Physician cost experience under private health insurance programs

by Zachary Dyckman

Little information is available on private payer claims cost experience for specific categories of health care. A study was conducted in which physician-claims cost experience and trends among 15 Blue Cross and Blue Shield Plans were compared. Between 1986 and 1988, physician claims cost per covered person increased at an average annual rate of 17 percent, approximately 6 percentage points higher than for Medicare. Annual charges were highest for laboratory (24 percent), radiology (19 percent), and medical care (18 percent) services.

Utilization trends were also examined in the study. The number of radiology imaging procedures performed increased 48 percent between 1986 and 1988, and the number of hospital visits declined by 6 percent.

Introduction

Expenditures for physician services are a large and growing component of total health care expenditures. In 1980, physician-service expenditures were $41.9 billion. By 1988, those expenditures had risen 151 percent to $105.1 billion (Office of National Cost Estimates, 1990). The ratio of physician expenditures to hospital expenditures (inpatient and outpatient services combined) increased from 41 percent in 1980 to 50 percent in 1988.

Much of what I know regarding expenditure trends for physician services relates to government-sponsored programs, primarily the Medicare and Medicaid programs (Fisher, 1988; Kay, 1990; Helbing and Keene; 1989; and Mitchell, Wedig, and Cromwell, 1989).[1] However, although public-program expenditures account for the majority of expenditures for hospital services, they represent less than one-third of physician costs. The largest source of payment for physician services is private health insurance. In 1988, private health insurance accounted for 48 percent of total physician costs, followed by public program (33 percent) and direct consumer payments (20 percent). Yet little is known about physician-cost experience and trends under private health insurance. Some obvious questions addressed in this article are:

- What is the cost per enrollee under private insurance programs for physician services?
- How rapidly are physician costs increasing? What is the rate of change (measured on a per enrollee basis) in physician claims costs? in allowed charges? in submitted charges?
- How do private insurance trends for physician services compare with Medicare program trends?
- What is the rate of change in allowed charges and volume of services for narrowly defined categories of physician services for specific procedures?

Information on physician-claims cost trends under private health insurance programs is of obvious interest to private insurance payers, who would find it useful to compare their own claims-cost trends with those of other payers. But claims-cost trend data are also of interest from a public policy perspective. Physician expenditures (a major and growing component of total health care costs) and cost experience under private health insurance programs can serve as useful comparisons with cost experience under government-sponsored programs. In this article, I present data on levels of physician-cost experience under private insurance programs by type of service for 1988 and growth trends for 1986-88. Comparisons are also made with national health expenditure trends and with Medicare program trends for the same period.

Overview of study methodology

During the fall of 1988, letters were sent to the presidents of all Blue Cross and Blue Shield plans, inviting them to participate in a multiplan study of physician cost experience. Nineteen plans contracted with the Center for Health Policy Studies to participate in the study. The cost of the study was shared by each of the participating plans. The specific project objectives were:

- To develop and compare among plans accurate measures of physician charge, utilization, and claims-cost experience on a per member basis in 1988 and during 1986-88.
- To analyze in detail charge, allowance, utilization, and claims-cost data for major type-of-service (TOS) categories and for a sample of approximately 90 high-dollar-volume procedures.
- To analyze changes in the health insurance and physician environments and evaluate their impact on physician charge, utilization, and cost trends.
- To examine specific physician cost and utilization problem areas and identify attractive cost-containment strategies that have been implemented by plans to respond to these problems.

[1] For an earlier study that examined private-payer payment practices for physician services and fee experience, see Dyckman (1978).

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The multiplan study (Dyckman, 1990) commenced in November 1988 and was completed for each of 19 participating Blue Cross and Blue Shield plans, with the preparation of a final report for each plan, in January 1990. This article reports study findings on claims cost, utilization, and charge trends by TOS categories. In addition, some study findings on specific procedures and narrowly defined categories of procedures also are reported. Data are not shown for individual study plans in keeping with the confidentiality assurances required by the study plans as a condition of their participation in the project.

