interviewed and is reported as black, white, or other. In Cycle III, race was classified according to the woman's report of the race that best described her. In Cycles I and II, race was classified by the observation of the interviewer. Cycle III data indicated that results using either method of classification were found to be very similar.

Hispanic origin—In Cycle III, a respondent was classified as being of Hispanic origin if she reported that her only or principal national origin was Puerto Rican, Cuban, Mexican American, Central or South American, or other Spanish. In Cycles I and II, if a respondent reported her origin or descent as Puerto Rican, Cuban, Mexican American, Central or South American, or other Spanish, she was classified as being of Hispanic origin, whether or not it was her principal origin. In tables where data are presented for women according to race and Hispanic origin, women of Hispanic origin are included in the statistics for white and black women if they were classified as such by race.

For a small number of respondents (0.1 percent in Cycles I and II and 3 percent in Cycle III), origin was not ascertained. In Cycle I, values were imputed where missing, using a known value of another similar, randomly selected respondent; in Cycle II and in this report for Cycle III, however, missing values of Hispanic origin were not imputed, and only cases with known values are included in statistics on Hispanic origin.

Marital status—Persons were classified by marital status as married, widowed, divorced, separated, or never married. In Cycles I and II, informally married women—women who volunteered that they were sharing living quarters with their sexual partner—were classified as currently married. These women constituted about 2 percent of currently married respondents in Cycle I and 3 percent in Cycle II. In Cycle III, such women were classified according to their legal marital status. Thus, statistics on currently married women for 1982 shown in this report are not strictly comparable to those for 1973 and 1976. However, reclassifying women in the 1973 and 1976 surveys according to the 1982 definition of marital status makes little difference in the distributions of currently married women by other characteristics for these years.

In all cycles, women who were married but separated from their spouse were classified as separated if the reason for the separation was marital discord, and as currently married otherwise.

Sterility—For this report, use of family planning services in the last 3 years was considered inapplicable if a woman was sterile 3 years or more before the interview; that is, she reported it was impossible for her and her husband to conceive as a result of an operation, accident, or illness that occurred more than 3 years before the interview—before January 1970 for Cycle I, before January 1973 for Cycle II, or before January

1979 for Cycle III. All other women were classified as able to conceive at the beginning of the period for which their use of family planning services was reported.

Poverty level income—The poverty level index was calculated by dividing the total family income by the weighted average threshold income of families with the head of the family under 65 years of age based on the poverty levels published by the U.S. Bureau of the Census.⁶⁻⁸ This definition takes into account the sex of the family head and the number of persons in the family. Total family income includes income from all sources for all members of the respondent's family. For substantial numbers of respondents (7 percent in Cycle I, 16 percent in Cycle II, and 22 percent in Cycle III), total family income was not ascertained. In Cycle I, values were imputed where missing, using a known value of another similar, randomly selected respondent; in Cycle II and in this report for Cycle III, however, missing values of family income were not imputed, and only cases with known values are included in statistics on poverty income level. Because of these high levels of missing data, small differences by poverty level income should be interpreted with caution.

Infertility services—A woman was classified as having used infertility services if she answered either of the following questions affirmatively: "Have you (or your husband) ever been to a doctor or clinic to talk about ways to help you become pregnant?" or "(Not counting routine care or advice about a pregnancy), have you (or your husband) ever been to a doctor or clinic to talk about ways to help you prevent a miscarriage?" Such women may not be currently infertile; for example, if the advice or treatment was successful.

Related data

Data on family planning services also are available from two other surveys conducted by NCHS. Data from the National Reporting System for Family Planning Services were collected annually from 1972 through 1980 from a sample of medical organizations that provide family planning services. These data excluded family planning visits to private physicians' offices, visits for pregnancy tests only, and visits the sole purpose of which was to obtain contraceptive supplies or counseling.⁹ The National Ambulatory Medical Care Survey obtains data on visits for family planning services from reports from a sample of office-based physicians.^{10,11} Both data systems use information from the providers of family planning services, in contrast to the NSFG, which uses information from recipients of services. Because of this difference and differences in collection procedures and definitions of terms, data from these sources may differ but they do provide complementary perspectives on family planning visits. Recent estimates of annual numbers of visits to private physician's offices for infertility were published in an article in the *Journal of the American Medical Association*.¹² The data in the cited article may differ from the statistics in this report because they refer to a different period of time; because they refer to visits, and women may have more than one visit in a year; and because both estimates, being based on samples, are subject to sampling variability.

NOTE: A list of references follows the text.

Fecundity and Infertility in the United States, 1965–82

by William D. Mosher, Ph.D., and William F. Pratt, Ph.D., Division of Vital Statistics

In 1982, about half of all American married couples with wives in the childbearing ages were currently sterile or had some childbearing impairment. Almost 8 million of these couples were voluntarily sterilized because they had had all the children they wanted. However, another approximately 6 million couples were unable or unlikely to have additional births, including about 1.4 million couples who were childless. These and related statistics on fecundity and infertility in the United States are from the National Survey of Family Growth, most recently conducted in 1982 by the National Center for Health Statistics.

This report presents, for the first time, preliminary nationwide statistics on the fecundity status of all women of reproductive age in the United States, regardless of marital status, and reports the latest data on trends in fecundity and infertility among married couples. The data on currently married women in this report update statistics published in a previous report.¹ The data for 1976 and 1982 were collected in Cycles II and III of the National Surveys of Family Growth (NSFG's); the data for 1965 are from the 1965 National Fertility Study conducted by Princeton University.²

The 1982 NSFG was based on personal interviews with a national sample of 7,969 women in the childbearing ages (15–44 years of age) in the noninstitutionalized population of the conterminous United States. Between August 1982 and February 1983 interviews were conducted with 3,201 black women and 4,768 women of races other than black. The interview focused on the respondent's fecundity (or physical ability to have children); past and current use of contraception; marital and pregnancy history; use of family planning and infertility services; labor force participation; and a wide range of social, economic, and demographic characteristics.

The Concept of Fecundity Status

The respondent's physical ability to have children was measured by her answers to a series of questions, not by a medical examination. The purpose of this series of questions

was to classify couples into three major groups: surgically sterile (impossible to have a baby); impaired fecundity (nonsurgically sterile or difficult or dangerous to have a baby); and fecund (no known physical problem). The questions included the following:

As far as you know, is it *possible* or *impossible* for you . . . to get pregnant (again)?

As far as you know, is there any problem or difficulty for you . . . to conceive or deliver a(nother) baby?

In these questions, the words "as far as you know" are important. Many women who have never tried to become pregnant do not know whether they have a fecundity impairment. Some women who reported that they did not know of any physical problems nonetheless have had long periods of time in which they did not conceive although they used no contraception. A few women may be classified as having fecundity problems because of underreporting of either contraceptive use or pregnancies, but there is no evidence that this underreporting has a significant effect on the estimates presented here.³ Finally, while some women with fecundity problems subsequently may have children, their reduced capacity for childbearing has an impact on the nation's birthrate and on the estimates of couples needing medical services to improve their chances of childbearing.

The category "surgically sterile" is divided into two subgroups: contraceptively and noncontraceptively sterile. The category "contraceptively sterile" consists of women or their current husbands who have had a sterilizing operation (tubal ligation, hysterectomy, or vasectomy) at least partly because they had had all the children they wanted. Table 1 shows that in 1982, 17 percent of all women 15–44 years of age were contraceptively sterile, including 1 percent of never married women, 28 percent of currently married women (or their husbands), and 20 percent of formerly married women. Not surprisingly, in each marital status category the percent contraceptively sterile was much higher for women with children (parity 1 or more) than for childless women (parity 0).

Table 1. Number of women 15–44 years of age and percent distribution by fecundity status, according to marital status, parity, and age: United States, 1982

[Preliminary statistics based on a sample of the female population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms]

Marital status, parity, and age	All women	Total	Surgically sterile		Impaired fecundity				
			Contraceptive	Noncontraceptive	All impaired	Non- surgically sterile	Subfecund	Long interval	Fecund
MARITAL STATUS AND PARITY									
All women.....	54,099	100.0	17.4	7.8	8.2	1.6	5.4	1.2	66.5
Parity 0	22,941	100.0	1.4	1.7	8.4	2.5	5.2	0.7	88.5
Parity 1 or more	31,158	100.0	29.2	12.4	8.1	1.0	5.6	1.5	50.2
Never married									
All parities.....	19,162	100.0	1.3	*0.8	4.1	1.0	3.0	0.1	93.8
Parity 0	16,693	100.0	*0.3	*0.4	3.7	1.0	2.6	0.1	95.6
Parity 1 or more	2,469	100.0	7.9	*3.8	*6.4	0.8	5.6	0.0	81.8
Currently married									
All parities.....	28,231	100.0	27.8	11.0	10.5	2.0	6.3	2.1	50.7
Parity 0	5,098	100.0	*4.6	*5.3	21.7	7.2	11.8	2.6	68.4
Parity 1 or more	23,134	100.0	33.0	12.3	8.0	0.9	5.1	2.0	46.7
Formerly married									
All parities.....	6,706	100.0	19.9	14.4	10.7	1.9	8.7	0.0	54.9
Parity 0	1,150	100.0	*4.2	*4.1	*16.6	2.1	14.3	0.1	75.1
Parity 1 or more	5,556	100.0	23.2	16.6	*9.4	1.8	7.6	0.0	50.8
AGE									
15–19 years	9,521	100.0	-	0.0	*2.1	*0.5	*1.6	-	97.9
20–24 years	10,629	100.0	3.7	*0.6	6.0	*0.9	4.9	*0.2	89.7
25–29 years	10,263	100.0	12.1	3.7	10.3	*1.5	7.7	*1.0	73.9
30–34 years	9,381	100.0	26.7	10.1	9.2	*1.7	6.5	*1.1	54.0
35–39 years	7,893	100.0	35.3	18.4	12.6	3.1	7.0	*2.5	33.7
40–44 years	6,412	100.0	39.4	21.8	10.8	*2.9	4.7	*3.2	28.0

Women classified as “surgically sterile for noncontraceptive reasons” had sterilizing operations for reasons other than limiting the size of their families. Table 1 shows that 8 percent (about 4.2 million) had had such operations, including 1 percent of never married women, 11 percent of currently married women (or their current husbands), and 14 percent of formerly married women. The percent sterilized for noncontraceptive reasons also was higher for women with children than for childless women.

Women classified as “nonsurgically sterile” said that it was impossible to have a baby for some reason other than a sterilizing operation—such as accident, illness, or unexplained inability to conceive. As of 1982, 0.9 million women (2 percent) were classified as nonsurgically sterile. The percent nonsurgically sterile was 1 to 2 percent in each marital status category.

Women classified as “subfecund” said that it was physically difficult for them to conceive or deliver a baby, or that a doctor had told them never to become pregnant again, because of danger to the woman, the baby, or both. In 1982, 5 percent, or about 2.9 million women, were classified as subfecund, including 3 percent of never married, 6 percent of currently married, and 9 percent of formerly married women (table 1).

Women or couples who were continuously married (either

formally or informally), did not use contraception, and did not become pregnant for 36 months or more were classified as having a “long interval.” Although these women reported no known physical problems, they were well beyond any normal period for conception, indicating some impairment to childbearing and possibly sterility. As of 1982, 1 percent of all women, or about 0.6 million women, had a long interval.

The category “impaired fecundity” includes women who were classified as nonsurgically sterile, subfecund, or having a “long interval” since their last pregnancy. About 4.4 million women, or 8 percent, had impaired fecundity. Of these, about 1.9 million were childless and about 2.5 million had 1 or more children (calculated from table 1).

“Fecund” is a residual category consisting of women who were not surgically sterile (and whose husbands were not surgically sterile) and did not have impaired fecundity. In table 1, 94 percent of never married women were classified as fecund, compared with about 51 percent of currently married and 55 percent of formerly married women. There are two main reasons for this large difference between never married and ever married women: never married women are younger on average than ever married women, and most never married women have never been pregnant or tried to become pregnant. As a result, never married women are much less likely to be

surgically sterile than ever married women, and have had less chance to develop or discover any fecundity problems.

Table 1 also contains data for all women by age. Differences between age groups also reflect differences in marital status, parity, and other factors. The percent contraceptively sterile increased with age, from 4 percent at ages 20–24 to 39 percent at ages 40–44. The percent noncontraceptively sterile also increased with age, especially after age 30. The percent with impaired fecundity ranged from 2 percent at ages 15–19 to 13 percent at ages 35–39. Because both surgical sterility and impaired fecundity are more common at the older ages, the percent fecund declined from 98 among teenagers to 28 among women 40–44 years of age.

Trends Among Married Couples: 1976 to 1982

In 1982, as in 1976, the proportions of couples in both categories of surgical sterilization increased with age and both were greater among couples with children than among childless couples (table 2). However, the proportions contraceptively sterile differ sharply by parity at each age while noncontraceptive sterilization is little affected by parity. In both years, impaired fecundity was notably more common among childless women. It also increased with age, especially among childless couples: about half the childless couples 35–44 years of age had impaired fecundity. The increase in impaired fecundity with age was not statistically significant among couples with children in 1982.

The percent of married couples who were contraceptively sterile increased by half—from 19 percent in 1976 to 28 per-

cent in 1982—as shown in table 2. The largest increase occurred among couples with wives 35–44 years of age who had 1 or more children. Changes in the percents surgically sterile for noncontraceptive reasons were not marked and generally were not statistically significant. The proportion of currently married couples who were surgically sterilized (all reasons) rose at a faster rate from 1976 to 1982 than from 1965 to 1976 (table 3): an increase of 10.7 percentage points from 1976 to 1982 (1.8 percentage points per year) compared with an increase of 12.4 percentage points from 1965 to 1976 (1.1 percentage points per year).

Overall and among those with children, between 1976 and 1982 the proportions of couples with impaired fecundity decreased, although at 15–24 years of age the decline was not statistically significant. There was no significant change in any of the three age groups in the proportion of childless couples with impaired fecundity (table 2).

The proportion fecund decreased from 56 to 51 percent overall, primarily because of the decline from 35 to 26 percent among wives 35–44 years of age with children (table 2). The overall decline in the proportion of childless couples who were fecund (from 73 to 68 percent) was entirely due to the older age composition of childless couples in 1982 compared with 1976; there were no significant declines in the percent fecund in any age group of childless couples.

Infertility Among Married Couples

“Infertility” is a medical concept for identifying couples potentially in need of medical services to improve their chances of childbearing. When neither partner is surgically sterile, a

Table 2. Number of currently married women 15–44 years of age and percent distribution by fecundity status, according to parity and age: United States, 1976 and 1982

[Statistics are based on samples of the female population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms. Data for 1982 are preliminary]

Parity and age	All women		Total		Surgically sterile							
					Contraceptive		Noncontra- ceptive		Impaired fecundity		Fecund	
	1982	1976	1982	1976	1982	1976	1982	1976	1982	1976	1982	1976
	Number in thousands		Percent distribution									
All parities												
15–44 years	28,231	27,488	100.0	100.0	27.8	18.5	11.0	9.6	10.5	15.7	50.7	56.1
15–24 years	4,741	6,020	100.0	100.0	*6.6	3.5	*0.6	*0.4	*8.0	10.8	84.8	85.3
25–34 years	12,924	12,179	100.0	100.0	23.8	19.1	7.7	6.8	9.4	15.5	59.0	58.7
35–44 years	10,566	9,288	100.0	100.0	42.3	27.6	19.8	19.4	12.8	19.1	25.1	33.9
Parity 0												
15–44 years	5,098	5,235	100.0	100.0	*4.6	1.5	*5.3	4.1	21.7	21.4	68.4	73.0
15–24 years	1,989	2,738	100.0	100.0	-	*0.2	*0.1	-	*11.1	10.6	88.8	89.3
25–34 years	2,256	1,931	100.0	100.0	*6.2	*1.8	*3.5	4.5	21.1	27.3	69.2	66.4
35–44 years	853	565	100.0	100.0	*10.8	*6.5	*22.5	22.3	47.8	53.9	*18.9	17.2
Parity 1 or more												
15–44 years	23,133	22,253	100.0	100.0	33.0	22.6	12.3	11.0	8.0	14.3	46.7	52.2
15–24 years	2,752	3,282	100.0	100.0	*11.3	6.2	*1.0	*0.8	*5.8	11.1	81.9	82.0
25–34 years	10,668	10,248	100.0	100.0	27.6	22.3	8.6	7.2	7.0	13.2	56.8	57.3
35–44 years	9,713	8,723	100.0	100.0	45.0	29.0	19.6	19.2	9.7	16.8	25.7	34.9

Table 3. Number of currently married women 15–44 years of age and percent distribution by infertility status, according to age, parity, and race: United States, 1965, 1976, and 1982

[Statistics are based on samples of the female population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms. Data for 1982 are preliminary]

Age, parity, and race	Infertility status												
	All women			Total	Surgically sterile			Infertile			Fecund ²		
	1982	1976	1965 ¹		1982	1976	1965	1982	1976	1965	1982	1976	1965
	Number in thousands			Percent distribution									
Total ³	28,231	27,488	26,454	100.0	38.9	28.2	15.8	8.4	10.3	11.2	52.7	61.6	73.0
AGE													
15–19 years.....	612	1,043	1,032	100.0	*0.3	*1.0	*0.6	*2.1	*2.1	*0.6	97.7	96.6	98.9
20–24 years.....	4,130	4,977	4,397	100.0	*8.2	4.5	3.1	9.7	6.4	*3.5	82.1	89.2	93.4
25–29 years.....	6,442	6,443	4,953	100.0	19.6	16.6	9.5	7.0	9.0	6.5	73.4	74.4	84.0
30–34 years.....	6,482	5,736	5,074	100.0	43.6	36.2	17.0	7.7	10.3	11.6	48.7	53.5	71.3
35–39 years.....	5,783	4,814	10,998	100.0	58.2	45.3	22.8	10.2	12.5	14.2	31.6	42.2	63.0
40–44 years.....	4,783	4,474		100.0	66.7	49.0	26.8	9.0	15.9	20.2	24.3	35.2	52.9
PARITY													
0.....	5,098	5,235	3,492	100.0	9.9	5.6	7.3	19.6	18.1	14.5	70.5	76.3	78.2
1.....	5,891	5,571	4,497	100.0	17.7	8.8	7.5	10.6	12.4	17.2	71.7	78.8	75.3
2.....	9,042	7,638	6,878	100.0	46.8	32.3	14.2	5.0	6.0	9.3	48.2	61.7	76.6
3 or more.....	8,201	9,045	11,587	100.0	63.4	49.8	21.5	3.8	7.9	9.4	32.8	42.3	69.0
RACE AND AGE													
White													
15–44 years.....	25,175	24,795	23,427	100.0	38.9	29.0	15.9	8.1	9.4	10.5	53.0	61.6	73.6
15–29 years.....	10,005	11,217	9,166	100.0	13.7	10.7	5.5	7.4	6.7	4.4	78.8	82.6	90.1
30–44 years.....	15,170	13,577	14,261	100.0	55.5	44.1	22.3	8.6	11.6	14.3	35.9	44.3	63.3
Black													
15–44 years.....	2,125	2,169	*3,027	100.0	36.3	21.6	14.2	13.1	18.1	16.3	50.6	60.3	69.5
15–29 years.....	859	993	*1,216	100.0	19.7	9.2	6.6	10.9	12.1	4.5	69.4	78.7	88.9
30–44 years.....	1,266	1,177	*1,811	100.0	47.5	32.1	20.6	14.6	23.2	26.1	37.9	44.7	53.3

¹For method of estimation, see Technical notes.

²The definition of "fecund" used in this table is different from the definition used in tables 1 and 2.

³Includes white, black, and other races.

⁴Figures are for races other than white.

couple is classified as infertile if, during the preceding 12 months or longer, they were continuously married (presumed to be sexually active), had not used contraception, and had not conceived.^{4–6} The measure of infertility generally provides lower estimates than impaired fecundity, as in tables 1 and 2, because it includes only wives who have difficulty conceiving, and excludes wives who are using contraception because a pregnancy would threaten their health. An important advantage of this measure is that we can measure the trend in infertility since 1965,^{1,3} as shown in tables 3 and 4. Not shown in the tables is the duration of infertility, which averaged (median) 27 months in 1982, with 47 percent of infertile couples having been infertile for 30 months or more.

Changes in the percent infertile between 1976 and 1982 generally were not statistically significant, except for the decline among women 40–44 years of age. However, during the longer period between 1965 and 1982, the proportion infertile showed a statistically significant decline, from 11 percent in 1965 to 8 percent in 1982. This overall decline occurred because the increase in infertility among women under age 30 was more

than offset by the sharp decline in the percent infertile among women 30–44 years of age.

The decline in infertility among older women and overall is the result of the large increase in surgical sterilizations. Although it is possible that more women who know they are infertile may have surgical sterilizations, it seems more likely that the increasing use of contraceptive sterilizations reduces the proportions of women who otherwise would find themselves infertile at age 30 and older.

When couples who were surgically sterile are excluded, the percent infertile did not change significantly between 1965 (13 percent) and 1982 (14 percent) (table 4). Among couples who were not surgically sterile, for those with wives aged 20–24 years, the percent infertile increased from 4 percent in 1965 to 11 percent in 1982. This was the only statistically significant change in any age or parity group in table 4.

Table 3 also contains data by race. The percent classified as infertile was higher among black than white couples in all three survey years; in 1982, 13 percent of black and 8 percent of white couples were classified as infertile. The increase in the

Table 4. Percent of currently married women 15–44 years of age (excluding surgically sterile) who were infertile by age, parity, and race: United States, 1965, 1976, and 1982

[Statistics are based on samples of the female population of the conterminous United States. See Technical notes for estimates of sampling variability and definitions of terms. Data for 1982 are preliminary]

Age, parity, and race	1982	1976	1965
	Percent		
Total ¹	13.8	14.3	13.3
Age			
15–19 years	*2.1	*2.1	*0.6
20–24 years	10.6	6.7	*3.6
25–29 years	8.7	10.8	7.2
30–34 years	13.6	16.1	14.0
35–39 years	24.4	22.8	18.4
40–44 years	27.2	31.1	27.7
Parity			
0	21.8	19.2	15.6
1	12.9	13.6	18.6
2	9.3	8.9	10.8
3 or more	*10.4	15.8	12.0
Race			
White	13.3	13.3	12.5
Black	20.6	23.1	19.0

¹Includes black, white, and other races.

percent infertile, from 4 to 7 percent among white couples with wives 15–29 from 1965 to 1982, was not statistically significant. There was a significant decrease, from 14 to 9 percent, among white couples with wives 30–44. The percent infertile among black couples 15–44 did not change significantly be-

tween 1965 and 1982 because there was a significant increase at ages 15–29 years (5 to 11 percent) and a significant decrease at ages 30–44 years (26 to 15 percent). The changes between 1976 and 1982 for white and black women 15–29 years of age were not statistically significant.

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Technical notes

Survey design

The National Survey of Family Growth (NSFG) is a periodic survey conducted by the National Center for Health Statistics to collect data on fertility, family planning, and related aspects of maternal and child health. Fieldwork for Cycles II and III was conducted under contract by Westat, Inc., in 1976 and 1982, respectively.

Personal interviews were conducted with a multistage area probability sample of women 15–44 years of age in the noninstitutionalized population of the conterminous United States. In Cycle II, conducted in 1976, ever married women and never married women with offspring living in the household were eligible for the survey. In Cycle III, all women aged 15–44 were eligible regardless of marital status or the presence of offspring. Women living in group quarters were excluded from the sample in Cycle II but included in Cycle III. Interviews were conducted with 8,611 women in Cycle II and 7,969 in Cycle III. Further details of the sample design of Cycle II are given in the report cited in reference 1.

Fieldwork for Cycle III was conducted between August 1982 and February 1983. Black women and women aged 15–19 were oversampled. Interviews were conducted by trained female interviewers and lasted an average of 1 hour. The interview focused on the woman's pregnancy history; use of contraceptives in each pregnancy interval; ability to bear children in the future; use of family planning and infertility services; marital history; labor force participation; and a wide range of social, economic, and demographic characteristics.

Reliability of estimates

Because the statistics presented in this report are based on a sample, they may differ from the statistics that would result if all 54 million women represented by the NSFG had been interviewed. The standard error of an estimate is a measure of such differences. The standard error of an estimated number or percent is calculated by using the appropriate values of *A* and *B* from table I in the equations,

$$SE_{(N)} = \left(A + \frac{B}{N} \right)^{1/2} \cdot N$$

and

$$SE_{(P)} = \left[\frac{B \cdot P \cdot (100 - P)}{X'} \right]^{1/2}$$

where *N*' = the number of women

P' = the percent

X' = the number of women in the denominator of the percent

Table I. Parameters used to compute estimated standard errors and relative standard errors of numbers and percents of women, by marital status and race: National Survey of Family Growth

Cycle, marital status, and race	Parameter	
	A	B
CYCLE III (1982)		
Ever married women		
All races and white	-0.001097329	39,809.1677
Black	-0.000908632	6,346.0484
All marital statuses		
All races and white	-0.0003935957	21,306.4134
Black	-0.000908632	6,346.0484
CYCLE II (1976)		
Currently married women		
All races	-0.000185899	6,751.0619
White and other races	-0.000205624	7,021.1665
Black	-0.000631040	2,798.6440

The chances are about 68 out of 100 that a sample estimate would fall within one standard error of a statistic based on a complete count of the population represented by the NSFG. The chances are about 95 in 100 that a sample estimate would fall within two standard errors of the complete count estimated. Differences between percents discussed in this report were found to be statistically significant at the 95-percent confidence level using a 2-tailed *t*-test with 39 degrees of freedom. This means that in repeated samples of the same type and size, a difference as large as the one observed would occur in only 5 percent of samples, if there were, in fact, no difference between the percents in the population.

The relative standard error of a statistic is the ratio of the standard error to the statistic and usually is expressed as a percent of the estimate. In this report, statistics with relative standard errors of 30 percent or larger are indicated with an asterisk (*). These estimates may be viewed as unreliable by themselves, but they may be combined with other estimates to make comparisons of greater precision.

Statistics in this report also may be subject to nonsampling error, that is, errors or omissions in responding to the interview, recording answers, and processing data. The data have been adjusted for nonresponse by means of adjustments to the sample weights assigned to each case. Other types of nonsampling error were minimized by a series of quality control measures as described in reports on Cycle II.¹

The 1965 National Fertility Study

The figures on infertility for 1965 in tables 3 and 4 were computed from the 1965 National Fertility Study and were published previously.^{1,3} The survey design and procedures are described in references 1 and 2.

Unlike the NSFG, the 1965 National Fertility Study did not include procedures to obtain weighted numbers; therefore,

NOTE: A list of references follows the text.

approximate numbers of currently married women for 1965 were obtained from population estimates made by the U.S. Bureau of the Census. The weighted numbers shown for 1965 in table 3 differ from those shown for 1976 and 1982 in the following ways: in the 1965 figures, Alaska and Hawaii are included; "black" includes women of all races other than white; and the age range includes currently married women 14 years of age. The population estimates for 1965 are obtained from two reports published by the U.S. Bureau of the Census.^{7,8}

Definitions of terms

Fecundity status—Fecundity is the physical ability of a woman or couple to have children at the time of interview, and refers to women with any number of children, unless classified by parity. It is determined by responses to questions asked in the NSFG interview, not by a medical examination. Fecundity status, as shown in tables 1 and 2, has three main categories: surgically sterile, impaired fecundity, and fecund. Women were classified as surgically sterile if they (or their current husband) had had a sterilizing operation. Surgically sterile is divided into two subcategories: contraceptive and noncontraceptive. Impaired fecundity is divided into the subcategories nonsurgically sterile, subfecund, and long interval. Women were classified as nonsurgically sterile if they reported that it was impossible for them to have a baby for any reason other than a sterilizing operation; as subfecund if it was difficult or dangerous to have a baby; and as "long interval" if they had been continuously married (formally or informally), had not used contraception, and had not become pregnant for 3 or more years. In tables 1 and 2, fecund is a residual category and means that the woman (or couple) is not surgically sterile and does not have impaired fecundity. The percent of currently married couples with impaired fecundity is higher than the percent in-

fertile because impaired fecundity includes difficulty in conceiving and difficulty or danger carrying to term, whereas infertility includes only difficulty in conceiving. For more detailed discussion of the concept of fecundity status, see the text of this report, and the report cited in reference 1.

Infertility status—Infertility is a medical concept; it identifies couples that may need medical services to improve their chances of having children. When neither spouse is surgically sterile, a couple is considered infertile if, during the previous 12 months or longer, they were continuously married, had not used contraception, and had not conceived. Infertility status, as shown in tables 3 and 4, refers to the categories surgically sterile, infertile, and fecund, where fecund means neither surgically sterile nor infertile.

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

Race—Race refers to the race of the woman interviewed and is reported as black, white, or other. In Cycle III, race was classified according to the woman's report of the race that best described her. In Cycle II, race was classified by the observation of the interviewer. Cycle III data indicated that results using either method of classification were very similar.

Marital status—Persons were classified by marital status as married, widowed, divorced, separated, or never married. In Cycle II, informally married women—women who volunteered that they were sharing living quarters with their sexual partner—were classified as currently married. These women constituted about 3 percent of currently married women in Cycle II. To improve the comparability of NSFG results over time and with other sources of data, in Cycle III such women were classified according to their legal marital status. In both cycles, women who were married but separated from their spouse were classified as separated if the reason for the separation was marital discord, and as currently married otherwise.

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

NOTE: A list of references follows the text.

Symbols

---	Data not available
...	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
Z	Quantity more than zero but less than 500 where numbers are rounded to thousands
*	Figure does not meet standard of reliability or precision (30 percent or more relative standard error)

Diagnosis-Related Groups Using Data From the National Hospital Discharge Survey: United States, 1982

by Robert Pokras and Kurt K. Kubishke, Division of Health Care Statistics

Introduction

This report presents selected estimates for 1982 of diagnosis-related groups (DRG) based on data from the National Hospital Discharge Survey (NHDS). A similar report has been published for 1981.¹ The current plan is to publish reports on DRG's regularly because they determine the reimbursement rates of Medicare inpatients, about 30 percent of all discharges from short-stay non-Federal hospitals.²

Developed at the Yale School of Organization and Management, DRG's are being used by the Health Care Financing Administration, some States, and some third party payers to reimburse hospitals for inpatient care on a prospective basis.³ This approach to health care reimbursement operates on the principle that patients with similar medical conditions should receive similar care and use approximately the same amount of resources; therefore, in general a hospital should be reimbursed the same amount for each patient in a DRG. While there is variation in resource consumption among individuals within a DRG, these are expected to balance across all patients.

