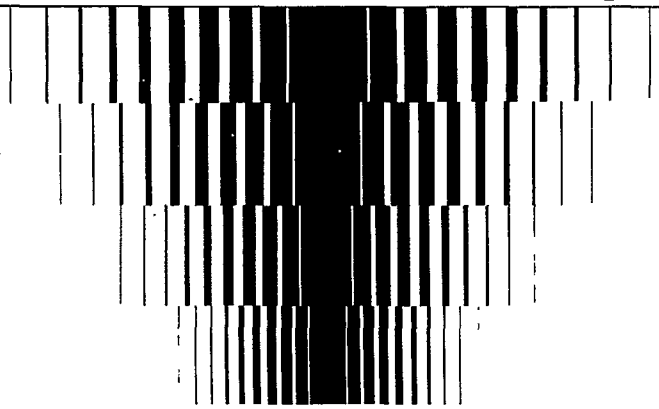
National Medical Care Utilization and Expenditure Survey

Utilization of Hospital Emergency and Outpatient Departments: United States, January-June 1980

Preliminary Data Report No. 2



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Overview

The hospital emergency department and hospital-based outpatient department are important components of the health care delivery system. Each of these facilities was established to provide a particular level of care. The emergency department was designed to provide acute care, and the hospital-based outpatient department was designed to provide primary and secondary care (Cambridge Research Institute, 1976). To assess whether each of these facilities is meeting its intended purpose, it is necessary to determine how and by whom the facility is being used.

In fact, apparent changes during the last 20 years in the levels and kinds of care provided in these facilities has caused concern as to whether they are being utilized appropriately (Davidson, 1978; Cambridge Research Institute, 1976). Estimates from the National Health Interview Survey indicate that of all ambulatory physician visits, visits to physicians occurring in hospital outpatient departments and emergency departments increased from 11 percent in 1970 to 13 percent in 1980 (National Center for Health Statistics, 1978; Collins, to be published). To understand changes in the utilization of hospital ambulatory facilities, current and reliable estimates are needed.

In this report, the utilization patterns of the emergency department and the hospital-based outpatient department are discussed for January through June 1980 in terms of people with visits and number of visits. The estimates presented represent the civilian noninstitutionalized population in the United States, and they are based on data collected on approximately 17,900 people. Utilization of the emergency department and the outpatient department is described by selected characteristics. Estimates are shown by five variables: age, sex, race, 1979 family income, and condition. In addition, the reason for selecting the emergency department and the type of service received in the outpatient department are presented.

The information presented is from a single national health survey, the National Medical Care Utilization and Expenditure Survey. This panel survey, conducted during the 1980 calendar year, was designed to collect detailed information regarding utilization of medical services and expenditures for medical care in the United States. Descriptions of survey methodology and variances as well as definitions of terms are included in the Technical Notes section. No adjustments to the data have been made for any confounding or intervening variables. For example, age and family income are interrelated, but in this report they are treated independently.

Data Highlights

Preliminary estimates of hospital-based ambulatory care from the National Medical Care Utilization and Expenditure Survey indicate that during the first 6 months of 1980:

- Visits to emergency departments accounted for 6 percent of the 581 million ambulatory medical visits.
- 11 percent of the population visited an emergency department.
- 9 percent had only one visit to an emergency department.
- 2 percent had two or more visits to an emergency department.

- 14 percent of the visits to an emergency department were perceived as life threatening.
- Visits to hospital outpatient departments accounted for 11 percent of all ambulatory medical visits.
- 11 percent of the population visited a hospital outpatient department.
- 6 percent had only one visit to an outpatient department.
- 5 percent had two or more visits to an outpatient department.

Survey Background

The preliminary estimates discussed are based on information collected at approximately 3-month intervals during interviews with members of families. In each interview usually one respondent reported medical care received and health expenditures incurred for each family member during a specified interval. They also reported information regarding disability days, illness episodes, and socio-demographic characteristics for each member of the family. If no one in the family was able to respond, a proxy acted as respondent.

No attempt was made to verify the information reported by the respondent with either a medical provider or medical records. However, to minimize reporting and recall errors, respondents were asked to check available records and verify the information. In addition, two memory aids were given to each family: a calendar and a summary. The calendar, given to each family during the initial interview, had a pocket for bills and space for recording medical care received by each member. After the first interview, the summary, a composite of previously reported medical and expenditure information on each family member, was reviewed by the interviewer and respondent during each interview. These aids facilitated reporting of accurate information and correcting of erroneous data.

Doubling the preliminary estimates reported for the first 6 months of 1980 will not necessarily provide reliable estimates for the full year. In their review of emergency department and inpatient service data, Webb, Taylor, and Cannon found that visits to the emergency department fluctuated seasonally (1978); emergency department utilization increased during May through October and declined from November through April. Thus the inclusion of information for July through December 1980 is necessary for accurate yearly estimates.

Discussion

Hospital Emergency Department

Person characteristics—In the first 6 months of 1980, 11 percent of the population sought medical care at least once in an emergency department (Table 1). Only 2 percent had two or more visits during the 6-month period. As shown in Table 1, the percent of people with visits to the emergency department was lower for the age group 45 years and over than for under 17 years of age. Approximately 14 percent of those under 17 years of age had at least one visit. Of those 45 years of age and over, 8 percent visited an emergency department.

Table 1 also shows differences in the utilization of the emergency department according to family income. People with family incomes of $10,000 or less were more likely to go to the emergency department for medical attention than those with family incomes of $25,000 or more.