Each of the study plans was requested to provide claims-based data in a common data format. Data were requested for calendar years 1986, 1987, and 1988. In addition, data on enrollment (subscribers and dependents) were requested that correspond to the submitted claims-based data, making possible the development of comparative data on a per member basis and the computation of meaningful trend data for the 1986-88 study period.

Considerable effort was expended trying to obtain consistently defined and reliable data from the study plans. In the written and oral communications with the study plan's staff, the need for consistency and reliability within each plan's data set over the 3-year study period was stressed. Data were requested for a specific health insurance program that had not experienced significant changes in benefit structure or in claims administration that could be expected to have a major impact on claims-cost trends during 1986-88. Data for Medicare supplemental insurance programs were not included in the study. For each of the study plans that were able to provide claims data, the data represented the majority of the plan's claims and enrollees for its covered population under age 65. One plan changed from member-submitted medical office visit claims to provider-submitted claims, which likely caused an increase in reported claims for this category of services.

Change in enrollment during the study period is not a problem because data are reported and analyzed on a per member basis. Some plans use direct counts for dependents in developing an enrollment figure. Others use numerical factors for estimating average family size. These factors may be based on recent statistically valid surveys of program enrollees or on historical experience. Regardless of the methodology used to determine number of enrollees, none of the participating study plans changed its methodology during 1986-88. Differences among plans in the methodology used to determine the size of the covered population should not cause any bias in the 1986-88 trend data.

Although consistency was also sought in how the data were defined and measured among plans, I recognized that this could not be completely achieved. Data were not being collected from a single national insurance program being administered by multiple carriers but from 19 independent plans, each administering its own, and in some respects, unique health insurance program.

The identification and resolution of data problems was a high-priority task during the project. A series of computer edits were used to identify possible data problems. These edits included consistency checks (e.g., allowed charge is equal to or greater than amount paid) and identification of outliers for further investigation (e.g., percent change in average charge is less than – 10 or greater than 25 percent). The primary data problems identified as part of the study were:

- Data entry errors.
- Data for one plan representing preferred provider organization (PPO) enrollment, which constituted a greater proportion of the plan's total enrollees in 1988 than in 1986.
- Definitional problems with respect to services (e.g., several followup hospital visits submitted as a single claim and counted as a single service).
- Exclusion of claims for specified types of services from the data set because they are covered under another benefit program for which data are not available (e.g., physician office visits covered under major medical benefits—discussed later).
- Differences among plans in structure of cost-sharing requirements.
- Apparent errors in program enrollment.

With respect to each type of data problem, the participating study plan's staff were consulted for clarification and resolution of the specific problem. The data problems were resolved by one of the following approaches:

- Obtaining corrected data (e.g., for data entry errors).
- Discarding erroneous data.
- Working with the plan's staff to develop more accurate data (e.g., for program enrollment).
- Appropriately interpreting the study findings to account for the problem.

The last approach was used with regard to differences among plans in cost-sharing requirements and changing PPO enrollment for a specific Blue Cross and Blue Shield plan.[2]

After extensive evaluation of the data, it was concluded that the plan data submissions are in almost all cases internally consistent and reliable. Moreover, although there are some definitional differences among plans with respect to TOS categories and the extent of inclusion of medical visit claims in the data set (which are discussed later), meaningful comparisons can be made among plans for the overwhelming majority of study findings.

Characteristics of study plans

The 19 participating study plans are identified in Table 1. The plans are located in small and large States and in all regions of the country. The plans represent the full spectrum of medical care and insurance market

[2]For the plan that experienced growth in PPO enrollment, quoted premiums and projected claims experience for its specific groups under the PPO were not significantly different from those under the traditional program.