DRG's were developed under the guiding principle that "The primary objective in the construction of DRG's was a definition of case type, each of which could be expected to receive similar outputs or services from a hospital."⁴ Their formulation was accomplished using clinical judgment and statistical procedures that classify patients by measuring resource utilization. The first step in this process was to cluster the universe of medical diagnoses into broad, mutually exclusive categories. These groups were formed to be consistent in their anatomical or physiopathological classification, or in a manner in which they are clinically managed. Once these major diagnostic groups were formed, an interactive statistical program (AUTOGROUP⁴) was used to further classify each major group into discrete DRG's. This process incorporated patient information regarding diagnoses (primary and secondary),

procedures, sex, and age to explain maximally a patient's length of stay. In all, there currently are 470 DRG's.

Prospective reimbursement was authorized under the Tax Equity and Fiscal Responsibility Act of 1983. Under this act hospitals participating in the Medicare program were brought into this system beginning with their fiscal year as of October 1, 1983. The Health Care Financing Administration, which operates the Medicare program, is allowing several years for hospitals to make a transition to prospective reimbursement by adjusting DRG payments based on certain hospital characteristics and geographic location. At the end of this phase-in period, care provided to a Medicare inpatient will translate into a pre-established payment based solely on the patient's DRG.

There is an important issue related to the NHDS and the implementation of this prospective reimbursement system: how this system may affect the selection of a patient's principal diagnosis and/or comorbidities. Because the NHDS is designed to collect data on the morbidity of the hospital inpatient population, any external influence on diagnostic practices may affect NHDS data. For example, two patients admitted to a hospital for treatment of chest pain—one diagnosed as having chest pain and the other diagnosed as having angina—will be placed into different DRG's and have different reimbursement rates. There is speculation that in cases such as this prospective reimbursement may influence the selection of a diagnosis,³ which in turn may affect estimates produced from the NHDS. After prospective payment has been in place for a few years, it may be possible to examine trends in NHDS data and determine the magnitude, if any, of this type of effect.

The statistics in this report are based on data collected by means of the NHDS, a continuous survey conducted by the National Center for Health Statistics since 1965. Data for this survey are sampled from short-stay non-Federal general and specialty hospitals in the 50 States and the District of Columbia. The sample for 1982 contained approximately 214,000 medical

records from 426 hospitals. The relevant variables required to produce DRG's (diagnoses, procedures, sex, age, and other variables) were abstracted from the face sheet of each sampled medical record, and NHDS data thereby could be used to produce national estimates of DRG's. These estimates may be of value for hospitals to compare their experience with that of other hospitals. For this reason, statistics in this report are frequency estimates and associated average length of stay for DRG's by hospital bed size and region of the country.

Highlights

The frequency and average length of stay for the most common DRG's are presented by age, region of the country, and hospital bed size (tables 1-4). Age is dichotomized as under 65 years of age and 65 years of age and older. This

allows a comparison with the Medicare population because Medicare covers most hospital costs for approximately 94 percent of discharges 65 years of age and over. Tables 1 and 2 provide regional data, while tables 3 and 4 provide bed-size data for these DRG's. Within each of these sets of tables, the first (tables 1 and 3) are for patients under 65 years of age, and the second (tables 2 and 4) are for patients 65 years of age and over.

By definition, some DRG's are only for patients in a specific age range. In such a case the DRG title and the table title (tables 1-4) together define the age group of the estimate. That is, the most restrictive case of either the table or DRG title determines the age group of the estimate. For example, "Diabetes, age greater than 35 years" in table 2 only refers to patients 65 years of age and over because of the table title; whereas, "Simple pneumonia and pleurisy, age greater than 69 years

Table 1. Number of discharges and average length of stay of patients under 65 years of age discharged from short-stay hospitals, by selected diagnosis-related groups and geographic regions: United States, 1982

[Discharges from non-Federal short-stay hospitals. Excludes newborn infants]

Diagnosis-related group	All regions					North Central					South West				
	All regions	Northeast	North Central	South	West	All regions	Northeast	North Central	South	West	All regions	Northeast	North Central	South	West
	Number in thousands										Average length of stay in days				
All discharges	27,896	5,564	7,929	9,804	4,598	5.9	6.5	6.3	5.6	5.0					
Vaginal delivery without complicating diagnoses	2,784	524	765	937	559	2.9	3.4	3.3	2.7	2.2					
Medical back problems	790	121	245	298	125	7.2	9.0	7.3	6.8	6.2					
Esophagitis, gastroenteritis, and miscellaneous digestive disorders, age 18-69 years without substantial comorbidity and/or complication	673	97	178	320	78	4.1	4.5	4.2	4.2	3.3					
Cesarean section without substantial comorbidity and/or complication	649	125	145	258	121	5.7	6.7	6.2	5.3	4.8					
Nonradical hysterectomy, age less than 70 years without substantial comorbidity and/or complication	495	70	128	212	85	7.2	7.9	7.6	7.1	6.2					
Unrelated operating room procedures	401	75	116	145	65	11.2	13.8	12.0	9.7	10.1					
Esophagitis, gastroenteritis, and miscellaneous digestive disorders, age 0-17 years	392	69	111	173	39	3.8	3.9	3.8	3.8	3.3					
Psychoses	388	95	118	108	68	16.5	19.1	19.7	13.8	11.6					
Alcohol- and substance-induced organic mental syndrome	360	157	90	68	45	10.6	9.8	11.9	10.7	10.9					
Dilation and curettage of uterus; conization except for malignancy	345	111	85	118	32	1.8	1.7	1.9	2.0	1.2					
Abortion with dilation and curettage of uterus	325	136	65	86	39	1.3	1.0	1.7	1.5	1.1					
Bronchitis and asthma, age 0-17 years	313	65	96	118	34	3.9	4.6	3.8	3.8	3.3					
Simple pneumonia and pleurisy, age 0-17 years	279	36	86	131	28	4.7	5.3	5.0	4.6	4.1					
Tonsillectomy and/or adenoidectomy, age 0-17 years	279	43	106	83	48	1.8	1.7	1.9	2.1	1.2					
Inguinal and femoral hernia procedures, age 18-69 years without substantial comorbidity and/or complication	271	76	74	80	42	4.2	4.0	4.4	4.7	3.0					
Diabetes, age greater than 35 years	259	52	72	104	30	8.2	9.9	8.7	7.4	6.4					
Vaginal delivery with sterilization and/or dilation and curettage of uterus	247	44	57	110	37	3.6	4.2	4.1	3.3	2.8					
Other factors influencing health status	242	53	68	75	46	3.5	3.6	3.8	3.2	3.4					
Total cholecystectomy with common bile duct exploration, age less than 70 years without substantial comorbidity and/or complication	233	48	63	83	39	7.8	8.1	7.9	8.1	6.7					
Bronchitis and asthma, age 18-69 years without substantial comorbidity and/or complication	227	45	62	81	38	5.3	5.9	5.8	4.9	4.6					

Table 2. Number of discharges and average length of stay of patients 65 years of age and over discharged from short-stay hospitals, by selected diagnosis-related groups and geographic regions: United States, 1982

[Discharges from non-Federal short-stay hospitals. Excludes newborn infants]

Diagnosis-related group	All regions					All regions				
	Northeast	North Central	South	West	Northeast	North Central	South	West		
	Numbers in thousands					Average length of stay in days				
All discharges	2,283	3,008	3,631	1,774	10.1	12.3	10.3	9.4	8.2	
Lens procedures	81	127	119	102	2.9	3.0	3.3	3.0	2.4	
Atherosclerosis, age greater than 69 years and/or substantial comorbidity and complication	99	109	157	62	8.7	10.9	9.0	8.2	6.3	
Heart failure and shock	88	108	132	59	9.7	11.8	10.3	8.8	7.7	
Esophagitis, gastroenteritis, and miscellaneous digestive disorders, age greater than 69 years and/or substantial comorbidity and complication	63	102	169	42	6.7	8.3	6.9	6.3	5.8	
Chronic obstructive pulmonary disease	54	76	117	54	9.8	11.9	10.2	8.8	9.2	
Specific cerebrovascular disorders except transient ischemic attack	64	76	103	52	15.4	20.4	16.2	13.2	12.2	
Simple pneumonia and pleurisy, age greater than 69 years and/or substantial comorbidity and complication	51	80	106	38	10.7	11.8	10.6	10.7	9.5	
Unrelated operating room procedures	59	65	72	29	17.3	20.0	17.5	15.8	15.0	
Diabetes, age greater than 35 years	49	56	77	24	10.0	13.9	9.7	8.4	8.1	
Angina pectoris	49	47	67	32	6.6	8.0	6.4	6.6	4.9	
Medical back problems	38	58	63	27	9.3	11.5	9.7	7.7	8.8	
Cardiac arrhythmia and conduction disorders, age greater than 69 years and/or substantial comorbidity and complication	35	51	65	30	7.1	9.1	7.2	7.1	4.8	
Circulatory disorders with acute myocardial infarction without cardiovascular complications, discharged alive	44	44	62	24	12.2	13.6	12.9	11.8	9.4	
Hypertension	28	43	70	17	7.9	8.8	7.7	7.6	8.4	
Transient ischemic attacks	39	42	52	22	7.6	9.6	7.8	7.3	4.3	
Bronchitis and asthma, age greater than 69 years and/or substantial comorbidity and complication	22	38	59	29	8.3	9.2	8.0	8.3	8.0	
Transurethral prostatectomy, age greater than 69 years and/or substantial comorbidity and complication	29	42	45	28	9.3	11.1	9.5	9.4	6.8	
Kidney and urinary tract infections, age greater than 69 years and/or substantial comorbidity and complication	23	34	67	17	8.5	9.9	8.8	8.1	7.1	
Respiratory neoplasms	36	34	43	24	10.9	11.0	11.9	11.2	9.0	
Hip and femur procedures except major joint, age greater than 69 years and/or substantial comorbidity and complication	27	45	38	25	19.5	25.1	19.9	18.5	14.3	

and/or substantial comorbidity and complication” in table 2 would not include a patient under 70 years of age because of the restriction in the DRG title.

The most common DRG for patients under 65 years of age was “Vaginal delivery without complicating diagnoses” (table 1), with an estimated 2.8 million discharges in 1982. “Cesarean section without substantial comorbidity and/or complication,” with 649,000 discharges, also was among the most frequent DRG’s in this age group. For patients 65 years of age and older (table 2), “Lens procedures” was the most common DRG, 429,000, and “Atherosclerosis, age greater than 69 years and/or substantial comorbidity and complication,” 427,000, was the second most common DRG for the elderly.

The average length of stay for specific DRG’s in the four

regions of the country generally reflects the pattern found for all patients: the Northeast and North Central have the longest average length of stay and the West has the shortest. Regional length-of-stay differences were greater for patients 65 years of age or more than for younger patients. The West had an average length of stay of 5.0 days for patients under 65 years of age, and the Northeast had an average length of stay of 6.5 days, a difference of 1.5 days, or 30 percent greater. For older patients, however, the Northeast had an average length of stay 4.1 days greater than the elderly patients in the West (12.3 versus 8.2 days), a difference of 50 percent.

Overall there was a tendency for length of stay to increase with hospital bed size (table 3 and 4) for patients under 65 years of age as well as for older patients, but this pattern is not

Table 3. Number of discharges and average length of stay of patients under 65 years of age discharged from short-stay hospitals, by selected diagnosis-related groups and hospital bed size: United States, 1982

[Discharges from non-Federal short-stay hospitals. Excludes newborn infants]

Diagnosis-related group	All hospitals	6-99 beds	100-199 beds	200-299 beds	300-399 beds	500 or more beds	All hospitals	6-99 beds	100-199 beds	200-299 beds	300-399 beds	500 or more beds
All discharges.....	27,896	4,664	4,906	4,459	6,909	6,958	5.9	4.5	5.3	5.7	6.2	6.8
Vaginal delivery without complicating diagnoses.....	2,784	425	466	433	700	759	2.9	2.4	2.8	2.8	3.1	3.2
Medical back problems.....	790	170	137	150	185	149	7.2	6.3	7.0	7.5	7.6	7.6
Esophagitis, gastroenteritis, and miscellaneous digestive disorders, age 18-69 years without substantial comorbidity and/or complication.....	673	191	116	115	143	108	4.1	3.3	4.3	4.6	4.2	4.8
Cesarean section without substantial comorbidity and/or complication.....	649	75	123	93	175	183	5.7	5.4	5.2	5.5	5.8	6.1
Nonradical hysterectomy, age less than 70 years without substantial comorbidity and/or complication.....	495	51	111	80	126	125	7.2	7.1	6.5	7.4	7.3	7.5
Unrelated operating room procedures.....	401	50	65	65	98	123	11.2	6.9	7.7	12.8	13.0	12.5
Esophagitis, gastroenteritis, and miscellaneous digestive disorders, age 0-17.....	392	82	97	60	78	75	3.8	2.7	3.7	3.8	4.0	4.8
Psychoses.....	388	34	74	40	137	103	16.5	12.0	14.5	15.1	15.8	20.9
Alcohol- and substance-induced organic mental syndrome.....	360	105	59	39	97	60	10.6	9.6	13.5	12.9	9.9	9.4
Dilation and curettage of uterus; conization except for malignancy.....	345	56	78	43	81	87	1.8	1.8	1.7	2.1	1.9	1.6
Abortion with dilation and curettage of uterus.....	325	36	68	41	78	102	1.3	1.6	1.4	1.5	1.2	1.1
Bronchitis and asthma, age 0-17 years.....	313	59	79	50	70	56	3.9	3.4	3.8	4.5	4.1	3.8
Simple pneumonia and pleurisy, age 0-17 years.....	279	85	63	48	49	35	4.7	4.1	4.9	5.0	5.2	4.9
Tonsillectomy and/or adenoidectomy, age 0-17 years.....	279	52	55	63	68	41	1.8	1.6	1.8	1.9	1.7	1.9
Inguinal and femoral hernia procedures, age 18-69 years without substantial comorbidity and/or complication.....	271	40	50	45	72	64	4.2	4.2	3.9	4.4	4.2	4.2
Diabetes, age greater than 35 years.....	259	57	43	53	56	50	8.2	6.2	7.2	8.2	9.4	9.7
Vaginal delivery with sterilization and/or dilation and curettage of uterus.....	247	47	47	41	47	65	3.6	3.4	3.3	3.5	3.7	3.8
Other factors influencing health status.....	242	35	38	39	58	73	3.5	3.1	4.0	3.5	3.6	3.4
Total cholecystectomy with common bile duct exploration, age less than 70 years without substantial comorbidity and/or complication.....	233	44	41	34	65	48	7.8	7.2	7.5	8.4	8.4	7.4
Bronchitis and asthma, age 18-69 years without substantial comorbidity and/or complication.....	227	60	37	38	45	46	5.3	4.8	5.3	5.0	5.7	5.8

consistent for some of the individual DRG's for which average length of stay in small and medium-size hospitals is equal to or greater than the average length of stay in large hospitals (500 or more beds).

The average length of stay associated with a DRG (tables

1-4) allows hospitals to compare their experience with that of other hospitals. While comparison is tenuous on a case-by-case basis, a hospital with an average length of stay 2, 3, or more days longer than the national average for a specific DRG may need to examine why it is so far from the norm. This kind

Table 4. Number of discharges and average length of stay of patients 65 years of age or over discharged from short-stay hospitals, by selected diagnosis-related groups and hospital bed size: United States, 1982

[Discharges from non-Federal short-stay hospitals. Excludes newborn infants]

Diagnosis-related group	All hospitals	6-99 beds	100-199 beds	200-299 beds	300-399 beds	500 or more beds	Average length of stay in days					
							All hospitals	6-99 beds	100-199 beds	200-299 beds	300-399 beds	500 or more beds
	Number in thousands						Average length of stay in days					
All discharges	10,697	2,172	1,832	1,907	2,638	2,148	10.1	8.1	9.6	10.2	10.8	11.5
Lens procedures	429	32	94	85	118	99	2.9	2.9	3.0	2.6	3.0	3.1
Atherosclerosis, age greater than 69 years and/or substantial comorbidity and complication	427	90	87	80	107	63	8.7	7.3	8.1	8.8	9.6	10.2
Heart failure and shock	387	113	70	68	82	54	9.7	8.1	9.3	10.5	10.8	11.0
Esophagitis, gastroenteritis, and miscellaneous digestive disorders, age greater than 69 years and/or substantial comorbidity and complication	376	123	60	64	78	51	6.7	5.6	7.2	6.9	8.3	6.5
Chronic obstructive pulmonary disease	300	76	48	58	71	48	9.8	8.1	9.5	10.7	10.6	10.5
Specific cerebrovascular disorders except transient ischemic attack.	294	66	54	60	63	50	15.4	11.2	15.8	16.1	14.9	20.1
Simple pneumonia and pleurisy, age greater than 69 years and/or substantial comorbidity and complication	276	98	45	42	56	36	10.7	9.3	10.9	11.7	11.8	11.6
Unrelated operating room procedures	226	29	42	45	58	52	17.3	14.1	17.3	16.0	17.5	19.9
Diabetes, age greater than 35 years	208	50	37	44	44	33	10.0	8.2	9.2	10.3	10.9	12.1
Angina pectoris	195	54	34	40	44	23	6.6	5.9	6.3	6.3	7.6	7.4
Medical back problems	186	45	33	36	41	31	9.3	7.8	8.3	8.5	11.6	10.2
Cardiac arrhythmia and conduction disorders, age greater than 69 years and/or substantial comorbidity and complication	181	49	31	33	37	30	7.1	5.7	6.6	7.8	7.8	8.5
Circulatory disorders with acute myocardial infarction without cardiovascular complications, discharged alive	174	35	27	31	46	35	12.2	11.2	11.6	12.1	12.9	12.9
Hypertension	158	39	31	29	27	32	7.9	6.2	7.3	9.3	7.7	9.6
Transient ischemic attacks	155	36	34	30	32	24	7.6	5.5	7.5	7.6	9.7	8.2
Bronchitis and asthma, age greater than 69 years and/or substantial comorbidity and complication	148	47	31	25	28	17	8.3	6.9	9.6	8.7	8.8	8.2
Transurethral prostatectomy, age greater than 69 years and/or substantial comorbidity and complication	144	14	31	27	38	33	9.3	9.2	8.3	10.2	9.2	9.5
Kidney and urinary tract infections, age greater than 69 years and/or substantial comorbidity and complication	142	48	26	20	31	18	8.5	7.2	9.2	8.5	9.2	9.4
Respiratory neoplasms	137	22	19	19	40	37	10.9	7.7	10.8	10.0	11.8	12.4
Hip and femur procedures except major joint, age greater than 69 years and/or substantial comorbidity and complication	135	16	23	24	40	32	19.5	18.3	18.1	17.9	20.3	21.3

of comparison may be worthwhile as a starting point, but even within a DRG, average length of stay is not an exact measure of resource consumption.

The change to prospective payment for Medicare inpatient

reimbursement is likely to affect areas such as cost savings, quality of care, medical records keeping, and certain areas of medical practice. However, for at least two reasons data currently available on DRG's from the NHDS (this report and a

similar report using 1981 data¹) should not be used to evaluate the success of prospective payment. First, the prospective payment program was not implemented until October 1983, and, second, historical trends must be studied to shed light on short-term changes in hospital utilization.

For example, from 1981 to 1982 average length of stay decreased 0.4 days for patients 65 years of age and over, and

some specific DRG's also showed a reduction in average length of stay. However, length of stay in short-stay non-Federal hospitals has been decreasing for over a decade (the average length of stay for patients 65 years of age and over was 12.2 days in 1972⁵ compared with 10.1 days in 1982), and it will take more time to understand the effects prospective payment will have, if any, on hospital utilization.

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Technical notes

Survey methodology

Source of data

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

The universe of the survey consisted of 6,965 short-stay hospitals contained in the 1963 Master Facility Inventory of Hospitals and Institutions. New hospitals were sampled for inclusion in the survey in 1972, 1975, 1977, and 1981. The sample for 1982 consisted of 550 hospitals. Of these, 71 refused to participate and 53 were out of scope either because the hospital had gone out of business or because it failed to meet the definition of a short-stay hospital. Thus 426 hospitals partici-

pated in the survey during 1982 and provided approximately 214,000 abstracts of medical records.

Sample design

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

Sample discharges were selected within the hospitals using the daily listing sheet of discharges as the sampling frame. These discharges were selected by a random technique, usually on the basis of the terminal digit or digits of the patient's medical

record number, a number assigned when the patient was admitted to the hospital. The within-hospital sampling ratio for selecting sample discharges varied inversely with the probability of selection of the hospital.

Data collection and estimation

The sample selection and the transcription of information from the hospital records for abstract forms were performed by the hospital staff or by representatives of the National Center for Health Statistics or by both. The data were abstracted from the face sheets of the medical records. All discharge diagnoses were listed on the abstract in the order of the principal one, or the first-listed one if the principal one was not identified, followed by the order in which all other diagnoses were entered on the face sheet of the medical record.

Statistics produced by NHDS are derived by a complex estimating procedure. The basic unit of estimation is the sample inpatient discharge abstract. The estimating procedure used to produce essentially unbiased national estimates in NHDS has three principal components: inflation by reciprocals of the probabilities of sample selection, adjustment for nonresponse, and ratio adjustment to fixed totals. These components of estimation are described in appendix I of two earlier publications.^{6,7}

Diagnosis-related groups

The diagnosis-related groups (DRG's) used in this report were produced using the most current DRG program available at the time (summer of 1983). This is a computer program that groups patients into DRG's based on diagnostic, surgical, and patient information. The program is maintained and is commercially available at Health Systems International (DRG Support Group, 100 Broadway, New Haven, Conn. 06511). However, the actual program used to produce estimates in this report was obtained from the Health Care Financing Administration.

To help interpret the data in this report, two points are worth mentioning. First, the entire NHDS file was used to produce estimates, including outliers. None of the data was excluded, or trimmed, because of an abnormally long length of stay. Second, the NHDS only codes three ICD-9-CM Class 4 procedures:^{8,9} circumcision, code 64.0; episiotomy, code 73.6; and removal of intrauterine contraceptive device, code 97.71. In certain instances Class 4 procedures can alter the DRG designation for a patient. The effect of not coding these procedures in the NHDS on determining DRG's is unknown, but probably quite small. In all other respects, the DRG's presented in this report are consistent with those in the *Federal Register* of Thursday, September 1, 1983.¹⁰

In publications from the National Center for Health Statistics using NHDS data, several schemes have been used to group patients into categories based on either their diagnoses or the procedures performed. These groups were developed to report general purpose statistics to the many users of NHDS data, and any similarity between the titles of those categories and DRG titles is coincidental.

Sampling errors and rounding of numbers

The standard error is a measure of the sampling variability that occurs by chance because only a sample, rather than an entire universe, is surveyed. The relative standard error of the estimate is obtained by dividing the standard error by the estimate itself and is expressed as a percent of the estimate. Table I shows relative standard errors for discharges and first-listed diagnoses for 1982. The standard errors for average lengths of stay are shown in table II. Estimates have been rounded to the nearest thousand. For this reason detailed figures within tables do not always add to the totals.

Tests of significance

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

Definition of terms

Patient—A person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment. In this report the number of patients refers to the number of discharges during the year, including any multiple discharges of the same individual from one or more short-stay hospitals.

Table I. Approximate relative standard errors of estimated number of discharges and first-listed diagnoses: United States, 1982

Size of estimate	Relative standard error
10,000	16.3
50,000	10.2
100,000	8.5
300,000	6.6
500,000	5.9
1,000,000	5.1
4,000,000	4.0

Table II. Approximate standard errors of average lengths of stay by number of discharges: United States, 1982

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

NOTE: A list of references follows the text.

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

Age—Patient's age refers to age at birthday prior to admission to the hospital inpatient service.

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

Geographic region—Hospitals are classified by location in one of the four geographic regions of the United States that correspond to those used by the U.S. Bureau of the Census:

<i>Region</i>	<i>States included</i>
Northeast	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut, New York, New Jersey, and Pennsylvania
North Central . . .	Michigan, Ohio, Illinois, Indiana, Wisconsin, Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas

Region—Con.

South

West

States included—Con.

Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida, Kentucky, Tennessee, Alabama, Mississippi, Arkansas, Louisiana, Oklahoma, and Texas

Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada, Washington, Oregon, California, Hawaii, and Alaska

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

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

Use of Topical Antimicrobial Drugs in Office-Based Practice: United States, 1980-81

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

This report examines the use of topical antimicrobial medications in the office-based patient care setting. The information used was obtained by combining the 1980 and 1981 results of the National Ambulatory Medical Care Survey, a sample survey of care provided by office-based physicians. Conducted annually by the National Center for Health Statistics from 1973 through 1981, the survey is being carried out again in 1985.

Because of the nature of the data collected by means of the National Ambulatory Medical Care Survey (NAMCS), the investigation of the use of antimicrobial medications is limited to an inspection of the patterns in physicians' ordering or providing them to patients. It is not possible to assess the extent to which the patients actually filled their prescription orders and used the medications according to instructions.

The estimates presented in this report are based on a sample of office visits, and so are subject to sampling variability. Comparisons among statistics were tested for statistical significance using the Bonferroni test for multiple comparisons, a modification of the *t*-test. Statements regarding differences between or among statistics indicate that the test results showed a difference significant at the $p < .05$ level. An explanation of sampling errors and guidelines for judging the precision of estimates, as well as a brief description of the survey design, are presented in the technical notes appended to this report.

In selecting the drugs to be included in this analysis, *AMA Drug Evaluations, Fifth Edition*,¹ first was utilized to establish a comprehensive list of drug ingredients (according to generic or nonproprietary name) considered to have antimicrobial activity. All drug mentions (that is, all drugs listed by physicians as ordered or provided to patients) appearing in NAMCS in

1980 and 1981 then were screened for these ingredients. The resulting list of antimicrobial drugs was divided into two sets: those known to be used only topically and all others. The topical drugs, and the patient visits associated with them, are discussed in this report; the other antimicrobial drugs will be presented in an additional report scheduled for publication in 1985.

Thirty-six specific antimicrobial generic ingredients appeared in the topical drug mentions recorded in the 1980 and 1981 surveys. For the purposes of this analysis, they can be classified in the following eight categories:

- Amphenicols (chloramphenicol).
- Macrolide antibiotics (erythromycin).
- Tetracyclines (chlortetracycline, meclocycline, oxytetracycline, and tetracycline hydrochloride).
- Aminoglycosides (gentamicin and neomycin).
- Polymyxins (polymyxin B).
- Sulfonamides (silver sulfadiazine, sulfabenzamide, sulfacetamide, sulfanilamide, sulfathiazole, and sulfisoxazole).
- Antifungal or antibacterial and antifungal agents (amphotericin B, selenium sulfide, sodium thiosulfate, tolnaftate, undecylenic acid, and zinc pyrithione).
- Miscellaneous antimicrobial agents (acetic acid, bacitracin, carbol-fuchsin, gramicidin, iodochlorhydroxyquin, iodiquinol, nitrofurazone, povidone-iodine, and silver nitrate).

Although gramicidin, neomycin, and polymyxin B also are used systemically, such use is unusual, particularly in the office-based ambulatory care setting examined here. Consequently, these three generic ingredients are included only in this topical antimicrobial report.

The specific topical antimicrobial drugs containing the above generic ingredients and appearing in NAMCS in 1980 and 1981 were subdivided according to the body site of application and the types of active ingredients included. This yielded

¹*AMA Drug Evaluations, Fifth Edition*, Chs. 21, 24, 62, and 69-80. Chicago. American Medical Association, 1983.

seven topical antimicrobial groups with frequencies large enough for analysis:

- *Ophthalmic antibacterial drugs:* Drugs for ophthalmic use only, containing one or more antibacterial agents.
- *Ophthalmic antibacterial-corticosteroid mixtures:* Drugs for ophthalmic use only, containing one or more antibacterial agents and one or more corticosteroids. (These drugs have anti-inflammatory as well as anti-infective properties.)
- *Otic drugs:* Drugs for otic use only, containing one or more antibacterial and/or antifungal agents, with or without a corticosteroid ingredient.
- *Vaginal drugs:* Drugs for vaginal use only, containing one or more antibacterial and/or antifungal agents.
- *Other topical antifungal drugs:* Drugs for use on skin and/or mucous membranes, containing one or more antifungal ingredients.
- *Other topical anti-infectives:* Drugs for use on skin and/or mucous membranes, containing one or more antibacterial ingredients and/or antibacterial and antifungal agents.
- *Other topical anti-infective and corticosteroid mixtures:* Drugs for use on skin and/or mucous membranes, containing one or more antibacterial and/or antibacterial and

Ophthalmic antibacterial drugs			
Bleph	gentian violet	BPN	
Chloromycin	Gyne-Lotrimin	carbol-fuchsin	
Chloroptic	Koro-Sulf	Castellani's paint	
Econochlor	Monistat 7	Efodine	
Genoptic	Nylmerate	Elase-Chloromycetin	
Isopto Cetamide	nystatin vaginal tablet	EryDerm	
Ophthochlor	Sulfa Vaginal	Furacin	
Statrol	sulfanilamide	Iodochlor	
Sulamyd	Sultrin	Meclan	
Sulfacel-15	Tricholan	Mity-Mycin	
Vasosulf	Triconol	Mycitracin	
	Tripul Vaginal	neomycin	
	Vaglia	Neo-Polycin	
	Vagitrol	Neosporin	
	Vanobid	nitrofurazone	
		Polysporin	
Ophthalmic antibacterial-corticosteroid mixtures			
Blephamide	Other topical antifungal drugs		
Cetapred	amphotericin	Polytracin	
Chloromycetin-Hydrocortisone	clotrimazole	povidone-iodine	
Chloroptic-P	Desenex	Sebizon Lotion	
Isopto Cetapred	Exsel Lotion	Silvadene	
Maxitrol	Fungizone	silver nitrate	
Metimyd	Fungizone Lotion	silver nitrate toughened sticks	
Neo-Hydeltrasol	Halotex	silver sulfadiazine	
Ophthocort	Head and Shoulders	Spectro-Biotic	
Optimyd	Lotrimin	Staticin	
Poly-Pred	MicaTin	sulfacetamide	
Sulfapred	miconazole	Sulfacet-R	
Vasocidin	Monistat	sulfathiazole	
	Mycelex	Thiaphyll	
	Nystaform	Topicycline	
	selenium	Triple Antibiotic	
	Selsun	Vioform	
	Selsun Blue		
	Tinactin	Other topical anti-infective and corticosteroid mixtures	
	Tinver Lotion	Caquin	
	undecylenic acid	Cordran-N	
	Verdefam	Cor-Tar-Quin	
	Zincon	Cortisporin	
		F-E-P	
Otic drugs			
Chloromycetin Otic	Other topical anti-infectives		
Domeboro Otic	A/T/S	hydrocortisone-neomycin	
Dureze	acetic acid	Mycolog	
Lidosporin	acetic acid glacial	Mytrex	
Neo-Cort-Dome Otic	Aureomycin	Neo-Cortef	
otic drops	Bacimycin	Neo-Decadron	
Otobione	bacitracin	Neo-Delta-Cortef	
Otobiotic	bacitracin-neomycin-polymyxin	Neo-Medrol	
Otocort	Betadine	Neo-Synalar	
Otoreid-HC	Biotres	Racet	
Pyocidin	Biozyme	Terra-Cortril	
Vōsol		Vioform-Hydrocortisone	
Vōsol-HC		Vytone	
Vaginal drugs			
AVC			
AVC/Dienestrol			
Betadine Vaginal Douche			
Candepin			
Femguard			

Figure 1. Topical antimicrobial drugs named by physician respondents: United States, 1980-81

antifungal ingredients and one or more corticosteroid ingredients. (These drugs also have anti-inflammatory and anti-infective properties.)