Visit characteristics—Traditionally, an emergency department has been a hospital facility providing medical services to people who require immediate medical or surgical intervention. Medical care is usually available in the department 24 hours a day, 7 days a week. In addition to its traditional role of managing critically ill patients, the emergency department has progressively become a backup or substitute for other ambulatory care facilities by treating patients with uncomplicated medical problems. Findings from the National Health Interview Survey (NHIS) suggest that the emergency department is the usual source of care for a small percent of people. In 1974, the emergency department was the usual source of care for 0.5 percent of those who had a regular source of care. Nearly 5 percent reported that they usually visited the outpatient department for care (Drury, 1978). According to data from the 1978 NHIS, 1 percent of women 17-44 years of age used the emergency department as their usual source of care, compared with approximately 5 percent who used the outpatient department (Kovar, 1979).

In the National Medical Care Utilization and Expenditure Survey (NMCUES), the reason the visit took place in the emergency department was identified through three questions: The first determined whether the condition was life threatening; the second determined whether the problem was serious, that is, if medical attention was required within a few hours; and the third determined the main reason for selecting the emergency department rather than an alternative source of care when there was no threat to life. The main reason stated by the respondent was recorded verbatim and immediately coded by the interviewer into one of the four precoded categories listed below:

- Other medical care not available at that time.
- Best or right place to go for that condition.
- Goes to emergency room for all or most medical care needs.
- Other.

Life-threatening conditions accounted for approximately 14 percent of the emergency department visits (Table 2). The percent of visits made by people 45 years of age and over that were for conditions perceived as life threatening was approximately twice the percent of such visits by people 17-44 years of age and by people under 17 years of age. Table 2 also shows the percent of visits that were for

Table 1

Percent distribution of persons according to whether they visited hospital emergency departments, by selected characteristics: United States, January-June 1980

Characteristic	Population in millions	Total	Persons with—			
			1 or more visits			No visits
			Total	1 visit only	2 or more visits	
		Percent distribution				
Total	217.3	100.0	11.2	9.1	2.2	88.8
Age						
Under 17 years	57.9	100.0	13.6	11.2	2.4	86.4
17-44 years	92.2	100.0	11.9	9.5	2.4	88.1
45 years and over	67.3	100.0	8.3	6.6	1.7	91.7
Sex						
Male	104.9	100.0	12.0	9.7	2.3	88.0
Female	112.5	100.0	10.5	8.5	2.1	89.5
Race						
White	182.9	100.0	10.9	8.9	2.0	89.1
All other[1]	34.5	100.0	13.0	10.0	3.0	87.0
Black	25.5	100.0	13.7	10.4	3.3	86.3
1979 family income						
Less than $10,000	50.5	100.0	13.2	10.0	3.2	86.8
$10,00-$24,999	91.2	100.0	11.6	9.6	2.1	88.4
$25,000 or more	50.9	100.0	8.7	7.3	1.3	91.3
Unknown	24.8	100.0	11.0	8.8	2.3	89.0

[1]Includes other races not shown as separate categories.

life-threatening conditions was higher for people with family incomes of less than $10,000 than for those with family incomes of $25,000 or more.

Eighty-five percent of the visits to the emergency department were for not-life-threatening conditions. Visits in which there was not a threat to life occurred in the emergency department primarily because other care was not available; for example, the physician could not be consulted or it was late (Table 2). Of all the visits to the emergency department, 37 percent were made because other care was not available.

The percent distribution in Table 2 suggests that the emergency department was not a regular source of care for most people. Overall, 4 percent of the visits were attributed to people who used the emergency department for all or most of their medical care. The percent of visits for this reason by black people was not significantly higher than the percent for white people. Those with family incomes of less than $10,000 had a higher percent of emergency department visits for this reason than those in other family income groups (Table 2).

Another way to assess the use of emergency departments is to infer the severity of the condition by whether the person was admitted to a hospital. According to estimates presented in Table 3, 14 percent of the visits to emergency departments resulted in hospital admission. Of the 4 million visits attributed to a perceived threat to life, 42 percent resulted in admission. Thirteen million visits were related to conditions that could become serious, and 14 percent of these resulted in admission. Finally, only 6 percent of the visits associated with conditions not expected to become serious resulted in admission.

Certain conditions are expected to be treated initially in the emergency department rather than some other facility. Summarized in Table 4 is the distribution of visits according to selected conditions. As expected, injuries, burns, and poisonings accounted for 41 percent of the visits to emergency departments. Diseases of the respiratory system, including conditions such as the common cold and influenza, were not expected to result in visits to the emergency department. However, they were the second most frequent cause of visits, accounting for 14 percent.

These preliminary findings suggest the following: Visits perceived as not life threatening occur in the emergency department because an alternative source of care is either not available when needed or the condition requires initial treatment in the emergency department. Visits to the emergency department do not usually occur because it is a regular source of care.

Hospital Outpatient Department

Person characteristics—Hospital outpatient departments originally functioned as facilities primarily for the

Table 2

Number and percent distribution of visits to hospital emergency departments, by perceived severity of condition, reason for selecting the emergency department, and selected characteristics: United States, January-June 1980