Table 1

Participating plans in the multiplan study of physician costs

Plan name and region	Provided claims data for		
	At least 1 year	At least 2 consecutive years	1986, 1987, and 1988
Total	16	14	13
Number of persons for whom claims data provided	8.2 million	6.5 million	6.4 million
Northeast			
Blue Cross and Blue Shield of Maine	X	X	X
Blue Cross and Blue Shield of Massachusetts	—	—	—
Blue Cross and Blue Shield of New Jersey	X	X	X
Empire Blue Cross and Blue Shield of New York	—	—	—
Blue Cross and Blue Shield of Vermont	—	—	—
South			
Blue Cross and Blue Shield of Florida	X	X	X
Blue Cross and Blue Shield of Alabama	X	X	X
Blue Cross and Blue Shield of Arkansas	X	X	X
Blue Cross and Blue Shield of Memphis	X	X	—
Blue Cross and Blue Shield of North Carolina	X	X	X
Blue Cross and Blue Shield of Oklahoma	X	X	X
Blue Cross and Blue Shield of Tennessee	X	X	X
Blue Cross and Blue Shield of Virginia	X	X	X
Midwest			
Blue Cross and Blue Shield of Indiana [1]	X	—	—
Blue Cross and Blue Shield of Minnesota	X	X	X
Blue Cross and Blue Shield of Nebraska	X	X	X
Community Mutual Blue Cross and Blue Shield of Ohio	X		
Blue Cross and Blue Shield United of Wisconsin	X	X	X
West			
Blue Shield of California	X	X	X

[1]Fifteen of the 16 study plans that provided claims data for at least 1 year provided data for 1988. Blue Cross and Blue Shield of Indiana provided data only for 1987.

SOURCE: (Dyckman, 1990).

characteristics. Not all of the study plans were able to provide claims data. Fifteen of the 19 study plans provided claims data for 1988, 14 for at least 2 consecutive years, and 13 for each year of the 1986-88 study period. The plans that did not provide claims data were either technically unable to do so or it was excessively costly for them to do so. Approximately 6.4 million persons were covered under the health insurance programs for which 3 years of claims data were available for analysis. Confidentiality assurances provided to each of the study plans preclude us from providing data on number of persons covered under its individual study plans.

Most of the study plans sponsored at least one health maintenance organization (HMO) plan. However, for most plans, HMO enrollment represented only a small portion of total plan enrollment, generally less than 10 percent. With one exception, HMO enrollment and claims data were not included in the submitted claims data set. Approximately one-half of the study plan enrollees and slightly less than one-half of enrollees for which claims data are analyzed in this study are covered under managed-care programs.[3]

The study plans are located in all regions of the United States. However, an examination of the location of the 15 study plans that provided data for 1988 indicates that the Northeast and West Regions appear to be under-represented, and the South is over-represented in the study data set. As the study plans selected themselves for participation, we had little control on the geographical representativeness of the study plans.

Of the 19 participating study plans, 16 used a usual, customary, and reasonable (UCR) payment approach as their primary payment methodology for physician services, and the remaining 3 plans used a fee-schedule approach. The majority of plans using a UCR methodology limited the size of increases in allowances, either informally or formally. Six plans employed some type of inflation index to limit growth in individual procedure allowances or in a weighted average of all allowances.

Physician-claims trend data

Claims trend data for 1986-88 have been computed on a per member basis (per person covered) for total submitted charges, allowed charges, and amount paid. For the purpose of the study, the following definitions are used. Total submitted charges are submitted physician charges for services covered under the health benefit program. Allowed charges are total submitted

[3]So-called "managed-care" programs vary widely in terms of structure, scope, and effectiveness. For the purposes of this study, a managed-care program was defined as including, at a minimum, precertification for hospital admission and at least one other managed-care type activity.

Table 2

Percent change in per enrollee physician charges and claims cost for Blue Cross and Blue Shield study plans: 1986–88

Charge and cost category	1986-87			1987-88			1986-88		
	Number	Mean	Median	Number	Mean	Median	Number	Mean	Median
		Percent change						Annual percent change	
Total submitted charges	13	18.7	17.7	14	15.9	14.2	13	16.8	17.0
Allowed charges	12	16.8	16.7	13	15.4	14.6	12	15.6	14.9
Amount paid	13	21.1	19.7	14	14.6	13.6	13	17.4	17.3
Consumer Price Index, physician services	—	7.3	7.3	—	7.2	7.2	—	7.3	7.3
Changes in utilization (residual from submitted charges)	—	10.6	9.7	—	8.1	6.5	—	8.9	9.0