All analyses in this report are based on this categorization of topical antimicrobials. The trade² and generic names used by physicians in reporting the specific drugs that appeared in NAMCS in 1980 and 1981 are displayed according to category in figure 1.

General findings

The 1980 and 1981 total number of office visits to physicians principally engaged in office-based practice, estimated by means of NAMCS, was 1.1 billion. Of these visits, 62 percent (0.7 billion) were drug visits, that is, visits at which one or more therapeutic medications were ordered or provided. The drug visits involved a total of 1.3 billion drug mentions.

The drug mentions defined as topical antimicrobials numbered 48.4 million, or 3.6 percent of all drug mentions. This reflected an average annual rate of 108.6 topical antimicrobial drugs per 1,000 population. (See table 1.) The most frequently mentioned groups were *other topical anti-infectives*, with 13.1 million mentions (27.0 percent of the total), *other topical anti-infective and corticosteroid mixtures*, with 10.5 million mentions (21.6 percent), and *vaginal drugs*, with 8.1 million mentions (16.8 percent). Although *vaginal drugs* had an annual average rate of 35.2 per 1,000 female population, *other topical anti-infectives* had a rate of 29.4 per 1,000 population, and *other topical anti-infective and corticosteroid mixtures* had a rate of 23.5 per 1,000 population, these differences are not statistically significant.

The 15 specific topical antimicrobial drugs mentioned most frequently are listed in table 2. Together they accounted for almost two-thirds of all drug mentions of this type.

Of the drug mentions under consideration, combination drugs (that is, those containing multiple active ingredients) constituted the majority (27.3 million drug mentions, or 56.1

Table 2. Number and percent distribution of the 15 topical antimicrobial drugs most frequently mentioned in office-based practice: United States, 1980-81

Rank	Name of drug and antimicrobial ingredients	Number of mentions in thousands	Percent distribution
	All topical antimicrobial drugs...	48,354	100.0
1	Cortisporin (polymyxin B, bacitracin, and neomycin)	4,988	10.3
2	Neosporin (polymyxin B, bacitracin, and neomycin)	4,664	9.6
3	Mycolog (nystatin, neomycin, and gramicidin).....	2,883	6.0
4	Maxitrol (neomycin and polymyxin B).....	2,057	4.3
5	Monistat 7 (miconazole).....	1,906	3.9
6	AVC (sulfanilamide).....	1,828	3.8
7	Monistat (miconazole).....	1,813	3.7
8	Lotrimin (clotrimazole).....	1,755	3.6
9	Chloroptic (chloramphenicol)...	1,507	3.1
10	Sultrin (sulfathiazole, sulfacetamide, and sulfabenzamide).....	1,271	2.6
11	Betadine (povidone-iodine)....	1,214	2.5
12	Gyne-Lotrimin (clotrimazole)...	1,189	2.5
13	Neo-Decadron (neomycin).....	1,184	2.4
14	Bacitracin.....	1,016	2.1
15	Silver nitrate.....	959	2.0
...	All other topical and antimicrobial drugs.....	18,119	37.5

percent). The remainder (21.1 million, or 43.9 percent) were single ingredient drugs. Table 3 lists the 15 generic ingredients most frequently included in all topical antimicrobial drug mentions. Together these substances account for more than three-fourths (78.0 percent) of the 109.8 million ingredient mentions listed for these drugs. Although 9 of the 15 most common ingredients were antibacterial or antifungal in nature, 6 were not. These latter ingredients were principally anti-inflammatory in their effects.

NAMCS data files also contain American Hospital Formulary Service information³ as to the expected therapeutic

²The use of trade names is for identification only and does not imply endorsement by the Public Health Service or the U.S. Department of Health and Human Services.

³American Hospital Formulary Service Classification System and Therapeutic Category Codes. Washington. American Society of Hospital Pharmacists, Inc., 1980.

Table 1. Number, percent distribution, and average annual rate of topical antimicrobial drug mentions in office-based practice by drug group: United States, 1980-81

Drug group	Number of mentions in thousands	Percent distribution	Average annual rate per 1,000 civilian non-institutionalized population
All topical antimicrobial drugs	48,354	100.0	108.6
Ophthalmic antibacterial drugs.....	3,471	7.2	7.8
Ophthalmic antibacterial-corticosteroid mixtures	4,558	9.4	10.2
Otic drugs.....	1,487	3.1	3.3
Vaginal drugs.....	8,106	16.8	35.2
Other topical antifungal drugs.....	7,198	14.9	16.2
Other topical anti-infectives	13,074	27.0	29.4
Other topical anti-infective and corticosteroid mixtures.....	10,460	21.6	23.5

¹Rate is based on the female population only.

Table 3. Number and percent distribution of the 15 generic ingredients most frequently appearing in topical antimicrobial drug mentions, with principal therapeutic action: United States, 1980 and 1981

Rank	Generic ingredient	Principal therapeutic action	Number of generic ingredient mentions in thousands	Percent distribution
	All generic ingredients		109,809	100.0
1	Neomycin	Antibacterial	17,585	16.0
2	Polymyxin B	Antibacterial	13,966	12.7
3	Bacitracin	Antibacterial	12,128	11.0
4	Hydrocortisone	Anti-inflammatory	6,564	6.0
5	Sulfacetamide	Antibacterial	5,836	5.3
6	Miconazole	Antifungal	4,447	4.0
7	Clotrimazole	Antifungal	3,727	3.4
8	Dexamethasone	Anti-inflammatory	3,241	3.0
9	Nystatin	Antifungal	2,948	2.7
10	Triamcinolone	Anti-inflammatory	2,916	2.7
11	Gramicidin	Antibacterial	2,883	2.6
12	Prednisolone	Anti-inflammatory	2,442	2.2
13	Sulfanilamide	Antibacterial	2,435	2.2
14	Allantoin	Stimulation of healthy tissue growth	2,255	2.1
15	Aminacrine	Bacteriostatic	2,255	2.1
...	All others		24,181	22.0

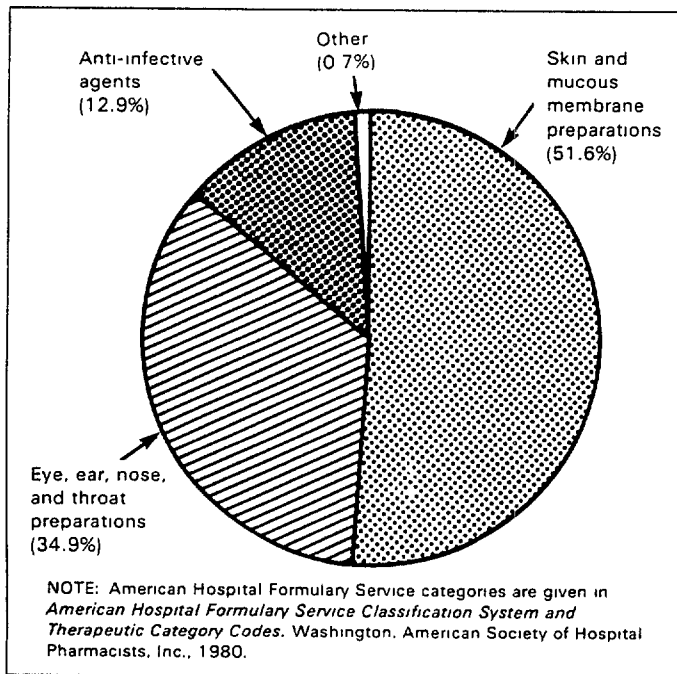


Figure 2. Distribution of topical antimicrobial drugs among American Hospital Formulary Service therapeutic categories: United States, 1980-81

effects of drugs mentioned. The therapeutic categories associated with the topical antimicrobial drugs selected for examination in this report are illustrated in figure 2. A slight majority (51.6 percent) of the drugs were classified as skin and mucous membrane preparations, and another large segment (34.9 percent) was classified as eye, ear, nose, and throat preparations.

Overall, most of the topical antimicrobial medications (90.6 percent) were available to patients only as prescription drugs. Of the ones available without prescription, two-thirds (67.2 percent) were classified for this report as *other topical anti-infectives*. Three of the drug groups—*ophthalmic anti-*

bacterial drugs, ophthalmic antibacterial-corticosteroid mixtures, and other topical anti-infective and corticosteroid mixtures—were composed of prescription drugs only. Prescription drugs dominated the remaining drug groups also, but in varying proportions, ranging from 76.6 percent of *other topical anti-infectives* to 97.1 percent of *otic drugs*.

Visits involving topical antimicrobial drugs

During 1980 and 1981 there were 46.0 million patient visits in which at least one topical antimicrobial drug was ordered or provided. This represented one out of every 25 (4.0 percent) office visits that occurred during that period.

For these visits there was an average of 1.05 topical antimicrobial drug mentions per visit, an intensity rate indicating that the simultaneous order or provision of multiple drugs of this type was an exceptional event. In fact, two or more of these drugs were ordered or provided in only 2.2 million visits, or 4.9 percent of all topical antimicrobial drug visits.

Patient demographics

As shown in table 4, the overall average annual rate of visits was 103.4 per 1,000 civilian noninstitutionalized population. The greatest number of visits (13.6 million, or 29.6 percent of all these visits) was made by persons 25-44 years of age. Females made a substantial majority (62.3 percent) of the visits involving topical antimicrobials, which did not differ noticeably from the proportion of all other office visits made by females (60.3 percent). Controlling for the relative sizes of the male and female populations, the female rate of 124.4 visits per 1,000 population per year was 54 percent higher than the male rate of 80.6.

The racial distribution of visits shows that white persons made 88.3 percent of the visits involving topical antimicrobial drugs and persons of all other races made 11.7 percent, proportions that did not differ significantly from those observed for

Table 4. Number, percent distribution, and average annual rate of visits involving topical antimicrobial drugs by age, sex, and race: United States, 1980-81

Age, sex, and race	Number of visits in thousands	Percent distribution	Rate per 1,000 civilian non-institutionalized population
All topical antimicrobial drug visits	46,034	100.0	103.4
Age			
14 years and under . . .	9,509	20.7	93.5
15-24 years	7,953	17.3	97.7
25-44 years	13,625	29.6	108.7
45-64 years	8,173	17.8	93.0
65 years and over . . .	6,773	14.7	138.2
Sex			
Male	17,361	37.7	80.8
Female	28,673	62.3	124.4
Race			
White	40,662	88.3	106.4
All other	5,372	11.7	84.9

all other visits. The visit rate for white persons (106.4 per 1,000 population per year) was 25 percent higher than that for all others (84.9).

Age, sex, and race distributions varied somewhat among visits involving different types of topical antimicrobial drugs. Excluding *vaginal drugs*, the largest sex differences appeared in the visits involving *other antifungal drugs* (36.4 percent of which were made by males) and *ophthalmic antibacterial-corticosteroid mixtures* (41.9 percent of which were made by males). One factor influencing these sex differences is that some of the *other antifungal drugs* may be used vaginally.

The age distribution of patients who received *ophthalmic antibacterial-corticosteroid mixtures* reflects the significant number of cataract patients. Fully one-third of the patients receiving these drugs (34.7 percent) were at least 65 years old, and an additional 25.1 percent were 45-64 years of age. In fact, the median age for all patients receiving this type of drug was 56.9, which was strikingly higher than the median age of 31.0 for all patients who received topical antimicrobial drugs.

Similarly, the use of *vaginal drugs* was heavily concentrated in the middle age range. The median age of 29.6 years for the patients receiving these drugs reflects the 77.1 percent of these patients who were 15-44 years of age, and is influenced by the relatively high susceptibility of women in the child-bearing years to vaginal infections and inflammation.

The final major age difference in the use of the specific types of topical antimicrobial drug was that children accounted for disproportionate numbers of visits involving *otic drugs* (36.9 percent), *other topical anti-infectives* (27.0 percent), and *other topical anti-infective and corticosteroid mixtures* (30.9 percent). The median patient ages of 24.4, 29.7, and 27.2, respectively, for these groups thus may be indicative of the relative susceptibility of youth to otic infections and superficial injuries.

Significant race differences in utilization of the different types of topical antimicrobials were observed, but possible explanations for these differences are unclear. Of the patients who were ordered or provided with topical antimicrobial drugs, persons of minority races were more likely than white persons to be users of *vaginal drugs* (28.3 percent compared with 15.7 percent) and *other topical antifungal drugs* (23.8 percent compared with 14.0 percent). The reverse was true for *other topical anti-infective drugs*—29.1 percent of the white patients receiving topical antimicrobials were ordered or provided with this type of drug, compared with 18.9 percent of minority race patients. Utilization of *other topical anti-infective and corticosteroid mixtures*, however, showed no difference between these two racial groupings. Because the frequencies of use of *ophthalmic antibacterial drugs*, *ophthalmic antibacterial-corticosteroid mixtures*, and *otic drugs* by minority race persons were too small to be statistically reliable, race differences in utilization of these drugs could not be tested.

Physician specialty and patients' reasons for visit

The distribution of visits involving topical antimicrobial drugs according to physician specialty is presented in table 5. Although general and family practitioners were the most frequently involved physicians (13.2 million visits, or 28.6 percent of the total), they handled a somewhat smaller proportion of these visits than of all other visits (33.1 percent). Also, the physicians who utilized topical antimicrobial drugs were more concentrated than other physicians in the specific few specialties most concerned with the types of illness and injury associated with the use of these medications—dermatology (11.2 percent of the visits involving topical antimicrobial drugs, compared with 4.1 percent of all other visits), obstetrics and gynecology (14.3 percent compared with 9.2 percent), ophthalmology (17.9 percent compared with 4.9 percent), and otolaryngology (4.4 percent compared with 2.2 percent). In fact, these four specialty groups alone accounted for almost half (47.8 percent) of all topical antimicrobial drug visits, but only one-fifth (20.4 percent) of all other visits.

Because so many infective processes are acute problems rather than chronic ones, it was expected that visits involving topical antimicrobial drugs would reflect more patients presenting for acute care and with new problems. The data presented in

Table 5. Number and percent distribution of visits involving topical antimicrobial drugs by physician specialty: United States, 1980-81

Physician specialty	Number of visits in thousands	Percent distribution
All specialties	46,034	100.0
General and family practice	13,170	28.6
Internal medicine	2,298	5.0
Pediatrics	4,872	10.6
Dermatology	5,170	11.2
General surgery	1,589	3.5
Obstetrics and gynecology	6,575	14.3
Ophthalmology	8,222	17.9
Otolaryngology	2,044	4.4
All other specialties	2,094	4.5

table 6 demonstrate that this was indeed the case. A majority of the patients receiving topical antimicrobial drugs (58.4 percent) presented with an acute problem, compared with only one-third (35.5 percent) of all other patients. However, the proportion who presented for postsurgery or injury care was the same, 8.8 percent, for both types of visit. More than half (55.7 percent) of all visits involving topical antimicrobial drugs were prompted by new problems. In contrast, only one-third (35.9 percent) of all other visits involved a new problem.

The principal reasons cited by patients for making office visits are summarized in tables 7 and 8. A full two-thirds (68.8 percent) of all patients receiving topical antimicrobial drugs gave a symptom as their principal reason for visit. In contrast, only half (53.5 percent) of all other patients said they visited a physician primarily because of a symptom. Patients receiving topical antimicrobial drugs also cited injuries and adverse effects more frequently than other patients did (7.8 percent compared with 3.9 percent) and cited diagnostic, screening, and preventive reasons and treatment-oriented reasons less frequently (8.3 percent compared with 19.9 percent, and 6.9 percent compared with 10.6 percent, respectively).

Of the 15 most commonly cited specific reasons for visit, 5 were related to eye problems, 4 to skin problems, 2 to vaginal

Table 6. Number and percent distribution of visits involving topical antimicrobial drugs by major reason for visit and patient status: United States, 1980-81

Major reason for visit and patient status	Number of visits in thousands	Percent distribution
All topical antimicrobial drug visits	46,034	100.0
Major reason for visit		
Acute problem	26,876	58.4
Chronic problem	11,774	25.6
Postsurgery or injury	4,065	8.8
Nonillness care	3,319	7.2
Patient status		
New patient	8,887	19.3
Returning patient, new problem	16,754	36.4
Returning patient, old problem	20,392	44.3

Table 7. Number and percent distribution of visits involving topical antimicrobial drugs by principal reason for visit module: United States, 1980-81

Principal reason for visit module ¹	Number of visits in thousands	Percent distribution
All topical antimicrobial drug visits	46,034	100.0
Symptom	31,666	68.8
Disease	3,005	6.5
Diagnostic, screening, and preventive	3,815	8.3
Treatment	3,157	6.9
Injuries and adverse effects	3,611	7.8
Other	711	1.5

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

Table 8. Number and percent distribution of the 15 specific principal reasons for visit most commonly given during visits involving topical antimicrobial drugs: United States, 1980-81

Rank	Most common reason for visit and RVC code ¹	Number of visits in thousands	Percent distribution
...	All topical antimicrobial drug visits	46,034	100.0
1	Skin rash (S860)	3,384	7.4
2	Earache or ear infection (S355)	2,936	6.4
3	Vaginal discharge (S760)	2,331	5.1
4	Other vaginal symptoms (S765)	2,160	4.7
5	Abnormal sensations of the eye (S320)	1,941	4.2
6	Skin lesion (S865)	1,622	3.5
7	Postoperative visit (T205)	1,573	3.4
8	Abnormal appearance of eyes (S330)	1,195	2.6
9	Foreign body in eye (J600)	1,035	2.2
10	Progress visit, NOS (T800)	1,008	2.2
11	General medical examination (X100)	962	2.1
12	Discharge from eye (S310)	951	2.1
13	Skin irritations, NEC (S870)	775	1.7
14	Acne or pimples (S830)	750	1.6
15	Symptoms of eyelids (S340)	680	1.5
...	All other reasons for visit	22,729	49.4

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

symptoms, and 1 to ear symptoms. Twelve of these 15 reasons explicitly mention specific body areas with which topical antimicrobial drugs are concerned. The relatively large proportions of visits precipitated by problems labeled as acute and/or new, the dominance of symptoms as the principal reasons for visit, and the contents of the most common patient complaints together reflect the often acute nature of the problems underlying the visits of interest.

Diagnostic services and diagnoses

Patients receiving topical antimicrobial drugs were ordered or provided with an average of 1.6 diagnostic services per visit, the same as all other patients. The types of services differed, however. The topical antimicrobial drug patients more frequently were ordered or provided with limited histories and/or exams (78.0 percent compared with 63.8 percent), Pap tests (8.0 percent compared with 4.2 percent), and vision tests (13.1 percent compared with 5.4 percent). Fewer of them received no diagnostic services (3.5 percent compared with 8.3 percent), general histories and/or exams (11.7 percent compared with 15.6 percent), X-rays (1.6 percent compared with 7.7 percent), and blood pressure checks (23.0 percent compared with 34.7 percent). (See table 9.)

By far the most common class of principal diagnosis assigned to patients receiving topical antimicrobial drugs was diseases of the nervous system and sense organs.⁴ (See

⁴Based on Public Health Service and Health Care Financing Administration: *International Classification of Diseases, 9th Revision, Clinical Modification*. DHHS Pub. No. (PHS) 80-1260. Public Health Service, Washington, U.S. Government Printing Office, Sept. 1980.

Table 9. Number and percent of office visits involving a topical antimicrobial drug by diagnostic service ordered or provided: United States, 1980-81

Diagnostic service	Number of visits in thousands	Percent ¹
All topical antimicrobial drug visits	46,034	100.0
No diagnostic services	1,597	3.5
Limited history/examination	35,914	78.0
General history/examination	5,368	11.7
Pap test	3,658	8.0
Clinical lab test	9,079	19.7
Blood pressure check	10,601	23.0
Vision test	6,008	13.1
X-ray	744	1.6
Other	3,432	7.5

¹Column does not add to 100.0 percent because multiple diagnostic services were ordered or provided during some visits.

table 10.) The 13.3 million patients who were so diagnosed constituted 28.8 percent of the entire group; in contrast, only 8.6 percent of all other patients had this type of principal diagnosis. Three other major categories of principal diagnosis also were much more common among patients receiving topical antimicrobial drugs than among other patients: infectious and parasitic diseases (15.2 percent compared with 2.8 percent), diseases of the genitourinary system (12.5 percent compared with 5.6 percent), and diseases of the skin and subcutaneous tissue (14.5 percent compared with 5.6 percent). These groups of diagnoses clearly are related to the type of drug under consideration. This relationship between diagnosis and therapeutic medication can be seen in more detail in table 11, which presents the 15 most common specific diagnoses. All of them are concerned with the body sites to which topical antimicrobial drugs are applied, and together they account for more than half (52.1 percent) of all visits involving these drugs.

As was expected, the most common diagnoses varied among the groups of patients receiving the different types of

Table 10. Number and percent distribution of office visits involving topical antimicrobial drugs by class of principal diagnosis: United States, 1980-81

Diagnostic class	Number of visits in thousands	Percent distribution
All topical antimicrobial drug visits	46,034	100.0
Infectious and parasitic diseases	6,985	15.2
Diseases of the nervous system and sense organs	13,254	28.8
Diseases of the respiratory system	1,666	3.6
Diseases of the genitourinary system	5,793	12.6
Diseases of the skin and subcutaneous tissue	6,679	14.5
Injury and poisoning	4,423	9.6
Factors influencing health status and contact with health service	3,068	6.7
All other diagnoses ¹	4,167	9.1

¹Includes neoplasms; endocrine, nutritional, and metabolic diseases and immunity disorders; mental disorders; diseases of the circulatory system; diseases of the digestive system; diseases of the musculoskeletal system; symptoms, signs, and ill-defined conditions; and other, missing, and unknown diagnoses.

Table 11. Number and percent distribution of the 15 specific principal diagnoses most commonly recorded during visits involving topical antimicrobial drugs: United States, 1980-81

Rank	Most common principal diagnosis and ICD-9-CM code ¹	Number of visits in thousands	Percent distribution
	All topical antimicrobial drug visits	46,034	100.0
1	Inflammatory disease of cervix, vagina, and vulva (616)	3,570	7.8
2	Disorders of conjunctiva (372)	3,394	7.4
3	Candidiasis (112)	2,561	5.6
4	Disorders of external ear (380)	2,367	5.1
5	Suppurative and unspecified otitis media (382)	2,215	4.8
6	Dermatophytosis (110)	1,775	3.9
7	Inflammation of eyelids (373)	1,544	3.4
8	Contact dermatitis and other eczema (692)	1,274	2.8
9	Diseases of sebaceous glands (706)	1,125	2.4
10	Superficial injury of eye and adnexa (918)	1,011	2.2
11	Cataract (366)	729	1.6
12	Foreign body on external eye (930)	632	1.4
13	Other disorders of eye (379)	607	1.3
14	Dermatomycosis, other and unspecified (111)	595	1.3
15	Keratitis (370)	578	1.3
...	All other diagnoses	22,056	47.9

¹Based on Public Health Service and Health Care Financing Administration: *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*. DHHS Pub. No. (PHS) 80-1260. Public Health Service. Washington, U.S. Government Printing Office, Sept. 1980.

topical antimicrobial drug. For several of these drug groups, particular diagnoses accounted for a relatively large proportion of visits. Among patients receiving *ophthalmic antibacterial drugs*, disorders of conjunctiva was the principal diagnosis for 28.2 percent (944,000 visits) of all patients receiving this type of drug. Among patients receiving the related *ophthalmic antibacterial-corticosteroid mixtures*, the most common principal diagnoses were disorders of conjunctiva (866,000 visits, or 19.4 percent), inflammation of eyelids (590,000 visits, or 13.2 percent), and cataract (584,000 visits, or 13.1 percent). Two diagnoses accounted for almost three-fourths of all patients receiving *otic drugs*: disorders of external ear (603,000 visits, or 40.5 percent) and suppurative and unspecified otitis media (486,000 visits, or 32.7 percent). Similarly, among patients receiving *vaginal drugs*, two diagnoses accounted for half of all visits: inflammatory disease of cervix, vagina, and vulva (2,693,000 visits, or 34.0 percent); and candidiasis (1,409,000 visits, or 17.8 percent). Among patients receiving *other topical antifungal drugs*, five diagnoses reached reliable levels: dermatophytosis (1,528,000 visits, or 21.9 percent); candidiasis (903,000 visits, or 12.9 percent); diseases of sebaceous glands (856,000 visits, or 12.3 percent); other and unspecified dermatomycosis (561,000 visits, or 8.0 percent); and inflammatory disease of cervix, vagina, and vulva (473,000 visits, or 6.8 percent). Two principal diagnoses attained reliable levels among patients receiving *other topical anti-infectives*: disorders of conjunctiva (1,210,000 visits, or 9.4 percent) and impetigo (529,000 visits, or 5.1 percent). Finally, of the patients receiv-

ing other topical anti-infective and corticosteroid mixtures, four principal diagnoses appeared in reliable numbers: disorders of external ear (1,673,000 visits, or 16.1 percent), suppurative and unspecified otitis media (1,473,000 visits, or 14.2 percent), contact dermatitis and other eczema (751,000 visits, or 7.2 percent), and disorders of conjunctiva (478,000 visits, or 4.6 percent).

Therapeutic services, patient disposition, and visit duration

An average of 0.5 nonmedication therapeutic services were ordered or provided during each visit made by patients receiving topical antimicrobial drugs. This was not significantly different from the average for all other patients (0.6). Statistics on specific types of therapeutic services are displayed in table 12. Slightly more than half the patients receiving topical antimicrobial drugs (26.0 million, or 56.4 percent) obtained no nonmedication therapeutic services, a proportion that did not differ from that for all other patients. The topical antimicrobial drug patients, however, did receive office surgery at a higher rate (12.4 percent compared with 7.2 percent) and psychotherapy or therapeutic listening, diet counseling, and family or social counseling at lower rates (0.9 percent compared with 5.1 percent, 3.2 percent compared with 8.3 percent, and 0.9 percent compared with 2.1 percent, respectively). Thus patients receiving topical antimicrobial drugs did not differ from other patients with respect to nonmedication therapeutic services rendered as much as they did with respect to diagnostic services performed.

The disposition of patients receiving topical antimicrobial drugs differed somewhat from that of other patients, but these differences also were not large ones. No followup was ordered for virtually identical proportions of each type of patient (11.4 percent of patients receiving topical antimicrobial drugs and 11.5 percent of all others). Patients who received topical antimicrobial drugs were instructed to return at a specified time somewhat less frequently than others (56.5 percent compared with 60.8 percent), but were requested to return if needed somewhat more frequently (29.6 percent compared with 22.4 percent). (See table 13.)

Table 12. Number and percent of office visits involving topical antimicrobial drugs with nonmedication therapeutic services ordered or provided, by type of service: United States, 1980-81

<i>Nonmedication therapeutic service</i>	<i>Number of visits in thousands</i>	<i>Percent¹</i>
All topical antimicrobial drug visits	46,034	100.0
No nonmedication therapeutic services	25,960	56.4
Physiotherapy	1,691	3.7
Office surgery	5,690	12.4
Family planning	1,193	2.6
Psychotherapy or therapeutic listening	*420	*0.9
Diet counseling	1,478	3.2
Family or social counseling	*417	*0.9
Medical counseling	11,181	24.3
Other nonmedication therapy	986	2.1

¹Column does not add to 100.0 percent because multiple nonmedication therapy services were ordered or provided during some visits.

Table 13. Number and percent distribution of office visits involving topical antimicrobial drugs by patient disposition: United States, 1980-81

<i>Patient disposition</i>	<i>Number of visits in thousands</i>	<i>Percent distribution</i>
All topical antimicrobial drug visits	46,034	100.0
No followup	5,228	11.4
Return at specified time	25,998	56.5
Return if needed	13,640	29.6
Other	2,826	6.1

NOTE: Categories do not add to totals because more than one disposition was recorded for some patients.