Characteristic	Number of visits in millions	Perceived severity of condition						
		Total[1]	Life threatening[2]	Not life threatening				
				Total[3]	Reason for selecting emergency department			
					Other care not available	Best place for that condition	Used for most medical care	Other
		Percent distribution						
Total	31.9	100.0	13.5	85.4	37.0	27.6	4.3	16.6
Age								
Under 17 years	9.9	100.0	10.0	88.8	44.3	26.4	3.7	14.4
17-44 years	14.2	100.0	10.3	89.1	37.3	28.3	5.1	18.3
45 years and over	7.9	100.0	23.6	74.6	27.2	28.1	3.3	16.0
Sex								
Male	16.0	100.0	12.6	86.1	35.4	30.0	3.7	17.0
Female	16.0	100.0	14.4	84.7	38.6	25.2	4.8	16.1
Race								
White	25.9	100.0	12.9	86.4	37.9	28.4	3.6	16.5
All other[4]	6.0	100.0	16.3	81.2	33.1	24.4	7.0	16.7
Black	4.8	100.0	16.5	80.8	33.5	23.7	6.5	17.1
1979 family income								
Less than $10,000	9.1	100.0	17.3	81.5	32.4	26.9	6.9	15.3
$10,000-$24,999	13.6	100.0	12.5	86.1	37.9	29.0	2.9	16.3
$25,000 or more	5.4	100.0	10.2	89.1	41.3	27.0	3.1	17.6
Unknown	3.8	100.0	12.6	87.0	38.5	25.3	4.4	18.8

[1] Includes visits for which the perceived severity was unknown.
[2] Condition required medical intervention within 1 hour.
[3] Includes visits for which the reason was unknown.
[4] Includes other races not shown as separate categories.

ambulatory, indigent population, that is, those who could not afford medical care elsewhere. Emphasis was placed on treating the illness rather than on prevention or health education (Cambridge Research Institute, 1976). Since the mid-1950's, the role of the hospital outpatient departments has changed; not only are illnesses treated but comprehensive health care, including preventive medicine, is provided.

Outpatient departments may be organized so that a person can visit, during the same day, several clinics (such as Pediatric, Obstetrics and Gynecology, and Eye) or a single clinic (such as Psychiatric). For this survey, if more than one clinic was visited on the same day, each visit was counted separately.

During January through June 1980, 11 percent of the population visited an outpatient department at least once (Table 5). Approximately 6 percent made one visit to an outpatient department and 5 percent made two or more visits. The percent of people with at least one visit to an outpatient department increased with age, from 9 percent of those under 17 years to 13 percent of those 45 years of age and over.

Where people go for medical care depends to some extent on family income. Thirteen percent of those with family incomes of less than $10,000 made at least one visit to an outpatient department, compared with 9 percent of those with family incomes of $25,000 or more.

The utilization pattern in Table 5 shows that about half of the people who visited the outpatient department made at least two visits during the 6-month period. This distribution was different from the distribution for emergency department visits during the same period (Table 1). It appears that outpatient departments provide medical services to people on a more regular basis than emergency departments.

People with family incomes of less than $10,000 were more likely to have two or more visits to outpatient departments than those with higher family incomes. Seven percent of the people with family incomes of less than $10,000 had two or more visits, compared with only 4 percent of those with family incomes of $25,000 or more.

Visit characteristics—In analyzing the utilization of outpatient departments, types of service received during the visits also were examined. This analysis provides insight into the demands made on the outpatient department by the community and the services being utilized.

The visits were categorized using a hierarchical scheme devised to attribute one service to a visit even when multiple

Table 3

Number and percent distribution of visits to hospital emergency departments according to whether they resulted in hospital admission, by perceived severity of condition and reason for selecting the emergency department: United States, January-June 1980

Perceived severity of condition and reason for selecting emergency department	Emergency department visits			
	Number in millions	Total[1]	Admitted to hospital	Not admitted to hospital
			Percent distribution	
All visits	31.9	100.0	14.2	83.1
Life threatening[2]	4.3	100.0	41.9	56.3
Not life threatening[3]	27.0	100.0	9.9	87.6
Other care not available	11.6	100.0	7.2	89.7
Best place for that condition	8.7	100.0	13.2	85.0
Used for most medical care	1.3	100.0	5.6	91.9
Other	5.2	100.0	11.3	86.4
Not life threatening:				
Expected to become serious[3,4]	13.2	100.0	14.2	83.8
Other care not available	6.0	100.0	9.7	87.9
Best place for that condition	4.4	100.0	19.8	78.7
Used for most medical care	0.6	100.0	11.3	87.0
Other	2.0	100.0	16.1	81.9
Not expected to become serious[3,5]	13.8	100.0	5.8	91.3
Other care not available	5.6	100.0	4.5	91.7
Best place for that condition	4.2	100.0	6.4	91.6
Used for most medical care	0.7	100.0	0.0	96.7
Other	3.2	100.0	8.3	89.1

[1]Includes unknown hospital admissions.
[2]Condition required medical intervention within 1 hour.
[3]Includes visits for which the reason was unknown.
[4]Condition required medical intervention within a few hours to prevent it from becoming serious.
[5]Condition required medical intervention but it was not expected to become serious if treatment was delayed for more than a few hours.

services were identified. In decreasing priority, the seven service categories were: Prenatal or postnatal care, Diagnosis or treatment, Family planning, Eye exam (for glasses), Immunization, General checkup, and Other. The hierarchical scheme and the types of service are explained further in Technical Notes. Visits for illness are categorized as diagnosis or treatment. Visits for services related to prenatal or postnatal care, general checkup, or eye exam were not considered illness-related visits.

Visits for diagnosis or treatment of an illness represented 81 percent of the outpatient department visits (Table 6). For each sociodemographic category, the percent of visits attributed to diagnosis or treatment was consistently higher than the percent attributed to services not related to illness. For people 45 years of age and over, diagnosis and treatment accounted for 86 percent of all visits, a higher percent than for either of the two younger age groups. The distribution by race was 82 percent for white people and 76 percent for people of all other races.

