Health care expenditures for major diseases in 1980

Health care expenditures in the United States were 10.5 percent of the gross national product in 1982; and growing rapidly. The magnitude and continuing growth make health care costs an important issue in public policy. Knowledge of costs for specific diseases is necessary for ascertaining the effectiveness and efficiency of various health programs. In this article, medical care expenditures for major diseases are estimated from readily available data and it is shown that expenditures for more specific disease categories can be derived.

Introduction

Personal health care expenditures have been rising rapidly since 1960. A total of $255 billion was spent for personal health care in 1981, an increase of 16 percent from 1980. Total spending in 1981 represented $1,090 per capita, a 15 percent increase over the $947 spent per person in 1980 (Waldo and Gibson, 1982).

Expenditures for personal health care measure the value of medical care services delivered to individuals for the prevention, diagnosis, and treatment of illness and disease. Expenditures may be incurred for hospitalization; outpatient clinical care; nursing home care; home health care; services of primary physicians, specialists, dentists, and other health professionals; drugs and drug sundries; and rehabilitation counseling and other rehabilitation costs, such as those for prostheses, appliances, eyeglasses, hearing aids, speech devices, etc., to prevent or overcome illness-related impairments. These expenditures are included in the United States National Health Accounts, now published by the Health Care Financing Administration (Cooper, Gibson, and Rice, 1980).

The Health Care Financing Administration (HCFA) annually estimates national health expenditures according to type of service and source of funds. In this article, personal health care expenditures in 1980 are further disaggregated into expenditures by age, sex and medical condition. The year 1980 was chosen to facilitate comparison with estimates of health care expenditures that will be forthcoming from the National Medical Care Utilization and Expenditure Survey (NMCUES). NMCUES was designed to collect data on the U.S. civilian noninstitutionalized population during 1980 and help analyze expenditures and health services provided under the Medicaid and Medicare programs. In the next section, the methodology for disaggregating HCFA's estimates of personal health care spending is described. The third section presents estimated expenditures by type of care and medical condition for males and females, persons under 65 years of age, and persons 65 years of age or over.

Methodology

The definitions, concepts, and sources of data employed by HCFA to estimate personal health care expenditures are discussed by Waldo and Gibson (1982). To estimate expenditures by age, sex, and medical condition in this article, HCFA's estimates of personal health care expenditures in 1980 for each type of service were first separated into expenditures for persons under 65 years of age and persons 65 years of age or over according to HCFA's distributions for 1978 (Fisher, 1980). These totals were distributed by sex and diagnosis according to utilization and costs, using a variety of other data sources. For example, expenditures in community hospitals were allocated to a disease category in proportion to the number of days of care attributable to the diagnosis, weighted by the cost per patient day for that diagnosis. Similar procedures were applied where possible to expenditures for other types of medical care to distribute the total by sex and diagnosis. This methodology follows closely that originally devised by Cooper and Rice (1976) to allocate expenditures among diagnoses, amended to include several additional sources of data.

Of the $219 billion spent for personal health care in 1980, $211 billion could be distributed by age and sex and $207 billion by age, sex, and diagnosis; $12 billion (6 percent) could not be allocated by age, sex and diagnosis because data were not available.

Expenditures in 1980

Personal health care expenditures in 1980 totaled $219 billion (Table 1). Hospital care accounted for the largest share of expenditures, $100 billion (46 percent), followed by physicians' services valued at $47 billion (21 percent). Other professional services (such as those of dentists, chiropractors, optometrists, and private duty nurses), nursing home care, and drugs, each accounted for about $20 billion, or 10 percent of spending for personal health care. All other personal health care, which included miscellaneous items such as eyeglasses and appliances, ambulance services, industrial on-site health services, and care provided in Federal facilities other than hospitals, represented 5 percent of the total expenditures.
Table 1  
Personal health care expenditures, according to medical condition and type of care: United States, 1980