Table 14. Average duration of office visits involving topical antimicrobial drugs by type of drug: United States, 1980-81

<i>Type of topical antimicrobial drug involved in visit</i>	<i>Average duration of visit</i>
	Minutes
All topical antimicrobial drugs	13.9
Ophthalmic antibacterial drugs	15.7
Ophthalmic antibacterial-corticosteroid mixtures	12.7
Otic drugs	11.7
Vaginal drugs	15.8
Other topical antifungal drugs	13.3
Other topical anti-infectives	14.2
Other topical anti-infective and corticosteroid mixtures	13.0

Table 15. Number and percent distribution of co-occurring medications during office visits involving topical antimicrobial drugs by therapeutic category: United States, 1980-81

<i>Therapeutic category¹</i>	<i>Number of drug mentions in thousands</i>	<i>Percent distribution</i>
All co-occurring drug mentions	37,490	100.0
Anti-infective agents	12,045	32.1
Skin and mucous membrane preparations	6,109	16.3
Central nervous system drugs	3,052	8.1
Eye, ear, nose, and throat preparations	2,944	7.9
Hormones and synthetic substitutes	2,837	7.6
Antihistamines	2,431	6.5
Cardiovascular drugs	1,376	3.7
Vitamins	1,042	2.8
Electrolytic, caloric, and water balance agents	985	2.6
Serums, toxoids, and vaccines	966	2.6
Autonomic drugs	933	2.5
Expectorants and cough preparations	674	1.8
All other ²	2,095	5.6

¹American Hospital Formulary Service Classification System and Therapeutic Category Codes. American Society of Hospital Pharmacists, Inc.

²Includes antineoplastic agents; blood derivatives; blood formation and coagulation agents; diagnostic agents; enzymes; gastrointestinal drugs; gold compounds; heavy metal antagonists; local anesthetics; oxytocics; radioactive agents; spasmolytic agents; unclassified therapeutic agents; devices; pharmaceutical aids; and undetermined agents.

The average duration of visits involving topical antimicrobial drugs (shown in table 14) was 13.9 minutes, compared with 15.5 minutes for all other visits. The shortest visits were those involving *otic drugs* (11.7 minutes), and the longest were those involving *vaginal drugs* (15.8 minutes) and *ophthalmic antibacterial drugs* (15.7 minutes).

Co-occurring drugs

As table 15 shows, there were 37.5 million other drugs ordered or provided during visits involving topical antimicrobial drugs. This was an average of 0.82 other drugs per visit. Of these drug mentions, almost one-third (32.1 percent) were classified in the therapeutic category of anti-infective agents. Skin and mucous membrane preparations also accounted for a notable proportion (16.3 percent).

Only seven specific other drugs reached reliable frequencies. (See table 16.) These accounted for only 13.8 percent of all co-occurring drug mentions, reflecting the fact that a wide variety of other drugs, rather than a specific few, were utilized during topical antimicrobial drug visits. It is noteworthy, however, that all of the leading other drugs are classified as anti-

Table 16. Number and percent distribution of the 7 co-occurring drugs most frequently mentioned during office visits involving topical antimicrobial drugs: United States, 1980-81

Rank	Name of drug	Number of drug mentions in thousands	Percent distribution
...	All co-occurring medications	37,490	100.0
1	Ampicillin	1,168	3.1
2	Tetracycline	862	2.3
3	Flagyl (metronidazole)	798	2.1
4	Erythromycin	781	2.1
5	Amoxicillin	624	1.7
6	Amoxil (amoxicillin)	475	1.3
7	E.E.S. (erythromycin)	461	1.2
...	All other	32,320	86.2

infective agents that may be administered systemically. This suggests that a high priority in the drug treatment of the cases inspected here is a multipronged attack on the infective diseases precipitating the visits.

Technical notes

Source of data and sample design

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

NAMCS uses a multistage probability sample design that involves a step sampling of primary sampling units, physicians' practices within primary sampling units, and patient visits within physicians' practices. The physician sample (5,805 physicians for 1980 and 1981) was selected from master files maintained by the American Medical Association and the American Osteopathic Association. Those members of the sample who proved to be in scope and eligible participated at a rate of 77.3 percent. Responding physicians completed visit records for a systematic random sample of office visits made during a randomly assigned weekly reporting period. Telephone contacts were excluded. During 1980 and 1981 responding physicians completed 89,447 visit records on which they recorded 97,796 drug mentions. Characteristics of the physician's practice, such as primary specialty and type of practice, were obtained during an induction interview. The National Opinion Research Center, under contract to the National Center for Health Statistics, was responsible for the field operations of the survey.

Sampling errors and rounding

The standard error is a measure of the sampling variability that occurs by chance because only a sample, rather than the entire universe, is surveyed. The relative standard error of an estimate is obtained by dividing the standard error by the estimate itself and is expressed as a percent of the estimate. In this report, any estimate that exceeds a relative standard error of 30 percent is marked with an asterisk. Table I should be used to obtain the relative standard error for aggregates of office visits or for mentions of drugs by specific name (for example, Darvon). Table II should be used to obtain the relative standard error for drug mentions expressed as drug groups (for example, the analgesic drug family).

In this report, the determination of statistical significance is based on the Bonferroni modification of the *t*-test with a critical value of 1.96 (0.05 level of significance). Terms relating to differences, such as "higher" or "less," indicate that the differences are statistically significant. Terms such as "similar" or "no difference" mean that no statistical significance exists between the estimates being compared. A lack of comment in a comparison between any two estimates does not mean that the difference was tested and was not significant.

In the tables of this report estimates have been rounded to

Table I. Approximate relative standard errors of estimated numbers of office visits and of drug mentions when drug is listed by product name (for example, Darvon), based on all physician specialties: National Ambulatory Medical Care Survey, 1980-81

<i>Estimated number of office visits or specific drug mentions</i>	<i>Relative standard error</i>
Number in thousands	Percent
*200.....	*44.8
*400.....	*31.7
*450.....	*30.0
600.....	26.0
800.....	22.6
1,000.....	20.2
2,000.....	14.5
5,000.....	9.5
10,000.....	7.1
20,000.....	5.6
50,000.....	4.4
100,000.....	3.9
200,000.....	3.6
500,000.....	3.5
1,000,000.....	3.4

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

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

<i>Estimated number of grouped drug mentions</i>	<i>Relative standard error</i>
Number in thousands	Percent
*200.....	*54.2
*400.....	*38.5
*600.....	31.5
*650.....	*30.0
800.....	27.3
1,000.....	24.5
2,000.....	17.6
5,000.....	11.6
10,000.....	8.7
20,000.....	6.8
50,000.....	5.3
100,000.....	4.7
200,000.....	4.4
500,000.....	4.2
1,000,000.....	4.1

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

the nearest thousand. For this reason, detailed estimates do not always add to totals.

Definitions

An *office* is a place that physicians identify as a location for their ambulatory practice. Responsibility for patient care

and professional services rendered in an office resides with the individual physician rather than an institution.

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

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

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

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

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

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

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

Marriage and First Intercourse, Marital Dissolution, and Remarriage: United States, 1982

by Christine A. Bachrach, Ph.D., and Marjorie C. Horn, M.A., Division of Vital Statistics

Changing patterns of marriage, divorce, and premarital sexual behavior are reflected in recent trends in marital and premarital births. Over the past two decades, the proportion of births occurring to unmarried women has risen dramatically, from 5 percent in 1960 to 19 percent in 1982.^{1,2} Slightly more than half of this change is due to a rise in births to unmarried women, resulting from an increase in both their fertility rate and their number in the population. The increased fertility rate for unmarried women is associated with a substantial shift in the timing of first sexual intercourse in relation to marriage. Nearly half of women marrying in the years 1960–64 delayed their first sexual intercourse until marriage, compared with only one-fifth of women who first married between 1975 and 1979. Declines in marital fertility rates account for the other half of the rise in the proportion of births to unmarried women. Those declines may reflect, in part, another fundamental change in the institution of marriage—declining marital stability. The likelihood of divorce, separation, or widowhood within 5 years of marriage was half as high among women first married during the years 1960–64 as among those first married in the years 1975–79. These findings on timing of first sexual intercourse and marital dissolution are based on preliminary data from the National Survey of Family Growth (NSFG), Cycle III.

The National Survey of Family Growth is conducted periodically by the National Center for Health Statistics (NCHS) on topics related to childbearing, contraceptive practice, and related aspects of maternal and child health. In Cycle III, conducted in 1982, interviews were completed with a probability sample of 7,969 women 15–44 years of age in the noninstitutional population of the conterminous United States. The sample included 4,651 ever married and 3,318 never married women. Previous cycles of the survey were conducted in 1976 and 1973. Further details about

the sample design and reliability of the data presented in this report are given in the Technical notes.

A primary purpose of the National Survey of Family Growth is to provide national estimates of factors that influence childbearing. The most basic of these factors is, of course, exposure to sexual intercourse. Marital status is an important determinant of exposure to sexual intercourse. Women marrying during the 1960's and 1970's increasingly began their sexual experience before marriage, as this report shows, but exposure to intercourse is still substantially higher among ever married than never married women. This is true whether exposure is measured as ever having had intercourse or as having had intercourse in the 3 months before the interview.³ Similarly, despite the increase in the proportion of births occurring to unmarried women since the early 1960's, the great majority of all births, and even of first births, still occur within marriage.^{1,2} Thus, marriage and marital dissolution continue to be important factors in explaining childbearing.

This report presents data on the timing of first sexual intercourse in relation to first marriage, and the timing of marital dissolution and remarriage among ever married women in the United States. Data on age at first sexual intercourse among all women, including never married women, will be presented in a subsequent report.

Timing of first sexual intercourse in relation to marriage

About two-thirds of ever married women 15–44 years of age had had sexual intercourse before marriage (table 1). About 20 percent of all ever married women married within 1 year of initiating sexual activity, 23 percent married

within 1–3 years, and about 25 percent married 3 or more years after their first intercourse.

The proportion of women who delayed sexual intercourse until marriage declined from 48 percent among women marrying during the period 1960–64, to 21 percent among women marrying in the years 1975–79. The largest decline appears to have occurred between 1965–69, when 42 percent of women marrying for the first time had not previously had intercourse, and 1970–74, when only 28 percent had delayed intercourse. This increase in the prevalence of premarital intercourse has also been reported in studies of both ever married and never married teenagers.^{4–6}

Women who married in the late 1970’s experienced longer periods of premarital sexual exposure than women who married in the early 1960’s. Among women marrying in the years 1975–79, 23 percent had initiated their sexual experience 5 or more years before marriage, compared with only 2 percent of women marrying during the years 1960–64. About 17 percent of women marrying in the years 1960–64 married within 6 months of their first intercourse, compared with only 7 percent of women marrying in the years 1975–79. These changes reflect a probable decline in the average age of first sexual intercourse as well as an increase in the median age of women at their first marriage.^{4,7}

Data for women who married before 1960 are not shown separately in table 1. Because the NSFG was restricted to women aged 15–44 in 1982, women marrying before 1960 who were 44 years of age at the time of the survey would have to have married before age 23; women under 44 years of age when the survey was conducted would have to have married at progressively younger ages. These women would have had fewer years to experience premarital intercourse than women marrying during the same years but at older ages. This bias may also have some effect on the comparison between the 1960–64 and later groups shown in table 1.

Table 1 shows that white ever married women were much more likely than black ever married women to delay first sexual intercourse until marriage (35 percent compared with 9 percent, respectively), and were less likely to have delayed marriage 5 years or more after their first sexual experience (11 compared with 26 percent). Among both black and white women, those married in the years 1975–79 were less than half as likely as those married in the years 1960–64 to have delayed their first sexual intercourse until marriage. The difference among white women (22 compared with 53 percent) was statistically significant, while the difference among black women (5 compared with 12 percent) was not.

Table 1. Number of ever married women 15–44 years of age and percent distribution by timing of marriage relative to first sexual intercourse, according to race, Hispanic origin, and year of first marriage: United States, 1982

[Preliminary data based on a sample of the noninstitutional population of the conterminous United States. See Technical notes for discussion of the sample design, estimates of sampling variability, and definitions of terms]

Race, Hispanic origin, and year of first marriage	Ever married women	Total	Marriage before or same month as first intercourse	Months between first intercourse and marriage					
				5 months or less	6–11 months	12–35 months	36–59 months	60 months or more	
	Number in thousands			Percent distribution					
Total¹									
All years ²	34,937	100.0	32.6	12.2	7.3	23.4	12.3	12.2	
1975–79	7,338	100.0	21.4	7.0	6.7	24.8	16.9	23.2	
1970–74	8,266	100.0	28.1	13.5	8.6	29.0	12.2	8.6	
1965–69	7,326	100.0	42.2	14.3	6.7	19.1	10.7	6.9	
1960–64	5,505	100.0	48.3	17.3	*6.7	20.2	*5.4	*2.1	
White									
All years ²	30,419	100.0	34.6	12.5	7.1	23.4	11.3	11.0	
1975–79	6,477	100.0	22.4	7.2	7.2	25.1	16.2	21.9	
1970–74	7,176	100.0	29.5	13.7	8.8	29.8	10.8	7.4	
1965–69	6,400	100.0	45.1	14.5	*6.4	17.8	10.0	*6.2	
1960–64	4,804	100.0	52.6	17.6	*5.6	19.2	*3.4	*1.6	
Black									
All years ²	3,442	100.0	8.8	9.0	8.4	25.2	22.9	25.7	
1975–79	687	100.0	*5.4	*4.7	*2.8	19.0	27.4	40.7	
1970–74	785	100.0	*7.7	8.6	10.2	25.2	27.0	21.3	
1965–69	709	100.0	12.2	12.2	*7.7	35.6	17.4	14.9	
1960–64	533	100.0	12.0	*10.9	16.4	30.8	22.1	*7.8	
Hispanic origin									
Hispanic	2,790	100.0	44.7	*12.8	*5.7	18.3	*9.5	*9.0	
Non-Hispanic	31,191	100.0	31.6	11.9	7.5	23.7	12.7	12.7	

¹ Includes white, black and other races, and women of unknown origin.
² Includes all first marriages before 1960 and between 1980 and interview.

Women of Hispanic origin were more likely than other women to delay their first sexual intercourse until marriage, as shown in the bottom rows of table 1. About 45 percent of Hispanic women, compared with 32 percent of non-Hispanic women, first had intercourse after marriage.

Dissolution of first marriage

In 1982, approximately 30 percent of first marriages to women aged 15–44 had been dissolved by divorce, separation, or death (table 2). Nearly 4 percent of all first marriages were dissolved within 1 year of the date of the first marriage, 11 percent within 3 years, 15 percent within 5 years, and 24 percent within 10 years.

The proportion of first marriages dissolved within 5 years was approximately twice as high for women married in the years 1975–79 (20 percent) as for women married in the years 1960–64 (10 percent). Similarly, at each duration greater than 1 year for which the experience of a marriage cohort (a group of women marrying during the same time period) had been completed, the more recent marriage cohorts experienced a higher rate of marital dissolution than the earlier ones, although in most cases the differences were too small to be statistically significant. Note that the propor-

tions of marriages disrupted within 3 to 10 years for the 1975–79 cohort, within 10 or 15 years for the 1970–74 cohorts, and within 15 years for the 1965–69 cohorts are biased downward, because not all women in these cohorts had completed the indicated number of years of marriage by the time of the survey. This truncation bias has been indicated in table 2 by italicizing the affected percents.

Marriages of black women were dissolved at a higher rate than marriages of white women at each duration of marriage. By the time of the interview, about 29 percent of white ever married women, compared with about 46 percent of black ever married women, had experienced the dissolution of their first marriage. These differences appear to have narrowed over time. Among women married during the years 1960–64, 23 percent of black women, compared with 9 percent of white women, had experienced a marital dissolution within 5 years; among women married in the years 1975–79, the comparable proportions were 24 and 20 percent, respectively. Thus, the increase in marital disruption appears to have been confined to marriages involving white women. There were no significant differences in cumulative rates of marital disruption between Hispanic and non-Hispanic women, as shown in the bottom rows of table 2.

Table 2. Number of ever married women 15–44 years of age and cumulative percent whose first marriage was dissolved by separation, divorce, or death, by years since first marriage, according to race, Hispanic origin, and year of first marriage: United States, 1982

[Preliminary data based on a sample of the noninstitutional population of the conterminous United States. See Technical notes for discussion of the sample design, estimates of sampling variability, and definitions of terms]

Race, Hispanic origin, and year of first marriage	Ever married women	Years since first marriage							
		1 year	2 years	3 years	4 years	5 years	10 years	15 years	All years
	Number in thousands	Cumulative percent dissolved at time of interview							
Total¹									
All years ²	34,937	3.8	7.4	11.2	13.4	15.5	24.4	28.4	30.4
1975–79	7,338	*4.1	9.8	15.0	18.9	20.4	22.1	...	22.1
1970–74	8,266	*3.5	7.8	12.8	15.8	18.7	32.6	33.1	33.1
1965–69	7,326	*3.7	7.0	10.6	12.4	15.2	28.9	38.8	39.7
1960–64	5,505	*3.4	*5.6	*7.3	8.8	10.3	22.0	29.7	35.8
White									
All years ²	30,419	3.5	7.1	10.9	13.0	14.7	23.2	27.0	28.9
1975–79	6,477	*4.1	10.0	15.0	18.8	20.2	21.5	...	21.5
1970–74	7,176	*3.2	7.3	12.5	15.3	18.0	31.5	31.8	31.8
1965–69	6,400	*3.6	6.8	10.3	11.9	13.9	27.7	37.5	38.5
1960–64	4,804	*2.6	*4.8	*6.4	*7.9	8.6	19.3	26.4	32.7
Black									
All years ²	3,442	6.4	11.4	15.2	18.6	23.9	36.9	43.0	45.6
1975–79	687	*5.4	10.4	16.4	22.0	24.3	27.6	...	27.6
1970–74	785	*5.3	11.9	17.0	22.1	26.6	45.0	47.0	47.0
1965–69	709	*6.5	11.7	15.6	17.6	28.1	44.1	55.6	55.9
1960–64	533	*9.1	12.8	15.4	17.7	22.7	44.5	57.6	62.8
Hispanic origin									
Hispanic	2,790	*3.9	*8.6	*13.1	15.2	17.3	24.3	27.2	29.0
Non-Hispanic	31,191	3.7	7.3	10.9	13.2	15.2	24.3	28.4	30.4

¹ Includes white, black and other races, and women of unknown origin.

² Includes first marriages beginning before 1960 and between 1980 and interview.

NOTE: Figures in italics reflect incomplete experience of all or some women in a given marriage cohort (see text).

Remarriage

Nearly 60 percent of the women whose first marriages were dissolved by divorce or death of the spouse had remarried by the time of the survey (table 3). Women whose first marriages ended in separation only are not included in this table because they are not legally permitted to remarry. About 7 percent of women whose first marriages were dissolved by divorce or death had remarried within 1 year, about 35 percent within 3 years, and about 48 percent within 5 years. Over half of the women who had remarried by the time of the survey had done so within 3 years.

Table 3 shows proportions of women who remarried according to the years in which their first marriages ended. Over four-fifths of women who were divorced or widowed in the 1960's had remarried by the time of the survey, compared with only about half of women divorced or widowed during the period 1975-79. This reflects not only the longer period to time in which the former group of women could have remarried, but also a probable decline in the likelihood of remarriage between the 1960's and late 1970's. Women whose first marriages ended in the 1970's tended to remarry within 2 to 5 years less often than women whose first marriages ended in the 1960's. Although none of these differences

is statistically significant, they consistently suggest a lower rate of remarriage in the 1970's than in the 1960's. As in table 2, some of the percents in table 3 are biased downward, in this case because not all women whose marriages ended during a given period of time had completed the indicated number of years between dissolution and interview. These percents appear in italics.

Data from the marriage-registration area indicate a similar trend in remarriage (see Technical notes). These data show that the yearly remarriage rate per 1,000 widowed or divorced women aged 25-44 varied between 140 and 157 during the years 1963-72 and then fell from 155 to 128 during the period 1972-79.⁸

Rates of remarriage among divorced or widowed women were significantly lower for black women compared with white women. Considering all marriage cohorts together, 61 percent of white women and 46 percent of black women had remarried by the time of the survey. Similar differences appear in the cumulative proportions remarrying by 2 to 5 years after divorce or death, and for 2 of the 4 marriage cohorts.

When all women whose first marriages dissolved are considered, including women whose first marriages ended in separation only, the differences by race in the percent

Table 3. Number of women 15-44 years of age whose first marriage was dissolved by divorce or death of spouse, and cumulative percent who remarried by years since dissolution, according to race, Hispanic origin, and year of dissolution: United States, 1982

[Preliminary data based on a sample of the noninstitutional population of the conterminous United States. See Technical notes for discussion of the sample design, estimates of sampling variability, and definitions of terms]

Race, Hispanic origin, and year of dissolution	First marriage dissolved	Years since dissolution of first marriage					
		1 year	2 years	3 years	4 years	5 years	All years
Total¹		Cumulative percent remarried at time of interview					
All years ²	9,459	6.9	23.6	34.7	42.1	48.2	59.1
1975-79	3,185	*6.4	23.2	<i>34.8</i>	<i>43.8</i>	<i>48.1</i>	53.6
1970-74	2,543	*9.0	22.1	35.1	42.2	52.2	68.8
1965-69	1,212	*6.5	32.5	45.5	54.4	59.6	82.7
1960-64	526	*3.7	*31.3	*43.6	56.6	69.1	89.1
White							
All years ²	8,145	7.3	25.2	36.5	44.3	50.5	60.6
1975-79	2,831	*6.6	24.7	36.0	<i>45.9</i>	<i>50.1</i>	55.4
1970-74	2,183	*10.5	24.0	38.0	44.5	54.8	70.9
1965-69	1,027	*5.4	34.1	49.1	58.9	63.6	85.3
1960-64	384	*3.0	37.4	48.8	63.5	80.0	94.6
Black							
All years ²	1,056	*4.3	10.5	18.2	23.3	28.2	45.7
1975-79	277	*5.8	*9.2	<i>*17.4</i>	<i>*19.4</i>	<i>24.9</i>	30.2
1970-74	303	*0.4	*7.0	*15.6	23.8	29.8	51.0
1965-69	164	*7.7	*20.3	*21.7	*26.0	34.5	70.7
1960-64	118	*6.8	*9.3	*27.1	*37.0	39.1	69.1
Hispanic origin							
Hispanic	641	*4.0	*17.5	*27.7	*34.3	*36.7	57.6
Non-Hispanic	8,484	7.2	24.2	35.5	43.0	49.2	59.7

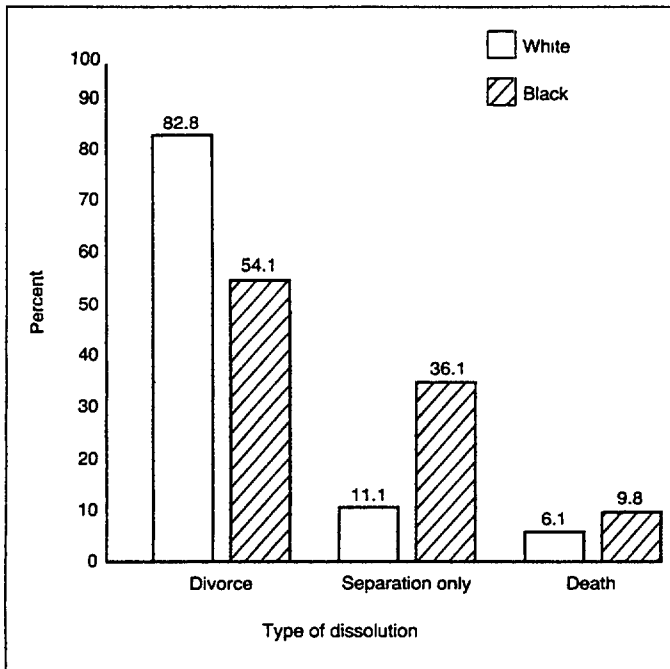
¹ Includes white, black and other races, and women of unknown origin.

² Includes first marriages dissolved before 1960 and between 1960 and interview.

NOTE: Figures in italics reflect incomplete experience of all or some women in a given marriage cohort (see text).

remarrying are even larger (31 percent of black women compared with 55 percent of white women). This is because the first marriages of black women are more likely than those of white women to end in separation only. As the figure shows, 36 percent of dissolved first marriages of black women ended in separation only, compared with 11 percent

Figure. Percent distribution of dissolved first marriages of women 15–44 years of age by type of dissolution, according to race: United States, 1982



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of dissolved first marriages of white women. Thus the lower percent of divorced or widowed black women who remarried is compounded by a higher proportion of black women who are no longer married and are not legally free to remarry. Differences in remarriage rates between Hispanic and non-Hispanic women were not statistically significant.

Related sources of data

A detailed analysis of remarriage among women whose first marriage ended in divorce is presented in a previous report based on data from the National Survey of Family Growth, Cycle II.⁹ These data are not directly comparable to those presented in this report because the earlier data were based on computed probabilities of remarriage rather than cumulative proportions remarried, and because the data in the earlier report are limited to women whose first marriages ended in divorce. Nevertheless, findings of both reports are similar with respect to race differences in remarriage.

Data on marriage and divorce are also published annually by the National Center for Health Statistics in *Monthly Vital Statistics Report*, Advance report of final marriage statistics; *Monthly Vital Statistics Report*, Advance report of final divorce statistics; and in *Vital Statistics of the United States*, Volume III, Marriage and Divorce.

Supp. DHHS Pub. No. (PHS) 81-1120. Public Health Service. Hyattsville, Md., Feb. 29, 1984.

⁸National Center for Health Statistics: *Vital Statistics of the United States*, Vol. III. Public Health Service. Annually.

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¹⁰National Center for Health Statistics, D. French: The National Survey of Family Growth, Cycle I, Sample design, estimation procedures, and variance estimation. *Vital and Health Statistics*. Series 2, No. 76. DHEW Pub. No. (PHS) 78-1350. Public Health Service. Washington. U.S. Government Printing Office, Jan. 1978.

¹¹National Center for Health Statistics, W. Grady: The National Survey of Family Growth, Cycle II, Sample design, estimation procedures, and variance estimation. *Vital and Health Statistics*. Series 2, No. 87. DHEW Pub. No. (PHS) 81-1361. Public Health Service. Washington. U.S. Government Printing Office, Feb. 1981.

Technical notes

Survey design

The National Survey of Family Growth (NSFG) is conducted periodically by the National Center for Health Statistics to collect data on fertility, family planning, and related aspects of maternal and child health. Field work for the first cycle was conducted under contract in 1973 by the National Opinion Research Center. Field work for the second and third cycles was conducted by Westat, Inc., in 1976 and 1982, respectively.

In all cycles, personal interviews were conducted with a multistage area probability sample of women 15–44 years of age in the noninstitutional population of the conterminous United States. In Cycles I and II, ever married women and never married women with offspring living in the same household were eligible for the survey. In Cycle III, all women aged 15–44 were eligible, regardless of marital status or the presence of offspring. Women living in group quarters (such as college dormitories) were excluded from the samples in Cycles I and II, but included in Cycle III. Interviews were conducted with 7,969 women in Cycle III.

Fieldwork for Cycle III was conducted between August 1982 and February 1983. Black women and women aged 15–19 were oversampled. Interviews were conducted by trained female interviewers and lasted an average of 1 hour. The interview focused on a woman's pregnancy history, use of contraceptives in each pregnancy interval, ability to bear children, future childbearing expectations, use of family planning and infertility services, marital history, and labor force participation; and incorporated a wide range of social, economic, and demographic characteristics.

Reliability of estimates

Because the statistics presented in this report are based on a sample, they may differ from the statistics that would result if all 54 million women represented by the NSFG had been interviewed. The standard error (SE) of an estimate is a measure of such differences. The standard error of an estimated number or percent presented in this report may be calculated by using the appropriate values of *A* and *B* from table I in the equations,

$$SE_{(N')} = \left(A + \frac{B}{N'} \right)^{1/2} \cdot N'$$

and

$$SE_{(P')} = \left(B \cdot P' \cdot \frac{100 - P'}{X'} \right)^{1/2}$$

where *N'* is the number of women, *P'* is the percent, and *X'* is the number of women in the denominator of the percent. Approximate standard errors for estimated percents of ever married women of all races in Cycle III are shown in table II.

Table I. Parameters used to compute estimated standard errors and relative standard errors of numbers and percents of ever married women, by race: National Survey of Family Growth, Cycle III

Race	A	B
All races and white	-0.001097329	39809.1677
Black	-0.000908632	6346.0484

Table II. Approximate standard errors for estimated percents (expressed in percentage points) for ever married women of all races: National Survey of Family Growth, Cycle III

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
100,000	8.8	13.8	18.9	25.2	28.9	30.9	31.5
500,000	4.0	6.1	8.5	11.3	12.9	13.8	14.1
1,000,000	2.8	4.3	6.0	8.0	9.1	9.8	10.0
5,000,000	1.2	1.9	2.7	3.6	4.1	4.4	4.5
10,000,000	0.9	1.4	1.9	2.5	2.9	3.1	3.2
30,000,000	0.5	0.8	1.1	1.5	1.7	1.8	1.8

The chances are about 68 in 100 that a sample estimate would fall within one standard error, and about 95 in 100 that it would fall within two standard errors of a statistic based on a complete count of the population represented by the NSFG. Differences between percents discussed in this report were found to be statistically significant at the 95-percent confidence level using a two-tailed *t*-test with 39 degrees of freedom. This means that in repeated samples of the same type and size, a difference as large as the one observed would occur in only 5 percent of samples, if there were in fact no difference between the percents in the population.

The relative standard error of a statistic is the ratio of the standard error to the statistic and is usually expressed as a percent of the estimate. In this report, statistics with relative standard errors of 30 percent or larger are indicated with an asterisk (*). These estimates are considered unreliable by themselves but may be combined with other estimates to make comparisons of greater precision.

Statistics in this report may also be subject to nonsampling error, that is, errors or omissions in responding to the interview, recording answers, and processing data. The data have been adjusted for nonsampling error resulting from nonresponse by means of adjustments to the sample weights assigned to each case. Other types of nonsampling error were minimized by a series of stringent quality control measures similar to those used in Cycles I and II.^{10,11}

Definitions of terms

Race—Race refers to the race of the woman interviewed and is reported as black, white, or other. In Cycle III, race was classified according to the woman's report of the race that best described her.

Hispanic origin—In Cycle III, a respondent was classified as being of Hispanic origin if she reported that her only or principal national origin was Puerto Rican, Cuban, Mexican

NOTE: A list of references follows the text.