Even though the services provided were primarily for diagnosis or treatment, almost 18 percent of the visits to hospital outpatient departments were not initiated due to illness. People under 17 years of age had a higher percent of visits not related to illnesses than those 45 years of age and over.

According to the estimates in Table 6, the distribution of visits by sex was 18 percent for women and 17 percent for men. Eliminating visits for prenatal or postnatal care, visits not related to illness totaled 14 percent for women.

Table 6 also shows the utilization of the outpatient department by race. For people of all races other than white, 24 percent of outpatient department visits were not associated with illness. For white people the figure was 16 percent. General checkup accounted for 15 percent of the visits by people of races other than white compared with 10 percent of the visits by white people.

Table 4 presents the distribution of visits according to conditions treated. About 16 percent of the 64 million visits were not associated with illness. These visits were probably for a general checkup, immunization, or some other service. In contrast with utilization of the emergency department, there appears to be no single group of illnesses that was treated predominantly in the outpatient department. As already mentioned, injuries, burns, and poisonings represented 41 percent of emergency department visits. These conditions represented only 9 percent of outpatient department visits. Impairments accounted for 7 percent of outpatient department visits and about 4 percent of emergency department visits. Apparently the conditions for which people visit the outpatient department are more diverse than those for which they visit the emergency department.

NMCUES Comparison to Other Sources of Data

National data pertaining to the utilization of emergency departments and hospital outpatient departments are

Table 4

Percent distribution of visits to hospital emergency departments and hospital outpatient departments and corresponding estimated design effects (d_i), by condition: United States, January-June 1980

Condition	Emergency department visit		Outpatient department visit	
	Percent distribution	Design effects (d_i)	Percent distribution	Design effects (d_i)
All visits	100.0	...	100.0	...
No condition	3.6	1.54	16.3	9.47
Injuries, burns, and poisonings	41.1	2.08	8.8	9.71
Fractures, dislocations, sprains, strains	14.7	1.97	4.3	11.82
Open wounds and lacerations	11.0	0.94	0.9	3.05
Contusions and superficial injuries	5.1	1.32	0.7	2.43
Other injuries and poisonings	10.2	2.33	2.9	7.87
Diseases of respiratory system	13.8	1.28	9.8	10.48
Diseases of circulatory system	5.9	3.37	8.7	6.86
Genitourinary disorders	3.5	1.93	4.5	11.43
Pregnancy and complications of pregnancy	1.4	2.57	2.8	6.32
Impairments	3.7	1.67	7.0	9.32
Diseases of digestive system	4.3	1.67	3.2	3.67
Infective and parasitic diseases	4.5	1.75	3.1	3.75
Mental and nervous disorders	3.3	13.56	5.4	16.09
Neoplasms	0.8	1.37	[1]6.3	14.07
Other conditions	13.8	1.12	24.0	12.79
Unknown	0.3	0.70	0.0	1.01

[1]88.0 percent of the neoplasms are malignant.

NOTES: $Var\ (\hat{P}_{ij}) = \frac{\hat{P}_{ij}\ (100 - \hat{P}_{ij})}{n_j}\ d_i$, where $\hat{P}_{ij}$ is the percent from the respective column and row for each condition.

The number of visits to emergency departments was 31.9 million. The number of visits in the sample (n_j) was 2,570. The number of visits to outpatient departments was 64.2 million. The number of visits in the sample (n_j) was 5,129.

available from three other sources: the 1980 National Health Interview Survey (NHIS) of NCHS; the 1979 Annual Survey of Hospitals of the American Hospital Association; and the 1977 National Medical Care Expenditure Survey of the National Center for Health Services Research (NCHSR) and NCHS. The estimates from these surveys are summarized in Table 7.

National Health Interview Survey—Estimates of the number of visits to emergency departments and hospital outpatient departments for the first two quarters of 1980 were provided by the 1980 NHIS. As shown in Table 7, the NHIS estimate of emergency department visits was 25 million (unpublished data from the Division of Health Interview Statistics). Comparing this estimate with the number of visits estimated for the same period by NMCUES, 32 million, the NMCUES estimate appears high. However, the NHIS estimate excluded visits to the emergency department that resulted in a hospital admission. NMCUES estimated almost 5 million emergency department visits resulted in hospital admission. Adding this number to the NHIS estimate, the number of visits increases to 30 million. The remaining difference can be explained, at least in part, by differences in questionnaire design and data collection procedures plus the effects of sampling error in the two surveys.

The number of hospital outpatient department visits estimated for the first 6 months of 1980 by NHIS was 45 million (unpublished data from the Division of Health Interview Statistics). Although there were 64 million visits reported during the first 6 months of NMCUES, 43 million were to medical doctors, doctors of osteopathy, nurses, and physical therapists. The procedure and emphasis used in recording outpatient department visits in NHIS and NMCUES differed. Visits to medical persons other than doctors of medicine or doctors of osteopathy (for example, visits to dieticians) were not specifically collected in NHIS.

National Medical Care Expenditure Survey—The National Medical Care Expenditure Survey (NMCES) estimated 42 million emergency department visits and 64 million hospital outpatient department visits in 1977 (Wilensky, to be published). The NMCUES estimates cannot be compared directly to the NMCES estimates because they represent different years and time periods. Additional differences between the estimated number of visits in NMCES and NMCUES may be attributable to the different procedures used in the survey to count visits to clinics within the outpatient department.

