# Medicare physicians' services: The composition of spending and assignment rates

by Ira Burney and George Schieber

*Medicare spending for physicians' services, the second largest component of the Medicare program (24.5 percent), represents 1.3 percent of the Federal budget, 0.41 percent of the gross national product, and 19.4 percent of national spending for physicians' services. Interest in reforming the Medicare physician payment system is growing. Detailed information on patterns of Medicare spending for physicians' services and assignment rates according to physician specialty, place of service, type of service, and procedure are presented here.*

## Introduction

Medicare spending for physicians' services has been the subject of increasing discussion and congressional action in recent years. There have been major changes to the Medicare program every year since 1981. However, the 1984 Deficit Reduction Act was the first legislation to contain provisions, including a fee freeze and a participating physician program, that significantly affected all physicians.

Congress has mandated three studies, due in 1985, on various aspects of physician payment: the advisability and feasibility of an inpatient physician diagnosis-related group system; the response of physicians to the fee freeze as measured by changes in the volume and mix of services they provide; and perceived inequities in the relative amounts paid to physicians with respect to type of service, locality, specialty, and the cognitive versus technical nature of the service provided. Two blue-ribbon panels have recently made recommendations concerning reform of Medicare physician reimbursement.[1] In addition, several medical groups have indicated their interest in developing relative value scales.

Despite these developments, much of the policy debate has taken place without the basic information necessary to analyze the effects of proposed changes. For example, how important is Medicare income to various physician specialties? How does Medicare spending for inpatient physicians' services compare with Medicare spending for outpatient physicians' services, and how does this vary by specialty? Will policies that focus on the inpatient setting have different impacts on different types of services, procedures, and specialties? How does assignment vary with respect to place of service, type of service, and specialty?

In this article, detailed data are brought together on the distribution of Medicare spending for physicians' services and on assignment rates according to physician specialty, place of service, type of service, and procedure. First, Medicare payment and participation practices are discussed. Then the importance of Medicare to physicians is reviewed. In the "Data sources" section, the Medicare Bill Summary Record, a 5-percent sample of Medicare beneficiaries is discussed. The information presented in this article is based largely on special tabulations of previously unpublished data from the Bill Summary Record. Subsequent sections cover Medicare spending and assignment patterns. Finally, the implications of the data for policy are discussed.

## Medicare physician payment and participation policies

Medicare is the largest social program in the United States after Social Security. In fiscal year (FY) 1984, Medicare benefit payments of $60.9 billion (Board of Trustees, 1985a, 1985b) represented 6.6 percent of the Federal budget and 1.7 percent of the gross national product (Council of Economic Advisers, 1985). Spending for physicians' services is the second largest component of Medicare expenditures, accounting for $14.9 billion in FY 1984, or 24.5 percent of the total. Medically necessary covered physicians' services are reimbursed by Part B of the Medicare program, subject to a $75 annual deductible and 20-percent coinsurance. Twenty-seven million elderly and 3 million disabled individuals are enrolled in the Part B program.

Payment for physicians' services is based on the customary, prevailing, and reasonable (CPR) charge methodology. Under the CPR system, Medicare's payment for a particular service, known as the approved charge, is the lowest of: the physician's actual billed charge for the service; the physician's customary charge for the service (defined as the physician's median charge for the procedure during a previous year); and the prevailing charge for the service within a given specialty and local geographic

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[1] The Bowen Commission (Advisory Council on Social Security, 1984) recommended adoption of fee schedules and a voluntary participating physician system for Medicare. The Grace Commission (President's Private Sector Survey on Cost Control, 1983 and 1984) recommended adoption of fee schedules for Medicare and competitive bidding of the Medicare benefit package for all beneficiaries living in an area.

area.[2] The prevailing charge for the service is defined as the lowest customary charge that is high enough to cover 75 percent of all customary charges for the service. Beginning in 1976, prevailing charges have been limited by the Medicare Economic Index, which reflects changes in earnings in the general economy and changes in physicians' office practice costs.

Prior to 1984, customary and prevailing charges were updated on July 1 of each year based on charges to the program during the previous calendar year. However, the Deficit Reduction Act of 1984 "froze" the customary and prevailing charge screens in effect on June 30, 1984, for 15 months (until October 1, 1985) and moved the charge screen update to October 1 of each year. The Act also froze the actual charges of nonparticipating physicians (explained later) for 15 months at the levels in effect during the quarter beginning April 1, 1984. Finally, the Act instituted a direct billing requirement for laboratory services that prohibits physicians from billing for laboratory services they do not perform themselves.

Prior to the Deficit Reduction Act, physicians who were willing to accept the Medicare approved charge as payment in full, a practice known as accepting assignment, billed and were paid by the Medicare program directly. Physicians who did not accept assignment billed the beneficiary, who in turn submitted the claim and received payment from the Medicare program. In this latter case, in addition to Part B cost sharing mandated by statute, the beneficiary was responsible for any difference between the physician's actual charge and the Medicare approved charge. In FY 1984, Medicare approved charges were, on average, 24 percent lower than physicians' actual charges.

The Deficit Reduction Act established a participating physician program for Medicare. A participating physician agrees in advance to accept assignment on all Medicare claims for a 12-month period beginning October 1. As incentives to participate, participating physicians have their names published in directories and available through toll-free telephone lines; are exempt from the 15-month freeze on actual charges; and benefit from certain administrative billing simplifications. Nonparticipating physicians retain the option of accepting assignment on a claim-by-claim basis. The 29.8 percent of physicians who signed participation agreements for the 12-month period beginning October 1, 1984, rendered services that accounted for 34.9 percent of total approved charges (Health Care Financing Administration, 1985a).

## Importance of Medicare to physicians

In fiscal year 1984, Medicare spending for physicians' services totaled $14.9 billion, or $511 per Medicare enrollee. This spending has increased rapidly in the past few years. From fiscal year 1978 to FY 1984, it grew at a compound annual rate of 18.7 percent (Health Care Financing Administration, 1985b), grew as a portion of the Federal budget from 0.8 percent to 1.3 percent, and increased as a portion of the gross national product from 0.25 to 0.41 percent.[3]

In 1983, Medicare payments for physicians' services represented 19.4 percent of total national spending for physicians' services (Gibson et al., 1983). In 1984, Medicare covered an estimated 58 percent of physician service expenses of the aged, 26 percent was paid out of pocket (exclusive of both Part B and Medigap premium payments), 14 percent was covered by insurance, and 2 percent was paid from other sources (Waldo and Lazenby, 1984).

Data from a survey of physicians in 16 specialties indicate the importance of Medicare income to various physician specialties in 1981 (Owens, 1983). Physicians in 6 of the 16 specialties received at least 24 percent of their gross revenues from Medicare. These specialties—thoracic surgery, internal medicine, radiology, general surgery, ophthalmology, and neurology—accounted for one-half of 1981 Medicare approved charges for physicians' services and represented nearly one-third of all physicians. Obstetrics, pediatrics, and psychiatry received less than 6 percent of their gross revenues from Medicare. These specialties accounted for 2 percent of 1981 Medicare approved charges for physicians' services and represented one-fifth of all physicians.[4]

Another measure of the importance of Medicare to physicians is the share of all physicians' visits that is represented by visits to Medicare patients. Data from the American Medical Association's Socioeconomic Monitoring System (American Medical Association, 1984) indicate that this figure is 30 percent. However, Medicare's share of patient visits is larger among medical specialties (43.9 percent) than among surgical specialties (25.7 percent) or general and family practitioners (28 percent). It is difficult to explain why Medicare represents 19.4 percent of spending for physicians' services but 30 percent of visits to physicians. Partial explanation may be found in the fact that the 34.7 percent of Medicare enrollees who do not use enough services to exceed the deductible may receive visits that appear in the patient visit count without generating Medicare payments for those visits. Also, the figure of 19.4 percent represents Medicare payments exclusive of both Medicare deductibles and coinsurance on all claims and exclusive of extra billing amounts on unassigned claims. The amounts of coinsurance and extra billing that physicians collect are unknown but are reflected

[2] The approved charge was formerly called the "reasonable" charge. The Medicare "customary, prevailing, and reasonable/approved charge" terminology is analogous to the "usual, customary, and reasonable (UCR) charge" terminology used by Blue Shield plans and other private insurers.

[3] Medicare physician spending was adjusted to exclude a prorated share of Part B premiums for purposes of calculating the percent of the Federal budget that it represents.

[4] Medicare approved charges are unpublished data from the 1981 Bill Summary Record. Count of doctors of medicine is from Eiler (1983), and osteopathic physician count is from Arnett et al. (1985).

in the "direct payment" and "private insurance" categories in Gibson et al. (1984). These collections might bring Medicare-related physician revenues to as much as one-quarter of total spending for physicians' services.

Using data from the 1976 Health Care Financing Administration (HCFA) Physician Practice Cost and Income Survey, Berry (1981) analyzed, by specialty, large and small Medicare practices, measured in terms of the percentage of patients in a practice covered by Part B. Berry's results indicate that in five specialties—cardiology, gastroenterology, internal medicine, ophthalmology, and urology—at least 30 percent of physicians reported having large Medicare practices (i.e., at least one-half of their patients had Medicare coverage). In 11 specialties—cardiology, dermatology, gastroenterology, general practice, general surgery, internal medicine, neurological surgery, ophthalmology, orthopedic surgery, otolaryngology, and urology—at least 30 percent of physicians had medium-sized Medicare practices (20-49 percent Medicare patients). In contrast, in three specialties—obstetrics-gynecology, pediatrics, and psychiatry—at least 60 percent of physicians had very small Medicare practices (less than 5 percent Medicare patients).

## Data sources

The Health Care Financing Administration (HCFA) maintains a file of Part B claims data for a 5-percent sample of Medicare beneficiaries. This beneficiary file, called the Part B Bill Summary Record (BSR), contains summary billing and payment information on all Part B services provided to a beneficiary and paid for on a charge basis, as well as information on physician specialty, number and type of services provided, place of service, and assignment. A summary record is prepared for each claim, defined as a physician's or supplier's request for payment or a beneficiary's request accompanied by one or more itemized statements from a single physician or supplier.