American, Central or South American, or other Spanish. For 3 percent of respondents, origin was not ascertained. In this report, values have not been imputed, and only cases with known values are included in the statistics on Hispanic origin. In tables where data are presented for women according to race and Hispanic origin, women of Hispanic origin are included in the statistics for white and black women if they were classified as such by race.

Marital status—Persons were classified by marital status as married, widowed, divorced, separated, or never married. In Cycles I and II, informally married women—women who volunteered that they were sharing living quarters with their sexual partner—were classified as currently married. These women constituted about 2 percent of currently married respondents in Cycle I and 3 percent in Cycle II. In Cycle III, such women were classified according to their legal marital status. In all cycles, women who were married but separated from their spouses were classified as separated if the reason for the separation was marital discord; otherwise, they were classified as currently married. Formal marital status is used throughout this report. Thus, for example, the number of years between first marriage and dissolution refers to the time elapsed between the date of the first formal marriage and the date of dissolution; remarriage is entry into a second formal union.

Marital dissolution—Dissolution of formal marriage includes death of the spouse, separation due to marital discord, and divorce. In the case of divorce, the date that a woman and her husband separated is used to compute the number of years between first marriage and dissolution.

Timing of first sexual intercourse—Persons were classified according to whether their first sexual intercourse occurred after their first marriage, or, if not, how long before marriage it occurred. The date of first sexual intercourse was ascertained by the question: "Thinking back, *after* your first menstrual period, when did you have sexual intercourse for the first time—what month and year was that?" Women who were unable to recall the exact month and year were probed for a season and year, their age at first intercourse, and whether or not it occurred before or after the birthday for the given age. For women who gave ages or seasons rather than exact dates of first intercourse, dates were estimated for purposes of classifying timing in relation to marriage. Dates of first intercourse were then compared with the date of first *formal* marriage. Thus, women whose first intercourse occurred after initiating an *informal* marriage were classified as having premarital intercourse.

Marriage-registration area (MRA)—In 1963, the marriage-registration area consisted of 35 States and the District of Columbia. It did not include Arizona, Arkansas, Colorado, Illinois, Minnesota, Missouri, Nevada, New Mexico, North Carolina, North Dakota, Oklahoma, South Carolina, Texas, Washington, and West Virginia. The 1971 MRA consisted of 41 States and the District of Columbia. Arizona, Arkansas, Colorado, Nevada, New Mexico, North Dakota, Oklahoma, Texas, and Washington were not included. Colorado was added to the MRA in 1979. Marriages performed in the MRA included 63 percent of the marriages registered in the United States in 1963, 81 percent in 1971, and 79 percent in 1979.

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 (more than 30-percent relative standard error)
 - # Figure suppressed to comply with confidentiality requirements
-

Wanted and Unwanted Childbearing: United States, 1973–82

by William F. Pratt, Ph.D. and Marjorie C. Horn, M.A., Division of Vital Statistics

A substantial decline in births that were unwanted at conception occurred between 1973 and 1982, according to results from the National Survey of Family Growth, conducted in both years by the National Center for Health Statistics. In 1982, fewer than 10 percent of all births to ever married women in the childbearing years had been unwanted at conception compared with 14 percent in 1973. Although black women in 1982 continued to report larger proportions of unwanted births (22 percent) than white women (8 percent), they experienced a greater percentage-point decline in unwanted births over the decade. Of the 4.3 million children in 1982 who had been born to never married women, 25 percent had been unwanted at conception; among the 75 percent that had been wanted, more than half had been wanted at a later time. Only 21 percent had been deliberately conceived by stopping, or not using, contraception for that purpose.

The statistics on wantedness and the timing status of births presented in this report for 1982 are preliminary results from Cycle III of the National Survey of Family Growth (NSFG). Data were collected from a multistage area probability sample of 7,969 women aged 15–44 years, regardless of marital status, in the noninstitutionalized population of the conterminous United States. Between August 1982 and February 1983, interviews were conducted with 3,201 black women and 4,768 women of other races. Comparative data for 1973 are from Cycle I of the NSFG which also was based on a multistage area probability sample of women 15–44 years of age, but which excluded most never married women.¹ Because the estimates of statistics in this report are based on samples, they are subject to sampling variability. Sampling variability, the design of the survey, and definitions of terms used in this report are discussed in the Technical notes.

The Concept of “Wantedness”

The terms “wanted” and “unwanted births” as used in this report are abbreviations for “wanted and unwanted pregnancies ending in live births”; whether a birth was wanted or unwanted refers to the mother’s attitude at the time of conception. It is important to emphasize that an “unwanted birth” is not necessarily an “unwanted child”; many children whose conceptions were not wanted nonetheless become cherished members of their families.

The wantedness of each birth was determined from a series of questions that asked whether the woman had wanted the pregnancy at the time conception occurred. If contraception had not been used or had been stopped prior to the pregnancy, the woman was asked: “Was the reason you (had stopped/were not) using any method because you yourself wanted to become pregnant?” Women who had avoided or discontinued use of contraception for some other reason or had become pregnant while using contraception were asked: “At the time you became pregnant . . . , did you, yourself, actually want to have a(nother) baby at *some* time?” Women who answered neither “yes” nor “no” also were asked: “. . . , as you look back to just before that pregnancy began, would you say you probably wanted a(nother) baby at *some* time or probably not?”

The pregnancy was classified as wanted at conception if the woman had stopped or was not using contraception because she wanted to become pregnant, or if she had wanted or probably had wanted a(nother) child at some time. The pregnancy was classified as unwanted if she had not wanted, or probably had not wanted a(nother) child. If the respondent did not know whether she had wanted a(nother) baby, or did not care, the wantedness of the pregnancy was classified as undetermined.

However, the percents of pregnancies ending in live births classified as "undetermined" were very small (0.3 and 0.2 percent in 1982 and 1973, respectively); percents of births that were wanted and unwanted at conception, therefore, are virtually complementary, increasing and decreasing by the same magnitude.

Statistics on the proportions of births that were mistimed also are presented in this report. Women whose pregnancies were classified as wanted were asked, "Did you become pregnant sooner than you wanted, later than you wanted, or at about the right time?" Births resulting from pregnancies that occurred sooner than wanted by the mother were classified as mistimed. Births that occurred later than wanted are not included with the mistimed births here because their delay was not subject to choice or planning control.

Trend in the "Wantedness" of Births: Ever Married Women

As shown in table 1, between 1973 and 1982 the proportion of all births to ever married women that resulted from unwanted pregnancies declined significantly (from 14 to 10 percent) and, of course, the proportion of births that were wanted rose correspondingly (from 86 to 90 percent). Over this period the data suggest that the proportion of births that occurred sooner than they were wanted (that is, mistimed births) increased slightly.

In 1982, the proportion of all births that were unwanted at conception increased steadily with age among ever married women from 5 percent for 15-19 year olds to 13 percent for women aged 40-44. A similar increase in unwanted births with increasing age was found in 1973. Not all of the increases between adjacent age groups were statistically significant, but the general pattern seems clear.

The changes observed among all ever married women, between 1973 and 1982, largely were due to significant increases in the proportions of wanted births and declines in unwanted births among women in the ages 25 to 39 years. Among women

20-24 and 40-44 years of age, similar but not statistically significant increases were observed in the proportions of wanted births. Minor changes observed over this period in the proportion of births that were wanted but mistimed were not statistically significant for any of the age groups between 20 and 44 years. However, in both years, mistimed births accounted for about two in every five births to women 20-24 years of age.

Ever married teenage women in 1982 had the highest proportion of wanted births (95 percent) and the lowest proportion of unwanted births (5 percent) of any age group shown in table 1; these proportions had not changed since 1973. However, the proportion of mistimed births to these teenaged women rose sharply from an already high 55 percent in 1973 to 75 percent in 1982. It is quite likely that this high and rising prevalence of mistimed births among ever married teenagers reflects the greater exposure to premarital intercourse at these ages and the large number of pregnancies precipitating an early marriage.²

Couples continue to have far less success with contraception in planning when their children will be born than in planning how many they will have. In 1982, mistimed births (28 percent) were almost three times more frequent than unwanted births (10 percent) but only two times more frequent in 1973. The apparent small rise in mistimed births for all ever married women and their more significant increase among younger women may be due in large measure to the trend toward greater use of barrier methods of contraception, which are generally less effective than the pill or IUD.^{3,4}

The proportion of unwanted births was twice as high among formerly married women compared with currently married women in both 1973 and 1982, but declined significantly in both groups over the decade (table 2). The proportion of births that were mistimed was practically unchanged among currently married women between 1973 and 1982, but it increased sharply among formerly married women. Among formerly married women in 1982, at least one-third of their births had been wanted but mistimed.

The notably higher proportions of unwanted and mistimed births to formerly married women suggest the possibility that

Table 1. Number of children ever born to ever married women 15-44 years of age and percent distribution by whether the birth was wanted, wanted but mistimed, or unwanted at conception, according to age of the mother: United States, 1973 and 1982

[Statistics are based on samples of the female population of the conterminous United States; see Technical notes for estimates of sampling variability and definitions of terms; data for 1982 are preliminary]

Age	Children ever born		Wanted at conception				Unwanted at conception	
			Total		Mistimed		1982	1973
	1982	1973	1982	1973	1982	1973		
	Number in thousands		Percent distribution ¹					
All ages	65,878	66,239	90.1	85.8	28.2	25.7	9.6	14.0
15-19 years	445	548	95.3	94.9	74.8	54.7	*4.7	*5.1
20-24 years	4,398	5,215	93.5	91.5	44.0	40.3	*6.5	8.4
25-29 years	11,304	11,102	93.1	89.5	28.0	28.3	6.3	10.4
30-34 years	15,346	15,160	91.7	86.6	26.8	27.3	8.2	13.2
35-39 years	16,983	16,307	89.3	83.0	26.4	23.7	10.4	16.8
40-44 years	17,401	17,907	86.7	83.4	26.0	19.4	13.0	16.4

¹ Percents of live births wanted and unwanted at conception may not add to 100 due to the exclusion of births for which the wantedness of the pregnancy was classified as "undetermined."

Table 2. Number of children ever born to ever married women 15-44 years of age and percent distribution by whether the birth was wanted, wanted but mistimed, or unwanted at conception, according to race and marital status of the mother: United States, 1973 and 1982

[Statistics are based on samples of the female population of the conterminous United States; see Technical notes for estimates of sampling variability and definitions of terms; data for 1982 are preliminary]

Race and marital status	Children ever born		Wanted at conception				Unwanted at conception	
			Total		Mistimed			
	1982	1973	1982	1973	1982	1973	1982	1973
	<i>Number in thousands</i>		<i>Percent distribution</i>					
All races ¹	65,878	66,239	90.1	85.8	28.2	25.7	9.6	14.0
Currently married.....	52,873	57,158	92.0	87.6	26.6	25.6	7.8	12.3
Formerly married.....	13,005	9,081	82.6	74.5	34.7	26.5	16.8	25.2
White.....	55,497	57,012	92.1	88.4	27.7	25.5	7.7	11.4
Currently married.....	46,546	51,179	93.0	89.2	26.0	25.4	6.8	10.6
Formerly married.....	8,952	5,834	87.4	81.3	36.7	26.3	12.2	18.5
Black.....	8,467	8,634	77.5	68.0	32.2	27.4	21.8	31.5
Currently married.....	4,769	5,448	82.6	71.3	33.1	27.6	17.2	28.3
Formerly married.....	3,698	3,186	70.9	62.3	31.1	27.2	27.8	37.1

¹Includes white, black, and other races.

unplanned childbearing is a factor in the instability of some marriages. Formerly married women as a group appear to be slightly older and to have borne more children on average than currently married women, and both age and parity are associated with increases in unwanted births. Nevertheless, at each parity shown in table 3, the data suggest that the proportion of births classified as unwanted by formerly married women was greater compared with currently married women.

The differences observed in the proportions of wanted and unwanted births between white and black women are even greater than the differences by marital status (table 2). In 1973, ever married black women reported 32 percent of births had

been unwanted at conception compared with 11 percent reported by white women. By 1982, the proportions of unwanted births had declined 10 percentage points among black women and 3 percentage points among white women, to 22 percent and 8 percent, respectively. In both race groups, formerly married women had notably higher proportions of unwanted births than currently married women in 1973 and 1982, despite the substantial reductions in unwanted births across the board.

The proportions of mistimed births increased for both black and white women between 1973 and 1982; in both years black women experienced a higher proportion mistimed compared with white women, although the difference was significant only

Table 3. Number of children ever born to ever married women 15-44 years of age and percent distribution by whether the birth was wanted, wanted but mistimed, or unwanted at conception, according to race and parity of the mother: United States, 1973 and 1982

[Statistics are based on samples of the female population of the conterminous United States; see Technical notes for estimates of sampling variability and definitions of terms; data for 1982 are preliminary]

Race and parity	Children ever born		Wanted at conception				Unwanted at conception	
			Total		Mistimed			
	1982	1973	1982	1973	1982	1973	1982	1973
	<i>Number in thousands</i>		<i>Percent distribution</i>					
All races ¹	65,878	66,239	90.1	85.8	28.2	25.7	9.6	14.0
All parities.....	65,878	66,239	90.1	85.8	28.2	25.7	9.6	14.0
1-2.....	29,549	21,571	96.3	95.3	27.9	27.7	3.6	4.6
3-4.....	27,734	26,924	88.1	85.7	28.5	25.0	11.7	14.1
5 or more.....	8,594	17,744	75.6	74.2	28.2	24.4	23.3	25.5
White.....	55,497	57,012	92.1	88.4	27.7	25.5	7.7	11.4
All parities.....	55,497	57,012	92.1	88.4	27.7	25.5	7.7	11.4
1-2.....	26,031	19,379	97.2	96.5	27.6	26.7	2.7	3.4
3-4.....	23,486	24,094	89.6	87.2	28.0	24.7	10.3	12.6
5 or more.....	5,980	13,539	79.6	79.0	27.3	24.9	19.5	20.8
Black.....	8,467	8,634	77.5	68.0	32.2	27.4	21.8	31.5
All parities.....	8,467	8,634	77.5	68.0	32.2	27.4	21.8	31.5
1-2.....	2,655	1,955	87.4	83.0	32.1	37.4	12.4	16.2
3-4.....	3,290	2,596	78.7	72.2	33.5	27.8	20.9	27.4
5 or more.....	2,522	4,083	65.6	58.0	30.6	22.4	33.0	41.5

¹Includes white, black, and other races.

at the .10 level in 1982. However, among black women, the increases in the proportion of mistimed births for currently married and formerly married women were not significant, while formerly married white women experienced a steep increase (10 percentage points) in mistimed births over the decade.

The proportion of unwanted births increased with the number of births a woman had had (that is, with her parity), as may be seen in table 3. For instance, in 1982, among ever married white women with only 1–2 births, less than 1 in 30 births had been unwanted at conception, while those with 5 or more births reported 1 in 5 had been unwanted. Similarly, among black women at parity 5 or more, 1 in 3 births had been unwanted at conception.

Although there appeared to be a reduction in the proportion of unwanted births in each parity category for both white and black women between 1973 and 1982, few of these declines were statistically significant; there is, however, some evidence of a reduction among black women with 3 or more births. None of these declines within the parity groups was as great as the overall decline for the respective race groups. For instance, between 1973 and 1982, the overall proportion of unwanted births to white women declined by nearly 4 percentage points, but the largest decline among the parity groups was about 2 percentage points among those with 3–4 births; similarly for black women, an overall decline of close to 10 percentage points exceeded the largest parity group decline of nearly 9 percentage points among those with 5 or more births.

The overall decline in the proportion of unwanted births between 1973 and 1982 was greater than the declines in the separate parity groups because, not only were women interviewed in 1982 more successful in avoiding unwanted births, but the number of births they wanted also was smaller. Over this decade, women were postponing marriage for longer periods of time, and delaying childbearing within marriage.^{5–7} As a result, we observe that in 1982 a larger proportion of births occurred to women who were parity 1–2 (45 percent) and a smaller proportion to women who were parity 5 or more (13 percent), compared with 33 and 27 percent, respectively, in 1973. Another way to see the effect of the declining number of wanted births is to note that if the declining proportions of unwanted births within the parity groups were the only change, then the overall proportion of unwanted births in 1982 would have been 12 rather than 10 percent. It is important not to confuse the increase in the proportion of births that were wanted at conception with wanting a larger number of children.

“Wantedness” of Births: Never Married Women

Never married women were interviewed in the NSFG for the first time in 1982 (table 4). Although it is no surprise that births to never married women were wanted at conception (75 percent) less frequently than those born to ever married women (90 percent), the proportion of wanted births to never married women nonetheless was high. It is important to recall that a wanted birth is one that, at the time of conception, was wanted by the mother “at some time” but not necessarily at that particular time. In fact, more than half the wanted births to never married women (42 percent of the total births) were mistimed,

Table 4. Number of children ever born to never married women 15–44 years of age and percent distribution by whether the birth was wanted, wanted but mistimed, or unwanted at conception, according to age and race of the mother: United States, 1982

[Preliminary statistics based on samples of the female population of the conterminous United States; see Technical notes for estimates of sampling variability and definitions of terms]

Age and race	Children ever born	Wanted at conception		Unwanted at conception
		Total	Mistimed	
	<i>Number in thousands</i>	<i>Percent distribution</i>		
All races ¹				
15–44 years	4,341	75.1	42.3	24.8
15–19 years	474	75.6	54.9	24.4
20–24 years	1,273	80.5	48.1	19.5
25–44 years	2,593	72.3	37.1	27.6
White				
15–44 years	1,670	81.6	42.4	18.4
15–19 years	220	85.2	61.6	*14.8
20–24 years	473	89.9	53.5	*10.1
25–44 years	977	76.7	32.7	23.3
Black				
15–44 years	2,569	70.1	41.4	29.8
15–19 years	245	68.2	49.2	31.8
20–24 years	727	72.5	42.9	27.5
25–44 years	1,597	69.3	39.4	30.5

¹Includes white, black, and other races.

contrasted with less than one-third (28 percent of the total births) among ever married women. Moreover, data not shown in table 4 reveal that, among the group of wanted births that were not mistimed, only about two-thirds of mothers had not used, or had stopped using, contraception because they wanted to become pregnant then. In sum, although 75 percent of births to never married women were wanted “at some time,” the proportion that had been deliberately conceived or planned was on the order of 21 percent.

Differences in wantedness status by race and age found among ever married women are similar to those for never married women. In 1982, the proportion of births classified as unwanted to all never married black women was higher than that of never married white women aged 15–44 (30 compared with 18 percent). Within each age group, the proportions unwanted also tended to be higher for black women than white women, although the differences at age(s) 25–44 were not statistically significant.

The proportions of births that were wanted but mistimed are nearly the same for black never married women (41 percent) as for white never married women (42 percent). At ages 15–24, it appears that white women classified a larger percent of all births as mistimed compared with black women, but the difference is not statistically significant. For black women, the proportions of mistimed births among the never married were substantially higher than among either their currently or formerly married counterparts (table 2). For white women a similar pattern was found, but the difference in the proportions mistimed between never and formerly married women was not significant.

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Symbols

- - - Data not available
 - . . . Category not applicable
 - Quantity zero
 - 0.0 Quantity more than zero but less than 0.05
 - Z Quantity more than zero but less than 500 where numbers are rounded to thousands
 - * Figure does not meet standards of reliability or precision (30 percent or greater relative standard error)
 - # Figure suppressed to comply with confidentiality requirements
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Technical Notes

Survey design

The National Survey of Family Growth (NSFG) is conducted periodically by the National Center for Health Statistics to collect data on fertility, family planning, and related aspects of maternal and child health. Field work for Cycle I was conducted under contract in 1973 by the National Opinion Research Center. Field work for Cycle III was conducted by Westat, Inc., in 1982.

In all cycles, personal interviews were conducted with a multistage area probability sample of women 15–44 years of age in the noninstitutionalized population of the conterminous United States. In Cycle I, ever married women and never married women with offspring living in the household were eligible for the survey. In Cycle III, all women aged 15–44 were eligible regardless of marital status or the presence of offspring. Women living in group quarters (such as college dormitories) were excluded from the samples in Cycle I, but included in Cycle III. Interviews were conducted with 9,797 women in Cycle I and 7,969 in Cycle III. The sample design of Cycle I is described in more detail in another report of the National Center for Health Statistics.¹

Field work for Cycle III was conducted between August 1982 and February 1983. Black women and women aged 15–19 were oversampled. Interviews were conducted by trained female interviewers and lasted an average of 1 hour. The interview focused on a woman's pregnancy history; use of contraceptives in each pregnancy interval; ability to bear children; future childbearing expectations; use of family planning and infertility services; marital history; labor force participation; and a wide range of social, economic, and demographic characteristics.

Reliability of estimates

Because the statistics presented in this report are based on a sample, they may differ from the statistics that would result if all 54 million women represented by the NSFG had been interviewed. The standard error of an estimate (SE) is a measure of such differences. The standard error of an estimated number or percent presented in this report may be calculated by using the appropriate values of *A* and *B* from table I in the equations

$$SE_{(N)} = \left(A + \frac{B}{N} \right)^{1/2} \cdot N$$

$$SE_{(P)} = \left(B \cdot P \cdot \frac{100 - P}{X} \right)^{1/2}$$

where *N* is the number of pregnancies, *P* is the percent, and *X* is the number of pregnancies in the denominator of the percent. Approximate standard errors for estimated percents of pregnancies to ever married women of all races in Cycle III are shown in table II.

Table I. Parameters used to compute estimated standard errors and relative standard errors of numbers and percents of pregnancies by race, marital status, and age of women: National Survey of Family Growth

Race, marital status, and age	Parameter	
	A	B
1982		
All pregnancies:		
All races and white	−0.0000013533	25,567.4424
Black	0.0001091980	7,143.2252
Pregnancies to ever married women:		
All races and white	0.0031203910	43,592.7254
Black	−0.0001123101	15,678.7103
Pregnancies to never married women and to teenagers aged 15–19 years:		
All races:		
Never married	0.0138872800	8,660.9620
Teenagers	0.0059512240	7,802.2084
White:		
Never married	0.0709659500	13,265.3231
Teenagers	0.0102484400	9,664.9170
Black:		
Never married; teenagers	0.0045465070	3,430.7602
1973		
All races and white	0.0000176130	4,493.7916
Black	0.0000402190	1,600.4393

The chances are about 68 in 100 that a sample estimate will differ by no more than one standard error, and about 95 in 100 that it will differ by no more than two standard errors, from a corresponding statistic based on a complete count of the population represented by the NSFG. Differences among percents discussed in this report were tested for statistical significance at the 95-percent confidence level, using a two-tailed *t*-test with 39 degrees of freedom. This means that if there were no difference among the corresponding percents in the population as a whole, then a difference as large as the one observed in the sample would occur in fewer than 5 percent of repeated samples of the same size and design as the NSFG. When the observed difference between two statistics being compared is not statistically significant, the statistics are described as “similar,” but terms such as “greater,” “less,” “larger,” and “smaller” indicate statistically significant differences. Marked differences that would be expected in fewer than 10 percent of repeated samples (that is, significant at the 90-percent confidence level) are noted in a qualified manner (for example, by such phrases as “the data suggest” or “some evidence for”).

The relative standard error of a statistic is the ratio of the standard error to the statistic and usually is expressed as a percent of the estimate. In this report, statistics with relative standard errors of 30 percent or greater are indicated with an asterisk (*). These estimates are considered unreliable by themselves, but may be combined with other estimates to make comparisons of greater precision.

NOTE: A list of references follows the text.

Table II. Approximate standard errors for estimated percents (expressed in percentage points) of pregnancies to women of all races: National Survey of Family Growth, Cycle III

Base of percent	Estimated percent						
	2 or 98	5 or 95	10 or 90	20 or 80	30 or 70	40 or 60	50
100,000.....	7.1	11.0	15.2	20.2	23.2	24.8	25.3
500,000.....	3.2	4.9	6.8	9.0	10.4	11.1	11.3
1,000,000.....	2.2	3.5	4.8	6.4	7.3	7.8	8.0
5,000,000.....	1.0	1.6	2.1	2.9	3.3	3.5	3.6
10,000,000.....	0.7	1.1	1.5	2.0	2.3	2.5	2.5
30,000,000.....	0.4	0.6	0.9	1.2	1.3	1.4	1.5
50,000,000.....	0.3	0.5	0.7	0.9	1.0	1.1	1.1

Statistics in this report also may be subject to nonsampling error, that is, errors or omissions in responding to the interview, recording answers, and processing data. The data have been adjusted for nonsampling error due to nonresponse by means of adjustments to the sample weights assigned to each case. Other types of nonsampling error were minimized by a series of stringent quality control measures similar to those used in Cycle I.¹

Definitions of terms

Wantedness—Pregnancies were classified as “wanted” or “unwanted,” and wanted pregnancies that occurred earlier than they were desired were subclassified as “mistimed.” A pregnancy was classified as wanted at conception if the woman had stopped, or had not used, contraception because she wanted a pregnancy, or if she had become pregnant while using contraception but nonetheless had wanted, or probably wanted, a(nother) baby at some time. Similarly, a pregnancy was classified as unwanted at conception if the woman had stopped, or had not used, contraception for reasons other than seeking pregnancy or had become pregnant while using contraception and had not wanted, or probably had not wanted, a(nother) baby at some time. In this report, a wanted pregnancy was considered mistimed if the woman had wanted the pregnancy to occur at a later date. Pregnancies that occurred sometime later than had been desired, also might be considered mistimed for some purposes, but these did not represent failures in family planning that is subject to contraceptive control, and therefore are classified with other births that were wanted at conception.

NOTE: A list of references follows the text.

Pregnancies that ended in live births, on which this report is focused, were classified as wanted or unwanted births. However, pregnancies that ended in multiple births are counted only once because only the pregnancy is subject to contraceptive control.

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

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

Race—Race refers to the race of the woman interviewed and is reported as black, white, or other. In Cycle III, race was classified according to the woman’s report of the race that best described her. In Cycle I, race was classified by the observation of the interviewer. Cycle III data indicated that results using either method of classification were found to be very similar.

Marital status—Persons were classified by marital status as married, widowed, divorced, separated, or never married. In Cycle I, informally married women—women who volunteered that they were sharing living quarters with their sexual partner—were classified as currently married. These women constituted about 2 percent of currently married respondents in Cycle I. In Cycle III, such women were classified according to their legal marital status. Thus, statistics on currently married women for 1982 shown in this report are not strictly comparable to those for 1973. Reclassifying women in the 1973 survey according to the 1982 definition of marital status, however, makes little difference in the distributions of currently married women by other characteristics for that year.

In all cycles, women who were married but separated from their spouse were classified as separated if the reason for the separation was marital discord, otherwise they were classified as currently married.

Hospital Use by Children: United States, 1983

by Eileen McCarthy and Lola Jean Kozak, Division of Health Care Statistics

Introduction

During 1983 an estimated 3.7 million children under 15 years of age were discharged from short-stay non-Federal hospitals in the United States. They spent an average of 4.6 days in the hospital. These and other statistics presented in this report are based on data collected by the National Center for Health Statistics, by means of the National Hospital Discharge Survey, a continuous voluntary survey. In 1983 data for the survey were abstracted from the medical records of approximately 206,000 patients discharged from 418 participating hospitals. A brief description of the sample design, source of data, and definition of terms used can be found in the Technical notes. The design of the survey has been described in a published report.¹

Although other reports²⁻⁴ based on the 1983 survey include data on children under 15 years of age, this report contains data on the four age groups within the under 15 years group: under 1 year, 1-4 years, 5-9 years, and 10-14 years. Data for the age groups are presented by selected characteristics of discharges, diagnoses, and procedures. Estimates of the number of discharges, rates per 1,000 population, and average lengths of stay are shown for children. Summary statistics for 1973 and 1978 are also presented. This is the first detailed presentation of data from the survey on the four specific age groups of children. The report is also intended to update the U.S. data from an earlier comparative study, "Hospital Use by Children in the United States and Canada,"⁵ which was based on 1978 data.

Data for newborn infants are excluded from this report. The diagnostic and procedural data are coded according to the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM).⁶

Highlights

- The discharges of children under 1 year of age increased from 15 percent of all children's discharges in 1973 to 26 percent in 1983.
- In 1983 males had a higher rate of discharges than females for the age groups under 1 year, 1-4 years, and 5-9 years.
- The average length of stay for children did not differ significantly by sex or geographic region.
- By region, the South had the largest number of children's discharges, an estimated 41 percent of the total.
- Private insurance was the leading principal expected source of payment of hospital costs for children.
- Medicaid and the self-pay category were more likely to be the expected source of payment for children under 1 year of age and 1-4 years than for older children.
- Diseases of the respiratory system accounted for a fourth of the discharges for children under 1 year of age, more than a third of the hospitalizations for children 1-4 and 5-9 years, and 20 percent of the discharges for the 10-14 years age group.
- Disorders relating to short gestation and unspecified low birth weight was a major diagnosis for children under 1 year of age.
- Pneumonia was an important diagnosis for children 1-4 years; and chronic disease of tonsils and adenoids was important for children 5-9 years and 10-14 years of age.
- For children under 15 years of age, tonsillectomies with or without adenoidectomies were the most frequently performed procedures, followed by myringotomies.