The NMCES estimate of 64 million outpatient department visits for all of 1977 included only visits to doctors of medicine or doctors of osteopathy. The NMCUES estimate of 64 million outpatient department visits for one-half of 1980 is reduced to 43 million by excluding visits to medical persons other than doctors of medicine or doctors of osteopathy. The number of emergency department visits

Table 5

Percent distribution of persons according to whether they visited hospital outpatient departments, by selected characteristics: United States, January-June 1980

Characteristic	Population in millions	Total	Persons with—			
			1 or more visits			No visits
			Total	1 visit only	2 or more visits	
		Percent distribution				
Total	217.3	100.0	10.6	5.6	5.0	89.4
Age						
Under 17 years	57.9	100.0	8.5	4.6	3.9	91.5
17-44 years	92.2	100.0	10.3	5.6	4.7	89.7
45 years and over	67.3	100.0	12.7	6.3	6.4	87.3
Sex						
Male	104.9	100.0	9.2	4.9	4.4	90.8
Female	112.5	100.0	11.8	6.2	5.6	88.2
Race						
White	182.9	100.0	10.3	5.7	4.6	89.7
All other[1]	34.5	100.0	11.7	4.7	7.0	88.3
Black	25.5	100.0	11.6	4.6	7.0	88.4
1979 family income						
Less than $10,000	50.5	100.0	12.6	5.8	6.9	87.4
$10,00-$24,999	91.2	100.0	10.9	5.9	5.0	89.1
$25,000 or more	50.9	100.0	8.6	5.1	3.5	91.4
Unknown	24.8	100.0	9.0	4.7	4.3	91.0

[1] Includes other races not shown as separate categories.

estimated from NMCUES would also be reduced by excluding visits in which doctors of medicine or doctors of osteopathy were not seen.

American Hospital Association Annual Survey of Hospitals—Data from the 1979 Annual Survey of Hospitals conducted by the American Hospital Association estimated approximately 77 million visits to emergency departments and 127 million visits to hospital outpatient departments (American Hospital Association, 1980). These estimates vary from others because this survey was hospital based and the other surveys were population based. Further, hospitals may make distinctions between services not perceived by the patient.

Table 6

Number and percent distribution of visits to hospital outpatient departments, by type of service and selected characteristics: United States, January-June 1980

Characteristic	Number of visits in millions	Type of service						
		Total[1]	Illness-related for diagnosis or treatment	Not illness-related				All other[3]
				Total[1]	General checkup	Prenatal or post-natal care	Other[2]	
		Percent distribution						
All visits	64.2	100.0	80.8	17.7	10.7	2.2	4.7	1.3
Age								
Under 17 years	11.4	100.0	74.0	24.8	14.1	0.8	9.9	0.7
17-44 years	26.0	100.0	78.5	19.7	8.3	5.3	6.1	1.5
45 years and over	26.9	100.0	85.8	12.7	11.6	...	1.1	1.3
Sex								
Male	28.4	100.0	81.4	16.9	11.5	...	5.3	1.3
Female	35.8	100.0	80.2	18.2	10.0	4.0	4.2	1.2
Race								
White	50.3	100.0	82.2	16.0	9.5	2.0	4.6	1.5
All other[4]	13.9	100.0	75.4	23.6	15.0	3.4	5.2	0.4
Black	11.2	100.0	75.6	23.6	15.7	3.9	4.0	0.3
1979 family income								
Less than $10,000	18.2	100.0	81.2	16.9	12.3	1.9	2.6	1.7
$10,000-$24,999	28.4	100.0	79.4	19.1	9.2	3.3	6.6	1.3
$25,000 or more	12.5	100.0	85.2	13.1	9.4	0.5	3.2	0.8
Unknown	5.0	100.0	75.5	23.6	16.5	2.0	5.1	0.8

[1]Includes visits for which the services were unknown.
[2]Includes visits for eye exam, immunization, and family planning.
[3]Includes services not applicable to other categories.
[4]Includes other races not shown as separate categories.

Table 7

Number of visits to hospital emergency and outpatient departments as estimated from 4 national surveys: United States, selected years, 1977-80

Survey	Emergency department visits	Outpatient department visits
	Number in millions	
1980 National Medical Care Utilization and Expenditure Survey[1]	32	64
1980 National Health Interview Survey[1]	25	45
1979 Annual Survey of Hospitals of the American Hospital Association[2]	77	127
1977 National Medical Care Expenditure Survey[3]	42	64

[1]6-month estimate.
[2]Annual estimate of Federal and non-Federal hospitals, including non-Federal short-term general and other special hospitals.
[3]Annual estimate.

SOURCES: Division of Health Interview Statistics, National Center for Health Statistics: Unpublished data from the 1980 National Health Interview Survey; American Hospital Association: *Hospital Statistics, 1980 Edition.* Chicago, American Hospital Association, 1980; Wilensky, G. R.: Ambulatory physicians services, use, expenditures, and sources of payment. *National Health Care Expenditure Study,* Data Preview 15. Hyattsville, MD. National Center for Health Services Research. To be published.

Table 8

Number of persons or visits in the sample (n_i) in the first 6 months of the National Medical Care Utilization and Expenditure Survey and corresponding estimated design effects (d_i) for Tables 1, 2, 5, and 6, by selected characteristics: United States, January-June 1980