Each month, carriers transmit to HCFA Central Office magnetic tapes containing the summary records for services paid for in the previous month. These monthly data are verified and consolidated to create the national BSR. The final BSR, covering services rendered during a particular calendar year, is prepared only after a 9-month waiting period following the end of the calendar year to allow for delays in the submission of claims. Records are prepared for each claim authorized regardless of a beneficiary's deductible status. However, only beneficiaries who use sufficient services to exceed the deductible and therefore generate program payments are included in the file. Separate records are prepared for cases in which charges for services performed over two consecutive calendar years are reported on the same claim.

The 1983 file contains 9,822,220 summary records on 1,095,080 beneficiaries. The 1983 BSR is estimated to be 99-percent complete. Tables 1-9 and 12 are based on data from a 1-percent sample of aged beneficiaries (i.e., 1 percent of aged beneficiaries in the 5-percent sample) and 5 percent of disabled beneficiaries (including end-stage renal disease beneficiaries).

The BSR includes approved charges for physicians' services billed on 1490 and 1500 billing forms. The overwhelming majority of physicians' services are billed on these forms; approved charges, which prior to October 1, 1983, were billed on several other forms, are excluded from the BSR.

The BSR excludes services billed on 1554 forms, which were used by hospitals prior to October 1, 1983, to bill for services of hospital-based physicians, particularly radiologists, pathologists, and anesthesiologists. McMillan, Pine, and Newton (1983) have estimated that billings made on 1554's accounted for 3 percent of total Part B reimbursements. The portion of pathologists' services billed on 1554's was larger by far than the portion of services of other physicians billed on these forms. The 1554 form was discontinued for services rendered after October 1, 1983.

The BSR excludes any physicians' services that were combined billed by the hospital on the 1453 hospital billing form prior to October 1, 1983. The combined-billing arrangement primarily affected inpatient radiology and pathology services and was discontinued for services rendered after October 1, 1983. The BSR also excludes any physicians' services rendered in a hospital outpatient department that were combined billed on a 1483 form or for which the professional component was billed separately on a 1483. The extent to which physicians' services were previously billed on 1453 and 1483 forms is not known. However, the absence from the 1983 BSR of data on physicians' billings recorded on 1554, 1453, and 1483 billing forms prior to October 1, 1983, results in an understatement of total Medicare approved charges for physicians' services in that year. Services provided by hospital-based physicians probably account for the bulk of the unrecorded charges.

A limitation of the BSR is that it does not contain procedure-specific information. Only the type of service (medical care, surgery, etc.) appears.

For purposes of this paper, physicians' services include services rendered and/or billed by doctors of medicine and osteopathy. Services of chiropractors, podiatrists, oral surgeons, and optometrists are excluded. Nonphysician services billed by a physician, such as independent laboratory services, ambulance services, durable medical equipment, and prosthetic devices, are included. Two recent changes in Medicare have affected the scope of nonphysician services billed by physicians.

First, prior to October 1, 1983, nonphysician services and supplies furnished to Medicare inpatients, such as laboratory tests, pacemakers, and intraocular lenses, could be billed by physicians or

other providers whether or not they provided them directly. However, the "rebundling" provision of the hospital prospective payment system (PPS) now prohibits physicians from billing Medicare inpatients separately for nonphysician services because they are covered in the prospective payment amount. The BSR reflects billings for these services for 9 months prior to the implementation of PPS.

Second, the 1983 percentage of laboratory services provided and/or billed by physicians includes services billed by physicians but not furnished by them directly. The direct billing provision of the Deficit Reduction Act, which prohibits physicians from billing for laboratory tests they do not provide themselves, is likely to result in reductions after July 1984 in the percentage of all physicians' services represented by laboratory services.

The BSR reflects the method of specialty designation used by the carriers. The bulk of carriers allow physicians to self-designate their specialty for reimbursement purposes, although some require board eligibility or board certification as a condition of payment as a specialist. Once a physician selects a specialty for payment purposes, that determination holds for all services rendered.

**Table 1**

**Medicare approved charges for physicians' services and physician supply, and assignment rate, by specialty: United States, 1983**

| Specialty | Approved charges[1] | | Physician supply[2] | | Approved charges per physician | Assignment rate[3] in percent |
|---|---|---|---|---|---|---|
| | Amount in thousands | Percent of total | Number | Percent of total | | |
| Total | $15,941,427 | 100.0 | 468,090 | 100.0 | $34,056 | 51.6 |
| General practice | 1,557,739 | 9.8 | 62,339 | 13.3 | — | — |
| General practice | 954,232 | 6.0 | 28,508 | 6.1 | 33,472 | 44.6 |
| Family practice | 603,507 | 3.8 | 33,831 | 7.2 | 17,839 | 46.7 |
| Medical specialties | 4,663,744 | 29.3 | 140,103 | 30.0 | — | — |
| Allergy | 21,165 | 0.1 | 1,525 | 0.3 | 13,879 | 29.6 |
| Cardiology | 835,994 | 5.2 | 10,934 | 2.3 | 76,458 | 57.0 |
| Dermatology | 233,570 | 1.5 | 6,066 | 1.3 | 38,505 | 51.5 |
| Gastroenterology | 257,174 | 1.6 | 4,729 | 1.0 | 54,382 | 66.0 |
| Internal medicine | 3,131,504 | 19.7 | 79,980 | 17.1 | 39,154 | 51.2 |
| Pediatrics | 15,966 | 0.1 | 32,570 | 7.0 | 490 | 67.6 |
| Pulmonary disease | 168,371 | 1.1 | 4,299 | 0.9 | 39,165 | 65.1 |
| Surgical specialties | 5,685,989 | 35.6 | 118,027 | 25.2 | — | — |
| General surgery | 1,436,744 | 9.0 | 35,775 | 7.6 | 40,161 | 53.8 |
| Neurological surgery | 162,709 | 1.0 | 3,726 | 0.8 | 43,669 | 52.7 |
| Obstetrics-gynecology | 112,796 | 0.7 | 28,383 | 6.1 | 3,974 | 41.0 |
| Ophthalmology | 1,664,026 | 10.4 | 13,841 | 3.0 | 120,224 | 44.3 |
| Orthopedic surgery | 886,603 | 5.6 | 15,571 | 3.3 | 56,939 | 46.2 |
| Otolarygology | 180,195 | 1.1 | 6,873 | 1.5 | 26,218 | 44.0 |
| Plastic surgery | 75,186 | 0.5 | 3,482 | 0.7 | 21,593 | 57.2 |
| Thoracic surgery | 525,622 | 3.3 | 2,140 | 0.5 | ([4]) | 56.3 |
| Urology | 642,108 | 4.0 | 8,236 | 1.8 | 77,964 | 46.3 |
| Other specialties | 4,028,106 | 25.3 | 147,620 | 31.5 | — | — |
| Anesthesiology | 766,065 | 4.8 | 18,794 | 4.0 | 40,761 | 43.8 |
| Neurology | 214,245 | 1.3 | 6,675 | 1.4 | 32,097 | 54.8 |
| Psychiatry | 197,069 | 1.2 | 29,674 | 6.3 | 6,641 | 71.5 |
| Pathology[5] | 153,277 | 1.0 | 14,513 | 3.1 | 10,561 | 54.1 |
| Radiology[5] | 1,187,323 | 7.5 | 10,176 | 2.2 | 116,679 | 58.7 |
| Other[6] | 1,515,976 | 9.5 | 67,788 | 14.5 | 22,277 | 67.5 |

[1] Approved charges include charges on assigned and unassigned claims and charges applied to the deductible for beneficiaries who use services exceeding the deductible. Note that the assignment rate is calculated based on assigned and unassigned charges, excluding charges applied to the deductible.

[2] Doctor of medicine count is from Eiler (1983) and is as of December 31, 1982. Total excludes physicians not classified, inactive, or with unknown addresses. Osteopathic physician count is from Arnett et al. (1985).

[3] The assignment rate is the ratio of approved charges on assigned claims to approved charges on all Medicare claims. This measure is net of approved charges applied to the deductible.

[4] 1983 approved charges per thoracic surgeon of $245,618 appear extremely high relative to approved charges per physician in other specialties. Data from the 1980, 1981, and 1982 Bill Summary Records also exhibit this pattern. This may result from an incompatability between the carrier definition of specialty, which was used for the information on approved charges, and the American Medical Association (AMA) definition of specialty, which was used for counts of physicians. General surgeons who specialize in pacemaker procedures, for example, could have designated themselves thoracic surgeons for payment purposes, but still have been counted as general surgeons by the AMA. In addition, approved charges for thoracic surgery may include charges for pacemakers themselves, for which physicians were permitted to bill hospital inpatients prior to the "rebundling" provision of the hospital prospective payment system.

[5] As discussed in the "Data sources" section, approved charges for radiologists and pathologists are understated because the 1983 Bill Summary Record excludes combined billings from 1453 billing forms and billings from 1554's for services rendered prior to October 1, 1983. The services of pathologists and radiologists were frequently billed on these two forms.

[6] Includes osteopaths and all other allopathic specialties.

NOTE: Figures may not add to subtotals and totals because of rounding.

SOURCE: Charge and assignment data come from special runs of a working subfile of 1 percent of aged beneficiaries and 5 percent of disabled beneficiaries from the 5-percent Bill Summary Record for services rendered and/or billed by doctors of medicine and osteopathy. See the "Data sources" section for a description of the Bill Summary Record.

## Medicare physician spending

This section is a review of the distribution of Medicare approved charges for physicians' services according to physician specialty, type of service, place of service, and combinations of these; and according to size of claim, size of service, and annual amount of services used by the beneficiary.

Medicare physician spending is concentrated in certain specialties. In 1983, internal medicine accounted for by far the largest share of Medicare approved charges for physicians' services, 19.7 percent (Table 1). The top five specialties for Medicare—internal medicine, ophthalmology, general surgery, radiology, and general practice—accounted for over one-half (52.6 percent) of Medicare approved charges for physicians' services in that year. Each of another four specialties—orthopedic surgery, anesthesiology, urology, and cardiology—accounted for at least 4 percent of Medicare-approved charges for physicians' services. The top 10 specialties represented 54.6 percent of all physicians and accounted for 76 percent of Medicare approved charges for physicians' services. Not surprisingly, psychiatrists, obstetricians-gynecologists, and pediatricians, who represented 19.4 percent of all physicians, accounted for only 2 percent of Medicare approved charges for physicians' services.