| Medical condition                          | All personal health care | Hospital care | Physicians' services | Nursing home care | Drugs | Other professional services | Amount in millions |
|-------------------------------------------|--------------------------|---------------|----------------------|------------------|-------|----------------------------|------------------|
| All conditions                            | $210,400                 | $100,461      | $46,790              | $20,593          | $19,300 | $21,000                     |                  |
| Infectious and parasitic diseases         | 4,498                    | 2,138         | 1,531                | ---              | ---    | 805                         | 24               |
| Neoplasms                                 | 13,623                   | 9,130         | 3,163                | 469              | 677    | 184                         |                  |
| Endocrine, nutritional, metabolic         | 7,656                    | 3,399         | 2,055                | 1,137            | 1,020  | 75                          |                  |
| Diseases of blood and blood-forming organs| 1,205                    | 749           | 309                  | ---              | ---    | 130                         | 17               |
| Mental disorders                          | 20,301                   | 12,836        | 2,027                | 4,363            | 1,001  | 74                          |                  |
| Diseases of the nervous system and sense organs | 17,499            | 4,409         | 4,557                | 387              | 2,175  | 870                         |                  |
| Diseases of the circulatory system        | 33,184                   | 16,682        | 5,813                | 7,983            | 2,272  | 434                         |                  |
| Diseases of the respiratory system        | 17,305                   | 8,428         | 5,313                | 435              | 2,979  | 141                         |                  |
| Diseases of the digestive system          | 31,755                   | 11,440        | 3,757                | ---              | 968    | 1590                        |                  |
| Diseases of the genitourinary system      | 13,152                   | 7,471         | 4,198                | ---              | 1,381  | 102                         |                  |
| Diseases of the skin and subcutaneous tissue | 6,179                 | 1,607         | 3,051                | ---              | 1,493  | 28                          |                  |
| Diseases of the musculoskeletal system and connective tissue | 13,645             | 6,220         | 3,879                | 833              | 1,529  | 1,184                       |                  |
| Congenital anomalies                      | 1,409                    | 918           | 287                  | ---              | 87     | 7                           |                  |
| Symptoms, signs, and ill-defined conditions 3 | 3,988              | 1,895         | 1,470                | ---              | 789    | 14                          |                  |
| Injury and poisoning                      | 19,248                   | 11,599        | 4,805                | 721              | 1,668  | 155                         |                  |
| Other conditions                          | 2,246                    | 1,760         | 373                  | ---              | 106    | 7                           |                  |
| Unallocated expenditures                  | 12,359                   |               | 4,265                | ---              | ---    | 2,094                       |                  |

1Includes all expenditures for eyeglasses and appliances.
2Includes all expenditures for dentists' services.
3Includes expenditures for other health services, other professional services, and nursing home care that could not be allocated to conditions.

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

SOURCE: National Center for Health Statistics. Computed by the Division of Analysis from data compiled by the Health Care Financing Administration, the National Center for Health Statistics, and other organizations.

Expenditures by age and sex

In each age group, females used more medical services and incurred disproportionately higher expenditures relative to their numbers than did males. Females represented 52 percent of the population but accounted for 58 percent of expenditures (Figure 1). The distribution of expenditures among the various health services was the same for males and females under 65 years of age: about half of the total was for hospital care, slightly more than one-third for professional services, 10 percent for drugs, and 3 percent for nursing home care. The elderly (persons 65 years of age or over), on the other hand, spent much more of their health dollar for nursing home care (18 percent for men and 30 percent for women), less on professional services, and less on hospital care for females age 65 or over. Elderly males and females used more health services than did persons under 65 years of age. Although persons 65 years of age or over represented only 12 percent of the population, they experienced higher use of health care services and accounted for 31 percent of expenditures for personal health care.

The influence of age and sex on expenditures is evident from per capita personal health care expenditures. On the average, per capita spending was three and one-half times greater for persons age 65 or over than for those under 65 years of age, and higher for females than males (Figure 2). Amounts spent varied greatly depending on age, sex, and type of health care. Expenditures ranged from a low of $19 per person for nursing home care among males under 65 years of age to $1,111 per individual for hospital care of males 65 years of age or over (Figure 3). For hospital care, professional services, and drugs, the ratio of per capita spending for the elderly to that for the nonelderly ranged from twice as high among females for drugs and professional services to three and one-half times as high for hospital care among males. Nursing home care is an important health service for the elderly and was the second most expensive health service for women 65 years of age or older. Except for hospital care and professional services for elderly males, females required greater health dollar expenditures per person. The difference in expenditures between males and females was usually larger for persons under 65 years of age, but was greatest for nursing home care among persons 65 years of age or over ($403 for males versus $801 for females).
**Figure 1**

Population and personal health care expenditures, by age and sex: 1980

- **Female**: 232 million
- **Male**: $211 billion

**SOURCE**: Health Care Financing Administration and National Center for Health Statistics

**Figure 2**

Per capita personal health care expenditures, by age and sex: 1980

- Under 65 years of age:
  - All ages (Both sexes): $911
  - Under 65 years of age: $710
  - 65 years of age or over: $784

- Under 65 years of age:
  - All ages (Males): $627
  - Under 65 years of age: $2,276
  - 65 years of age or over: $1,030

- Under 65 years of age:
  - All ages (Females): $791
  - Under 65 years of age: $2,507
  - 65 years of age or over: $2,867

**SOURCE**: Health Care Financing Administration and National Center for Health Statistics
Expenditures by medical conditions

Expenditures by condition and type of care for the leading disease classes are shown in Table 1 (National Center for Health Statistics, 1980). Diseases of the circulatory system were responsible for the highest amount ($33 billion spent for care), followed closely by diseases of the digestive system ($32 billion including $15 billion spent for dental care). The remaining conditions can be divided into two groups, each one containing several conditions with about the same expenditures. The first group includes mental disorders ($20 billion), injury and poisoning ($19 billion), and diseases of the respiratory system ($17 billion). The other group includes neoplasms ($14 billion), diseases of the musculoskeletal system and connective tissue ($14 billion), diseases of the genitourinary system ($13 billion), and diseases of the nervous system and sense organs ($12 billion).