Characteristic	Table 1		Table 2		Table 5		Table 6	
	n_i (persons)	d_i	n_i (visits)	d_i	n_i (persons)	d_i	n_i (visits)	d_i
Total	17,442	2.39	2,570	2.31	17,442	7.31	5,129	5.76
Age								
Under 17 years	5,021	1.98	861	1.86	5,021	3.54	992	12.89
17-44 years	7,019	1.52	1,074	1.50	7,019	4.15	1,982	3.78
45 years and over	5,402	1.01	635	2.29	5,402	2.05	2,155	4.71
Sex								
Male	8,389	1.79	1,284	2.02	8,389	3.15	2,289	8.13
Female	9,053	1.67	1,286	1.68	9,053	3.91	2,840	5.60
Race								
White	14,780	2.13	2,111	2.08	14,780	6.32	4,067	5.37
All other[1]	2,662	1.92	459	1.99	2,662	2.39	1,062	6.20
Black	1,954	1.51	365	2.24	1,954	2.02	844	7.25
1979 family income								
Less than $10,000	4,071	1.68	728	2.00	4,071	1.82	1,445	3.41
$10,000-$24,999	7,335	1.91	1,097	2.18	7,335	5.20	2,268	8.67
$25,000 or more	4,058	0.88	437	1.43	4,058	2.85	1,005	3.61
Unknown	1,978	0.69	308	1.52	1,978	2.57	411	3.24

[1] Includes other races not shown as separate categories.

NOTE: $Var(\hat{P}_{ij}) = \frac{\hat{P}_{ij}(100-\hat{P}_{ij})}{n_i} d_i$, where $\hat{P}_{ij}$ is the percent from the specified table.

Table 9

Number of visits to hospital emergency departments (n_i) in the first 6 months of the National Medical Care Utilization and Expenditure Survey and corresponding estimated design effects (d_i) for Table 3, by perceived severity of condition and reason for selecting emergency department: United States, January-June 1980

Perceived severity of condition and reason for selecting emergency department	Table 3	
	n_i	d_i
All visits	2,570	1.58
Life threatening	347	1.41
Not life threatening[1]	2,171	1.07
Other care not available	944	1.12
Best place for that condition	691	1.03
Used for most medical care	107	0.95
Other	410	1.38
Not life threatening:		
Expected to become serious[1]	1,068	1.29
Other care not available	489	1.06
Best place for that condition	354	1.00
Used for most medical care	54	1.02
Other	160	1.16
Not expected to become serious[1]	1,103	1.47
Other care not available	455	1.42
Best place for that condition	337	1.18
Used for most medical care	53	0.80
Other	250	1.88

[1] Includes visits for which the reason was unknown.

NOTE: $Var(\hat{P}_{ij}) = \frac{\hat{P}_{ij}(100-\hat{P}_{ij})}{n_i} d_i$, where $\hat{P}_{ij}$ is the percent from Table 3.

Acknowledgments

The National Medical Care Utilization and Expenditure Survey was sponsored by the National Center for Health Statistics (NCHS) and the Health Care Financing Administration (HCFA). Robert R. Fuchsberg, NCHS, and Allen Dobson, HCFA, were the survey's co-project officers. Robert A. Wright, NCHS, and Larry S. Corder, HCFA, were primarily responsible for the administration of the Survey. Of the people in NCHS who assisted in the preparation of this report, Cecelia Snowden of the Office of Research and Methodology was primarily responsible for the preparation of the estimated design effects and the variance equation presented in the report.

Three contractors were responsible for the conduct of the Survey: the Research Triangle Institute, the National Opinion Research Center, and SysteMetrics, Inc. The Research Triangle Institute was the principal contractor. Daniel G. Horvitz of the Research Triangle Institute was the project director and primarily responsible for data collection. Esther Fleishman of the National Opinion Research Center, Robert H. Thornton of the Research Triangle Institute, and James S. Lubalin of SysteMetrics, Inc., were associate project directors. Barbara Moser of the Research Triangle Institute provided major guidance for the data processing.

References

American Hospital Association: *Hospital Statistics, 1980 Edition.* Chicago. American Hospital Association, 1980.

Cambridge Research Institute: Trends affecting the U.S. health care system. *Health Planning Information Series. No. 1.* DHEW Pub. No. (HRA) 76-14503. Bureau of Health Planning and Resources Development, Health Resources Administration. U.S. Government Printing Office, Jan. 1976.

Collins, J. G.: Physician visits, volume and interval since last visit, United States, 1980. *Vital and Health Statistics.* Series 10. National Center for Health Statistics, Public Health Service, DHHS, Hyattsville, Md. To be published.

Davidson, S. M.: Understanding the growth of emergency department utilization. *Med. Care* 16(2):122-132, Feb. 1978.

Division of Health Interview Statistics, National Center for Health Statistics: Unpublished data from the 1980 National Health Interview Survey.

Drury, T.: Access to ambulatory health care: United States, 1974. *Advance Data From Vital and Health Statistics.* No. 17. DHEW Pub. No. (PHS) 78-1250. National Center for Health Statistics, Public Health Service. Washington. U.S. Government Printing Office, Feb. 23, 1978.

Kovar, M. G.: *Better Health for Our Children, A National Strategy.* Vol. III, A Statistical Profile. DHHS Pub. No. (PHS) 79-55071. Public Health Service. Washington. U.S. Government Printing Office, 1979.

National Center for Health Statistics: *Health Interview Survey Medical Coding Manual and Short Index.* Hyattsville, Md. 1979.

National Center for Health Statistics: *Health United States, 1978.* DHEW Pub. No. (PHS) 78-1232. National Center for Health Statistics, Public Health Service. Washington. U.S. Government Printing Office. Dec. 1978.

Webb, S. B., Jr., Taylor, W. J., and Cannon, J. F.: Emergency department and inpatient service: a symbiotic relationship? *J. Ambulatory Care Management* 1(2): 81-89, Apr. 1978.

Wilensky, G. R.: Ambulatory physicians services: use, expenditures, and sources of payment. *National Health Care Expenditure Study.* Data Preview 15. Hyattsville, Md. National Center for Health Services Research. To be published.