Table 1. Numbers, rates, and average lengths of stay for patients under 15 years of age (excluding newborn infants) discharged from short-stay non-Federal hospitals, by age groups and sex: United States, 1973, 1978, and 1983

Age group	1973			1978			1983		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Number of discharges									
Under 15 years	3,933	2,231	1,700	3,488	1,946	1,542	3,654	2,084	1,570
Under 1 year	580	337	243	691	394	297	936	542	394
1-4 years	1,214	703	510	1,044	601	443	1,146	664	482
5-9 years	1,138	639	499	910	506	404	769	451	319
10-14 years	1,001	552	448	843	445	398	803	427	375
Rate per 1,000 population									
Under 15 years	70.0	77.9	61.8	67.1	73.3	60.7	70.8	79.0	62.3
Under 1 year	185.6	211.0	158.5	207.7	231.6	182.6	255.8	289.2	220.7
1-4 years	88.4	100.3	75.9	84.2	94.7	73.1	80.9	91.7	69.6
5-9 years	62.2	68.5	55.7	52.6	57.3	47.7	48.1	55.1	40.8
10-14 years	47.6	51.5	43.5	44.5	46.0	43.0	45.1	47.0	43.2
Average length of stay in days									
Under 15 years	4.5	4.5	4.6	4.4	4.5	4.4	4.6	4.5	4.6
Under 1 year	6.4	6.2	6.7	5.9	5.7	6.2	6.6	6.5	6.7
1-4 years	4.3	4.1	4.6	4.0	4.0	4.0	3.7	3.6	3.7
5-9 years	3.8	3.8	3.7	3.6	3.7	3.4	3.4	3.4	3.3
10-14 years	4.6	4.6	4.6	4.7	4.9	4.5	4.6	4.6	4.7

Children's discharges

Trends by age and sex

The 3.8 million discharges for children under 15 years of age in 1983 translated to a rate of 70.8 per 1,000 children in the population (table 1). Neither the total number nor the rate changed significantly from 1973 through 1983, but there were changes during this period for specific age groups.

Children under 1 year of age, who had the highest discharge rates of the four children's age groups, were the only age group for which the numbers and rates of discharges increased. They accounted for 15 percent of children's discharges in 1973, expanded to 20 percent in 1978, and to 26 percent in 1983. The discharge rate for children in this age group grew 38 percent from 1973 through 1983. The 1-4 years age group made up virtually the same proportion of the discharges, approximately 30 percent, in each of the 3 years.

The hospitalizations of children 5-9 years of age decreased during the period 1973-83. This group made up 29 percent of children's discharges in 1973, but fell to 26 percent in 1978, and to 21 percent in 1983. The discharge rate of the 5-9 years age group decreased 23 percent during the period, with the rate for males declining 20 percent and the rate for females falling 27 percent. The number of discharges for children 10-14 years of age also decreased. Children in this group accounted for 25 percent of all children's discharges in 1973, 22 percent in 1983.

Neither the total average length of stay for all children under 15 years nor the lengths of stay for the four specific age groups changed significantly from 1973 through 1983. The longest lengths of stay were for children under 1 year of age. The 5-9 years age group had lengths of stay below the average for all children in 1973, 1978, and 1983.

Average lengths of stay were approximately the same for both males and females in all the age groups in the period 1973-83. However, discharge rates were higher for males than for females under 15 years throughout the period. Not all the sex differences in discharge rates for the specific age groups were significant, but males had consistently higher discharge rates than females in the 1-4 years age group. In 1983 males also had higher discharge rates than females in the under 1 year and 5-9 years age groups.

Geographic distribution

The South Region of the country had the largest number of children's discharges in 1983 (table 2). Although the South had the largest population of children of any region, this high number of discharges also reflects a children's discharge rate that was higher than the average for all the regions. In two of the three geographic divisions that make up the region, East South Central and West South Central, the discharge rates were higher than the average.

The North Central Region had the second highest population of children and the second highest number of children's discharges. Within the region, the West North Central Division had a discharge rate that was higher than the average.

The third-ranking region in number of discharges was the Northeast, even though it had the smallest regional population of children. The New England Division of this region had the smallest number of children's discharges of any division because of its small population of children and a discharge rate for children that was well below the average for the country. Among the regions, the West had the smallest number and rate of children's discharges. This is primarily attributable to the very low discharge rate for the Pacific Division of the region. Lengths of stay for children by region

Table 2. Numbers, rates, and average lengths of stay for patients under 15 years of age (excluding newborn infants) discharged from short-stay non-Federal hospitals, by geographic regions and divisions: United States, 1983

<i>Region and division</i>	<i>Number in thousands</i>	<i>Rate per 1,000 population</i>	<i>Average length of stay in days</i>
All regions	3,654	70.8	4.6
Northeast	682	68.8	4.5
New England	125	50.9	4.5
Middle Atlantic	557	74.7	4.5
North Central	987	74.5	4.8
East North Central	622	66.6	4.9
West North Central	365	93.2	4.5
South	1,507	83.9	4.6
South Atlantic	511	62.7	4.3
East South Central	384	110.8	4.3
West South Central	612	96.5	5.1
West	478	45.7	4.0
Mountain	194	62.8	4.0
Pacific	284	38.5	4.1

Table 3. Numbers, percent distributions, and average lengths of stay for patients under 15 years of age (excluding newborn infants) discharged from short-stay non-Federal hospitals, by expected principal sources of payment and age groups: United States, 1983

<i>Source of payment</i>	<i>Under 15 years</i>	<i>Under 1 year</i>	<i>1-4 years</i>	<i>5-9 years</i>	<i>10-14 years</i>
Number of discharges					
Total	3,654	936	1,146	769	803
Medicaid	801	248	288	139	126
Private insurance	2,295	485	692	542	575
Self pay	325	129	98	47	51
Other	233	74	68	41	51
Percent distribution					
Total	100.0	100.0	100.0	100.0	100.0
Medicaid	21.9	26.5	25.1	18.1	15.7
Private insurance	62.8	51.8	60.4	70.5	71.7
Self pay	8.9	13.8	8.5	6.2	6.3
Other	6.4	8.0	5.9	5.2	6.3
Average length of stay in days					
Total	4.6	6.6	3.7	3.4	4.6
Medicaid	5.0	6.8	4.2	3.6	5.0
Private insurance	4.2	5.9	3.4	3.3	4.6
Self pay	5.2	7.4	3.7	3.3	4.4
Other	5.7	8.5	4.4	4.5	4.3

were not significantly different from the average for the country as a whole.

Source of payment

The expected principal sources of payment for children's hospitalizations are shown in table 3. Private insurance was the leading expected source for children in each of the four age groups. It was the expected source of payment for more than 70 percent of the hospitalizations of children 5-9 and 10-14 years of age and a smaller proportion of the hospitalizations of children 1-4 years and under 1 year, 60 percent and 52 percent respectively.

Medicaid, a government health program that provides benefits to low-income persons, was the second most common expected source of payment for children. It was more likely to be the expected principal source of payment for children under 1 year and 1-4 years of age than for children in the two older age groups.

The self-pay category is one in which the costs of hospitalization are expected to be paid by the family rather than any insurance or other program. More of the hospitalizations of children under 1 year, 14 percent, fell into this category than did hospitalizations of other age groups, though children 1-4 years of age were more likely to have hospital

stays in the self-pay category than were older children.

The average length of stay varied somewhat for hospitalizations with different expected principal sources of payment. For children under 15 years of age as a group, average stays were shorter when private insurance was the payment source than when Medicaid or self pay were. Children under 1 year in the self-pay category had significantly longer average stays than those covered by private insurance. The 1-4 years age group had significantly longer stays when covered by Medicaid than when covered by private insurance. However, for children 5-9 and 10-14 years of age, average stays were not significantly different for these three payment sources.

Diagnoses

Under 1 year of age

Estimates of numbers and rates of discharges and of the average lengths of stay for children under 1 year of age are shown in table 4 by selected diagnoses and sex. Three diagnostic categories accounted for 61 percent of the discharges of children in this age group: diseases of the respiratory system, certain conditions originating in the perinatal period, and diseases of the digestive system.

Diseases of the respiratory system were responsible for one-fourth of the discharges of the under 1 year age group. Acute bronchitis and bronchiolitis, other acute respiratory infections, and pneumonia accounted for more than three-fourths of the respiratory disease discharges.

Certain conditions originating in the perinatal period made up 22 percent of the total discharges. Disorders relating to short gestation and unspecified low birth weight accounted for 42 percent of the discharges in the category. It should be pointed out that babies who remain in the hospital where they are born are categorized as newborn infants and are not included in this report. However, infants admitted or transferred to another hospital at any time after birth are considered patients under 1 year of age in the hospital to which they are admitted or transferred. This latter group, made up mainly of very young babies, accounts for a large proportion of discharges in the perinatal conditions category.

Diseases of the digestive system made up 14 percent of the total discharges of children under 1 year of age. Two diagnoses accounted for three-fourths of the digestive disease discharges: noninfectious enteritis and colitis (54 percent) and inguinal hernia (22 percent).

The discharge rate for males under 1 year was almost a third larger than the rate for females, and the differences in rates by sex were even larger for some of the diagnostic categories. For example, the discharge rate for diseases of the respiratory system was 49 percent higher for males, and within the category, males had a 73-percent higher rate for other acute respiratory infections. Males also had a 47-percent higher discharge rate for diseases of the digestive system and made up 89 percent of the discharges for inguinal hernia.

The average length of stay for the under-1-year age group was 6.6 days, ranging from 1.7 days for inguinal hernia to 19.5 days for disorders relating to short gestation

Table 4. Numbers, rates, and average lengths of stay for patients under 1 year of age (excluding newborn infants) discharged from short-stay non-Federal hospitals, by selected first-listed diagnoses and sex: United States, 1983

Diagnostic category and ICD-9-CM code ¹	Both sexes			Both sexes			Both sexes		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	
	Number in thousands			Rate per 1,000 population			Average length of stay in days		
Total ²	936	542	394	255.8	289.2	220.7	6.6	6.5	6.7
Infectious and parasitic diseases 001-139	75	41	34	20.4	21.8	19.0	4.9	4.5	5.4
Diseases of the nervous system and sense organs 320-389	61	32	29	16.7	17.1	16.4	5.2	6.1	4.1
Otitis media and eustachian tube disorders 381,382	33	17	16	8.9	9.0	8.9	3.3	3.2	3.3
Diseases of the respiratory system 460-519	237	144	92	64.6	77.0	51.6	4.5	4.6	4.4
Acute bronchitis and bronchiolitis 466	62	37	24	16.8	20.0	13.5	4.6	4.5	4.8
Other acute respiratory infections 460-465	48	31	17	13.2	16.6	9.6	3.3	3.5	2.9
Pneumonia 480-486	76	44	32	20.7	23.2	18.1	5.2	5.3	4.9
Diseases of the digestive system 520-579	127	77	50	34.6	41.0	27.9	3.9	3.8	4.1
Inguinal hernia 550	27	24	*	7.5	12.6	*	1.7	1.8	*
Noninfectious enteritis and colitis 555-558	69	35	33	18.7	18.7	18.8	4.3	4.5	4.0
Congenital anomalies 740-759	75	45	30	20.4	23.9	16.7	6.3	6.0	6.7
Certain conditions originating in the perinatal period 760-779	206	115	90	56.2	61.6	50.5	12.8	12.7	13.0
Disorders relating to short gestation and unspecified low birth weight 765	86	49	38	23.6	26.0	21.1	19.5	19.9	19.0
Intrauterine hypoxia, birth asphyxia, and other respiratory conditions of newborn 768-770	35	21	14	9.5	11.2	7.6	12.1	9.5	16.2
Hemolytic disease of fetus or newborn due to isoimmunization and other perinatal jaundice 773-774	33	20	14	9.1	10.6	7.6	3.0	3.0	3.0
Symptoms, signs, and ill-defined conditions 780-799	32	19	13	8.8	10.4	7.2	4.1	4.2	3.9
Injury and poisoning 800-999	29	17	12	7.9	9.1	6.7	4.3	3.5	5.4
Injuries (including fractures) 800-959	20	12	*9	5.5	6.2	*4.8	4.5	4.0	*5.1

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*.
²Includes diagnostic conditions not shown in table.

and unspecified low birth weight. A much longer than average stay, 12.8 days, was recorded for "certain conditions originating in the perinatal period." This category contained not only the disorders relating to short gestation and unspecified low birth weight but intrauterine hypoxia and other respiratory conditions of the newborn, for which the average length of stay was 12.1 days. On the other hand, the length of stay for hemolytic disease of newborn due to isoimmunization and other perinatal jaundice was only 3.0 days, well below the average for all conditions.

In most diagnostic categories the average lengths of stay for males and females under 1 year varied by less than 1 day. There were some exceptions, though. The stays of males were 2 days longer than stays of females for diseases of the nervous system and sense organs. Females had stays 1.9 days longer for injury and poisoning and 6.7 days longer for intrauterine hypoxia and other respiratory conditions of the newborn.

1-4 years of age

Children 1-4 years of age had a total of 1.1 million discharges in 1983 (table 5). A greater number of these discharges were for diseases of the respiratory system, 420,000 (37 percent), than for any other diagnostic category. Every fourth diagnosis in the respiratory disease category for this age group was pneumonia. Other acute respiratory infections contributed an additional 21 percent of the respiratory disease diagnoses. Chronic disease of tonsils and

adenoids and asthma were also important diagnoses for this age group, accounting for 18 and 15 percent, respectively, of the discharges for respiratory diseases.

Three categories were very similar in importance as discharge diagnoses for the 1-4 years age group, each making up 12 percent of total discharges. One category was "diseases of the nervous system and sense organs." The major diagnosis within this category was otitis media and eustachian tube disorders, which was responsible for 63 percent of the discharges in the category. The second category, diseases of the digestive system, also had one main diagnosis, noninfectious enteritis and colitis, which accounted for 53 percent of the discharges in the category. Almost half of the third category, injury and poisoning, was made up of discharges for a variety of injuries (other than fractures), such as concussions, sprains, lacerations, and burns.

The discharge rate for males 1-4 years of age was almost one-third larger than the rate for females. In the largest diagnostic category, diseases of the respiratory system, the male discharge rate was 50 percent higher than the female rate. Within the category, the sex difference was particularly marked for chronic disease of tonsils and adenoids, for which the male discharge rate was 65 percent higher. Males also made up 71 percent of the discharges for chronic and unspecified bronchitis.

In addition, a greater than average sex difference in discharge rates was found for the "diseases of the digestive system." The male rate was 44 percent higher for the category

Table 5. Numbers, rates, and average lengths of stay for patients under 1-4 years of age discharged from short-stay non-Federal hospitals, by selected first-listed diagnoses and sex: United States, 1983

Diagnostic category and ICD-9-CM code ¹	Both sexes			Both sexes			Both sexes		
	Male	Female		Male	Female		Male	Female	
	Number in thousands			Rate per 1,000 population			Average length of stay in days		
Total ²	1,146	664	482	80.9	91.7	69.6	3.7	3.6	3.7
Infectious and parasitic diseases 001-139	68	37	31	4.8	5.1	4.5	4.0	4.0	3.9
Diseases of the nervous system and sense organs 320-389	137	76	61	9.7	10.4	8.9	3.0	2.9	3.1
Disorders of the central nervous system 320-336,340-349	22	12	11	1.6	1.6	1.5	7.0	7.0	7.1
Otitis media and eustachian tube disorders 381,382	86	49	37	6.1	6.8	5.4	2.2	2.2	2.3
Diseases of the respiratory system 460-519	420	257	164	29.7	35.4	23.6	3.3	3.3	3.3
Acute bronchitis and bronchiolitis 466	38	24	14	2.7	3.3	2.1	3.3	3.2	3.5
Other acute respiratory infections 460-465	90	56	34	6.3	7.7	4.9	2.9	2.8	2.9
Chronic disease of tonsils and adenoids 474	75	48	27	5.3	6.6	4.0	1.7	1.7	1.6
Pneumonia 480-486	105	61	45	7.4	8.4	6.5	4.4	4.6	4.3
Bronchitis, chronic and unspecified 490-491	24	17	7	1.7	2.4	0.9	3.4	3.3	3.8
Asthma 493	62	34	27	4.4	4.7	4.0	3.5	3.5	3.5
Diseases of the digestive system 520-579	135	81	54	9.5	11.2	7.8	2.9	2.7	3.2
Inguinal hernia 550	26	21	5	1.8	2.9	0.7	1.6	1.6	1.4
Noninfectious enteritis and colitis 555-558	71	39	32	5.0	5.4	4.6	3.3	3.4	3.3
Diseases of the genitourinary system 580-629	44	21	23	3.1	2.9	3.3	3.6	3.8	3.4
Congenital anomalies 740-759	64	41	24	4.5	5.6	3.4	5.7	5.3	6.5
Symptoms, signs, and ill-defined conditions 780-799	24	14	10	1.7	2.0	1.4	3.1	2.9	3.4
Injury and poisoning 800-999	133	77	56	9.4	10.6	8.1	4.4	4.5	4.4
Fractures, all sites 800-829	26	15	11	1.8	2.1	1.6	7.0	7.5	6.3
Injuries other than fractures 850-959	64	37	27	4.5	5.0	4.0	3.8	4.3	3.2

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

²Includes diagnostic conditions not shown in table.

as a whole. Within the category, males accounted for 81 percent of the discharges for inguinal hernia. The male discharge rate was also 65 percent higher than the female rate for the congenital anomalies category.

The average lengths of stay by diagnosis ranged from 1.6 days to 7 days for children 1–4 years of age. Stays of less than 2 days were the average for both inguinal hernia and chronic disease of tonsils and adenoids. The average stays of 7 days were recorded for disorders of the central nervous system and fractures. Both the total average lengths of stay and the average stays for specific diagnoses were similar for males and females.

5–9 years of age

Table 6 shows hospital use by diagnostic categories for children 5–9 years of age. The respiratory disease category accounted for the largest number of discharges, 260,000, which was one-third of the total number of discharges for the children 5–9 years of age. Chronic disease of tonsils and adenoids was the most important diagnosis within the respiratory disease category. It made up almost half of respiratory disease diagnoses, and by itself was responsible for significantly more discharges than any of the other diagnostic categories except injury and poisoning.

Injury and poisoning ranked second in importance among the diagnostic categories with 125,000 discharges, 16 percent of total discharges. Fractures accounted for 40 percent of the discharges in the category, and intracranial injuries, excluding those with skull fractures, made up an additional 18 percent of the category.

Other important diagnostic categories for the 5–9 years

age group were diseases of the nervous system and sense organs with 10 percent of total discharges, and diseases of the digestive system with 11 percent. Otitis media and eustachian tube disorders made up more than half of the discharges for diseases of the nervous system and sense organs. Noninfectious enteritis and colitis accounted for almost a fourth of the discharges for diseases of the digestive system.

The discharge rate was 35 percent higher for males than for females 5–9 years of age. The sex difference was especially pronounced for the injury and poisoning category, in which the male discharge rate was 82 percent higher than the female rate. Within the category males had a 70 percent higher discharge rate for fractures, and they accounted for more than three-fourths of the discharges for intracranial injury.

The sex difference in discharge rates was also large for the congenital anomalies category, in which the male rate was 85 percent higher than the female rate. In addition, the male discharge rate was 57 percent higher for otitis media and eustachian tube disorders and 94 percent higher for asthma.

The range in average lengths of stay for diagnostic categories was not wide, from 1.6 to 4.8 days. Stays of less than 2 days were the average for otitis media and eustachian tube disorders and for chronic disease of tonsils and adenoids. Average stays of more than 4.5 days were found for pneumonia and fractures. The average lengths of stay of males and females were different by less than a day for all the diagnoses and diagnostic categories.

Table 6. Numbers, rates, and average lengths of stay for patients 5–9 years of age discharged from short-stay non-Federal hospitals, by selected first-listed diagnoses and sex: United States, 1983

Diagnostic category and ICD-9-CM code ¹	Both sexes			Both sexes			Both sexes		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	
	Number in thousands			Rate per 1,000 population			Average length of stay in days		
Total ²	769	451	319	48.1	55.1	40.8	3.4	3.4	3.3
Infectious and parasitic diseases 001–139	38	19	19	2.4	2.3	2.4	3.6	3.4	3.9
Diseases of the nervous system and sense organs 320–389	77	45	32	4.8	5.5	4.0	2.0	2.0	2.0
Otitis media and eustachian tube disorders 381–382	43	27	16	2.7	3.3	2.1	1.6	1.5	1.8
Diseases of the respiratory system 460–519	260	148	113	16.3	18.1	14.4	2.8	2.9	2.6
Acute respiratory infections 460–466	34	18	16	2.1	2.2	2.1	2.8	2.9	2.8
Chronic diseases of tonsils and adenoids 474	127	67	60	7.9	8.2	7.7	1.8	1.9	1.7
Pneumonia 480–486	40	23	17	2.5	2.9	2.2	4.8	4.8	4.8
Asthma 493	37	25	12	2.3	3.1	1.6	3.5	3.5	3.7
Diseases of the digestive system 520–579	88	49	39	5.5	6.0	4.9	3.5	3.6	3.5
Noninfectious enteritis and colitis 555–558	21	11	10	1.3	1.3	1.3	3.1	3.2	3.0
Diseases of the genitourinary system 580–629	32	14	17	2.0	1.8	2.2	3.5	3.8	3.3
Congenital anomalies 740–759	30	19	10	1.9	2.4	1.3	3.5	3.2	4.0
Symptoms, signs, and ill-defined conditions 780–799	18	10	*9	1.2	1.2	*1.1	2.3	2.6	*2.1
Injury and poisoning 800–999	125	82	43	7.8	10.0	5.5	4.1	4.0	4.2
Fractures, all sites 800–829	50	32	18	3.1	3.9	2.3	4.7	5.0	4.2
Intracranial injury, excluding those with skull fracture 850–854	22	17	*5	1.4	2.1	*0.7	2.7	2.9	*2.2
Other injuries 830–848,860–959	39	24	15	2.4	2.9	1.9	4.2	3.9	4.7

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*.
²Includes diagnostic conditions not shown in table.

10-14 years of age

Children 10-14 years of age had 803,000 hospital discharges in 1983 (table 7). There were more diagnostic categories with sizable numbers of discharges for this age group than for the younger age groups. The following categories each accounted for more than 20,000 discharges for children 10-14 years but for less than 20,000 discharges for children in each of the other three age groups: neoplasms; endocrine, nutritional and metabolic diseases, and immunity disorders; diseases of the blood and blood-forming organs; mental disorders; and diseases of the musculoskeletal system and connective tissue.

The leading diagnostic categories for the 10-14 years age group were diseases of the respiratory system and injury and poisoning, which were each responsible for 20 percent of all discharges. Chronic disease of tonsils and adenoids was again the most important respiratory disease diagnosis, making up 42 percent of all discharges in the category. Fractures accounted for 39 percent of the discharges in the injury and poisoning category.

Diseases of the digestive system was the third-ranking diagnostic category in number of discharges. Fourteen percent of all discharges for children 10-14 years were in this category. Noninfectious enteritis and colitis was the most frequent diagnosis, making up 23 percent of the digestive disease category.

The total discharge rates for males and females 10-14 years of age were not significantly different, but sex

differences were found in the rates for specific diagnoses and diagnostic categories. The discharge rate for chronic disease of tonsils and adenoids was 78 percent higher for females than for males. This difference is especially noteworthy because the rates for the diagnosis were higher for males 1-4 years of age and were not significantly different by sex for children 5-9 years of age. However, for the injury and poisoning category the discharge rate of males 10-14 years of age was almost twice the female rate. Within the category males had rates more than 1.5 times higher than females for fractures. They accounted for 69 percent of the discharges for intracranial injury, and had more than double the female rate for other injuries.

The longest average length of stay for children 10-14 years of age was 19.4 days for mental disorders. Lengths of stay for other diagnostic categories ranged between 6.3 days for "endocrine, nutritional, and metabolic diseases and immunity disorders" and 2.9 days for "symptoms, signs, and ill-defined conditions" and "diseases of the respiratory system." The shortest stay, 1.7 days, for chronic disease of tonsils and adenoids was within the respiratory disease category.

The total average lengths of stay for males and females were not significantly different, but there were sex differences in the lengths of stay for specific conditions. The length of stay of females was twice that of males for diseases of the blood and blood-forming organs, and females had

Table 7. Numbers, rates, and average lengths of stay for patients 10-14 years of age discharged from short-stay non-Federal hospitals, by selected first-listed diagnoses and sex: United States, 1983

Diagnostic category and ICD-9-CM code ¹	Both sexes			Both sexes			Both sexes		
	Male	Female	Rate per 1,000 population	Male	Female	Rate per 1,000 population	Male	Female	Average length of stay in days
Total ²	427	375	45.1	47.0	43.2	4.6	4.6	4.7	
Infectious and parasitic diseases 001-139	28	14	1.6	1.5	1.6	3.6	3.8	3.4	
Neoplasms 140-239	27	17	1.5	1.8	1.2	3.6	2.7	5.1	
Endocrine, nutritional and metabolic diseases, and immunity disorders 240-279	26	12	1.5	1.3	1.6	6.3	5.1	7.3	
Diseases of the blood and blood-forming organs 280-289	24	12	1.3	1.3	1.4	4.2	2.8	5.6	
Mental disorders 290-319	36	17	2.0	1.9	2.2	19.4	17.7	21.0	
Diseases of the nervous system and sense organs 320-389	38	21	2.1	2.3	2.0	3.6	3.5	3.7	
Diseases of the respiratory system 460-519	159	78	8.9	8.6	9.3	2.9	3.0	2.7	
Acute respiratory infections 460-466	22	11	1.2	1.2	1.3	3.1	3.2	2.9	
Chronic diseases of tonsils and adenoids 474	66	24	3.7	2.7	4.8	1.7	1.6	1.8	
Pneumonia 480-486	21	13	1.2	1.4	*0.9	5.0	4.8	*5.3	
Asthma 493	24	15	1.3	1.6	*1.1	3.6	3.7	*3.5	
Diseases of the digestive system 520-579	111	62	6.2	6.8	5.6	4.1	3.9	4.3	
Noninfectious enteritis and colitis 555-558	26	15	1.5	1.6	1.3	3.2	3.0	3.4	
Diseases of the genitourinary system 580-629	47	23	2.6	2.6	2.7	3.7	3.3	4.2	
Diseases of the musculoskeletal system and connective tissue 710-739	39	16	2.2	1.8	2.6	5.9	7.1	5.0	
Congenital anomalies 740-759	23	13	1.3	1.4	1.2	5.8	6.9	4.6	
Symptoms, signs, and ill-defined conditions 780-799	29	13	1.7	1.5	1.9	2.9	2.8	3.0	
Injury and poisoning 800-999	164	110	9.2	12.1	6.2	4.2	4.8	3.1	
Fractures, all sites 800-829	64	47	3.6	5.2	2.0	5.0	5.7	2.9	
Intracranial injury, excluding those with skull fracture 850-854	26	18	1.5	2.0	*0.9	3.6	4.0	*2.8	
Other injuries 830-848,860-959	54	38	3.1	4.2	1.9	3.7	3.9	3.3	

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*.
²Includes diagnostic conditions not shown in table

89 percent longer stays for neoplasms. Males had 50 percent longer stays for congenital anomalies and 55 percent longer stays for injury and poisoning. Within the injury and poisoning category, the average stays of males were almost twice those of females for fractures.

Procedures

In 1983, 2.3 million operations and other procedures were performed in hospitals on children under 15 years of age. Both the numbers and the rates of procedures were higher for males under 15 years than for females (tables 8 and 9). Children under 1 year of age had the lowest number of procedures but the highest rate among the four age groups. The other age groups each accounted for about the same number of procedures, but the rate of procedures for children 10–14 years of age was significantly below the average for all children under 15 years.

The largest number of procedures for children under 15 years was in the category “operations on the nose, mouth, and pharynx,” which contained almost 20 percent of all procedures. Tonsillectomies with and without adenoidectomies were responsible for more than 60 percent of the procedures in this category. The other major procedure categories for children under 15 years were operations on the ear, more than three-fourths of which were myringotomies; operations on the digestive system, more than half of which were

appendectomies and inguinal hernia repairs; operations on the musculoskeletal system, 40 percent of which were reductions of fracture; and miscellaneous diagnostic and therapeutic procedures, one-fourth of which were computerized axial tomographies and diagnostic ultrasounds.

The leading procedure categories for children under 1 year of age were somewhat different than for the other three age groups. In addition to operations on the digestive system and miscellaneous diagnostic and therapeutic procedures, leading categories for these children were operations on the nervous system and operations on the cardiovascular system. The under-1-year age group had higher rates than the other three age groups for all these procedure categories. They also had higher rates for cardiac catheterizations, repair of inguinal hernia, computerized axial tomography, and for spinal taps and biopsies of the nervous system, which accounted for 81 percent of the operations on the nervous system.

The largest procedure category both for children 1–4 and 5–9 years of age was operations on the nose, mouth, and pharynx. Tonsillectomies with and without adenoidectomies made up more than half of the procedures in the category for children 1–4 years of age, and almost three-fourths for children 5–9 years, who had the highest rate for the procedure among the four age groups. Children 1–4 and 5–9 years were the only age groups for which operations on the ear was a leading category. Myringotomies accounted for more than 90 percent of the ear operations on children

Table 8. Number of all-listed procedures for patients under 15 years of age (excluding newborn infants) discharged from short-stay non-Federal hospitals, by selected procedure categories, sex, and age groups: United States, 1983

Procedure category and ICD-9-CM code ¹	Under 15 years						
	Both sexes	Male	Female	Under 1 year	1-4 years	5-9 years	10-14 years
	Number in thousands						
Total ²	2,293	1,346	947	423	643	609	619
Operations on the nervous system 01-05	143	76	66	80	32	17	14
Spinal tap and biopsies on the nervous system 01.1,03.3,04.1,05.1	101	55	46	65	22	*8	*6
Operations on the ear 18-20	220	132	88	*9	95	91	25
Myringotomy 20.0	169	101	68	*7	86	66	10
Operations on the nose, mouth, and pharynx 21-29	451	239	213	12	139	178	122
Tonsillectomy with or without adenoidectomy 28.2-28.3	279	143	136	*	78	130	71
Adenoidectomy without tonsillectomy 28.6	50	32	18	*	24	20	*
Operations on the cardiovascular system 35-39	117	61	56	58	36	12	11
Cardiac catheterization 37.21-37.23	32	16	16	11	12	*6	*
Operations on the digestive system 42-54	281	183	98	65	65	64	87
Appendectomy, excluding incidental 47.0	75	38	36	-	*	25	47
Repair of inguinal hernia 53.0-53.1	81	67	13	28	28	17	*8
Operations on the musculoskeletal system 76-84	249	142	107	13	42	68	127
Reduction of fracture 76.7,79.0-79.6	100	66	34	*	12	38	48
Operations on the integumentary system 85-86	121	69	52	*6	37	32	45
Excision or destruction of lesion or tissue of skin and subcutaneous tissue 86.2	30	16	14	*	*8	*7	13
Miscellaneous diagnostic and therapeutic procedures 87-99	302	172	130	91	71	55	85
Computerized axial tomography 87.03,87.41,87.71,88.01,88.38	46	28	17	13	10	10	13
Diagnostic ultrasound 88.7	31	16	15	16	*	*	*8

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*
²Includes procedures not shown in table.