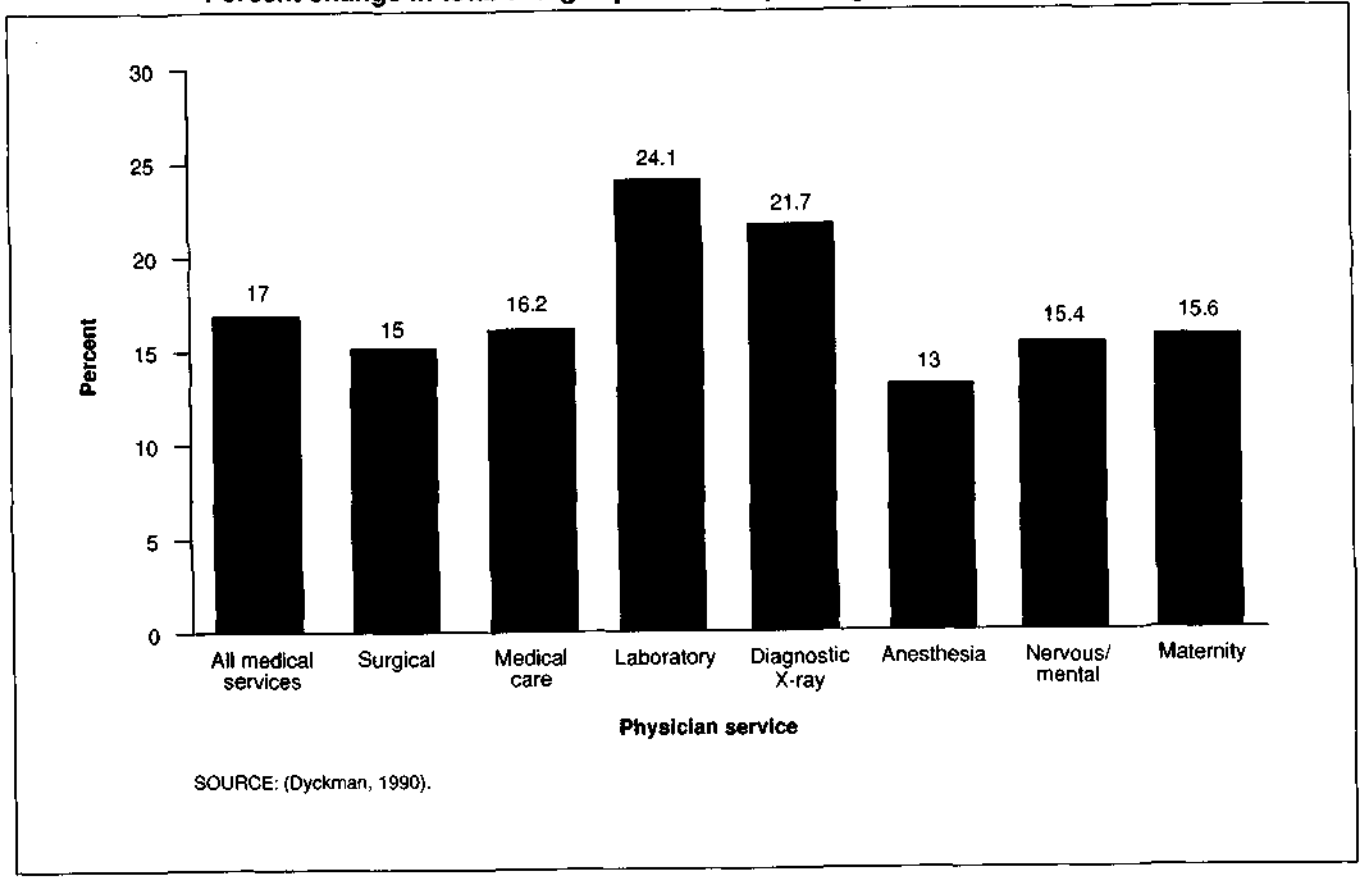
SOURCE: (Dyckman, 1990).