As shown in Table 1, in 1983, Medicare approved charges studied here averaged $34,056 per physician.[5] Medicare approved charges for physicians' services averaged more than $75,000 per physician in five specialties—thoracic surgery, ophthalmology, radiology, urology, and cardiology. Orthopedic surgeons and gastroenterologists had Medicare approved charges averaging between $50,000 and $75,000.

Medicare spending also varies widely with respect to type and place of service. Table 2 shows the 1983 distribution of Medicare approved charges for physicians' services across nine types of service and seven places of service. The most significant types of service were medical care (primarily physician visits) and surgery, which accounted for 37.3 percent and 33.7 percent, respectively, of total approved charges. Diagnostic radiology services represented 8.4 percent and diagnostic laboratory services[6] provided and/or billed by physicians another 8.0 percent of total approved charges for physicians' services.[7] Anesthesia accounted for 4.8 percent and consultations for 3.8 percent. Together, these six types of service made up 96 percent of the total. Charges for assistants at surgery, radiation therapy, and other medical services made up the remaining 4 percent.

**Table 2**

**Medicare approved charges and assignment rates for physicians' services, by type and place of service: United States, 1983**

| Type and place of service | Approved charges | Percent of approved charges | Assignment rate in percent in millions |
|---|---|---|---|
| **Type of service** | | | |
| All types | $15,941.4 | 100.0 | 51.6 |
| Medical care | 5,944.8 | 37.3 | 51.8 |
| Surgery | 5,378.3 | 33.7 | 50.1 |
| Consultation | 605.1 | 3.8 | 62.4 |
| Diagnostic radiology | 1,346.0 | 8.4 | 57.3 |
| Diagnostic laboratory | 1,272.8 | 8.0 | 50.0 |
| Radiation therapy | 184.9 | 1.2 | 59.5 |
| Anesthesia | 772.7 | 4.8 | 44.5 |
| Assistant at surgery | 292.6 | 1.8 | 50.6 |
| Other medical services | 144.2 | 0.9 | 53.3 |
| **Place of service** | | | |
| All places | 15,941.4 | 100.0 | 51.6 |
| Office | 4,658.2 | 29.2 | 40.4 |
| Inpatient hospital | 9,875.7 | 61.9 | 54.7 |
| Outpatient hospital | 944.3 | 5.9 | 62.2 |
| Home | 97.7 | 0.6 | 59.7 |
| Independent laboratory | 51.4 | 0.3 | 32.5 |
| Skilled nursing facility | 214.2 | 1.3 | 82.9 |
| Other | 99.9 | 0.6 | 73.1 |

NOTE: Columns may not add to 100.0 percent because of rounding.

SOURCE: See "Data sources" section and Table 1.

More than three-fifths (61.9 percent) of 1983 Medicare approved charges for physicians' services were attributable to care provided on an inpatient basis. Another 29.2 percent reflected services provided in physicians' offices, and care rendered in hospital outpatient settings accounted for 5.9 percent.[8] Together, services provided in these three settings accounted for 97 percent of Medicare physician spending. Services provided in other settings such as skilled nursing facilities (SNF's)[9] and patients' homes accounted for the remainder.

The distribution of Medicare approved charges for physicians' services across various combinations of place and type of service is shown in Table 3. In 1983, inpatient surgery accounted for 27.5 percent of Medicare approved charges for physicians' services. Surgery in physicians' offices and hospital outpatient departments accounted for 3.8 percent and 2.4 percent of the total, respectively. Medical care services provided to hospital inpatients accounted for 18.8 percent of Medicare approved charges for physicians' services. Medical care rendered in physicians' offices accounted for 15.5 percent, and

[5] As discussed in the "Data sources" section, this figure excludes billings on certain forms not included in the BSR.

[6] For purposes of this article, laboratory services refer to diagnostic laboratory services, and radiology services refer to diagnostic radiology services.

[7] The 1983 percentage of laboratory services provided and/or billed by physicians includes services billed by physicians but not furnished by them directly. The direct billing provision of the Deficit Reduction Act is likely to result in reductions after July 1984 in the percentage of all physicians' services represented by laboratory services; reductions in this percentage will be especially marked in specialties which have typically shown large amounts of billings for laboratory services.

[8] As discussed in the "Data sources" section, billings in hospital outpatient departments are understated on the Bill Summary Record to the extent that physicians' services in outpatient departments were billed on the hospital outpatient department billing form (1483) and therefore excluded.

[9] The SNF category also includes physicians' services rendered in nursing homes other than skilled nursing facilities.

## Table 3

**Medicare approved charges, percent distributions of approved charges, and assignment rates for physicians' services, by combinations of place and type of service: United States, 1983**

| Type of service | Place of service | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | All places | Office | Inpatient hospital | Home | Outpatient hospital | Independent lab | Skilled nursing facility | Other places |
| | Approved charges in millions | | | | | | | |
| All types | $15,941.4 | $4,658.2 | $9,875.7 | $97.7 | $944.3 | $51.4 | $214.2 | $99.9 |
| Medical care | 5,944.8 | 2,470.8 | 3,001.5 | 77.7 | 175.6 | (1) | 178.4 | 40.7 |
| Surgery | 5,378.3 | 604.8 | 4,377.6 | 4.1 | 380.4 | 0.1 | 5.1 | 6.1 |
| Consultation | 605.1 | 111.4 | 468.9 | 1.0 | 12.3 | (1) | 10.6 | 0.9 |
| Diagnostic radiology | 1,346.0 | 534.5 | 591.1 | 1.4 | 204.4 | 1.3 | 11.9 | 1.5 |
| Diagnostic laboratory | 1,272.8 | 808.7 | 344.7 | 3.9 | 57.5 | 49.9 | 4.2 | 3.9 |
| Radiation therapy | 184.9 | 63.5 | 39.1 | (1) | 78.6 | (1) | 0.1 | 3.5 |
| Anesthesia | 772.7 | 3.3 | 752.9 | 0.1 | 15.2 | (1) | (1) | 1.0 |
| Assistant at surgery | 292.6 | 3.3 | 279.8 | 0.2 | 8.9 | (1) | (1) | 0.4 |
| Other medical services | 144.2 | 57.8 | 20.0 | 9.2 | 11.4 | (1) | 3.7 | 41.8 |
| | Percent distribution of total approved charges | | | | | | | |
| All types | 100.0 | 29.2 | 61.9 | 0.6 | 5.9 | 0.3 | 1.3 | 0.6 |
| Medical care | 37.3 | 15.5 | 18.8 | 0.5 | 1.1 | (2) | 1.1 | 0.3 |
| Surgery | 33.7 | 3.8 | 27.5 | (2) | 2.4 | (2) | (2) | (2) |
| Consultation | 3.8 | 0.7 | 2.9 | (2) | 0.1 | (2) | 0.1 | (2) |
| Diagnostic radiology | 8.4 | 3.4 | 3.7 | (2) | 1.3 | (2) | 0.1 | (2) |
| Diagnostic laboratory | 8.0 | 5.1 | 2.2 | (2) | 0.4 | 0.3 | (2) | (2) |
| Radiation therapy | 1.2 | 0.4 | 0.2 | (2) | 0.5 | (2) | (2) | (2) |
| Anesthesia | 4.8 | (2) | 4.7 | (2) | 0.1 | (2) | (2) | (2) |
| Assistant at surgery | 1.8 | (2) | 1.8 | (2) | 0.1 | (2) | (2) | (2) |
| Other medical services | 0.9 | 0.4 | 0.1 | 0.1 | 0.1 | (2) | (2) | 0.3 |
| | Percent distribution of approved charges for each type of service | | | | | | | |
| All types | 100.0 | 29.2 | 61.9 | 0.6 | 5.9 | 0.3 | 1.3 | 0.6 |
| Medical care | 100.0 | 42.6 | 50.1 | 1.3 | 3.0 | (2) | 3.0 | 0.7 |
| Surgery | 100.0 | 11.2 | 81.4 | 0.1 | 7.1 | (2) | 0.1 | 0.1 |
| Consultation | 100.0 | 18.3 | 77.1 | 0.2 | 2.0 | (2) | 1.7 | 0.2 |
| Diagnostic radiology | 100.0 | 39.7 | 43.9 | 0.1 | 15.2 | 0.1 | 0.9 | 0.1 |
| Diagnostic laboratory | 100.0 | 63.5 | 27.1 | 0.3 | 4.5 | 3.9 | 0.3 | 0.3 |
| Radiation therapy | 100.0 | 34.4 | 21.2 | (2) | 42.6 | (2) | 0.1 | 1.9 |
| Anesthesia | 100.0 | 0.4 | 97.5 | (2) | 2.0 | (2) | (2) | 0.1 |
| Assistant at surgery | 100.0 | 1.2 | 95.8 | 0.1 | 3.0 | (2) | (2) | (2) |
| Other medical services | 100.0 | 40.1 | 13.9 | 6.4 | 8.0 | (2) | 2.6 | 29.1 |
| | Percent distribution of approved charges for each place of service | | | | | | | |
| All types | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Medical care | 37.3 | 53.0 | 30.4 | 79.6 | 18.6 | (2) | 83.4 | 40.8 |
| Surgery | 33.7 | 13.0 | 44.3 | 4.2 | 40.3 | 0.2 | 2.4 | 6.2 |
| Consultation | 3.8 | 2.4 | 4.7 | 1.0 | 1.3 | (2) | 5.0 | 0.9 |
| Diagnostic radiology | 8.4 | 11.5 | 6.0 | 1.4 | 21.6 | 2.5 | 5.6 | 1.6 |
| Diagnostic laboratory | 8.0 | 17.4 | 3.5 | 4.0 | 6.1 | 97.3 | 2.0 | 3.9 |
| Radiation therapy | 1.2 | 1.4 | 0.4 | (2) | 8.3 | (2) | (2) | 3.5 |
| Anesthesia | 4.8 | 0.1 | 7.6 | 0.1 | 1.6 | (2) | (2) | 1.0 |
| Assistant at surgery | 1.8 | 0.1 | 2.8 | 0.2 | 0.9 | (2) | (2) | (2) |
| Other medical services | 0.9 | 1.2 | 0.2 | 9.4 | 1.2 | (2) | 1.7 | 42.0 |
| | Assignment rates as percent of approved charges | | | | | | | |
| All types | 52 | 40 | 55 | 60 | 62 | 33 | 83 | 73 |
| Medical care | 52 | 35 | 60 | 56 | 72 | (3) | 82 | 80 |
| Surgery | 50 | 48 | 50 | (3) | 54 | (3) | (3) | (3) |
| Consultation | 62 | 44 | 66 | (3) | 61 | (3) | 94 | (3) |
| Diagnostic radiology | 57 | 43 | 65 | (3) | 69 | (3) | 96 | (3) |
| Diagnostic laboratory | 50 | 54 | 58 | (3) | 65 | 32 | (3) | (3) |
| Radiation therapy | 59 | 45 | 70 | (3) | 65 | (3) | (3) | (3) |
| Anesthesia | 45 | (3) | 44 | (3) | 53 | (3) | (3) | (3) |
| Assistant at surgery | 51 | (3) | 50 | (3) | 65 | (3) | (3) | (3) |
| Other medical services | 53 | 41 | 41 | 60 | 77 | (3) | (3) | 53 |

[1] Less than $0.1 million.
[2] Less than 0.05 percent.
[3] Assignment rates not shown where place and type of service approved charges are less than 0.1 percent of total approved charges.