World Health Organization: *Manual of the International Statistical Classification of Diseases, Injuries, and Causes of Death.* Based on the Recommendations of the Ninth Revision Conference, 1975. Geneva. World Health Organization, 1977.

Symbols

---	Data not available
...	Category not applicable
-	Quantity zero
0.0	Quantity more than zero but less than 0.05
*	Test statistic is significant at 0.05 level
**	Test statistic is significant at 0.01 level

Technical Notes

Definition of Terms

Terms related to health and medical services—A *hospital outpatient department* is a hospital-based ambulatory care facility organized to provide nonemergency medical services. Persons receiving services do not receive inpatient nursing care. Examples of outpatient departments or clinics are Pediatric, Obstetrics and Gynecology, Eye, and Psychiatric.

An *emergency department* is a hospital facility organized to provide medical services to people needing immediate medical or surgical intervention. The emergency department is staffed 24 hours a day. People receiving care in the emergency department may be admitted into a hospital.

A *hospital outpatient department visit* is a face-to-face encounter between an ambulatory patient and a medical person. The patient comes to a hospital-based ambulatory care facility to receive services and departs on the same day. If more than one department or clinic is visited on a single trip, each department or clinic visited is counted as a separate visit.

An *emergency department visit* is a face-to-face encounter between a patient (not necessarily ambulatory) and a medical person. Emergency department visits include encounters by patients transported to the emergency department by police or the emergency medical service. The visit may result in a hospital admission.

Hospital admission is the formal acceptance by a hospital of a patient who is provided room, board, and regular nursing care in a unit of the hospital. Included as a hospital admission is a patient admitted to the hospital and discharged on the same day. Also included is a hospital stay resulting from an emergency department visit.

A *condition* is an entry on the questionnaire that describes a departure from a state of physical or mental well-being. It is any illness, injury, complaint, or problem perceived by the respondent as inhibiting usual activities or requiring medical treatment. Impairments are chronic or permanent defects, usually static in nature, that result from disease, injury, or congenital malformation. They represent decrease or loss of ability to perform various functions, particularly those of the musculoskeletal system and the sense organs. Pregnancy, vasectomy, and tubal ligation were not considered as conditions; however, related medical care was recorded as if they were conditions. Neoplasms were classified without regard to site. Conditions, except impairments, are classified by type according to the Ninth Revision of the International Classification of Diseases (World Health Organization, 1977) as modified by the National Health Interview Survey Medical Coding Manual (NCHS, 1979); these modifications make the code more suitable for a household interview survey. Impairments are classified by using a supplementary code specified in the coding manual. In the supplementary code, impairments are grouped according to type of functional impairment and etiology.

Types of service in a hospital outpatient department—In the National Medical Care Utilization and Expenditure Survey (NMCUES), the interviewer assigned the type of service the respondent reported receiving to a precoded category. Each applicable service was coded into one of the following categories: Diagnosis or treatment, General checkup, Eye exam (for glasses), Immunization, Family planning, or Other. Services coded as Other were recorded by the interviewer and coded before entry into the computer. In order to have one service associated with each visit for the purposes of this report, a hierarchy for selecting one service was developed. Visits for services not known or visits for services not reported were excluded. The seven service categories, in order of priority, follow.

Prenatal or postnatal care includes visits related to care of the mother during pregnancy (prenatal care) and visits during the period just after delivery (postnatal care).

Diagnosis or treatment includes visits with an associated condition. The visit was for an examination or test to detect the presence of a disease or for a procedure to counter or manage the effects of a disease or injury. Excluded from this category are visits for a general checkup during which a condition was discovered.

Family planning includes visits for consultations relating to methods of birth control, sex education, genetic counseling, and so forth. If the respondent reported a tubal ligation or vasectomy, it was coded as Family planning.

Eye exam (for glasses) includes visits for examination of the eyes either to establish a need for eyeglasses or contact lenses or to modify the type of eyeglasses or contact lenses.

Immunization includes visits to receive shots or injections to prevent one or more particular diseases. Visits for allergy shots are included in the Diagnosis or treatment category.

General checkup includes visits to determine the general state of a person's health. This category includes physical examinations required for employment, entrance to school, and insurance; routine annual physical examinations; visits to the well-baby clinic, and so forth.

Other includes visits for medical services not mentioned in the previously described categories.

Reason for selecting the emergency department—Emergency department visits are classified according to the severity of the person's condition.

A *life-threatening condition* needs medical or surgical intervention within an hour to prevent the condition from becoming life threatening.

A *not-life-threatening condition expected to become serious* needs medical or surgical intervention within a few hours to prevent the condition from becoming serious.

A *not-life-threatening condition not expected to become serious* needs medical or surgical intervention, but the condition is not expected to become serious if treatment is delayed for more than a few hours.

If a condition was perceived as not life threatening, the *main reasons for selecting the emergency department* could be coded:

Other care not available means other medical care not available at that time, too far to travel to regular provider, office or clinic of the regular provider was closed, regular provider unavailable at that time, or could not get appointment with regular provider.

Best place for that condition means best or right place to go for that condition; sent or referred by regular provider; condition required services only available in a hospital setting; taken by ambulance, police, or other emergency medical service; or thought condition might require hospitalization.

Used for most medical care means the emergency department is the person's usual source of care, the individual goes to this facility for all or most medical care needs, and has no regular physician or medical provider.

Other means the person did not know where to go or what else to do, could not find a provider who would accept Medicaid, or gave a reason not included in the previous categories.

Terms related to demographic characteristics—Age refers to the age of the person as of January 1, 1980.

The *sex* of the person was recorded by the interviewer in the initial NMCUES interview.