charges less those reductions resulting from application of UCR methodology or fee-schedule screens and utilization review edits, but not including those reductions related to coordination of benefits, coinsurance, and deductibles. Amount paid is simply the amount paid by the health insurance program for the service. Both amount paid and allowed charges as a proportion of total submitted charges vary by plan, reflecting differences among plans in payment methodology used and cost-sharing requirements. However, these proportions changed very little for individual plans during 1986-88. With only one or two exceptions, neither payment methodology nor cost-sharing requirements changed significantly for most enrollees under programs for which claims data were submitted for the study.

Mean and median percent changes in total submitted charges, allowed charges, and amount paid are shown for the study plans in Table 2. As a general rule, focus was on median rather than mean values in analyzing the multiplan study data. This was done to diminish the effects of occasional extreme values among the study plans, which may be due to unique circumstances or data reporting errors. In Table 2, the pattern of mean

Figure 1

Percent change in total charges per member, average annual rate: 1986-88



SOURCE: (Dyckman, 1990).

and median percent changes is relatively consistent for 1986-88. During this period, total submitted charges and amount paid each increased at an annual rate of approximately 17 percent, while allowed charges increased at a 15-percent rate. Physician costs increased more rapidly during 1987 than during 1988. As discussed later, this same pattern was also observed for Medicare physician expenditures, although the rates of increase were somewhat lower than those for private health insurance.

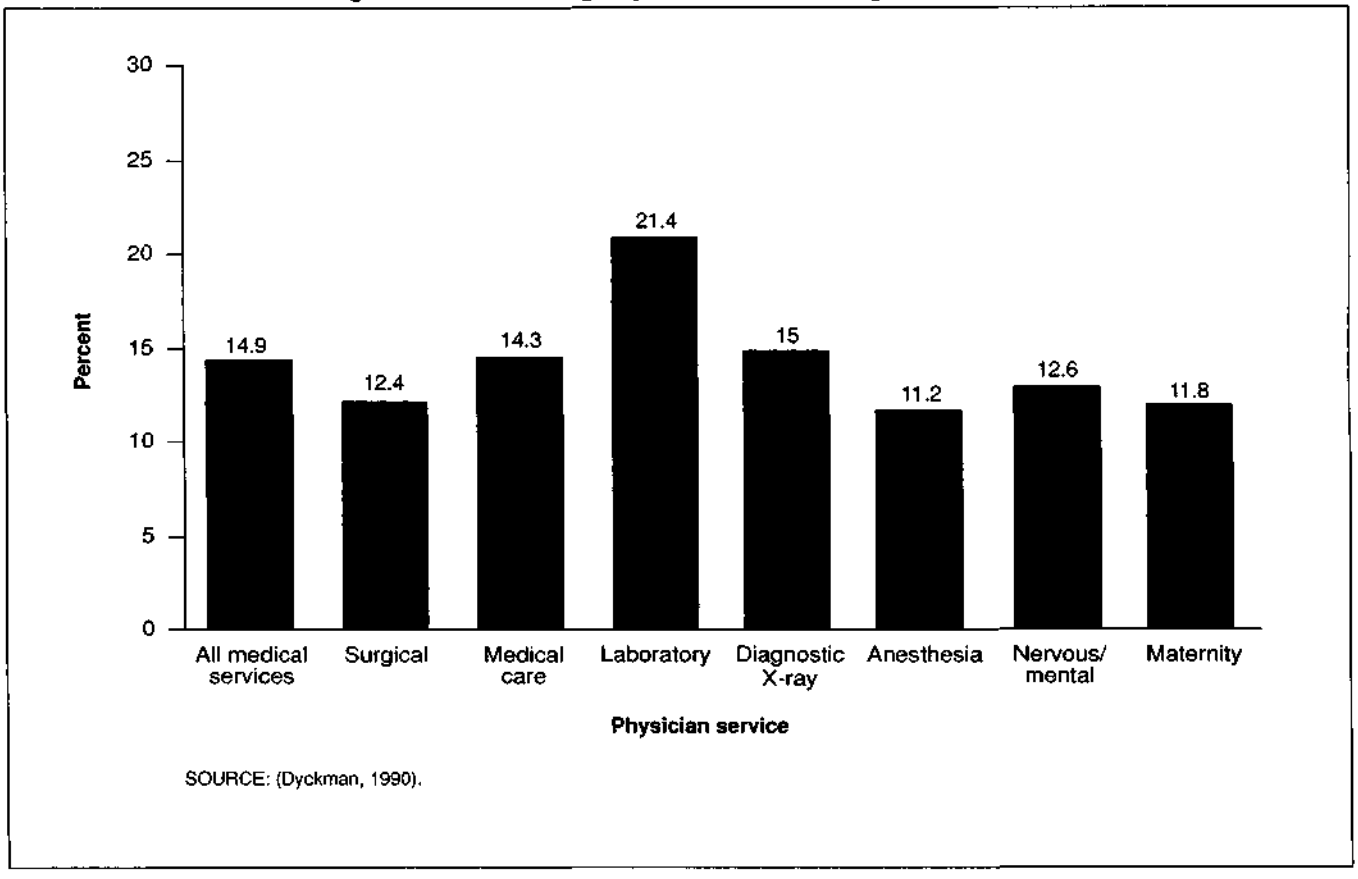
Also shown in Table 2 are percent changes in physician fees, as measured by the physician services component of the Consumer Price Index (CPI), all urban consumers, and the estimated change in physician service utilization during 1986-88. The latter is computed as the residual of total submitted charges after the effect of the change in physician fees is netted out. During the study period, physician fees increased at an annual rate of 7.3 percent. Also during this period, utilization of physician services increased at an annual rate of 9 percent, or 55 percent of the sum of utilization and fee changes. Utilization measured as a residual reflects change in number of services as well as in the mix of services.