NOTE: Columns and rows may not add to totals because of rounding.

SOURCE: See "Data sources" section and Table 1.

such care provided in hospital outpatient settings totaled 1.1 percent. It is notable that inpatient surgery, together with medical care services rendered in the hospital inpatient setting and in physicians' offices, accounted for 61.8 percent of total Medicare approved charges for physicians' services. Laboratory and radiology services furnished in the office accounted for 5.1 percent and 3.4 percent of total Medicare approved charges for physicians' services, respectively.

The distribution of Medicare approved charges for physicians' services is shown for each type of service in each place of service and, conversely, for each place of service within each type of service. In 1983, 92.7 percent of medical care was rendered in two settings, inpatient hospital (50.1 percent) and physicians' offices (42.6 percent). Of total Medicare approved charges for surgery, 81.4 percent occurred in the inpatient hospital setting, 11.2 percent in physicians' offices, and 7.1 percent in hospital outpatient departments. More than three-quarters of spending for consultations (77.1 percent) took place on an inpatient basis; another 18.3 percent was for consultations provided in physicians' offices. Nearly all spending for diagnostic radiology and radiation therapy services occurred in three settings—inpatient hospital, physicians' offices, and hospital outpatient departments. More than 90 percent of spending for laboratory services occurred in physicians' offices and the inpatient hospital setting. Virtually all spending for anesthesia and assistants at surgery occurred in the hospital.

In 1983, of all Medicare approved charges for physicians' services rendered in the office, medical care accounted for 53.0 percent, laboratory services for 17.4 percent, surgery for 13.0 percent, and radiology for 11.5 percent. Of spending for physicians' services in the hospital, surgery accounted for 44.3 percent, medical care for 30.4 percent, anesthesia for 7.6 percent, radiology services for 6.0 percent, consultations for 4.7 percent, laboratory services for 3.5 percent, and assistants at surgery for 2.8 percent. Three types of service—surgery (40.3 percent), radiology (21.6 percent), and medical care (18.6 percent)—accounted for more than four-fifths of Medicare approved charges for physicians' services in hospital outpatient departments.

The types and places of service from which physicians earn their Medicare revenues vary according to specialty. The distribution of approved charges for 19 specialties, each of which accounted for at least 1 percent of 1983 Medicare approved charges for physicians' services, is shown in Tables 4 and 5.

**Table 4**

**Percent distribution of Medicare approved charges for physicians' services, by type of service and specialty: United States, 1983**

| Specialty | Type of service | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All types | Medical care | Surgery | Diagnostic lab | Diagnostic X-ray | Consultation | Radiation therapy | Anesthesia | Assistant at surgery | Other medical services |
| | Percent distribution | | | | | | | | | |
| All physicians | 100.0 | 37.3 | 33.7 | 8.0 | 8.4 | 3.8 | 1.2 | 4.8 | 1.8 | 0.9 |
| **General practice** | | | | | | | | | | |
| General practice | 100.0 | 74.4 | 7.8 | 9.9 | 3.0 | 1.0 | 0.1 | 0.7 | 2.4 | 0.6 |
| Family practice | 100.0 | 76.6 | 4.9 | 11.5 | 3.0 | 0.9 | (1) | 0.3 | 2.3 | 0.6 |
| **Medical specialties** | | | | | | | | | | |
| Cardiology | 100.0 | 45.5 | 23.9 | 18.8 | 3.7 | 7.2 | 0.1 | (1) | 0.7 | 0.1 |
| Dermatology | 100.0 | 23.4 | 64.8 | 6.4 | 0.2 | 3.2 | 1.1 | (1) | (1) | 0.8 |
| Gastroenterology | 100.0 | 29.8 | 56.1 | 2.8 | 1.7 | 9.4 | (1) | 0.1 | (1) | (1) |
| Internal medicine | 100.0 | 70.8 | 7.8 | 12.6 | 2.7 | 5.2 | 0.1 | 0.1 | 0.1 | 0.5 |
| Pulmonary disease | 100.0 | 64.4 | 13.9 | 7.1 | 1.4 | 12.9 | (1) | (1) | (1) | 0.1 |
| **Surgical specialties** | | | | | | | | | | |
| General surgery | 100.0 | 15.2 | 73.6 | 1.5 | 0.6 | 3.3 | (1) | 0.1 | 5.3 | 0.3 |
| Neurological surgery | 100.0 | 12.8 | 73.3 | 1.0 | 2.5 | 7.9 | (1) | (1) | 2.2 | (1) |
| Ophthalmology | 100.0 | 18.4 | 67.3 | 3.0 | 1.7 | 1.3 | (1) | 0.1 | 4.1 | 4.1 |
| Orthopedic surgery | 100.0 | 14.0 | 71.8 | 0.1 | 7.5 | 2.7 | (1) | 0.1 | 3.2 | 0.5 |
| Otolaryngology | 100.0 | 37.1 | 48.3 | 6.0 | 1.2 | 6.0 | (1) | 0.1 | 0.9 | 0.3 |
| Thoracic surgery | 100.0 | 4.6 | 83.8 | 1.7 | 0.4 | 2.7 | (1) | (1) | 6.5 | 0.2 |
| Urology | 100.0 | 13.6 | 75.3 | 3.4 | 1.3 | 4.4 | (1) | 0.1 | 1.4 | 0.3 |
| **Other specialties** | | | | | | | | | | |
| Anesthesiology | 100.0 | 1.8 | 3.4 | 0.3 | 0.1 | 0.2 | (1) | 93.9 | 0.1 | 0.1 |
| Neurology | 100.0 | 47.0 | 6.7 | 11.2 | 5.7 | 28.9 | 0.1 | (1) | 0.2 | 0.1 |
| Psychiatry | 100.0 | 88.9 | 0.8 | 0.7 | 0.8 | 6.8 | (1) | 0.2 | 0.1 | 1.7 |
| Pathology | 100.0 | 5.9 | 1.0 | 87.3 | 3.0 | 1.7 | 0.1 | 0.4 | 0.2 | 0.3 |
| Radiology | 100.0 | 2.7 | 3.0 | 5.9 | 75.1 | 0.9 | 12.1 | 0.1 | (1) | 0.2 |

[1] Less than 0.05 percent.

NOTE: Rows may not add to 100.0 percent because of rounding.

SOURCE: See "Data sources" section and Table 1.

## Table 5

**Percent distribution of Medicare approved charges for physicians' services, by place of service and specialty: United States, 1983**

| Specialty | Place of service | | | | | | |
|---|---|---|---|---|---|---|---|
| | All places | Office | Inpatient hospital | Home | Skilled nursing facility | Outpatient hospital | Other |
| | Percent distribution | | | | | | |
| All physicians | 100.0 | 29.2 | 61.9 | 0.6 | 1.3 | 5.9 | 0.6 |
| **General practice** | | | | | | | |
| General practice | 100.0 | 48.6 | 38.0 | 2.6 | 4.7 | 4.8 | 1.3 |
| Family practice | 100.0 | 48.0 | 41.4 | 2.0 | 5.0 | 2.0 | 1.6 |
| **Medical specialties** | | | | | | | |
| ardiology | 100.0 | 27.4 | 69.8 | 0.3 | 0.3 | 1.8 | 0.4 |
| Dermatology | 100.0 | 92.4 | 4.3 | 0.4 | 1.1 | 1.0 | 0.7 |
| Gastroenterology | 100.0 | 20.0 | 67.8 | 0.1 | 0.6 | 11.1 | 0.4 |
| Internal medicine | 100.0 | 40.4 | 52.9 | 0.9 | 2.1 | 2.2 | 1.4 |
| Pulmonary disease | 100.0 | 19.4 | 78.4 | 0.2 | 0.3 | 1.3 | 0.4 |
| **Surgical specialties** | | | | | | | |
| General surgery | 100.0 | 12.5 | 83.2 | 0.2 | 0.5 | 3.4 | 0.2 |
| Neurological surgery | 100.0 | 8.4 | 90.1 | (1) | (1) | 1.4 | 0.1 |
| Ophthalmology | 100.0 | 32.4 | 54.1 | 0.4 | 0.4 | 11.3 | 1.5 |
| Orthopedic surgery | 100.0 | 21.9 | 74.1 | 0.1 | 0.2 | 3.5 | 0.2 |
| Otolaryngology | 100.0 | 51.6 | 43.5 | 0.1 | 0.4 | 4.2 | 0.1 |
| Thoracic surgery | 100.0 | 4.8 | 94.3 | 0.3 | (1) | 0.5 | 0.1 |
| Urology | 100.0 | 20.5 | 76.4 | 0.1 | 0.2 | 2.6 | 0.2 |
| **Other specialties** | | | | | | | |
| Anesthesiology | 100.0 | 1.0 | 96.7 | (1) | 0.1 | 2.0 | 0.2 |
| Neurology | 100.0 | 29.5 | 67.3 | 0.1 | 0.4 | 2.5 | 0.2 |
| Psychiatry | 100.0 | 23.7 | 69.4 | 1.2 | 4.0 | 1.5 | 0.2 |
| Pathology | 100.0 | 6.2 | 81.8 | 0.2 | 0.3 | 9.0 | 2.4 |
| Radiology | 100.0 | 22.3 | 53.5 | 0.1 | 0.5 | 23.1 | 0.5 |

[1] Less than 0.05 percent.