The relative amounts spent for each type of health care varied among the disease categories. This reflects the differences in pathology and consequent needs for each type of service among diseases. Hospital care usually accounted for the largest share of expenditures for a disease class, ranging from 35 percent of expenditures for diseases of the nervous system and sense organs to 67 percent for neoplasms. Professional services were usually the second leading cause of expenditures in a disease category, but ranged from 10 percent of spending for mental disorders to 61 percent for digestive system diseases. However, out of $19 billion for professional services for diseases of the digestive system, $15 billion were spent for dental services. Nursing home expenditures were high for circulatory diseases (24 percent); mental disorders (22 percent); and endocrine, nutritional and metabolic diseases (15 percent), but contributed small amounts to other diseases. Drugs were most important in terms of expenditures for diseases of the nervous system (18 percent); respiratory system (17 percent); and endocrine, nutritional, and metabolic diseases (13 percent).

Variations by age and sex

The economic burden imposed by a disease category varies with the age and sex of the population. For the elderly, persons 65 years of age or over, circulatory diseases were far and away the leading cause of health care expenditures, accounting for about 30 percent of the total for elderly males and females (Table 2) and requiring $674 and $848 per capita, respectively (Table 3). Also among the five most expensive conditions for both groups of elderly were digestive system diseases and mental disorders. Injury and poisoning, and problems of the musculoskeletal system completed the
### Table 2

**Personal health care expenditures, according to medical condition, sex, and age: United States, 1980**

| Medical condition                                      | Both sexes | Males | Females |
|--------------------------------------------------------|------------|-------|---------|
|                                                        | All ages   | Under 65 years | All ages | Under 65 years | All ages | Under 65 years |
|                                                        | or over    | or over        | or over  | or over        | or over  | or over        |
| All conditions                                         | $219,400   | $146,191       | $87,300  | $24,318        | $123,525 | $82,891        | $40,634 |
| Infectious and parasitic diseases                      | 4,498      | 3,928          | 569      | 188            | 2,677    | 2,306          | 371     |
| Neoplasms                                              | 13,623     | 8,302          | 5,322    | 1,820          | 1,622    | 198            | 371     |
| Endocrine, nutritional, metabolic diseases, and immunity disorders | 7,656 | 4,689       | 2,968    | 2,354          | 1,483    | 872            | 2,096   |
| Diseases of blood and blood-forming organs             | 1,205      | 753            | 449      | 427            | 280      | 147            | 302     |
| Mental disorders                                       | 20,301     | 14,612         | 5,689    | 9,330          | 7,935    | 1,393          | 3,753   |
| Diseases of the nervous system and sense organs        | 17,499     | 13,028         | 4,471    | 7,558          | 5,762    | 1,796          | 2,675   |
| Diseases of the circulatory system                    | 33,184     | 13,078         | 20,105   | 13,932         | 6,739    | 7,194          | 12,911  |
| Diseases of the respiratory system                     | 17,305     | 13,164         | 4,141    | 8,096          | 6,048    | 2,048          | 2,093   |
| Diseases of the digestive system                       | 31,755     | 25,084         | 6,671    | 13,428         | 11,159   | 2,269          | 3,402   |
| Diseases of the genitourinary system                   | 13,162     | 10,721         | 2,441    | 3,509          | 2,138    | 1,372          | 1,069   |
| Diseases of the skin and subcutaneous tissue           | 6,179      | 5,038          | 1,144    | 2,573          | 2,147    | 425            | 718     |
| Diseases of the musculoskeletal system and connective tissue | 13,645 | 9,821       | 3,824    | 5,053          | 4,078    | 975            | 2,849   |
| Congenital anomalies                                   | 1,409      | 1,321          | 88       | 526            | 590      | 36             | 52      |
| Symptoms, signs, and ill-defined conditions            | 3,968      | 3,197          | 771      | 1,654          | 1,310    | 344            | 427     |
| Injury and poisoning                                   | 19,248     | 15,042         | 4,206    | 9,763          | 8,662    | 1,121          | 3,085   |
| Other conditions                                       | 2,246      | 2,187          | 59       | 331            | 297      | 34             | 25      |
| Unallocated expenditures                               | 12,359     | 1,229          | 3,036    | 1,496          | 548      | 948            | 2,088   |

*Includes expenditures that could not be distributed by age and sex.

**NOTE:** Numbers may not add to totals due to rounding.

**SOURCE:** National Center for Health Statistics: Computed by the Division of Analysis from data compiled by the Health Care Financing Administration, the National Center for Health Statistics and other organizations.