Race is classified as "white," "black," or "other." The "other" race category includes American Indian, Alaskan Native, Asian, Pacific Islander, and people not identified by race. The category "all other" includes the categories "black" and "other." The race of people 17 years of age and over was reported by the family respondent; the race of those under 17 was derived from the race of other family members. If the head of the family was male and had a wife who was living in the household, her race was assigned to any children under 17 years of age. In all other cases, the race of the head of the family (male or female) was assigned to any children under 17 years of age.

Family is defined as the basic unit for reporting data in the household component of NMCUES. A family consisted of all people related to each other by blood, marriage, adoption, or foster care status and residing in the same housing unit or group quarters. One person could give information for all members of the family. In this report, unmarried students 17 years of age and over living away from home at the time of the first interview with a family are counted as a separate family.

Family head is designated at the time of the first interview. The respondent was asked to name a family member as the head.

Family income is classified according to the total "1979 family income" of the family to which the person belonged at the time of first interview. The income recorded was the total of all income received by members of the family in the 12 months preceding the first interview, a period primarily in 1979. Income from all sources was included, for example, wages, salaries, rents from property, pensions, help from relatives, and so forth. Unrelated persons were classified according to their own income.

Sample Design

The NMCUES utilized two, independently drawn, national area samples provided by the Research Triangle Institute and its subcontractor, the National Opinion Research Center. Both sample designs were stratified four-stage area probability designs and were similar in structure. The first stage consisted of primary sampling units (PSU's), which were counties, parts of counties, or groups of contiguous counties. The second stage consisted of secondary sampling units (SSU's), which were Census enumeration districts or block groups. The third stage was smaller area segments, and the fourth stage was housing units (HU's). Related persons in an HU were interviewed as a single reporting unit (RU). Combined stage-specific samples for the two designs totaled 135 PSU's (covering 108 separate primary areas), 809 SSU's, 809 small area segments (one segment per SSU) and 7,596 HU's. About 6,600 RU's were interviewed, and the response rate was 91.8 percent of eligible RU's.

NMCUES consisted of an initial interview during February through April 1980 and four followup interviews spaced at approximately 3-month intervals. About four-fifths of the third and fourth interviews were conducted by telephone; all of the remaining interviews were conducted in person. In most reporting units, data for all related persons were collected from a single respondent. A summary of selected information reported in previous interviews was reviewed with the family to correct errors and update information.

Reliability of Estimators

The statistics presented in this report are based on a sample of the target population rather than the entire population. Thus the estimates may differ from values that would be obtained from a complete census. The difference between a sample estimate and the population value is called the sampling error and the expected magnitude of the sampling error is measured by a statistic called the standard error. The standard errors for the statistics in the text tables are estimated by the following procedure: Let $\hat{P}_{ij}$ be the estimator for the percent of the ith row population in the jth column. A large sample approximation for the standard error of $\hat{P}_{ij}$ is

$$SE(\hat{P}_{ij}) = [\hat{P}_{ij}(100-\hat{P}_{ij})d_i/n_i]^{1/2}$$

where

n_i = the unweighted sample size for the ith row of the table and

d_i = the estimated design effect for the ith row of the table. The design effects were estimated using the procedure, "Standard Errors Program for Computing of Standardized Rates from Sample Survey Data," developed by B. V. Shah, Research Triangle Institute, North Carolina. For

Tables 1-3, 5, and 6, appropriate estimates of the design effects, together with the unweighted sample sizes, may be found in Table 8 or 9 depending on the text table under consideration. Sample sizes and design effects for Table 4 are given in that table. Here, $\hat{P}_{ij}$ refers to the percent of the jth column in the ith row and n_j for each column is given in parentheses.

For example, in Table 1, 13.6 percent of the people under 17 years of age made one or more visits to the emergency department. The number of people under 17 years of age in this sample and the design effect for this group in Table 8 are 5,021 and 1.98, respectively, so that the estimated standard error for the estimate, 13.6, is

$$[13.6\ (100-13.6)\ 1.98/5021]^{1/2} = .68$$

Under the assumptions that the n_i's are sufficiently large and the sampling distribution is very nearly a normal distribution, the chances are approximately 68 out of 100 that an estimate from a sample is within one standard error of the true percent, π, for the target population. The chances are approximately 95 out of 100 that the estimate is within two standard errors of π.

In addition to sampling error, the results are also subject to various types of nonsampling errors such as nonresponse, misreporting by respondents, data processing mistakes, and so forth. In the final reports based on the NMCUES, these types of errors will be kept to a minimum by various quality control procedures, imputations procedures, outlier checks, and other methods. These procedures have not been completed for the data in this report and, hence, the estimates should be used with care.

In this report, such terms as "similar" and "the same" mean that the difference between the statistics compared was not statistically significant. Terms such as "more likely," "higher," and "lower" indicate that the difference between the statistics was statistically significant. The t-test (0.05 level of significance) was used to test all comparisons that are discussed. Lack of comment regarding the difference between any two statistics does not mean the difference was tested and found to be not significant.

☆ U.S. GOVERNMENT PRINTING OFFICE: 1983 - 399-434 - 814/717

SUGGESTED CITATION

National Center for Health Statistics, M. M. Chyba: Utilization of hospital emergency and outpatient departments, United States, January–June, 1980. *National Medical Care Utilization and Expenditure Survey, Preliminary Data Report No. 2.* DHHS Pub. No. (PHS) 83-20000. Public Health Service. Washington. U.S. Government Printing Office, February 1983

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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National Center for Health Statistics
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DHHS Publication No. 83-20000
February 1983