NOTE: Rows may not add to 100.0 percent because of rounding.

SOURCE: See "Data sources" section and Table 1.

Physicians in general practice, family practice, internal medicine, and psychiatry earned at least 70 percent of their Medicare income from the provision of medical care services, and physicians in eight other specialties earned at least one-half of their Medicare dollars from the provision of surgical services (Table 4). Together, medical care and surgical services were the source of at least three-quarters of the Medicare income of physicians in 14 of the 19 specialties.

In 1983, laboratory services accounted for at least 10 percent of the Medicare revenues received by physicians in pathology, cardiology, internal medicine, family practice, and neurology. Consultations were extremely important to neurologists, generating 28.9 percent of their Medicare dollars. Physicians in seven other specialties—pulmonary disease, gastroenterology, neurological surgery, cardiology, psychiatry, otolaryngology, and internal medicine—derived at least 5 percent of their Medicare income from consultations.

The importance of the hospital setting to virtually all specialties is illustrated by the fact that, in 1983, physicians in all specialties except dermatology derived at least 38 percent of their Medicare income from services provided to hospital inpatients (Table 5). Physicians in 12 of the 19 specialties—anesthesiology, thoracic surgery, neurological surgery, general surgery, pathology, pulmonary disease, urology, orthopedic surgery, cardiology, psychiatry, gastroenterology, and neurology—earned at least two-thirds of their Medicare revenues in the inpatient setting. General practitioners and family practitioners earned about two-fifths of their total Medicare income from services provided to hospital inpatients.

Only dermatologists earned more than 90 percent of their Medicare income in the office. General practitioners, family practitioners, and otolaryngologists derived about one-half of their Medicare revenues in that setting. Physicians in another eight specialties earned 20-35 percent of their Medicare incomes from services provided in the office.

Medicare spending for each type and place of service varies according to specialty. Tables 6 and 7 show the distribution, along these dimensions, of 1983 Medicare approved charges for physicians' services for the 19 specialties that cumulatively accounted for 89.1 percent of all Medicare physician spending.

These 19 specialties also accounted for at least 80 percent of Medicare spending for each type of service

## Table 6

**Percent distribution of Medicare approved charges for physicians' services, by specialty and type of service: United States, 1983**

| Specialty | Type of service | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All types | Medical care | Surgery | Diagnostic lab | Diagnostic X-ray | Consultation | Radiation therapy | Anesthesia | Assistant at surgery | Other medical services |
| | Percent distribution | | | | | | | | | |
| All physicians | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 19 specialties | 89.1 | 86.5 | 90.9 | 86.3 | 89.1 | 89.2 | 83.3 | 95.6 | 92.4 | 80.3 |
| All other specialties | 10.9 | 13.5 | 9.1 | 13.7 | 10.9 | 10.8 | 16.7 | 4.4 | 7.6 | 19.7 |
| **General practice** | | | | | | | | | | |
| General practice | 6.0 | 11.9 | 1.4 | 7.4 | 2.1 | 1.6 | 0.5 | 0.8 | 7.9 | 4.0 |
| Family practice | 3.8 | 7.8 | 0.5 | 5.4 | 1.4 | 0.9 | 0.1 | 0.2 | 4.8 | 2.3 |
| **Medical specialties** | | | | | | | | | | |
| Cardiology | 5.2 | 6.3 | 3.7 | 12.3 | 2.3 | 9.9 | 0.5 | (1) | 1.9 | 0.4 |
| Dermatology | 1.5 | 0.9 | 2.8 | 1.2 | (1) | 1.2 | 1.3 | (1) | (1) | 1.2 |
| Gastroenterology | 1.6 | 1.3 | 2.7 | 0.6 | 0.3 | 4.0 | (1) | (1) | (1) | 0.1 |
| Internal medicine | 19.6 | 37.0 | 4.5 | 31.1 | 6.3 | 26.9 | 2.2 | 0.3 | 1.4 | 12.0 |
| Pulmonary disease | 1.1 | 1.8 | 0.4 | 0.9 | 0.2 | 3.6 | (1) | (1) | (1) | 0.1 |
| **Surgical specialties** | | | | | | | | | | |
| General surgery | 9.0 | 3.6 | 19.7 | 1.7 | 0.6 | 7.8 | 0.4 | 0.2 | 26.1 | 2.6 |
| Neurological surgery | 1.0 | 0.3 | 2.2 | 0.1 | 0.3 | 2.1 | (1) | (1) | 1.3 | 0.1 |
| Ophthalmology | 10.4 | 5.1 | 20.8 | 3.9 | 2.1 | 3.5 | 0.1 | 0.2 | 23.3 | 47.4 |
| Orthopedic surgery | 5.6 | 2.1 | 11.8 | 0.1 | 4.9 | 4.0 | 0.2 | 0.1 | 9.6 | 3.2 |
| Otolaryngology | 1.1 | 1.1 | 1.6 | 0.8 | 0.2 | 1.8 | (1) | (1) | 0.6 | 0.4 |
| Thoracic surgery | 3.3 | 0.4 | 8.2 | 0.7 | 0.2 | 2.3 | (1) | (1) | 11.8 | 0.6 |
| Urology | 4.0 | 1.4 | 9.0 | 1.7 | 0.6 | 4.7 | 0.1 | 0.1 | 3.2 | 1.4 |
| **Other specialties** | | | | | | | | | | |
| Anesthesiology | 4.8 | 0.2 | 0.5 | 0.2 | (1) | 0.3 | (1) | 93.1 | 0.1 | 0.4 |
| Neurology | 1.3 | 1.7 | 0.3 | 1.9 | 0.9 | 10.2 | 0.1 | (1) | 0.1 | 0.1 |
| Psychiatry | 1.2 | 2.9 | (1) | 0.1 | 0.1 | 2.2 | (1) | 0.1 | 0.1 | 2.3 |
| Pathology | 1.0 | 0.2 | (1) | 10.5 | 0.3 | 0.4 | 0.1 | 0.1 | 0.1 | 0.3 |
| Radiology | 7.4 | 0.5 | 0.7 | 5.5 | 66.2 | 1.7 | 77.6 | 0.2 | 0.1 | 1.4 |

[1] Less than 0.05 percent.

NOTE: Columns may not add to 100.0 percent because of rounding.

SOURCE: See "Data sources" section and Table 1.

(Table 6). Internal medicine, general practice, and family practice accounted for 56.7 percent of approved charges for medical care. Internal medicine alone represented 37 percent. Three other specialties—ophthalmology, general surgery, and orthopedic surgery—accounted for 52.3 percent of approved charges for surgery. Ophthalmology by itself accounted for 20.8 percent. Of approved charges for laboratory services, three specialties—internal medicine, cardiology, and pathology—accounted for 53.9 percent; internal medicine represented 31.1 percent. Radiologists accounted for about two-thirds of spending for diagnostic radiology services and about three-quarters of radiation therapy services. Internal medicine, neurology, and cardiology accounted for 47.0 percent of approved charges for consultations. Five specialties—general surgery, ophthalmology, thoracic surgery, orthopedic surgery, and general practice—represented 78.7 percent of approved charges for assistants at surgery. Ophthalmology accounted for 47.4 percent of approved charges for other medical services.

The 19 specialties accounted for at least 80 percent of approved charges in physicians' offices, both inpatient and outpatient hospital settings, patients' homes, and SNF's (Table 7). Internal medicine, ophthalmology, and general practice accounted for 48.7 percent of approved charges for services furnished in physicians' offices. Internal medicine alone represented 27.1 percent. Of approved charges for physicians' services rendered in the hospital, internists accounted for 16.8 percent, the single largest share, and five specialties accounted for 52.1 percent. Five percent or more of Medicare approved charges for physicians' services in the hospital were accounted for by each of nine specialties. Internal medicine, general practice, and family practice represented 65.9 percent of approved charges for physicians' services in patients' homes and 66.3 percent in SNF's. Of spending for services in hospital outpatient departments, radiologists, and ophthalmologists accounted for 48.9 percent.

Although these payment data from the Medicare Bill Summary Record provide information on the distribution of Medicare spending according to broad types of service, they do not furnish information at the procedure level. Hospital discharge data illustrate in more detail the types of procedures that are most common among inpatients 65 years of age or over,

## Table 7

**Percent distribution of Medicare approved charges for physicians' services, by specialty and place of service: United States, 1983**

| Specialty | All places | Place of service: Office | Inpatient hospital | Home | Skilled nursing facility | Outpatient hospital | Other |
|---|---|---|---|---|---|---|---|
| | Percent distribution | | | | | | |
| All physicians | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| 19 specialties | 89.1 | 88.3 | 88.1 | 89.3 | 84.2 | 83.0 | 73.6 |
| All other specialties | 10.9 | 11.7 | 11.9 | 10.7 | 15.8 | 17.0 | 26.4 |
| **General practice** | | | | | | | |
| General practice | 6.0 | 10.0 | 3.7 | 25.2 | 21.0 | 4.8 | 8.0 |
| Family practice | 3.8 | 6.2 | 2.5 | 12.1 | 14.0 | 1.3 | 6.5 |
| **Medical specialties** | | | | | | | |
| Cardiology | 5.2 | 4.9 | 5.9 | 2.4 | 1.1 | 1.6 | 2.2 |
| Dermatology | 1.5 | 4.6 | 0.1 | 1.0 | 1.2 | 0.3 | 1.0 |
| Gastroenterology | 1.6 | 1.1 | 1.8 | 0.3 | 0.7 | 3.0 | 0.6 |
| Internal medicine | 19.6 | 27.1 | 16.8 | 28.6 | 31.3 | 7.4 | 29.0 |
| Pulmonary disease | 1.1 | 0.7 | 1.3 | 0.3 | 0.2 | 0.2 | 0.5 |
| **Surgical specialties** | | | | | | | |
| General surgery | 9.0 | 3.8 | 12.1 | 3.4 | 3.4 | 5.2 | 2.0 |
| Neurological surgery | 1.0 | 0.3 | 1.5 | (1) | (1) | 0.2 | 0.1 |
| Ophthalmology | 10.4 | 11.6 | 9.1 | 6.0 | 2.8 | 19.9 | 16.2 |
| Orthopedic surgery | 5.6 | 4.2 | 6.6 | 1.2 | 0.6 | 3.3 | 1.0 |
| Otolaryngology | 1.1 | 2.0 | 0.8 | 0.2 | 0.4 | 0.8 | 0.1 |
| Thoracic surgery | 3.3 | 0.5 | 5.0 | 1.7 | (1) | 0.3 | 0.3 |
| Urology | 4.0 | 2.8 | 5.0 | 0.4 | 0.5 | 1.7 | 0.9 |
| **Other specialties** | | | | | | | |
| Anesthesiology | 4.8 | 0.2 | 7.5 | 0.2 | 0.2 | 1.6 | 0.8 |
| Neurology | 1.3 | 1.4 | 1.5 | 0.2 | 0.4 | 0.6 | 0.2 |
| Psychiatry | 1.2 | 1.0 | 1.4 | 2.4 | 3.7 | 0.3 | 0.3 |
| Pathology | 1.0 | 0.2 | 1.3 | 0.4 | 0.2 | 1.5 | 0.1 |
| Radiology | 7.4 | 5.7 | 6.4 | 1.1 | 2.6 | 29.0 | 3.8 |