### Table 3

**Per capita personal health care expenditures and rank for leading medical conditions, according to age and sex: United States, 1980**

| Medical condition                                      | Persons under 65 years of age | Persons 65 years of age or over |
|--------------------------------------------------------|-------------------------------|---------------------------------|
|                                                        | Male                          | Female                         | Male                           | Female                         |
|                                                        | Per capita amount              |                                |                                |                                |
| Circulatory diseases                                   | $67                           | $61                            | $574                           | $848                           |
| Digestive diseases                                     | 110                           | 143                            | 213                            | 223                            |
| Mental disorders                                       | 73                            | 69                             | 181                            | 245                            |
| Injury and poisoning                                   | 86                            | 61                             | 105                            | 203                            |
| Respiratory diseases                                   | 80                            | 68                             | 192                            | 137                            |
| Neoplasms                                              | 10                            | 50                             | 244                            | 178                            |
| Musculoskeletal system and connective tissue diseases   | 40                            | 55                             | 91                             | 187                            |
| Genitourinary system diseases                          | 21                            | 82                             | 128                            | 70                             |
| Nervous system and sense organ diseases                | 37                            | 69                             | 165                            | 176                            |
| Endocrine, nutritional, metabolic diseases             | 15                            | 31                             | 82                             | 138                            |

**Rank**

| Medical condition                                      | Rank                         |
|--------------------------------------------------------|-------------------------------|
| Circulatory diseases                                   | 4                             | 1                             |
| Digestive diseases                                     | 1                             | 1                             |
| Mental disorders                                       | 3                             | 3                             |
| Injury and poisoning                                   | 3                             | 5                             |
| Respiratory diseases                                   | 2                             | 8                             |
| Neoplasms                                              | 5                             | 4                             |
| Musculoskeletal system and connective tissue diseases   | 9                             | 2                             |
| Genitourinary system diseases                          | 9                             | 7                             |
| Nervous system and sense organ diseases                | 6                             | 6                             |
| Endocrine, nutritional, metabolic diseases             | 10                            | 10                            |

**NOTE:** Conditions are based on the International Classification of Diseases, 9th Revision, Clinical Modification.

**SOURCE:** National Center for Health Statistics: Computed by the Division of Analysis from data compiled by the Health Care Financing Administration, the National Center for Health Statistics, and other organizations.
The top five most expensive conditions for elderly females, but ranked eighth and ninth for elderly males. Neoplasms were the second most expensive category among elderly males, but ranked sixth for women 65 years of age or over. Similarly, respiratory diseases were relatively important for elderly males (ranking fourth), but ranked ninth among elderly females.

Among persons under 65 years of age, expenditures related to the digestive system were the highest and accounted for 18.5 percent of the total for males and females. Mental disorders and respiratory diseases were also important causes of expenditures for males and females under 65 years of age. Completing the five most expensive conditions for males under 65 years of age were injury and poisoning and circulatory diseases (ranking second and fourth, respectively), while diseases of the genitourinary and nervous systems were important for females under 65 years of age (ranking second and third, respectively).

For each age group and each sex, diseases of the digestive system and mental disorders were important causes of expenditures. Circulatory diseases ranked high for all but females under 65 years of age, and respiratory diseases were relatively important for all but elderly women. Together, these four categories accounted for almost 50 percent of all expenditures for personal health care. The relative importance of different types of medical care to health care expenditures varies by sex, age, and medical condition (Tables 4 and 5).

Table 4
Personal health care expenditures, according to medical condition and type of care: Males, United States, 1980

| Medical condition                      | All personal health care | Hospital care | Physicians' services | Nursing home | Drugs | Other professional services |
|----------------------------------------|--------------------------|---------------|----------------------|--------------|-------|-----------------------------|
| Total males                            | 1 $87,618                | $44,388       | $19,225              | $6,168       | $7,999| $7,944                      |
| All conditions                         |                          |               |                      |              |       |                             |
| Infectious and parasitic disease       | 1,820                    | 911           | 604                  | --           | 296   | 8                           |
| Neoplasms                              | 5,647                    | 3,944         | 1,178                | 186          | 261   | 78                          |
| Endocrine, nutritional, metabolic      | 2,354                    | 1,143         | 615                  | 300          | 277   | 20                          |
| diseases, and immunity disorders       |                          |               |                      |              |       |                             |
| Diseases of blood and blood-forming    | 427                      | 273           | 105                  | --           | 44    | 5                           |
| organs                                 | 9,330                    | 6,681         | 797                  | 1,457        | 365   | 30                          |
| Mental disorders                       |                          |               |                      |              |       |                             |
| Diseases of the nervous system and     | 17,558                   | 2,017         | 2,039                | 110          | 941   | 258                         |
| sense organs                           |                          |               |                      |              |       |                             |
| Diseases of the circulatory system     | 13,932                   | 7,936         | 2,686                | 2,180        | 973   | 167                         |
| Diseases of the respiratory system     | 8,096                    | 3,981         | 2,504                | 221          | 1,325 | 65                          |
| Diseases of the digestive system       | 13,428                   | 4,681         | 1,581                | --           | 432   | 6,735                       |
| Diseases of the genitourinary system   | 3,509                    | 2,144         | 1,015                | --           | 306   | 44                          |
| Diseases of the skin and subcutaneous  | 2,573                    | 742           | 1,241                | --           | 581   | 9                           |
| tissue                                 |                          |               |                      |              |       |                             |
| Diseases of the musculoskeletal system | 5,053                    | 2,394         | 1,498                | 113          | 581   | 467                         |
| and connective tissue                  |                          |               |                      |              |       |                             |
| Congenital anomalies                   | 626                      | 418           | 184                  | --           | 41    | 3                           |
| Symptoms, signs, and ill-defined       | 1,654                    | 777           | 579                  | --           | 293   | 5                           |
| conditions                             |                          |               |                      |              |       |                             |
| Injury and poisoning                   | 9,783                    | 6,037         | 2,597                | 126          | 975   | 49                          |
| Other conditions                       | 331                      | 309           | 13                   | --           | 8     | 1                           |
| Unallocated expenditures               | 1,496                    | --            | 1,496                | --           |       |                             |