Table 9. Rates for all-listed procedures for patients under 15 years of age (excluding newborn infants) discharged from short-stay non-Federal hospitals, by selected procedure categories, sex, and age groups: United States, 1983

Procedure category and ICD-9-CM code ¹	Under 15 years			Under 1 year	1-4 years	5-9 years	10-14 years
	Both sexes	Male	Female				
	Rate per 10,000 population						
Total ²	444.6	510.2	375.8	1,155.8	453.6	381.3	347.9
Operations on the nervous system 01-05	27.6	28.9	26.3	219.0	22.4	10.3	7.9
Spinal tap and biopsies on the nervous system 01.1,03.3,04.1,05.1	19.5	20.7	18.3	178.1	15.8	*4.9	*3.1
Operations on the ear 18-20	42.6	50.0	34.8	*25.0	66.8	56.9	14.0
Myringotomy 20.0	32.7	38.1	26.9	*20.5	60.5	41.2	5.4
Operations on the nose, mouth, and pharynx 21-29	87.5	90.5	84.3	33.2	98.0	111.5	68.7
Tonsillectomy with or without adenoidectomy 28.2-28.3	54.1	54.3	53.9	*	54.8	81.5	39.7
Adenoidectomy without tonsillectomy 28.6	9.7	12.0	7.3	*	17.1	12.8	*
Operations on the cardiovascular system 35-39	22.7	23.2	22.1	158.7	25.7	7.3	6.2
Cardiac catheterization 37.21-37.23	6.2	6.0	6.5	30.3	8.5	*3.6	*
Operations on the digestive system 42-54	54.5	69.4	38.9	176.7	46.2	39.9	49.1
Appendectomy, excluding incidental 47.0	14.5	14.6	14.4	-	*	15.6	26.7
Repair of inguinal hernia 53.0-53.1	15.6	25.5	5.3	75.4	19.6	10.5	*4.7
Operations on the musculoskeletal system 76-84	48.3	53.9	42.5	35.2	29.3	42.8	71.2
Reduction of fracture 76.7,79.0-79.6	19.4	24.9	13.6	*	8.7	23.8	26.8
Operations on the integumentary system 85-86	23.5	26.0	20.8	*17.7	26.2	20.2	25.3
Excision or destruction of lesion or tissue of skin and subcutaneous tissue 86.2	5.8	6.0	5.7	*	*5.8	*4.1	7.2
Miscellaneous diagnostic and therapeutic procedures 87-99	58.5	65.3	51.5	248.2	50.0	34.6	47.8
Computerized axial tomography 87.03,87.41,87.71,88.01,88.38	8.8	10.7	6.9	36.0	7.1	*6.1	7.1
Diagnostic ultrasound 88.7	6.1	6.2	6.0	43.5	*	*	*4.7

¹Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*.
²Includes procedures not shown in table.

1-4 years and almost three-fourths on children 5-9 years. The other leading procedure categories both for children 1-4 and 5-9 years of age were operations on the digestive system and miscellaneous diagnostic and therapeutic procedures.

Children 5-9 years of age also shared with children 10-14 years the leading procedure category "operations on the musculoskeletal system." Reduction of fractures accounted

for more than half of the category for the 5-9 years age group, 38 percent for children 10-14 years of age. The other leading procedure categories for the 10-14 years age group were operations on the nose, mouth, and pharynx; operations on the digestive system; and the miscellaneous category. This age group had a higher rate than the other three for one procedure, appendectomy.

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Symbols

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

Technical notes

Survey Methodology

Source of data

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

The original universe for the survey consisted of 6,965 hospitals contained in the 1963 National Master Facility Inventory. New hospitals were sampled for inclusion in the survey in 1972, 1975, 1977, 1979, 1981, and 1983. In all, 553 hospitals were sampled in 1983. Of these hospitals, 78 refused to participate, and 57 were out of scope. The 418 participating hospitals provided approximately 206,000 abstracts of medical records.

Sample design and data collection

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

Sample discharges were selected within the hospitals using the daily listing sheet of discharges as the sampling frame. These discharges were selected by a random technique, usually on the basis of the terminal digit or digits of the patient's medical record number, a number assigned when the patient was admitted to the hospital. The within-hospital sampling ratio for selecting sample discharges varied inversely with the probability of selection of the hospital.

The sample selection and the transcription of information from the hospital records to abstract forms were performed by the hospital staff or by representatives of the National Center for Health Statistics or by both. The data were abstracted from the face sheets of the medical records. All discharge diagnoses and procedures were listed on the abstract in the order of the principal one, or the first-listed one if the principal one was not identified, followed by the order in which all other diagnoses or procedures were entered on the face sheet of the medical record.

Presentation of estimates

Statistics produced by NHDS are derived by a complex estimating procedure. The basic unit of estimation is the

sample inpatient discharge abstract. The estimating procedure used to produce essentially unbiased national estimates in NHDS has three principal components: inflation by reciprocals of the probabilities of sample selection, adjustment for nonresponse, and ratio adjustment to fixed totals. These components of estimation are described in appendix I of two earlier publications.^{7,8}

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

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

Sampling errors and rounding of numbers

The standard error is a measure of the sampling variability that occurs by chance because only a sample, rather than an entire universe, is surveyed. The relative standard error of the estimate is obtained by dividing the standard error by the estimate itself and is expressed as a percent of the estimate. Relative standard errors for discharges and first-listed diagnoses are shown in table I, relative standard errors for days of care are shown in table II, and relative standard errors for all-listed procedures are shown in table III.

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

Table I: Approximate relative standard errors for estimated numbers of discharges and first-listed diagnoses: United States, 1983

<i>Size of estimate</i>	<i>Relative standard error</i>
5,000	16.0
10,000	12.8
50,000	8.1
100,000	6.8
300,000	5.3
500,000	4.8
1,000,000	4.2
3,000,000	3.5
5,000,000	3.2
10,000,000	2.9
20,000,000	2.7
30,000,000	2.5
40,000,000	2.5

Table II: Approximate relative standard errors for estimated numbers of days of care, by region and all other characteristics: United States, 1983

<i>Size of estimate</i>	<i>Region</i>	<i>All other characteristics</i>
10,000	38.4	20.3
30,000	28.9	15.7
50,000	25.4	14.0
100,000	21.4	12.0
300,000	16.5	9.5
500,000	14.7	8.6
1,000,000	12.6	7.5
3,000,000	10.0	6.2
5,000,000	9.0	5.7
10,000,000	7.9	5.1
50,000,000	5.9	4.0
100,000,000	5.2	3.6
200,000,000	4.7	3.3

Table III: Approximate relative standard errors for estimated numbers of all-listed procedures: United States, 1983

<i>Size of estimate</i>	<i>Relative standard error</i>
5,000	17.1
10,000	14.0
25,000	10.9
50,000	9.2
100,000	7.8
500,000	5.7
1,000,000	5.1
3,000,000	4.3
5,000,000	4.0
10,000,000	3.6
15,000,000	3.5
20,000,000	3.3
25,000,000	3.3

Tests of significance

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

Definition of terms

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

Patient—A patient is a person who is formally admitted to the inpatient service of a short-stay hospital for observation, care, diagnosis, or treatment. In this report the number of patients refers to the number of discharges during the year, including any multiple discharges of the same individual

from one or more short-stay hospitals. Infants admitted on the day of birth directly or by transfer from another medical facility, with or without mention of disease, disorder, or immaturity, are included. All newborn infants, defined as those admitted by birth to the hospital, are excluded from this report. The terms “patient” and “inpatient” are used synonymously.

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

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

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

Discharge diagnoses—One or more diseases or injuries (or some factor that influences health status and contact with health services which is not itself a current illness or injury) listed by the attending physician on the medical record of a patient constitute the discharge diagnoses. In NHDS all discharge (or final) diagnoses listed on the face sheet (summary sheet) of the medical record for patients discharged from the inpatient service of short-stay hospitals are transcribed in the order listed. Each sample discharge is assigned a maximum of seven five-digit codes according to ICD-9-CM.⁶ The number of principal or first-listed diagnoses is equivalent to the number of discharges.

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

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

Procedure—A procedure is one or more surgical or non-surgical operations, procedures, or special treatments assigned by the physician to patients discharged from the inpatient service of short-stay hospitals. In NHDS all terms listed on the face sheet (summary sheet) of the medical record under the captions “operation,” “operative procedures,” “operations and/or special treatment,” and the like are transcribed in the order listed. A maximum of four procedures are coded.

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

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

Private insurance—Health insurance provided by nongovernment sources including consumers, insurance companies, private industry, and philanthropic organizations is private insurance.

Medicaid—Medicaid is a joint Federal-State welfare program available in virtually all States that provides medical benefits for low income persons, including the aged. In order to qualify for this program, a person must meet each State's definition of "low income."

Self pay—The major share of the total costs for a self-pay hospitalization is expected to be paid by the patient, spouse, parents, or next of kin.

Other payments—This includes all other sources of payment such as workmen's compensation, Medicare, no charge, and other government programs.

Geographic regions and divisions—The 50 States and the District of Columbia are grouped by the Bureau of the Census into 4 regions and 9 divisions as follows:

<i>Region and division</i>	<i>States</i>
Northeast	
New England	Maine, New Hampshire, Vermont, Massachusetts, Rhode Island, Connecticut
Middle Atlantic	New York, New Jersey, Pennsylvania
North Central	
East North Central	Michigan, Ohio, Illinois, Indiana, Wisconsin
West North Central	Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, Kansas
South	
South Atlantic	Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, Florida
East South Central	Kentucky, Tennessee, Alabama, Mississippi
West South Central	Arkansas, Louisiana, Oklahoma, Texas
West	
Mountain	Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, Nevada
Pacific	Washington, Oregon, California, Hawaii, Alaska



Office-Based Ambulatory Care for Patients 75 Years Old and Over: National Ambulatory Medical Care Survey, 1980 and 1981

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Introduction

This report offers a statistical description of the care provided in the physician's office to patients 75 years old and over. This segment of the population, comparatively small in the past, is projected to increase dramatically over the next few decades. For the health community this increase means the emergence of problems not encountered before. To anticipate these problems and to furnish the resources necessary to solve them, the Nation's health planners need information about the health needs of the advanced aging and the treatment settings where these needs are met.

Although it is important to examine the care provided to the advanced aging in the Nation's hospitals and nursing homes, it is shortsighted to accept inpatient care as the model by which the health problems and treatment of all aging patients are judged. It is also necessary to examine outpatient settings, especially the doctor's office, where most of the advanced aging still seek their health care.

To establish normative patterns for the office-based care of the advanced aging, the authors combined the 1980 and 1981 findings of the National Ambulatory Medical Care Survey, an annual sample survey of office-based physicians conducted from 1973 through 1981 by the National Center for Health Statistics. The patient universe examined was the age group 75 years old and over, which was divided, where detailed analysis was indicated and possible, into 5-year subgroups. The statistical bases for the report are shown in table 1.

The following aspects of the office visit will be successively examined:

- Sex of patient.
- Physician's diagnoses.
- Patient's symptoms.

Table 1. Number and percent distribution of office visits by age and sex of patient: United States, 1980 and 1981

Patient age and sex	Office visits	
	Number in thousands	Percent distribution
All office patients	1,160,922	100.0
All patients		
Under 75 years old	1,078,468	92.9
75 years old and over	82,454	7.1
75-79 years old	43,309	3.7
80-84 years old	24,713	2.1
85 years old and over	14,431	1.3
Female		
Under 75 years old	646,220	55.7
75 years old and over	53,498	4.6
75-79 years old	27,497	2.4
80-84 years old	16,430	1.4
85 years old and over	9,571	0.8
Male		
Under 75 years old	432,248	37.2
75 years old and over	28,956	2.5
75-79 years old	15,813	1.4
80-84 years old	8,284	0.7
85 years old and over	4,860	0.4

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

- Medications ordered or provided.
- Nonmedication therapy.
- Former visit status and referrals.
- Disposition and duration.
- Physician's specialty.

The data presented are estimates, based on a sample of office visits rather than on the actual number, and, thus, are subject to sampling variability. The smaller an estimate, or any percent or ratio based on that estimate, the more imprecise it is likely to be; this applies particularly to the 5-year, sex-age subgroups. An asterisk preceding any estimate indicates that it exceeds 30 percent relative standard error. Guidelines for judging the precision of estimates are provided in the Technical notes at the end of this report, along with a brief description of the survey design.

For greater ease of reference, the textual discussion will sometimes use the following designators:

- *AG* group: patients 75 years old or over.
- *Younger* group: patients under 75 years of age.

Data Highlights

General

Over the 2-year period from January 1980 through December 1981, patients in the AG group made an estimated 82,454,000 visits to the offices of non-Federal physicians practicing in the coterminous United States. This amounted to an average of five visits per year for each person in the subpopulation over 74 years of age. (For the younger subpopulation, the average was about three visits per year.) Slightly over one-half (53 percent) of these 82,454,000 visits were made by patients 75–79 years old, another 30 percent by patients 80–84 years old, and the remaining 17 percent by patients in the open-ended subgroup over 84 years of age (table 1). Similar to the pattern found for most age subgroups, visits by AG females substantially outnumbered visits by AG males, by a margin that increased to almost two to one in the older two subgroups. In large part, this gender difference among the very old is a function of relative longevity, reflecting an average life expectancy that in 1981 was 77.9 years for women versus 70.4 years for men.

Diagnoses

For the majority of AG visits (52 percent), multiple diagnoses were the rule (table 2). The National Ambulatory Medical Care Survey (NAMCS) allows for the processing of up to three of these diagnoses per visit. Of these, the first-listed is designated as the principal diagnosis, for the reason that it is the one most closely associated with the patient's chief presenting symptom and thus usually commands the physician's immediate attention. For patient groups among which a single diagnosis is the rule, an analysis by principal problem is probably adequate to describe the diagnostic mix typical of the group. At the AG visit, however, where coexisting problems are the rule, a broader perspective seems indicated, one that accounts for the overall impact of a disease entity, whether first listed or coexistent.

Thus the approach used in tables 3–5 is to cumulate mentions of a diagnosis as a first-, second-, or third-listed problem to produce an all-listed diagnosis. For example, essential hypertension was a first-listed diagnosis at 10 percent of AG visits but an all-listed problem at 17 percent; the circulatory diseases

Table 2. Percent of office visits with multiple diagnoses by age and sex of patient: United States, 1980 and 1981

<i>Patient age and sex</i>	<i>Percent of visits with multiple diagnoses</i>
All patients	
Under 75 years old.	31.1
75 years old and over	52.4
75–79 years old.	50.0
80–84 years old.	54.6
85 years old and over	56.5
Female	
Under 75 years old.	30.6
75 years old and over	52.1
75–79 years old.	48.3
80–84 years old.	54.8
85 years old and over	58.4
Male	
Under 75 years old.	31.7
75 years old and over	53.2
75–79 years old.	53.0
80–84 years old.	54.2
85 years old and over	52.8

as a group accounted for 28 percent of all principal diagnoses but appeared as coexisting problems at yet another 27 percent, producing an all-listed proportion of 55 percent.

Table 3 ranks the 25 diagnoses most frequently present at AG visits. Clearly apparent is the dominant presence of certain chronic diseases and their sequellae. The major afflictions of the ambulatory aging (essential hypertension, ischemic heart disease, diabetes, osteoarthritis, and cataract) are ranked high on the list for both AG males and females. One notable difference between the sexes is the presence of two male-specific conditions, hyperplasia and malignant neoplasm of the prostate. Ranked among the 10 problems most frequently encountered among AG males, these diseases are especially evident among male patients in the subgroup 75–79 years. Among the other problems listed in table 3, the most substantial differences between male and female rankings were apparent for the following:

- Hypertensive heart disease (ranked 8th among AG females, 26th among males).
- Neurotic disorders (ranked 15th among females, 42d among males).
- Chronic airway obstruction (ranked 8th among AG males, 52d among females).

It is interesting to observe that among these most frequent problems, there was no mention of a "senile" mental condition. In tables 4 and 5, the specific diagnoses are gathered into diagnostic groups.

At AG visits, the following diagnostic groups exceeded in rate of mention the level found for the younger group:

- *Diseases of the circulatory system*—Present at a startling 55 percent of AG visits, these conditions dramatically

Table 3. Number of mentions per 1,000 office visits of patients 75 years old and over by the 25 all-listed diagnoses most frequently mentioned and ranks of diagnoses by sex: United States, 1980 and 1981

R a n k	Most frequent all-listed ¹ diagnoses and ICD-9-CM code ²	Number of mentions per 1,000 visits	Rank order by sex of patient		
			Females	Males	
1	Essential hypertension	401	174	1	1
2	Chronic ischemic heart disease	414	95	2	2
3	Diabetes mellitus	250	67	4	3
4	Osteoarthritis and allied disorders	715	60	3	7
5	Cataract	366	51	5	5
6	Heart failure	428	44	7	4
7	Cardiac dysrhythmias	427	36	9	6
8	Arthropathies, other and unspecified	716	36	6	14
9	Glaucoma	365	28	10	13
10	Hypertensive heart disease	402	26	8	*26
11	Angina pectoris	413	23	12	11
12	Other disorders of eye	379	23	11	15
13	Heart disease; ill-defined descriptions and complications	429	20	14	17
14	Atherosclerosis	440	20	13	19
15	Chronic airway obstruction NEC ³	496	17	*52	8
16	Other disorders of urethra and urinary tract	599	17	16	16
17	Cerebrovascular disease, other and ill-defined	437	16	26	12
18	Other and unspecified anemias	285	15	17	21
19	Neurotic disorders	300	15	15	*42
20	Other malignant neoplasm of skin	173	14	27	18
21	Acute upper respiratory infections	465	14	18	*29
22	Malignant neoplasm of prostate	185	13	...	9
23	General symptoms	780	13	23	*22
24	Hyperplasia of prostate	600	12	...	10
25	Other retinal disorders	362	12	19	*38

¹All-listed diagnosis: Cumulates mentions as 1st-, 2d-, or 3d-listed diagnosis.

²Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*.

³Not elsewhere classified.

dominated the arena of office-based AG care. In relative proportions, they were about equally evident among AG females and males. Their rate of mention, largely due to the growing presence of heart failure, hypertensive heart disease, and cardiac dysrhythmias, continued to increase for both sexes beyond the 84th year.

- *Diseases of the musculoskeletal system*—Although both sexes showed a marked increase, it was among the AG females that these conditions were more frequently encountered, underscoring a need for early use of postmenopausal treatment with hormones and calcium replacement. Mention rate did not increase for either sex beyond the 84th year.
- *Eye disorders*—Three times as frequent at AG visits, both AG males and females were affected, and the mention rate continued to increase beyond the 84th year.
- *Diseases of the endocrine glands (chiefly diabetes)*—Nearly twice as frequent at AG visits, both AG males and females were affected about equally. For neither sex was there an increase in mention rate beyond the 84th year.
- *Neoplasms*—Increased rates of mention, though evident for both sexes, were more substantial among AG males, chiefly owing to an estimated 1,000,000 mentions of malignant neoplasm of the prostate. For neither sex was there an increasing rate of mention beyond the 84th year.
- *Diseases of the blood and blood-forming organs (chiefly unspecified anemias)*—One of the less frequently mentioned diagnostic groups, these conditions increased in

mention rate for both AG females and AG males. The relatively small number of mentions precluded further analysis among the AG subgroups.

- *Digestive disorders*—Mention rate increased for AG females while remaining about the same for AG males.
- *Diseases of the genitourinary system*—Mention rate more than doubled for AG males while decreasing by one-half among AG females. Chiefly responsible was the substantial presence among male patients of prostatic hyperplasia. For neither sex was there evidence of increasing rate of mention beyond the 84th year.

For the following diagnostic groups, the AG mention rate either fell below or roughly equaled the rate found among younger office patients:

- *Infectious and parasitic diseases*—Mention rate was about one-third the rate observed among younger patients.
- *Mental disorders (dominantly nonpsychotic)*—With this group, though minor in rate of mention, the rate among AG females was almost double that found among AG males.
- *Diseases of the respiratory system*—Rather than the acute, self-limiting problems typical of younger patient groups, among AG patients it is the presence of the chronic respiratory problems, for example, chronic airway obstruction, that chiefly accounted for the relatively large rates of mention of this diagnostic category. This presence was most evident among AG males in the subgroup 80–84 years.

Table 4. Number of mentions per 1,000 office visits of patients by age, sex, and selected diagnostic groups composed of all-listed diagnoses: United States, 1980 and 1981

<i>All-listed diagnoses¹ (in selected diagnostic groups) and ICD-9-CM code²</i>	<i>All patients</i>		<i>Females</i>		<i>Males</i>	
	<i>Under 75 years</i>	<i>75 years and over</i>	<i>Under 75 years</i>	<i>75 years and over</i>	<i>Under 75 years</i>	<i>75 years and over</i>
	Number of mentions per 1,000 visits					
Infectious and parasitic diseases 001-139	44	15	43	15	45	16
Neoplasms 140-239	33	76	34	54	31	116
Endocrine, nutritional, and metabolic diseases and immunity disorders 240-279	70	104	80	103	56	106
Diseases of endocrine glands 240-259	39	81	43	80	32	82
Diseases of blood and blood-forming organs 280-289	9	26	11	27	7	24
Mental disorders 290-319	66	38	67	46	63	24
Nonpsychotic disorders 300-316	57	33	59	40	55	20
Diseases of nervous system and sense organs 320-389	123	206	112	217	140	187
Diseases of central nervous system 320-349	10	16	10	17	10	*14
Eye disorders 360-379	57	155	54	164	60	139
Diseases of circulatory system 390-459	143	540	128	540	166	541
Essential hypertension 401	69	174	69	201	69	124
Ischemic heart disease 410-414	26	131	17	120	40	153
Other selected circulatory diseases	27	186	24	181	34	195
Heart failure 428	5	44	4	41	6	48
Cardiac dysrhythmias 427	6	36	6	33	8	43
Hypertensive heart disease 402	6	26	6	33	6	*13
Heart disease; ill-defined descriptions and complications 429	3	20	2	21	4	20
Cerebrovascular disease; other and ill-defined 437	1	17	1	11	1	26
Atherosclerosis 440	1	20	1	21	2	18
Angina pectoris 413	5	23	4	21	7	27
Diseases of respiratory system 460-519	175	110	154	94	206	138
Diseases of digestive system 520-579	60	81	55	89	69	65
Diseases of genitourinary system 580-629	82	70	109	52	41	102
Diseases of skin and subcutaneous tissue 680-709	75	57	71	56	81	60
Diseases of musculoskeletal system 710-739	97	167	94	192	100	121
Arthropathies 711-716	29	103	33	121	23	69
Symptoms, signs, and ill-defined conditions 780-799	54	60	54	58	54	63
Injury and poisoning 800-999	107	62	81	68	146	51

¹All-listed diagnosis: Cumulates mentions as 1st-, 2d-, or 3d-listed diagnosis.
²Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*.

- *Diseases of the skin and subcutaneous tissue*—Although skin diseases were generally more of a problem in the younger patient group than they were at AG visits, they showed their highest single rate of mention among AG females over 84 years old.
- *Symptoms, signs, and ill-defined conditions*—Recourse by physicians to this vaguest of diagnostic categories was no more common among AG office patients than it was among their younger counterparts.
- *Injury and poisoning* (chiefly accidents)—Though relatively less frequent among the less active AG group, for example, the rate for AG males decreased by two-thirds, the consequences of injury were much more serious for the advanced aging.

the National Ambulatory Medical Care Survey processes up to three of the patient's self-expressed symptoms per visit, the first-listed entry being the most important from the patient's point of view. Continuing the approach applied in forming the all-listed diagnoses, the findings in tables 6 and 7 cumulate mention as a first-, second-, or third-listed symptom to produce an all-listed symptom.

Listed in table 6 are the 25 symptoms most frequently presented at AG visits. At about one-half of all AG visits, one or more of these symptoms appeared. For most of them there is a ready linkage to the 25 diagnoses in table 3.

Gender differences in the ranking of these symptoms were uncommon. When they did occur, they generally showed a close parallel to the male-female differences found among the provenant diagnoses. For example, anxiety and nervousness, symptoms three times as frequent among AG females, are chiefly associated with a diagnosis of neurotic disorder, which is also found in a three to one ratio favoring AG females. (It deserves comment, however, that the overall findings testify to the relatively high degree of emotional health enjoyed by AG patients, whether male or female. This is further attested to by the finding that a symptom of depression was presented at fewer than 1 percent of AG visits.)

Symptoms

Formal diagnoses represent the objective bases on which the successful management of AG care principally depends. But also clinically relevant are the more subjective aspects of AG care, as represented by the complaints and symptoms that AG patients present. Indeed, a significant part of AG treatment may be almost wholly symptomatic; for example, the treatment of degenerative joint disease. As with the diagnoses,

Table 5. Number of mentions per 1,000 office visits of patients by age and selected diagnostic groups composed of all-listed diagnoses: United States, 1980 and 1981

All-listed diagnoses ¹ (in selected diagnostic groups) and ICD-9-CM code ²	All patients			Females			Males		
	75-79 years	80-84 years	85 years and over	75-79 years	80-84 years	85 years and over	75-79 years	80-84 years	85 years and over
Number of mentions per 1,000 visits									
Neoplasms 140-239	87	62	65	62	42	50	130	102	95
Endocrine, nutritional, and metabolic diseases and immunity disorders 240-279	110	103	89	117	93	81	98	123	105
Diseases of endocrine glands 240-259	86	84	59	93	74	55	74	104	*69
Mental disorders 290-319	42	33	34	49	44	*38	31	*11	*24
Nonpsychotic disorders 300-316	37	27	*30	44	37	*34	*25	*8	*21
Diseases of nervous system and sense organs 320-389	199	203	235	218	205	234	166	198	237
Eye disorders 360-379	151	149	177	170	146	176	118	153	181
Diseases of circulatory system 390-459	498	567	623	480	581	641	522	539	586
Essential hypertension 401	172	178	171	192	202	219	137	125	*76
Ischemic heart disease 410-414	122	141	142	109	134	127	146	155	172
Other selected circulatory diseases ³	161	199	242	158	189	240	164	221	247
Diseases of respiratory system 460-519	110	122	86	97	101	74	134	164	110
Diseases of digestive system 520-579	81	83	75	88	99	75	69	*51	*75
Diseases of genitourinary system 580-629	69	71	71	45	60	61	111	93	*89
Diseases of skin and subcutaneous tissue 680-709	55	53	69	51	46	86	63	68	*36
Diseases of musculoskeletal system 710-739	171	162	164	195	185	195	130	115	102
Arthropathies 711-716	100	100	117	118	116	140	69	66	*73
Symptoms, signs, and ill-defined conditions 780-799	53	70	64	51	66	66	56	78	*59
Injury and poisoning 800-999	67	59	50	73	66	54	58	*44	*41

¹All-listed diagnosis: Cumulates mentions as 1st-, 2d-, or 3d-listed diagnosis.

²Based on the *International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM)*.

³Includes heart failure (ICD 428); cardiac dysrhythmias (ICD 427); hypertensive heart disease (ICD 402); heart disease, ill-defined descriptions and complications (ICD 429); cerebrovascular disease, other and ill-defined (ICD 437); atherosclerosis (ICD 440); and angina pectoris (ICD 413).

It is noteworthy that the top-ranked symptom, dizziness, does not permit as easy a linkage to diagnosis as the linkage evident for most of the other symptoms on the list. Transient cerebral ischemias, for example, were associated with fewer than 5 percent of the dizziness visits. Worthy of exploration are the possible effects of the more intensive use of drugs in AG treatment.

A complaint of pain was presented at roughly 21 percent of the 82,454,000 AG visits, a proportion only slightly greater than the comparable proportion (20 percent) found among patients under 75 years old. Of these 17,123,000 pain-associated AG visits, five diagnostic categories accounted for a clearly dominant proportion (76 percent).

Category	Percent of all pain-associated visits
Diseases of the musculoskeletal system	34.0
Diseases of the circulatory system	18.5
Diseases of the digestive system	9.2
Injuries	8.1
Diseases of the nervous system and sense organs	6.2

The findings in table 7 express the sex-age dispersions of the pain-associated AG visits. They reveal that pain was more apparent among the AG females than among the males, reaching its highest proportion (23.4 percent) among females in the

subgroup 80-84 years. Beyond the 84th year, the proportion of pain-associated visits declined among female patients while remaining roughly the same among the male subgroup.

Medication Therapy

Figure 1 illustrates the prominent role played by drugs in the office-based care of the advanced aging. Seven of every ten AG visits were *drug visits*; that is, they involved the utilization of one or more medications. For four of these seven drug visits, drug therapy was the only form of treatment applied.

To assess the volume and nature of the drug therapy applied by office-based practitioners, survey procedure required that the physician respondents list up to eight of the medications that they ordered or provided in the course of the visit. Non-prescription as well as prescription drugs were recorded and, along with any new drugs, continuing drugs were listed, if the patient was specifically instructed during the visit to continue the medication. The resulting drug mentions were distributed according to the age and sex patterns shown in table 8.

It is clearly evident that the average rate of drug mentions for the AG group well exceeded the rate of use found for the younger group. Two major indicators support this more intensive use of drug therapy:

- An estimated 70 percent of AG visits were drug visits, an increase of 9-10 percent over the proportion found for drug visits by the younger group.

Table 6. Number of mentions per 1,000 office visits of patients 75 years old and over by the 25 all-listed symptoms most frequently presented and rank of symptoms by sex: United States, 1980 and 1981

Rank	Most frequent all-listed ¹ symptoms	Number of mentions per 1,000 visits	Rank order by sex of patient	
			Females	Males
1	Dizziness	38	1	3
2	Vision dysfunctions	34	2	7
3	Back pain	32	4	2
4	Leg pain	31	3	6
5	Cough	28	6	4
6	Chest pain	27	5	8
7	Shortness of breath	26	9	1
8	General weakness	26	8	5
9	Knee pain	20	7	*25
10	Skin lesion	20	11	9
11	Abdominal pain	19	13	10
12	Headache	18	10	*18
13	Foot and toe pain	17	14	11
14	Tiredness and exhaustion	15	16	*13
15	Hip pain	15	15	*16
16	Abnormal sensations of the eye	14	12	*40
17	Head cold	12	20	*14
18	Shoulder pain	12	18	*22
19	Anxiety and nervousness	12	17	*51
20	Abnormal pulsations and palpitations	11	19	*23
21	Nausea	10	27	*19
22	Frequency and urgency of urination	10	32	*15
23	Generalized pain, site unspecified	10	22	*30
24	Symptoms of fluid abnormalities	10	21	*34
25	Skin irritations	9	24	*32

¹All-listed symptom: Cumulates mentions as 1st-, 2d-, or 3d-listed symptom.