[1] Less than 0.05 percent.

NOTE: Columns may not add to 100.0 percent because of rounding.

SOURCE: See "Data sources" section and Table 1.

virtually all of whom are enrolled in the Medicare program.

Hospital Discharge Survey data (Graves, 1985) indicate that, in 1983, 35 percent of discharges among the elderly population were for surgery. Sixteen procedures[10] accounted for 39.1 percent of all inpatient surgical procedures performed on persons in this group (Table 8). Moreover, seven of these procedures—extraction of lens, insertion of prosthetic lens, prostatectomy, gallbladder removal (cholecystectomy), pacemaker procedures, gastrectomy, and inguinal hernia repair—accounted for 29 percent of all inpatient surgical procedures performed on the elderly. (Cataract removals are now increasingly performed in outpatient settings.) National average Medicare prevailing charges for specialists exceeded $1,000 for four of these procedures in the year beginning July 1, 1983.

For certain inpatient procedures, a substantial portion of the total number performed are attributable to the aged. Indeed, Table 9 shows that at least 74 percent of all inpatient lens extractions, prosthetic lens insertions, pacemaker procedures, prostatectomies, and arthroplasty-hip replacements were performed on those 65 years of age or over. In 1983, these five operations accounted for 23.7 percent of all inpatient surgical procedures performed on the elderly population and were also procedures whose markets were dominated by this age group. Nearly 60 percent of all partial gastrectomies-intestine resections were performed on the population 65 years or over, and elderly persons also accounted for at least 25 percent of the market for nine other surgical procedures.

The elderly population's share of the market for diagnostic and therapeutic procedures performed on an inpatient basis is also shown in Table 9. For nine procedures, elderly patients accounted for at least 27 percent of the total number performed. In 1983, the aged population received 51.4 percent of all endoscopies, 47 percent of radioisotope scans, 44.5 percent of bronchoscopies, and 42.8 percent of computerized axial tomography (CAT) scans.

Medicare spending for physicians' services also varies with respect to the dollar size of claims and services (measured by approved charges) and the

[10] For purposes of this article, surgical procedures include biopsies but exclude diagnostic endoscopy and radiography, radiotherapy and related therapies, physical medicine and rehabilitation, and other nonsurgical procedures. For a definition of surgical procedures, see Graves (1985).

## Table 8

**Selected inpatient surgical procedures as a percent of all inpatient surgical procedures for population 65 years of age or over and average specialist prevailing charge: United States, 1983**

| Surgical procedure | Number of procedures in thousands | Percent of all procedures[1] | Average specialist prevailing charge, FSY 1984[2] |
|---|---|---|---|
| All surgical procedures | 6,192 | 100.0 | — |
| Selected surgical procedures | 2,421 | 39.1 | — |
| Extraction of lens | 501 | 8.1 | $1,001 |
| Insertion of prosthetic lens | 427 | 6.9 | N/A |
| Prostatectomy | 274 | 4.4 | [3]1,005 |
| Cholecystectomy | 156 | 2.5 | 843 |
| Pacemaker[4] | 150 | 2.4 | [5]1,214 |
| Partial gastrectomy resection of intestine | 148 | 2.4 | [6]1,153 |
| Repair of inguinal hernia | 140 | 2.3 | 522 |
| Open reduction of fracture | 133 | 2.1 | 1,182 |
| Arthroplasty and replacement of hip | 118 | 1.9 | 2,322 |
| Dilation of urethra | 70 | 1.1 | 26 |
| Direct heart revascularization[7] | 67 | 1.1 | [8]3,942 |
| Division of peritoneal adhesions[9] | 57 | 0.9 | N/A |
| Hysterectomy | 53 | 0.9 | 1,002 |
| Mastectomy | 44 | 0.7 | [10]960 |
| Other reduction of fracture | 42 | 0.7 | N/A |
| Arthroplasty and replacement of knee | 41 | 0.7 | N/A |

[1] Total includes biopsies but excludes most diagnostic and therapeutic "surgical" procedures (i.e., those not coded as surgical procedures prior to 1979). Total includes all listed procedures for surgical discharges from short-stay hospitals.
[2] Fee Screen Year 1984 (July 1, 1983, to June 30, 1984).
[3] Prevailing charge for electrosection-prostate.
[4] Includes insertion, replacement, removal, and repair of pacemakers.
[5] Prevailing charge for insertion of pacemakers.
[6] Prevailing charge for colectomy.
[7] Coronary artery bypass.
[8] Prevailing charge for coronary artery bypass.
[9] Surgery of the digestive system: release of adhesions of the bowel, usually resulting from previous surgery.
[10] Prevailing charge for radical mastectomy.

NOTE: N/A = Data not available.

SOURCE: Number of procedures is from Graves (1985). Special run of the subtotal of surgical procedures described in footnote 1 was provided by Robert Pokras. Average specialist prevailing charges for FSY 1984 are unweighted averages of prevailing charges in each Medicare reimbursement locality; data from Bureau of Program Operations, Health Care Financing Administration.

dollar volume of services used by a beneficiary in a year. This information is essential to evaluation of reimbursement and assignment policies that are linked to the size of the claim or service as well as coinsurance or catastrophic protection policies that are based on patterns of beneficiary spending.

Small claims account for the bulk of claims received by Medicare for physicians' services, but they account for only a small portion of total approved charges for physicians' services (Table 10). For example, the 79.5 percent of claims on which approved charges were $100 or less accounted for only 26.8 percent of total approved charges in 1983. In contrast, the 1.4 percent of claims on which approved charges were more than $1,000 represented 23.7 percent of total approved charges for physicians' services.

Because claims can include more than one service, it is also useful to consider the distribution of expenditures with respect to the dollar size of each service. In 1983, although the approved charges for 96.8 percent of services rendered and/or billed by physicians were $100 or less, the cumulative approved charges for these services accounted for only 61.5 percent of total approved charges for physicians' services. On the other hand, services for which approved charges exceeded $1,000 represented 0.4 percent of services but 15.2 percent of total approved charges for physicians' services.[11]

Although these data indicate that the approved charges on most Medicare claims and services are less than $100, it is also apparent that Medicare spending is concentrated among a small number of beneficiaries who receive a large annual dollar volume of services. The 5.6 percent of beneficiaries who received physicians' services whose approved charges totaled $2,500 or more in 1983 accounted for 45.4 percent of total approved charges for physicians' services (Table 10). Similarly, the 15.1 percent of beneficiaries who received physicians' services whose approved charges totaled $1,000 or more accounted for 73.0 percent of total approved charges for physicians' services. In contrast, the 28.1 percent of beneficiaries who received physicians' services whose approved charges totaled less than $250 accounted for only 6.6 percent of spending for these services. In 1983, 34.7 percent of beneficiaries did not use enough

[11] Because each anesthesia time and base unit for a procedure is frequently counted as a separate service for billing purposes, we examined the potential impact of this method of billing on the distribution of the number of services by size of approved charge. We found virtually the same distribution of services by size of approved charge whether anesthesia services were included or excluded.

physicians' services covered by Medicare to exceed the deductible.

## Medicare assignment rates

Beneficiary protection against out-of-pocket expenses (in excess of Medicare cost-sharing amounts) can be measured by the Medicare assignment rate. The two most common measures of assignment are the claims assignment rate, the percentage of claims taken on assignment, and the dollar assignment rate, the percentage of total approved charges represented by claims taken on assignment. A claims assignment rate weights each claim equally, regardless of whether it contains a bill for a $10 laboratory test or a $2,000 surgery. This assignment rate may not accurately represent the financial protection assignment actually provides to beneficiaries to the extent that the frequency of assigned claims is not correlated with their dollar size. (Frequent but small dollar claims taken on assignment result in less significant beneficiary financial protection than do less frequent but far more costly assigned claims.) Thus, the extent of beneficiary financial liability can be more realistically estimated from the dollar assignment rate.

In FY 1984, assignment was accepted on 56.7 percent of all Part B claims, and 57.4 percent of total Part B approved charges were accounted for by claims taken on assignment. National and carrier-specific claims and dollar-assignment rates are available from monthly and quarterly carrier workload reports. However, assignment rates specific to physician specialty, place of service, and type of service are not routinely available. Assignment rates presented in this article are from the 1983 Bill Summary Record data. Although the participating physician program, established in July 1984, has fundamentally changed the terms of participation in Medicare, information on assignment rates prior to the program's implementation is useful as a baseline.