See footnotes at end of table.
Table 4—Continued

Personal health care expenditures, according to medical condition and type of care: Males, United States, 1980

| Medical condition | All personal health care | Hospital care | Physicians' services | Nursing home | Drugs | Other professional services |
|-------------------|--------------------------|---------------|----------------------|--------------|-------|----------------------------|
| Males under 65 years of age | $63,300 | $32,532 | $14,226 | $1,574 | $6,068 | $6,830 |
| Infectious and parasitic disease | 1,622 | 773 | 503 | 284 | 3 |
| Neoplasms | 3,043 | 2,283 | 577 | (2) | 138 |
| Endocrine, nutritional, metabolic diseases, and immunity disorders | 1,453 | 804 | 394 | 94 | 187 |
| Diseases of blood and blood-forming organs | 280 | 189 | 64 | 27 | 1 |
| Mental disorders | 7,395 | 5,527 | 724 | 788 | 340 |
| Diseases of the nervous system and sense organs | 15,762 | 1,537 | 1,992 | (2) | 731 |
| Diseases of the circulatory system | 6,739 | 4,474 | 1,381 | 328 | 524 |
| Diseases of the respiratory system | 6,048 | 2,717 | 2,120 | (2) | 1,168 |
| Diseases of the digestive system | 11,159 | 3,558 | 1,142 | — | 328 |
| Diseases of the genitourinary system | 2,138 | 1,314 | 608 | — | 210 |
| Diseases of the skin and subcutaneous tissue | 2,147 | 607 | 1,042 | — | 495 |
| Diseases of the musculoskeletal system and connective tissue | 4,078 | 2,010 | 1,201 | (2) | 471 |
| Congenital anomalies | 590 | 394 | 156 | — | 38 |
| Symptoms, signs, and ill-defined conditions | 1,210 | 623 | 452 | — | 233 |
| Injury and poisoning | 8,662 | 5,447 | 2,288 | (2) | 888 |
| Other conditions | 287 | 275 | — | (2) | 1 |
| Unallocated expenditures | 548 | — | 548 | — | — |
| Males 65 years of age or over | $24,318 | $11,856 | $4,999 | $4,294 | $1,531 | $1,114 |
| Infectious and parasitic disease | 198 | 138 | (2) | — | (2) |
| Neoplasms | 2,603 | 1,661 | 600 | 150 | 123 |
| Endocrine, nutritional, metabolic diseases, and immunity disorders | 872 | 339 | 221 | 206 | 90 |
| Diseases of blood and blood-forming organs | 147 | 84 | (2) | — | (2) |
| Mental disorders | 1,835 | 1,154 | 73 | 669 | 25 |
| Diseases of the nervous system and sense organs | 1,796 | 480 | 547 | 99 | 211 |
| Diseases of the circulatory system | 7,194 | 3,462 | 1,305 | 1,832 | 449 |
| Diseases of the respiratory system | 2,048 | 1,284 | 384 | 189 | 157 |
| Diseases of the digestive system | 2,269 | 1,123 | 439 | — | 104 |
| Diseases of the genitourinary system | 1,372 | 830 | 408 | — | 96 |
| Diseases of the skin and subcutaneous tissue | 425 | 135 | 199 | — | 86 |
| Diseases of the musculoskeletal system and connective tissue | 975 | 384 | 296 | 94 | 110 |
| Congenital anomalies | 36 | 24 | (2) | — | (2) |
| Symptoms, signs, and ill-defined conditions | 344 | 154 | 127 | — | 60 |
| Injury and poisoning | 1,121 | 590 | 309 | 107 | 88 |
| Other conditions | 34 | 34 | — | — | — |
| Unallocated expenditures | 645 | — | 948 | — | — |