- Roughly 44 percent of AG visits involved the provision of multiple drugs, an increase of about one-third over the multiple-use proportion found at visits by younger patients.

Within the AG group, there were significant gender differences in these two measures of drug intensity:

- The proportion of drug visits was higher among the AG females than among the males. (For both sexes, however, the proportion did not show an increase beyond the 84th year.)
- The relative exposure to multiple drugs was substantially greater among AG females, especially in the older two subgroups but, again, for both sexes it did not appear to increase beyond the 84th year.

Table 9 offers a ranked listing of the 25 drugs most frequently ordered or provided at AG visits. Two agents, hydrochlorothiazide (a diuretic) and digoxin (a cardiac drug) head the list by a considerable margin. Most of the other listed agents also link rather closely to the most frequent diagnoses listed in table 3 and the most frequent symptoms listed in table 6.

Table 7. Percent of office visits with symptomatic pain by sex and age of patient: United States, 1980 and 1981

Patient sex and age	Percent of visits with symptomatic pain ¹
Female	
Under 75 years old	19.3
75 years old and over	22.4
75-79 years old	22.5
80-84 years old	23.4
85 years old and over	20.2
Male	
Under 75 years old	20.0
75 years old and over	17.8
75-79 years old	19.3
80-84 years old	16.4
85 years old and over	15.6

¹Cumulates visits where symptomatic pain was a 1st-, 2d-, or 3d-listed reason for visiting the doctor.

Because the more frequent use of multiple medications at the AG visits may increase the threat of adverse interactions, the concomitant use of drugs needs detailed exploration not possible in this brief report. It may be instructive, however, to cite the 10 agents that most commonly appeared in conjunction

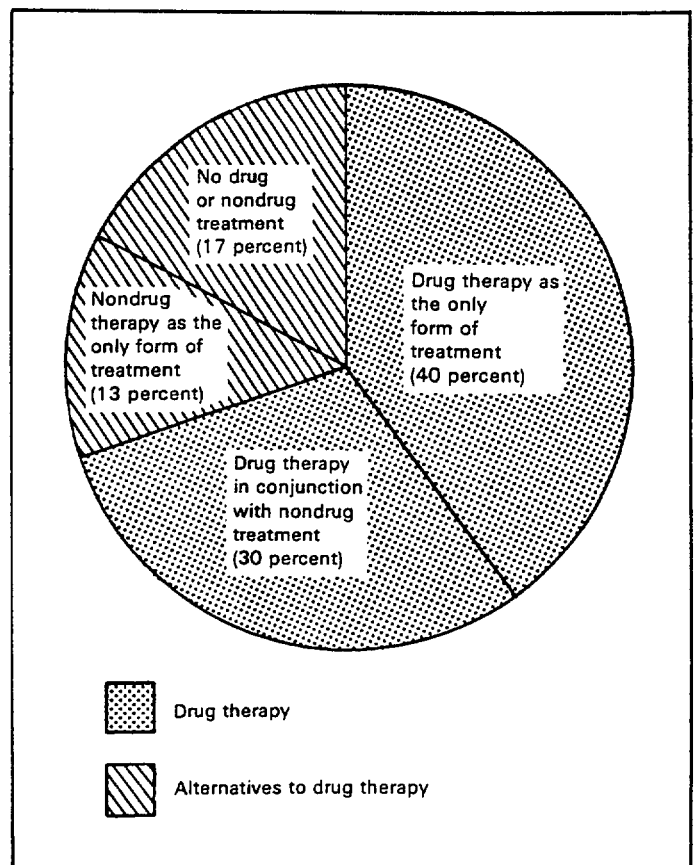


Figure 1. Percent distribution of office visits of persons 75 years and over by treatment modality: United States, 1980 and 1981

Table 8. Number and percent distribution of drug mentions, percent of office visits with at least 1 drug mention, and percent of office visits with multiple drug mentions, by age and sex of patient: United States, 1980 and 1981

Patient age and sex	Drug mentions		At least 1 drug mention	Multiple drug mentions
	Number in thousands	Percent distribution	Percent of visits	
All office patients	1,330,746	100.0	61.8	30.9
All patients				
Under 75 years old	1,195,419	89.8	61.2	29.9
75 years old and over	135,327	10.2	69.5	44.0
75-79 years old	68,652	5.2	68.8	42.5
80-84 years old	41,914	3.1	70.4	45.8
85 years old and over	24,761	1.9	70.1	45.1
Female				
Under 75 years old	712,725	53.6	60.9	29.6
75 years old and over	91,301	6.8	70.8	45.4
75-79 years old	44,783	3.4	69.5	43.4
80-84 years old	29,402	2.2	72.1	47.4
85 years old and over	17,117	1.3	72.2	47.6
Male				
Under 75 years old	482,695	37.2	61.7	30.3
75 years old and over	44,026	3.3	67.2	41.3
75-79 years old	23,869	1.8	67.6	40.9
80-84 years old	12,512	0.9	67.1	42.5
85 years old and over	7,644	0.6	66.0	40.4

Table 9. Number of mentions per 1,000 office visits of the 25 drugs most frequently ordered or provided for patients 75 years old and over and rank by sex: United States, 1980 and 1981

Rank	Name of drug (generic)	Therapeutic effect	Number of mentions per 1,000 visits ¹	Comparable rank	
				Females	Males
1	Hydrochlorothiazide	Diuretic	126	1	2
2	Digoxin	Cardiac drug	109	2	1
3	Furosemide	Diuretic	69	3	3
4	Triamterene	Diuretic	46	4	4
5	Aspirin	Analgesic, and so forth	43	5	6
6	Propranolol	Cardiac drug	42	6	5
7	Methyldopa	Antihypertensive agent	36	7	13
8	Potassium replacement solutions	Replacement solution	35	9	9
9	Vitamin B-12	Vitamin	32	10	12
10	Nitroglycerin	Vasodilating agent	32	11	10
11	Isosorbide	Vasodilating agent	29	14	8
12	Reserpine	Antihypertensive agent	27	12	17
13	Multivitamins, general	Vitamin	25	13	21
14	Acetaminophen	Analgesic and antipyretic	23	16	14
15	Chlorthalidone	Diuretic	23	15	16
16	Dihydroergotamine	Treatment of migraine	20	19	15
17	Ibuprofen	Analgesic, anti-inflammatory	20	17	*31
18	Meclizine	Antinauseant	19	18	28
19	Theophylline	Spasmolytic agent	18	38	11
20	Iron preparations	Anti-anemia agent	17	20	27
21	Phenobarbital	Sedative	17	23	22
22	Chlorpropamide	Antidiabetic agent	17	25	23
23	Papaverine	Spasmolytic agent	16	21	*37
24	Spirolactone	Diuretic	15	28	*35
25	Tetracycline	Antibiotic	15	32	24

¹Includes mentions of an agent as a single-ingredient drug and its mentions as an ingredient of a combination drug.

with the ranking drug, hydrochlorothiazide. In rank order of frequency of co-occurrence these were as follows:

Rank	Drug
1.....	Triamterene
2.....	Digoxin
3.....	Methyldopa
4.....	Spironolactone
5.....	Reserpine
6.....	Propranolol
7.....	Hydralazine
8.....	Potassium replacement solutions
9.....	Aspirin
10.....	Furosemide

In tables 10 and 11 the individual agents are grouped into therapeutic classes. Generally, there was a predictable relationship between the mention rate of a given drug class and that of its associated diagnosis or symptom.

For the following drug classes the AG mention rate showed an increase over the average level found for younger office patients:

- Analgesics.
- Antineoplastic agents and estrogens. (When the estrogens used in the treatment of prostatic carcinomas are added to the formal class of antineoplastic agents, there is a predictable increase for AG males in the overall rate of antineoplastic mentions.)
- Cardiovascular-renal agents (including the spasmolytic agents used to relieve symptoms of the urinary tract).
- Gastrointestinal drugs (including the spasmolytic agents used in the symptomatic treatment of gastrointestinal hypermotility).
- Hematologics.
- Insulins and antidiabetic agents.

Table 10. Number of mentions per 1,000 office visits of drugs ordered or provided for patients under 75 years old and over 74 years old by selected drug categories: United States, 1980 and 1981

Selected drug categories ¹	All patients		Females		Males	
	Under 75 years	75 years and over	Under 75 years	75 years and over	Under 75 years	75 years and over
	Number of mentions per 1,000 visits					
All drug mentions.....	1,108	1,641	1,103	1,707	1,117	1,520
Antihistamine drugs.....	79	28	73	34	88	18
Anti-infective agents (systemic).....	187	94	176	85	204	109
Antineoplastic agents.....	8	9	10	9	5	*9
Autonomic drugs.....	42	48	41	52	43	40
Blood formation and coagulation.....	13	31	15	29	9	36
Cardiovascular drugs.....	96	367	81	385	117	333
Cardiac drugs.....	39	175	31	177	51	172
Antihypertensive agents.....	36	97	35	115	37	65
Vasodilating agents.....	19	92	15	89	27	96
Central nervous system drugs.....	179	261	187	290	168	209
Analgesics and antipyretics.....	96	159	94	173	99	132
Antidepressants.....	17	20	20	24	13	*13
Major tranquilizers (for example: thorazine).....	8	10	8	12	8	*7
Minor tranquilizers (for example: diazepam), sedatives, and hypnotics.....	40	57	44	66	35	38
Respiratory and cerebral stimulants.....	12	10	15	12	6	*6
Replacement solutions.....	12	36	12	39	11	31
Diuretics.....	65	215	68	226	61	194
Expectorants and cough preparations.....	33	16	30	13	37	21
Ophthalmic drugs.....	30	74	28	72	34	76
Agents used to treat glaucoma.....	4	28	4	29	6	26
Mydriatics and cycloplegics.....	3	10	3	*7	3	*14
Anti-infective and anti-inflammatory agents.....	19	26	17	24	21	30
Gastrointestinal drugs.....	39	76	38	85	40	59
Antacids.....	6	11	6	11	6	*11
Laxatives.....	6	18	6	20	5	*13
Emetics and anti-emetics.....	6	19	7	22	5	*15
Miscellaneous (chiefly agents used to treat duodenal ulcer).....	9	12	8	14	11	*9
Hormones and synthetic substances.....	93	125	112	127	64	121
Adrenals (systemic).....	33	38	33	40	34	34
Estrogens.....	11	16	17	13	*1	21
Insulins and antidiabetic agents.....	17	46	16	43	18	51
Thyroid and antithyroid.....	9	15	13	18	3	*9
Serums, toxoids, and vaccines.....	41	18	34	22	51	*12
Skin preparations.....	91	70	90	66	93	77
Spasmolytic agents.....	17	46	13	40	23	56
Vitamins.....	36	68	49	75	18	56
Vitamin B complex.....	10	38	12	41	7	33

¹Drug categories are adapted from 2 sources: The therapeutic categories of the American Hospital Formulary Service, reproduced with permission of the American Society of Hospital Pharmacists, and the drug classes used in the *National Drug Code Directory*, 1982 edition.

Table 11. Number of mentions per 1,000 office visits of drugs ordered or provided for patients 75 years old and over by age, sex, and selected drug categories: United States, 1980 and 1981

Selected drug categories ¹	All patients			Females			Males		
	75-79 years	80-84 years	85 years and over	75-79 years	80-84 years	85 years and over	75-79 years	80-84 years	85 years and over
	Number of mentions per 1,000 visits								
All drug mentions	1,585	1,696	1,716	1,629	1,790	1,788	1,509	1,510	1,573
Anti-infective agents (systemic)	92	103	83	82	99	70	109	112	107
Autonomic drugs	47	47	52	54	50	53	36	*42	*49
Blood formation and coagulation	26	34	43	*22	*29	51	34	*44	*27
Cardiovascular drugs	353	379	389	370	406	392	323	324	381
Cardiac drugs	162	187	195	166	185	195	155	190	195
Antihypertensive agents	94	101	101	109	126	116	69	*51	*72
Vasodilating agents	93	91	92	89	94	82	97	83	113
Central nervous system drugs	267	277	217	292	318	234	224	195	183
Analgesics and antipyretics	160	166	141	172	189	146	139	121	131
Major tranquilizers (for example: thorazine) and antidepressants	34	29	20	41	35	*22	*23	*18	*13
Minor tranquilizers (for example: diazepam), sedatives, and hypnotics	57	66	40	65	81	*45	42	*36	*31
Replacement solutions	29	40	54	28	44	64	29	*32	*34
Diuretics	195	227	254	200	241	276	187	197	210
Ophthalmic drugs	73	70	87	70	74	83	79	63	95
Gastrointestinal drugs	69	73	99	72	94	106	65	*32	*86
Hormones and synthetic substitutes	132	127	100	142	117	101	115	147	99
Adrenals (systemic)	38	41	35	40	44	*37	35	*33	*32
Insulins and antidiabetic agents	48	48	38	51	35	*32	41	73	*48
Skin preparations	65	69	88	56	66	97	80	74	*69
Spasmolytic agents	44	46	52	40	37	47	51	65	*61
Vitamins	59	71	91	70	74	91	40	67	*90

¹Drug categories are adapted from 2 sources: The therapeutic categories of the American Hospital Formulary Service, reproduced with permission of the American Society of Hospital Pharmacists, and the drug classes used in the *National Drug Code Directory*, 1982 edition.

- Ophthalmic drugs.
- Sedatives, hypnotics, and minor tranquilizers. (The increase is apparent only for AG females; it seems at least partly linked to the increased presence of symptomatic pain.)
- Vitamins.

For the remaining drug classes, the AG mention rate either fell below or roughly equaled the rate for younger office patients.

- In spite of the increased presence of inflammatory disorders among AG patients, it is noteworthy that the mention rate for the systemic, anti-inflammatory agents differed little between AG sufferers and the younger patients. In contrast, the use of the nonsteroidal anti-inflammatory agents (not treated as a separate class in tables 10 and 11) nearly doubled for AG patients, increasing from 69 mentions per 1,000 visits for the younger group to a rate of 124 mentions per 1,000 visits for the AG group. It is evident that the nonsteroidals were preferred for the routine maintenance therapy that is so much a part of AG care.
- Parallel with the diagnostic findings in table 5, skin preparations, although their average use is more intensive among the younger patients, showed their highest single rate of mention among AG females over 84 years of age.
- Finally, there was a noteworthy decrease between younger and older patients in the mention intensity of two sensitive drug categories, controlled drugs and combination drugs. For controlled drugs the mention proportion declined from

8-9 percent for the younger group to about 6 percent for the AG patients. The controlled drugs most frequently mentioned in AG care were the minor tranquilizers or sedatives. For combination drugs the mention proportion decreased from 25 percent for the younger group to about 20 percent among the AG patients, the decline being most apparent among the opioid-nonopioid combinations.

Nonmedication therapy

In sheer volume, the role of nonmedication therapy in AG care is by no means as imposing as that played by drug therapy. This is apparent from figure 1, which shows that nonmedication therapy was ordered or provided at fewer than one-half (43 percent) of AG visits, at about two-thirds of which it occurred concomitantly with the use of one or more drugs.

Of six nonmedication procedures ordered or provided in AG care (table 12), five either fell below or roughly equaled their proportionate use among patients under 75 years of age. These were physiotherapy, office surgery, psychotherapy, diet counseling, and family or social counseling. Three of these procedures warrant comment.

- *Office surgery*—Although relatively less frequent among the AG group as a whole, surgical procedures showed their highest single intensity of use among AG females in the subgroup over 84 years of age. (This was chiefly due to surgical intervention in the treatment of the senile keratoses.)

Table 12. Number and percent of office visits of patients, by age and nonmedication therapy ordered or provided: United States, 1980 and 1981

Nonmedication therapy ¹	All patients				
	Under 75 years	75 years and over	75-79 years	80-84 years	85 years and over
	Number of visits in thousands				
All office visits.	1,078,468	82,454	43,309	24,713	14,431
	Percent of visits				
No nonmedication therapy.	53.6	56.6	57.0	56.7	55.5
Physiotherapy	4.9	4.1	4.2	4.1	3.8
Office surgery	7.5	5.9	5.7	5.1	7.9
Psychotherapy or therapeutic listening.	5.1	3.0	3.1	2.9	*2.7
Diet counseling.	8.1	8.1	8.1	8.3	7.6
Family and social counseling.	2.1	1.4	1.2	*1.6	*1.3
Medical counseling ²	22.8	26.4	26.1	26.3	27.5

¹Selected procedures.

²Probably also includes instruction on drugs provided.

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

- *Psychotherapy or therapeutic listening*—Along with the diagnostic and symptomatic evidence examined earlier, the infrequent resort to these procedures among AG patients offers further testimony to a relatively high degree of emotional health.
- *Family and social counseling*—One reason for the minimal use of these procedures may derive from the fact that they were marginal to treating the kind of specific, physiologically rooted morbidity that dominates AG visits. (It is estimated that 94 percent of all AG visits were strongly illness oriented.) But the main reason is probably that AG patients simply did not need this kind of counseling to the extent required by aging patients in other treatment environments. The same survivor toughness that produced fewer emotional problems among the ambulatory aging

may have enabled them to cope independently with family and social problems.

As the form of counseling most directly applicable to the practical, on-going management of chronic illness, it was predictable that *medical counseling*—to include instruction in the use of drugs—would be relatively more common among AG patients than among younger counterparts.

Other visit characteristics

As a group, AG patients seldom changed doctors; about 92 percent of their visits were made to the physician with whom they had an established relationship (table 13). Thus continuity of care is seen to be a hallmark in the management of the aging, ambulatory patient. Of their visits to other physicians (8 percent), about one-half were referred by the parent physician.

Table 13. Percent distribution of office visits of patients by referral status and patient-problem status, according to age: United States, 1980 and 1981

Referral status and patient-problem status	All patients				
	Under 75 years	75 years and over	75-79 years	80-84 years	85 years and over
	Number of visits in thousands				
All office visits.	1,078,468	82,454	43,309	24,713	14,431
	Percent distribution				
All office visits.	100.0	100.0	100.0	100.0	100.0
Referral status					
Referred by another physician	4.5	3.9	3.9	3.0	5.3
Not referred.	95.5	96.1	96.1	97.0	94.6
Patient-problem status					
New patient.	14.8	8.3	8.4	7.2	9.7
Established patient.	85.1	91.8	91.7	92.8	90.4
New problem.	22.9	13.9	14.5	13.5	12.7
Continuing problem	62.2	77.9	77.2	79.3	77.7

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

Voluntary doctor selection probably occurred at fewer than 4 percent of AG visits.

About 8 of every 10 AG visits was a return (progress) visit, usually for one or more of the chronic problems discussed earlier. The presentation of new problems by AG patients generally signaled the onset of one of the sequellae of the long-standing, chronic diseases, for example, diabetic retinopathy aggravated by hypertension.

Although the average proportion of referrals did not differ significantly between the AG and the younger group, there was a noteworthy increase in referred visits among AG patients in the subgroup over 84 years of age (table 13). Earlier diagnostic evidence suggests that this increased need for specialized attention was chiefly the result of three intensifying conditions: circulatory problems, eye disorders, and skin diseases.

In their followup instructions to AG patients, physicians were substantially more specific than they were with the younger group (table 14), because the conditions monitored were, in large part, intensifying problems that offered little or no hope for complete remission. Thus the disposition instruction "return at specified time" was markedly more frequent at AG visits. "Telephone followup," a monitoring procedure certainly less taxing to the aging, was, on the average, no more frequent among AG patients than among younger patients.

Findings suggest that physicians spend more time in face-to-face contact with AG patients than they do with younger patients, but, on the average, this increased encounter time only amounted to an additional 1 or 2 minutes (table 14). The longest average duration of contact, between 17 and 18 minutes, occurred with AG patients 80 years old and over. Probably

much of this increased contact time was due to the need for relatively more medical counseling and instruction in the use of medications.

Providers

The final aspect of AG care to be explored is that of the doctors of medicine and osteopathy providing the care (table 15). Four providers, general physicians, family physicians, internists, and ophthalmologists, accounted for three-fourths of the AG visits. It is noteworthy that two of these providers—the general physician and the family physician—are *generalists*, in the breadth of their clinical scope and in the demographic fact that their patients range from one end of the age continuum to the other. Their combined visit proportion (36 percent) constitutes the largest single share of the 82,454,000 AG visits, exceeding the comparable proportion (33 percent) found for the group under 75 years old.

Next in relative frequency are the visits to internists. Their proportion of AG visits (23 percent) was double the comparable proportion found for the younger group. Although internists qualify as generalists in many of their practice characteristics, it is probably their specialist skills in managing the circulatory diseases that account chiefly for their prominent position in AG care.

The increased presence of eye disorders among AG patients (tables 4 and 5) is predictably paralleled by the increased frequency of their visits to the ophthalmologist.

With diagnostic correlates that are obvious, it was expected that nearly two-thirds of the 3,197,000 referred visits

Table 14. Percent distribution of office visits of patients by visit disposition and duration, according to age: United States, 1980 and 1981

Disposition and duration	All patients				
	Under 75 years	75 years and over	75-79 years	80-84 years	85 years and over
	Number of visits in thousands				
All office visits	1,078,468	82,454	43,309	24,713	14,431
	Percent of visits				
All office visits	100.0	100.0	100.0	100.0	100.0
	Disposition ¹				
No followup	11.9	5.7	6.2	5.6	4.4
Return at specified time	59.7	72.8	72.3	72.8	74.2
Return if needed	23.2	16.6	16.0	17.0	16.0
Telephone followup	3.4	3.5	3.3	3.2	4.4
Admit to hospital	2.2	3.3	3.2	2.9	4.2
	Duration ²				
0 minute ³	2.6	1.8	1.8	2.0	*1.7
1-10 minutes	43.4	34.1	35.9	32.0	32.3
11-30 minutes	47.9	58.5	57.1	60.8	59.4
31 minutes or more	6.1	5.5	5.3	5.2	6.7
Mean visit duration ⁴ in minutes	15.8	16.7	16.4	17.1	17.4

¹Selected alternatives. Therefore, figures will not add to totals.
²Figures may not add to totals due to rounding.
³No face-to-face encounter between physician and patient.
⁴Includes only face-to-face encounters between physician and patient.

Table 15. Percent distribution of office visits of patients by specialty of the attending physician according to sex and age of patient: United States, 1980 and 1981

Physician specialty	All patients		Females		Males	
	Under 75 years	75 years and over	Under 75 years	75 years and over	Under 75 years	75 years and over
Number of office visits in thousands						
All office visits	1,078,468	82,454	646,220	53,498	432,248	28,956
Percent distribution						
All office visits	100.0	100.0	100.0	100.0	100.0	100.0
General and family practice	32.6	36.4	32.4	37.8	33.0	33.8
Internal medicine	11.6	23.1	11.2	23.1	12.2	23.0
General surgery	5.2	5.5	4.9	5.5	5.8	5.3
Obstetrics and gynecology	10.0	1.0	16.6	1.5	-	-
Orthopedic surgery	4.9	3.2	3.7	3.8	6.7	1.9
Cardiovascular disease	1.2	2.9	0.9	2.4	1.6	3.9
Dermatology	4.5	3.4	4.5	3.7	4.4	3.0
Urology	1.6	3.3	0.9	1.2	2.5	7.2
Psychiatry	2.9	*0.4	2.8	*0.4	3.1	*0.4
Neurology	0.6	*0.4	0.5	*0.4	0.6	*0.6
Ophthalmology	4.8	12.6	4.6	13.2	5.2	11.6
Otolaryngology	2.3	1.6	2.0	1.5	2.7	1.8
All other specialties	17.7	6.2	15.0	5.5	22.2	7.5

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

made by AG patients would be to five specialists:

Specialists	Percent of referred visits
Internist	16.3
General surgeon	15.5
Ophthalmologist	14.6
Orthopedic surgeon	*10.9
Dermatologist	*7.9

Summary

Office-based ambulatory care of the advanced aging may be generally characterized by the following features:

- Female patients accounted for two-thirds of the care.
- At most of the visits the physician had to cope with multiple diagnoses.
- Most of the morbidity encountered took the form of long-term, physiologically rooted, chronic diseases or their sequelae.
- The sharply reduced prospect for complete cure led to an emphasis on routine maintenance care carefully monitored by the physician.
- The strong, illness-based focus led to a reduced use of nonillness care, including measures that were considered marginal to the direct management of the illness (for example, family and social counseling).
- Drug therapy was markedly more frequent than other treatment mechanisms. It was relatively more intense with females than with males.
- The increased use of multiple drugs created more potential for adverse interactions.
- Physicians gave evidence of an increased conservatism in the use of controlled and combination drugs.
- There is a need for further study of the possible linkage between the increased intensity of drug use and such frequently occurring symptoms as dizziness and blurred vision.
- Mental and emotional illness, including what is loosely referred to as "senility," was a relatively minor problem for both sexes.
- An increase in the female use of sedatives, hypnotics, and minor tranquilizers may be due less to the existence of emotional illness than to the increasing presence of symptomatic pain.
- A long-standing relationship between physician and patient is the rule. Referrals are relatively infrequent, as is voluntary doctor shopping.
- Most of the care, general or specialized, occurred in the offices of three primary care physicians: the general physician, the family physician, and the internist.
- The average contact between physician and patient lasted about 17 minutes, only about 1 minute longer than the average contact with younger patients.
- These oldest of office patients display a certain survivor toughness of mind and body that needs further exploration—especially among patients in the oldest, open-ended subgroup.

Technical notes

Source of data and sample design

The estimates presented in this report are based on the findings of the National Ambulatory Medical Care Survey (NAMCS), a yearlong sample survey of office-based care conducted by the National Center for Health Statistics. Findings for two survey years, 1980 and 1981, were combined to produce the estimates. The target universe of NAMCS is composed of office visits made by ambulatory patients to non-Federal and noninstitutional physicians who are principally engaged in office-based patient care practice. Visits to physicians practicing in Alaska and Hawaii are excluded from the range of the survey, as are visits to anesthesiologists, pathologists, and radiologists.

Table I. Approximate relative standard errors of estimated numbers of office visits and of drug mentions when the drug is listed by product name (for example, Valium), based on all physician specialties: National Ambulatory Medical Care Survey, 1980 and 1981

<i>Estimated number of office visits or specific drug mentions in thousands</i>	<i>Relative standard error in percent</i>
*200.....	*44.8
*400.....	*31.7
*450.....	*30.0
600.....	26.0
800.....	22.6
1,000.....	20.2
2,000.....	14.5
5,000.....	9.5
10,000.....	7.1
20,000.....	5.6
50,000.....	4.4
100,000.....	3.9
200,000.....	3.6
500,000.....	3.5
1,000,000.....	3.4

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

NAMCS uses a multistage probability sample design that involves a step-wise sampling of primary sampling units, physicians' practices within primary sampling units, and patient visits within physicians' practices. The physician sample (5,805 for the 2-year period) was selected from master files maintained by the American Medical Association and the American Osteopathic Association. Those members of the sample who were in scope and available participated at a rate of 77.3 percent. Responding physicians completed visit records for a systematic random sample of their office visits during a randomly assigned 7-day reporting period. During the combined years 1980 and 1981, responding physicians completed 89,447 visit records, of which 6,384 were records of visits by patients 75 years old or over. Characteristics of the physician's practice, such as primary specialty, were obtained or confirmed during an induction interview. The National Opinion Research Center, under contract to the National Center for Health Statistics, was responsible for the field operations of the survey.

Sampling errors and rounding

The sampling error is a measure of the sampling variability that occurs by chance because only a sample, rather than the entire universe, is surveyed. The relative standard error of an estimate is obtained by dividing the standard error by the estimate itself and is expressed as a percent of the estimate. In this report, any estimate that exceeds a relative standard error of 30 percent is marked with an asterisk. Table I should be used to obtain the relative standard error for aggregates of office visits. Standard errors for estimated percents of visits (or for rates per 1,000 visits reduced to percents) are shown in table II.

The determination of statistical inference is based on a one-sided *t*-test with a critical value of 1.645 (0.05 level of confidence). Terms relating to differences, such as "exceeded" or "fell below" indicate that the differences are statistically significant. Terms such as "similar" or "roughly equal" mean that no statistical significance exists between the estimates be-

Table II. Approximate standard errors of percents of estimated numbers of office visits based on all physician specialties: National Ambulatory Medical Care Survey, 1980

<i>Base of percent (number of office visits in thousands)</i>	<i>Estimated percent</i>					
	<i>1 or 99</i>	<i>5 or 95</i>	<i>10 or 90</i>	<i>20 or 80</i>	<i>30 or 70</i>	<i>50</i>
	Standard error in percent					
500.....	2.7	5.9	8.1	10.8	12.4	13.5
1,000.....	1.9	4.2	5.7	7.6	8.7	9.5
2,000.....	1.3	2.9	4.0	5.4	6.2	6.7
5,000.....	0.8	1.9	2.6	3.4	3.9	4.3
10,000.....	0.6	1.3	1.8	2.4	2.8	3.0
20,000.....	0.4	0.9	1.3	1.7	2.0	2.1
50,000.....	0.3	0.6	0.8	1.1	1.2	1.3
100,000.....	0.2	0.4	0.6	0.8	0.9	1.0
500,000.....	0.1	0.2	0.3	0.3	0.4	0.4

EXAMPLE OF USE OF TABLE: An estimate of 30 percent based on an aggregate of 15,000,000 visits has a standard error of 2.4 percent, or a relative standard error of 8 percent (2.4 percent divided by 30 percent).

ing compared. Estimates have been rounded to the nearest thousand.

Any questions regarding these findings or the survey procedures that produced them may be addressed to—

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