The 1983 dollar-assignment rates for each specialty are presented in Table 1. The overall dollar-

### Table 9

**Elderly population's share of market for selected inpatient surgical, diagnostic, and therapeutic procedures: United States, 1983**

| Procedure | Percent of market share for population 65 years or over |
|---|---|
| **Inpatient surgical** | |
| Insertion of prosthetic lens | 82.8 |
| Extraction of lens | 79.5 |
| Pacemaker[1] | 79.4 |
| Prostatectomy | 76.8 |
| Arthroplasty and replacement of hip | 74.2 |
| Partial gastrectomy, resection of intestine | 59.7 |
| Dilation of urethra | 42.9 |
| Mastectomy | 37.9 |
| Direct hearth revascularization | 35.1 |
| Open heart surgery | 32.0 |
| Cholecystectomy | 32.0 |
| Open reduction of fracture | 31.4 |
| Arthroplasty and replacement of knee | 27.9 |
| Repair of inguinal hernia | 27.5 |
| Skin graft (except mouth or lip) | 26.0 |
| **Inpatient diagnostic or therapeutic** | |
| Endoscopy | 51.4 |
| Radioisotope scan | 47.0 |
| Bronchoscopy | 44.5 |
| Computerized axial tomography (CAT) | 42.8 |
| Esophagoscopy and gastroscopy | 38.6 |
| Arteriography and angiocardiography | 38.3 |
| Diagnostic ultrasound | 35.8 |
| Pyelogram[2] | 33.8 |
| Cardiac catheterization | 27.2 |

[1] Includes insertion, replacement, removal, and repair of pacemakers.
[2] An X-ray highlighting the kidney and urinary tract.

SOURCE: Derived from Graves (1985).

### Table 10

**Percent of spending for physicians' services, by dollar size of claim, dollar size of service, and dollar volume of physicians' services used by the beneficiary: United States, 1983**

| Dollar interval | Percent of total | Approved charges | Assignment rate |
|---|---|---|---|
| **Size of claim** | | Percent | |
| All sizes | 100.0 | 100.0 | 51.6 |
| $1-$20 | 29.1 | 4.2 | 47.2 |
| $21-$40 | 27.6 | 8.0 | 45.5 |
| $41-$60 | 11.3 | 5.6 | 47.5 |
| $61-$80 | 6.8 | 4.8 | 50.2 |
| $81-$100 | 4.7 | 4.2 | 49.9 |
| $101-$200 | 10.1 | 14.1 | 50.4 |
| $201-$500 | 7.1 | 21.4 | 55.9 |
| $501-$1,000 | 2.0 | 14.1 | 56.5 |
| $1,001-$2,000 | 1.1 | 15.5 | 49.0 |
| More than $2,000 | 0.3 | 8.2 | 50.5 |
| **Size of service[1]** | | | |
| All sizes | 100.0 | 100.0 | 51.6 |
| $1-$20 | 51.2 | 17.4 | 43.4 |
| $21-$40 | 35.7 | 28.0 | 51.8 |
| $41-$60 | 6.5 | 8.8 | 57.2 |
| $61-$80 | 2.2 | 4.3 | 57.7 |
| $81-$100 | 1.2 | 3.0 | 60.4 |
| $101-$200 | 1.5 | 5.8 | 61.8 |
| $201-$500 | 1.0 | 8.6 | 58.0 |
| $501-$1,000 | 0.4 | 8.9 | 52.0 |
| $1,001-$2,000 | 0.3 | 10.8 | 43.8 |
| More than $2,000 | 0.1 | 4.4 | 50.5 |
| **Dollar volume of annual physicians' services used[2]** | | | |
| All amounts | 100.0 | 100.0 | 51.6 |
| No reimbursement[3] | 34.7 | 0.0 | — |
| $1-$100 | 9.6 | 1.1 | 35.5 |
| $100-$249 | 18.5 | 5.5 | 33.4 |
| $250-$499 | 12.7 | 8.2 | 41.9 |
| $500-$999 | 9.4 | 12.0 | 49.1 |
| $1,000-$1,999 | 7.4 | 19.3 | 50.3 |
| $2,000-$2,499 | 2.1 | 8.3 | 51.6 |
| $2,500 or more | 5.6 | 45.4 | 56.6 |

[1] Each anesthesia time and base unit for a procedure is frequently counted as a separate service for billing purposes billed. Anesthesia time units were counted in 12- or 15-minute units prior to October 1, 1983. Each mile or time unit (for services billed by physicians) is also counted as a separate service.
[2] Dollar volume of physicians' services in 1983 is measured by Medicare approved charges, including beneficiary coinsurance and deductible liabilities for persons who exceed the deductible.
[3] These beneficiaries did not use enough services to meet the deductible.

NOTE: Columns may not add to 100.0 percent because of rounding.

SOURCE: See "Data sources" section and Table 1.

assignment rate in 1983 was 51.6 percent, but there was considerable variation across specialties.[12] Four of the 19 specialties that each accounted for at least 1 percent of Medicare approved charges for physicians' services—anesthesiology, otolargyngology, ophthalmology, and general practice—had assignment rates of less than 45 percent. The highest assignment rates among these specialties were in psychiatry (71.5 percent), gastroenterology (66.0 percent), and pulmonary disease (65.1 percent).

Dollar-assignment rates for physicians' services according to type of service are displayed in Table 2. The assignment rate for medical care services (51.8 percent) was slightly higher than the rate for surgical services (50.1 percent). Assignment rates for consultations (62.4 percent) and radiology services (57.3 percent) were higher than the rates for laboratory services (50.0 percent) and anesthesia (44.5 percent).

Dollar-assignment rates according to place of service are also displayed in Table 2. Assignment rates were higher for inpatient physicians' services (54.7 percent) than for services furnished in physicians' offices (40.4 percent), and assignment rates in hospital outpatient settings were still higher (62.2 percent). The assignment rate was 59.7 percent for care in patients' homes and 82.9 percent for services in SNF's. However, services provided in these two settings accounted for less than 2 percent of Medicare approved charges for physicians' services.

Dollar-assignment rates for physicians' services provided in physicians' offices, inpatient and outpatient hospital settings, and all other settings are shown according to type of service in Table 3. Several key findings emerge. First, the assignment rate for medical care differed greatly depending on the setting. The assignment rate for medical care was 35 percent in physicians' offices, but it was 60 percent in the inpatient hospital setting and 72 percent in hospital outpatient settings. Second, the assignment rate for surgery performed in physicians' offices (48 percent) was slightly lower than the rate for surgery performed on an inpatient basis (50 percent); the assignment rate for surgery was highest in the outpatient hospital setting (54 percent). Third, the assignment rate for consultations performed in the inpatient hospital setting was 66 percent, compared with 44 percent for consultations performed in physicians' offices. Fourth, the assignment rate for radiology services was much higher in the hospital (65 percent) than in physicians' offices (43 percent). For laboratory services, the assignment rate was only slightly higher in the hospital (58 percent) than in physicians' offices (54 percent).

Dollar-assignment rates for each place and type of service are shown by specialty in Tables 11 and 12. Little consistent relationship can be seen between assignment rates for medical care and surgery across specialties. In several of the medical specialties, general practice, and in family practice, assignment rates were lower for laboratory services than for medical care services; in the surgical specialties, the converse was true. In almost all specialties, assignment rates for consultations were higher than those for medical care. Assignment rates for 16 of 19 specialties were higher in the hospital setting than for services rendered in physicians' offices; in 11 specialties, the inpatient assignment rates exceeded by 15 percent or more the rates for services furnished in physicians' offices. The largest differences were in internal medicine, pulmonary disease, dermatology, and gastroenterology; the smallest differences were in the surgical specialties. In most specialties, assignment rates were highest for services rendered in patients' homes and SNF's.

Assignment rates are shown in Table 10 according to the amount of the approved charges for each claim and for each service and according to the amount of total approved charges for physicians' services used by the beneficiary. The data indicate some variation in assignment rates (45.5-56.5 percent) according to the amount of approved charges for the claim and somewhat wider variation (43.4-61.8 percent) according to the approved charges for each service, but no patterns are distinguishable. However, the assignment rate was related to the total dollar volume of approved charges for physicians' services received by a beneficiary in a year. In 1983, the assignment rate was 35.5 percent on services provided to beneficiaries who received physicians' services whose approved charges totaled less than $100, compared with 56.6 percent for beneficiaries who received physicians' services whose approved charges totaled $2,500 or more.

## Discussion

Detailed information has been presented on the impact of Medicare on physicians. In this section, implications of these data for physician payment reform and assignment, utilization, and cost-sharing policies are discussed.

Physician payment reforms, including fee schedules, inpatient physician diagnosis-related group systems, and capitation, have been discussed (Burney et al., 1984). Because 62 percent of Medicare spending for physicians' services takes place on an inpatient basis, influencing spending for services provided in this setting will be an important aspect of payment reform. The hospital prospective payment system and the peer review organization program, which provide incentives for efficiency in the provision of services in the hospital and incentives for the performance of services outside the hospital, are likely to affect Medicare spending for physicians' services.

[12] The 51.6-percent dollar-assignment rate from the 1983 BSR is based on approved charges for physicians' services only. This compares with a 55.6-percent 1983 dollar-assignment rate for all Part B services and a 53.9-percent claims assignment rate.