1 Includes expenditures for eyeglasses and appliances.
2 Figure does not meet standards of reliability or precision.

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

SOURCE: National Center for Health Statistics: Computed by the Division of Analysis from data compiled by the Health Care Financing Administration, the National Center for Health Statistics, and other organizations.
Table 5  
Personal health care expenditures, according to medical condition and type of care: Females, United States, 1980

| Medical condition                              | All personal health care | Hospital care | Physicians' services | Nursing home | Drugs | Other professional services |
|-----------------------------------------------|--------------------------|---------------|----------------------|--------------|-------|-----------------------------|
| **Total females**                             |                          |               |                      |              |       |                             |
| All conditions                                | $123,525                 | $56,073       | $27,562              | $14,423      | $11,601| $10,859                     |
| Infectious and parasitic disease              | 2,677                    | 1,227         | 926                  | —            | 509   | 15                          |
| Neoplasms                                     | 7,977                    | 5,186         | 1,966                | 283          | 416   | 107                         |
| Endocrine, nutritional, metabolic diseases, and immunity disorders | 5,302                    | 2,226         | 1,441                | 837          | 743   | 55                          |
| Diseases of blood and blood-forming organs    | 775                      | 476           | 204                  | —            | 86    | 12                          |
| Mental disorders                              | 10,971                   | 6,155         | 1,230                | 2,905        | 636   | 44                          |
| Diseases of the nervous system and sense organs | 19,941                   | 2,392         | 2,519                | 277          | 1,234 | 612                         |
| Diseases of the circulatory system            | 18,251                   | 8,145         | 3,117                | 5,823        | 1,259 | 267                         |
| Diseases of the respiratory system            | 9,209                    | 4,457         | 2,809                | 214          | 1,863 | 76                          |
| Diseases of the digestive system              | 18,327                   | 6,756         | 2,177                | —            | 536   | 8,855                        |
| Diseases of the genitourinary system          | 9,652                    | 5,327         | 3,183                | —            | 1,065 | 57                          |
| Diseases of the skin and subcutaneous tissue  | 3,607                    | 865           | 1,811                | —            | 912   | 19                          |
| Diseases of the musculoskeletal system and connective tissue | 6,592                    | 3,826         | 2,362                | 720          | 948   | 717                         |
| Congenital anomalies                          | 783                      | 500           | 223                  | —            | 56    | 4                           |
| Symptoms, signs, and ill-defined conditions   | 2,314                    | 918           | 891                  | —            | 486   | 8                           |
| Injury and poisoning                          | 9,465                    | 5,582         | 2,309                | 596          | 853   | 106                         |
| Other conditions                              | 1,915                    | 1,451         | 359                  | —            | 98    | 6                           |
| Unallocated expenditures                      | 2,769                    | —             | 2,769                | —            | —     |                             |
| **Females under 65 years of age**             |                          |               |                      |              |       |                             |
| All conditions                                | $82,891                  | $39,487       | $20,717              | $2,201       | $9,102| $9,100                      |
| Infectious and parasitic disease              | 2,306                    | 1,014         | 821                  | —            | 486   | 3                           |
| Neoplasms                                     | 5,259                    | 3,533         | 1,393                | (2)          | 269   | 17                          |
| Endocrine, nutritional, metabolic diseases, and immunity disorders | 3,206                    | 1,449         | 1,054                | 117          | 576   | 6                           |
| Diseases of blood and blood-forming organs    | 473                      | 297           | 122                  | —            | 52    | 2                           |
| Mental disorders                              | 7,217                    | 4,664         | 1,051                | 927          | 558   | 16                          |
| Diseases of the nervous system and sense organs | 17,266                   | 1,777         | 2,714                | (2)          | 900   | 557                         |
| Diseases of the circulatory system            | 6,340                    | 3,972         | 1,454                | 280          | 616   | 18                          |
| Diseases of the respiratory system            | 7,117                    | 3,216         | 2,852                | (2)          | 1,465 | 12                          |
| Diseases of the digestive system              | 14,925                   | 4,918         | 1,651                | —            | 417   | 7,939                        |
| Diseases of the genitourinary system          | 8,583                    | 4,690         | 2,883                | —            | 988   | 22                          |
| Diseases of the skin and subcutaneous tissue  | 2,868                    | 612           | 1,486                | —            | 788   | 3                           |
| Diseases of the musculoskeletal system and connective tissue | 5,744                    | 2,816         | 1,701                | (2)          | 677   | 478                         |
| Congenital anomalies                          | 731                      | 471           | 206                  | —            | 52    | 2                           |
| Symptoms, signs, and ill-defined conditions   | 1,857                    | 768           | 708                  | —            | 409   | 3                           |
| Injury and poisoning                          | 8,380                    | 3,864         | 1,721                | (2)          | 747   | 15                          |
| Other conditions                              | 18,900                   | 1,426         | 356                  | —            | 98    | 6                           |
| Unallocated expenditures                      | 651                      | —             | 681                  | —            | —     | —                           |

See footnotes at end of table.
### Personal health care expenditures, according to medical condition and type of care: Females, United States, 1980

| Medical condition | Type of care | Amount in millions |
|-------------------|--------------|--------------------|
|                   | All personal health care | Hospital care | Physicians' services | Nursing home | Drugs | Other professional services |
| Females 65 years of age or over | $40,634 | $16,586 | $6,846 | $12,222 | $2,499 | $1,859 |
| Infectious and parasitic diseases | 371 | 213 | 105 | — | 41 | 12 |
| Neoplasms | 2,718 | 1,653 | 592 | 256 | 127 | 90 |
| Endocrine, nutritional, metabolic diseases, and immunity disorders | 2,096 | 777 | 387 | 720 | 165 | 47 |
| Diseases of blood and blood-forming organs | 302 | 179 | 81 | — | 34 | 10 |
| Mental disorders | 3,753 | 1,491 | 176 | 1,978 | 79 | 26 |
| Diseases of the nervous system and sense organs | 12,675 | 615 | 805 | 244 | 334 | 55 |
| Diseases of the circulatory system | 12,911 | 4,774 | 1,863 | 5,543 | 682 | 249 |
| Diseases of the respiratory system | 2,083 | 1,241 | 417 | 183 | 158 | 64 |
| Diseases of the digestive system | 3,402 | 1,841 | 526 | — | 119 | 916 |
| Diseases of the genitourinary system | 1,099 | 637 | 300 | — | 97 | 35 |
| Diseases of the skin and subcutaneous tissue | 718 | 253 | 325 | — | 124 | 16 |
| Diseases of the musculoskeletal system and connective tissue | 2,849 | 1,010 | 681 | 647 | 272 | 239 |
| Congenital anomalies | 52 | 29 | 52 | — | (2) | 2 |
| Symptoms, signs, and ill-defined conditions | 427 | 150 | 184 | — | 87 | 6 |
| Injury and poisoning | 3,085 | 1,698 | 588 | 562 | 146 | 91 |
| Other conditions | 25 | 25 | — | — | — | — |
| Unallocated expenditures | 2,088 | — | — | — | — | — |

1Includes expenditures for eyeglasses and appliances.
2Figure does not meet standards of reliability or precision.

**NOTE:** Numbers may not add to totals due to rounding.

**SOURCE:** National Center for Health Statistics: Computed by the Division of Analysis from data compiled by the Health Care Financing Administration, the National Center for Health Statistics, and other organizations.

### Diseases of the circulatory system

Although it is valuable to estimate expenditures for the international classification of diseases chapters, these provide only an overview. Expenditures for circulatory system diseases will be broken down as an example. Diseases of the circulatory system are a leading cause of expenditures for medical care and include three well known diseases that are serious health problems for millions of people in the United States: Heart disease, stroke, and hypertension. The discussion of circulatory disorders will show that each chapter is a composite of diseases and expenditures may vary markedly among the separate diseases according to type of health care, age, and sex. Expenditures are a reflection of underlying parameters such as the prevalence of disease, and health services utilization. These parameters vary among diseases, and by age and sex.

The $33.2 billion spent for diseases of the circulatory system in 1980 is the sum of $14.6 billion for heart disease, $5.1 billion for stroke, $4.5 billion for hypertension, and $9 billion for other circulatory diseases (Figure 4). The proportions spent for each type of health care differed among the circulatory diseases. Overall, 50 percent of expenditures were for hospital care; but the proportion for hospital services was as high as 69 percent for heart disease and as low as 21 percent for hypertension. Professional services accounted for 19 percent of the total cost of medical care for all circulatory diseases but represented 41 percent of expenditures for hypertension and 18 percent of money spent for care of heart disease.

Nursing home care was an important service for persons with diseases of the circulatory system, accounting for almost one-quarter of all expenditures and ranking second behind hospital care. The bulk of nursing home expenditures was for other circulatory diseases (mainly arteriosclerosis), accounting for almost half of all expenditures for that condition. Nursing home care was also an important component of care for victims of stroke, requiring 35 percent of the total spent for stroke. Relatively smaller but significant amounts were spent for nursing home care of...
Figure 4
Personal health care expenditures for diseases of the circulatory system, by type of care: 1980

Billions of dollars

|          | Hospital care | Professional services | Nursing home care | Drugs |
|----------|---------------|-----------------------|-------------------|-------|
| Heart disease | $14.6        |                       |                   |       |
| Stroke     |                | $5.1                  |                   |       |
| Hypertension|                |                       | $4.5              |       |
| Other circulatory diseases |            |                       | $9.0              |       |

SOURCE: National Center for Health Statistics

persons with hypertension ($649 million or 14 percent) and heart disease ($1.1 billion or 8 percent).

Drugs amounted to only 7 percent of total expenditures for all circulatory diseases but were responsible for almost one-quarter of the total spent for hypertension. However, drugs accounted for 5 percent or less of expenditures for heart disease, stroke, and other circulatory diseases.