## Table 11

## Assignment rates for physicians' services, by type of service and specialty: United States, 1983

| Specialty | Type of service | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | All types | Medical care | Surgery | Diagnostic lab | Diagnostic X-ray | Consultation | Radiation therapy | Anesthesia | Assistant at surgery | Other medical services |
| | Percent distribution | | | | | | | | | |
| All physicians | 51.6 | 51.8 | 50.1 | 50.0 | 57.3 | 62.4 | 59.5 | 44.5 | 50.6 | 53.3 |
| **General practice** | | | | | | | | | | |
| General practice | 44.6 | 45.0 | 45.5 | 42.8 | 40.6 | 56.5 | 52.8 | 41.3 | 40.3 | 39.2 |
| Family practice | 46.7 | 47.7 | 44.0 | 43.0 | 40.3 | 59.9 | (1) | 43.0 | 40.9 | 46.7 |
| **Medical specialties** | | | | | | | | | | |
| Cardiology | 57.0 | 56.0 | 51.7 | 63.6 | 65.9 | 61.1 | 96.0 | (1) | 45.5 | 41.4 |
| Dermatology | 51.5 | 46.8 | 52.6 | 45.2 | 48.1 | 75.4 | 45.7 | (1) | (1) | 63.3 |
| Gastroenterology | 65.9 | 61.9 | 69.1 | 44.3 | 39.4 | 70.7 | (1) | 35.1 | (1) | (1) |
| Internal medicine | 51.2 | 51.9 | 55.7 | 41.3 | 37.1 | 61.8 | 83.0 | 47.8 | 60.7 | 67.9 |
| Pulmonary disease | 65.1 | 64.4 | 68.2 | 65.7 | 33.5 | 68.6 | (1) | (1) | (1) | 65.3 |
| **Surgical specialties** | | | | | | | | | | |
| General surgery | 53.8 | 55.9 | 53.1 | 57.2 | 43.8 | 64.6 | (1) | 43.7 | 51.7 | 38.5 |
| Neurological surgery | 52.7 | 58.8 | 51.0 | 68.3 | 63.5 | 54.3 | (1) | (1) | 48.8 | (1) |
| Ophthalmology | 44.3 | 34.5 | 43.4 | 66.0 | 74.6 | 62.9 | (1) | 60.9 | 61.0 | 45.9 |
| Orthopedic surgery | 46.2 | 44.9 | 47.1 | 50.2 | 38.7 | 55.8 | (1) | 43.0 | 41.0 | 23.9 |
| Otolaryngology | 44.0 | 30.3 | 50.3 | 49.6 | 29.0 | 63.1 | (1) | 41.4 | 67.2 | 28.9 |
| Thoracic surgery | 56.3 | 63.9 | 55.4 | 78.8 | 69.8 | 63.9 | (1) | (1) | 51.3 | 77.5 |
| Urology | 43.8 | 46.9 | 45.6 | 44.0 | 35.1 | 60.5 | (1) | 39.5 | 48.5 | 40.5 |
| **Other specialties** | | | | | | | | | | |
| Anesthesiology | 43.8 | 58.1 | 53.0 | 61.9 | 49.5 | 66.7 | (1) | 43.1 | 49.8 | 48.9 |
| Neurology | 54.8 | 55.0 | 38.4 | 54.1 | 52.9 | 59.1 | 90.0 | (1) | 38.2 | 72.6 |
| Psychiatry | 71.5 | 71.5 | 36.6 | 44.8 | 74.3 | 76.2 | (1) | 72.4 | 25.3 | 82.1 |
| Pathology | 54.1 | 57.8 | 44.2 | 53.8 | 73.0 | 30.4 | 87.1 | 43.2 | 71.5 | 60.4 |
| Radiology | 58.7 | 53.9 | 67.7 | 45.7 | 59.8 | 57.9 | 57.4 | 47.7 | (1) | 59.8 |

[1] Ratio not shown where place or type of service for each specialty is less than 0.1 percent of approved charges for that specialty.

SOURCE: See "Data sources" section and Table 1.

## Table 12

## Assignment rates for physicians' services, by place of service and specialty: United States, 1983

| Specialty | Place of service | | | | | | |
|---|---|---|---|---|---|---|---|
| | All places | Office | Inpatient hospital | Home | Skilled nursing facility | Outpatient hospital | Other |
| | Percent | | | | | | |
| All physicians | 51.6 | 40.4 | 54.7 | 59.7 | 82.9 | 62.2 | 73.1 |
| **General practice** | | | | | | | |
| General practice | 44.6 | 33.6 | 51.5 | 50.1 | 81.5 | 55.5 | 68.2 |
| Family practice | 46.7 | 35.1 | 53.4 | 56.6 | 80.5 | 61.3 | 83.7 |
| **Medical specialties** | | | | | | | |
| Cardiology | 57.0 | 49.4 | 59.4 | 60.2 | 81.4 | 70.9 | 58.0 |
| Dermatology | 51.5 | 49.7 | 74.2 | 85.1 | 93.4 | 56.5 | 71.3 |
| Gastroenterology | 65.9 | 46.5 | 70.9 | 68.3 | 78.3 | 68.0 | 84.3 |
| Internal medicine | 51.2 | 35.1 | 60.4 | 54.8 | 79.6 | 66.5 | 81.4 |
| Pulmonary disease | 65.1 | 43.1 | 70.0 | 53.0 | 88.8 | 62.9 | 75.7 |
| **Surgical specialties** | | | | | | | |
| General surgery | 53.8 | 46.4 | 54.4 | 66.8 | 84.0 | 57.3 | 63.9 |
| Neurological surgery | 52.7 | 51.5 | 52.9 | (1) | (1) | 42.9 | 64.2 |
| Ophthalmology | 44.3 | 43.4 | 42.8 | 57.3 | 75.4 | 50.5 | 58.3 |
| Orthopedic surgery | 46.2 | 41.5 | 47.1 | 51.5 | 58.9 | 53.6 | 53.8 |
| Otolaryngology | 44.0 | 34.8 | 52.6 | 72.7 | 96.4 | 49.6 | 60.1 |
| Thoracic surgery | 56.3 | 63.0 | 55.7 | 96.8 | 93.9 | 66.8 | 88.7 |
| Urology | 46.3 | 39.8 | 47.4 | 49.6 | 77.0 | 57.4 | 81.9 |
| **Other specialties** | | | | | | | |
| Anesthesiology | 43.8 | 48.3 | 43.5 | (1) | 87.9 | 51.3 | 60.4 |
| Neurology | 54.8 | 43.6 | 59.2 | 63.6 | 77.4 | 59.8 | 79.9 |
| Psychiatry | 71.5 | 57.9 | 74.6 | 83.6 | 92.4 | 66.6 | 59.1 |
| Pathology | 54.1 | 34.1 | 55.1 | 71.4 | 84.9 | 60.7 | 97.7 |
| Radiology | 58.7 | 44.3 | 61.8 | 68.2 | 89.9 | 64.2 | 86.9 |

[1] Ratio not shown where place or type of service for each specialty is less than 0.1 percent of approved charges for specialty.

SOURCE: See "Data sources" section and Table 1.

Policies aimed at the inpatient setting would affect 81 percent of Medicare spending for surgical services, 77 percent of Medicare spending for consultations, virtually all Medicare spending for anesthesia and assistants at surgery, and 11.5 percent of all national spending for physicians' services. Two-thirds of the Medicare income of physicians in 12 major specialties would be affected by such policies. A more limited policy, targeting only inpatient surgical services, would affect 27.5 percent of all Medicare spending for physicians' services, 5 percent of national spending for physicians' services, and six surgical specialties that earn at least two-thirds of their Medicare incomes from the provision of surgical services.

The data presented here suggest that Medicare might target fee schedules on selected high-volume procedures. Five surgical procedures—cataract removal, prosthetic lens insertion, pacemaker procedures, prostatectomy, and hip replacement—are among the highest volume surgical procedures for the elderly population and are also procedures for which this population represents a significant share of the inpatient market. Fee schedules and/or limits might also be applied to endoscopies, radioisotopes scans, bronchoscopies, and CAT scans because the aged population's share of these procedures is also substantial.

The financial protection Medicare provides to beneficiaries can be measured in terms of assignment rates. The data presented here indicate that, in 1983, assignment rates, and therefore beneficiary financial protection, were far from uniform across physician specialties, places of service, or types of service. For example, assignment was accepted for 55 percent of inpatient physicians' services but for only 40 percent of services furnished in physicians' offices. Assignment rates varied from less than 45 percent in four specialties to highs of 72 percent in psychiatry and 66 percent in gastroenterology.

Factors influencing the assignment decision, including payment rates of Medicare and other insurers, the supply of physicians, physician characteristics, and the income levels and demographic characteristics of patients, have been analyzed in several studies (Ferry et al., 1980; Paringer, 1980; Mitchell and Cromwell, 1982; Rogers and Musacchio, 1983; Rice and McCall, 1983; Rice, 1984). The differences between the assignment rates presented in this article for services provided in hospital inpatient settings and in physicians' offices may reflect differences in the mix of specialties practicing in the two settings or the condition of the patients treated. (For instance, patients sick enough to be hospitalized may use more physicians' services than other beneficiaries do.) However, without a formal model of physician behavior in a local medical market, it is difficult to explain the variation in assignment rates shown in this article.

The Deficit Reduction Act of 1984 established a participating physician system in which physicians agree prospectively to accept assignment for all services provided to Medicare patients. Data from 1983 illustrate the patterns of assignment characteristic of the system in effect at that time. The impact of the participating physician program on assignment may be assessed by comparing changes in patterns and rates of assignment with the baseline data presented here.

Physicians may react to payment constraints or perceived reductions in their incomes by reducing their Medicare participation and assignment acceptance and/or by increasing the volume or intensity of the services they provide to Medicare beneficiaries (Mitchell and Cromwell, 1981; Rice, 1983; Gabel and Rice, 1985). Data presented here on the distribution of spending for physicians' services with respect to the dollar size of claims and services may have implications for policies designed to address these physician responses. The bulk of physicians' services provided to beneficiaries and the majority of Medicare claims for physicians' services are for amounts less than $100. Given the per-unit costs of utilization review, it may not be cost effective to monitor services and claims across the board. However, without some type of monitoring, it may be very difficult to contain the growth of laboratory, diagnostic, and therapeutic services costing less than $100 that are rendered and/or billed by physicians.

The data on spending patterns according to the size of the service and the dollar volume of services used by beneficiaries shed some light on the potential impacts of policies designed to increase Medicare patients' coinsurance. Although policies that increase coinsurance on lower priced services may affect most physicians' services, they may not affect utilization because the absolute dollar amount of coinsurance for the beneficiary on these services is relatively small. In addition, because Medicare dollars are concentrated among a small number of beneficiaries who receive a large dollar volume of services (5.6 percent of beneficiaries accounted for 45 percent of 1983 approved charges for physicians' services), the burden of increased coinsurance would fall most heavily on the relatively few high users of services. Beneficiaries already face effective coinsurance of about 40 percent on unassigned claims: the statutorily mandated 20-percent coinsurance and the 24 percent by which submitted charges are, on average, reduced.

As policymakers consider Medicare physician payment changes, the composition of Medicare spending for physicians' services as well as assignment patterns must be understood and taken into account. This article has provided data that illustrate these spending and assignment patterns. Although information on behavioral factors will be important in anticipating responses to possible system changes, the data presented here enable the first steps to be taken in analysis of alternative policies.

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