The relative amount spent for each type of health care for a circulatory disorder varied with the age and sex of the population. In general, expenditures for hospital care were proportionately higher for persons under 65 years of age than for the elderly (persons 65 years of age or over), and expenditures for nursing home care were proportionately greater for the elderly than for the population under 65 years of age (Figure 5). Less than two thirds of expenditures for heart diseases for the elderly were for hospital care compared to more than three-fourths for persons under 65 years of age. On the other hand, 8 percent of expenditures for elderly males and 16 percent for elderly females were for nursing home care, compared with only 1 percent of expenditures among persons under 65 years of age. This pattern also occurs for other circulatory diseases such as stroke, hypertension, and the residual category "other circulatory diseases." No patterns of differential spending by age or sex are discernible for professional services or drugs.

Other things being equal, expenditures will be higher the larger the population in an age-sex group. Therefore, it is important to take into consideration the size of the population when comparing expenditures for different ages and between sexes. Although heart disease expenditures for elderly women greatly exceed the amount for elderly males, per capita expenditures were much closer ($309 for men versus $318 for women) (Figure 6). The relatively large total expenditures for heart disease among persons under 65 years of age were distributed among many more persons, and per capita spending was much lower, $36 for males and $26 for females.

Per capita expenditures adjust for the effect of population size. The level of per capita spending is directly related to the prevalence of disease, the number of services used by each patient, and the average cost of each service. The very large differences in per capita spending between the elderly and persons under 65 years of age were chiefly the result of the higher prevalence of heart disease among persons 65 years of age or over. In 1979, the prevalence of heart disease was 274 elderly persons per 1,000 population compared with 52 persons under 65 years of age per 1,000 population (Division of Health Interview Statistics, 1979). Nevertheless, elderly persons with heart disease used more health services, on the average, than the group under 65 years of age, which also contributed to higher per capita expenditures.
Figure 5
Personal health care expenditures for heart disease, by type of care, age, and sex: 1980

Billions of dollars

SOURCE: National Center for Health Statistics

Figure 6
Per capita personal health care expenditures, by type of circulatory system disease, age, and sex: 1980

SOURCE: National Center for Health Statistics
Prevalence rates were about the same for males and females under 65 years of age, but higher use of health services by males resulted in higher per capita expenditures for them. The prevalence rate of heart disease among elderly females was slightly higher than for males. This and greater use of nursing home care resulted in higher per capita expenditures for heart disease among elderly females.

Some of these patterns also hold for hypertension and stroke. Prevalence rates are higher for the elderly and for females, and persons 65 years of age or over with these diseases used more services. As a result, per capita expenditures were higher for persons 65 years of age or over and usually higher for females than for males.

Conclusion

Health care expenditures have taken an increasing share of the gross national product (GNP) for more than two decades, rising from 5.3 percent of GNP in 1960 to 9.8 percent in 1981. If current trends continue, national health expenditures will consume 12 percent of GNP in 1990 (Freeland and Schendler, 1983). The prospect of continuing growth in health care spending that outpaces growth in the rest of the economy makes health care costs an important economic issue, affecting both the public and private sectors.

Potential strategies for reducing health care expenditures include the following: health promotion and disease prevention efforts to reduce prevalence; use of fewer health services per case or the substitution of less expensive for more expensive forms of care such as outpatient for inpatient surgery, and hospice and home care for hospital care; and lower costs per service through technological advances, competition, and other economic incentives that induce more efficient use of resources. In reality, expenditures are determined by a variety of complex and interrelated factors. For example, price per service may depend on the number of services used, and technological innovation that improves quality of care may raise rather than lower costs. Thus, the relative costs and benefits of different strategies are often unclear. For this discussion, however, it is assumed per capita expenditures are directly related to the prevalence rate, number of services per case, and the price per service.

Circulatory disorders are used as an illustration of reductions in expenditures that might be achieved through reduced prevalence, utilization, or costs. The potential savings from what appear to be relatively modest changes in the prevalence and resource requirements for heart disease, stroke, and hypertension are large. A 10 percent decrease in the prevalence of these three circulatory diseases means that four to five million fewer persons would have these conditions and 10 percent fewer dollars would be spent for personal health care. In 1980, almost $2.5 billion would have been saved. Similarly, expenditures in 1980 could have been reduced by $2.5 billion by a 10 percent decrease in expenditures per case, through reductions in the number of services per case, price per service, or some combination of fewer services and lower prices. If the prevalence and resource requirements were simultaneously reduced by 10 percent each, the total savings would be almost $5 billion in terms of 1980 expenditures.

This is not to say that these savings can be realized easily. For example, medical advances leading to a decline in the incidence of heart disease may also lengthen the period of survival for those who do develop heart disease. The net effect may be an increase in the prevalence and the amount of medical care to be provided for heart disease. Similarly, changes in treatment of heart disease may be beneficial to the patient but may also increase expenditures per case. The interrelationships among these and other factors make cost containment a difficult goal to reach.

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