The median average annual rates of change in total submitted charges per member for all physician services and for each of the primary TOS categories during 1986-88 are shown in Figure 1. The median rate for all physician services is 17 percent. Among study plans the median ranged from a low of 6.6 percent to a high of 23.1 percent for all physician services. For all but two TOS categories, the median annual percent change was similarly high—within a narrow range of 13.0 percent to 16.2 percent. However, for the two diagnostic testing TOS categories laboratory and diagnostic X-ray, the percent increase was much higher—24.1 percent and 21.7 percent, respectively.

Median annual percent change in allowed charges per member (total charges less charge reductions resulting from application of the plan's utilization review and fee screens) is shown in Figure 2 for all physician services and for the major TOS categories. Comparable data for amount paid per member are shown in Figure 3. For all three measures of physician cost, several patterns can be noted: Laboratory costs are increasing most rapidly (21-24 percent annual rate), followed by diagnostic X-ray; for no TOS category are costs increasing at less than double-digit rates; and cost increases for nervous and mental-related services, although high, tend to be at or below rates of increase for most other TOS categories. Mental health costs have been highlighted by a number of private health insurers and actuarial firms as a leading cause of health care cost inflation. Evidence from the multiplan study suggests that, at least for the professional services component, mental health care costs are increasing somewhat less rapidly than other physician-cost categories.

Figure 2

Percent change in allowed charges per member, average annual rate: 1986-88



SOURCE: (Dyckman, 1990).

A consistent pattern may be observed (Figures 1, 2, and 3) of allowed charges increasing at a lower rate for each TOS category than total charges or amount paid. The following hypothesis is advanced. Allowed charges are increasing at a lower rate than total charges because of several plans' efforts to limit growth in maximum allowances, either through use of an economic index, such as the CPI or an index similar to the Medicare Economic Index (MEI), or through less formal means. Amount paid is increasing at a higher rate than allowed charges because of a relatively constant structure of benefit plan deductibles for most of the study plans during 1986-88. As allowed charges increase over time, a smaller portion of these charges is used to meet the benefit plan deductible, and a larger proportion is paid out as health benefits by the insurance plan.

Comparative physician-cost trends

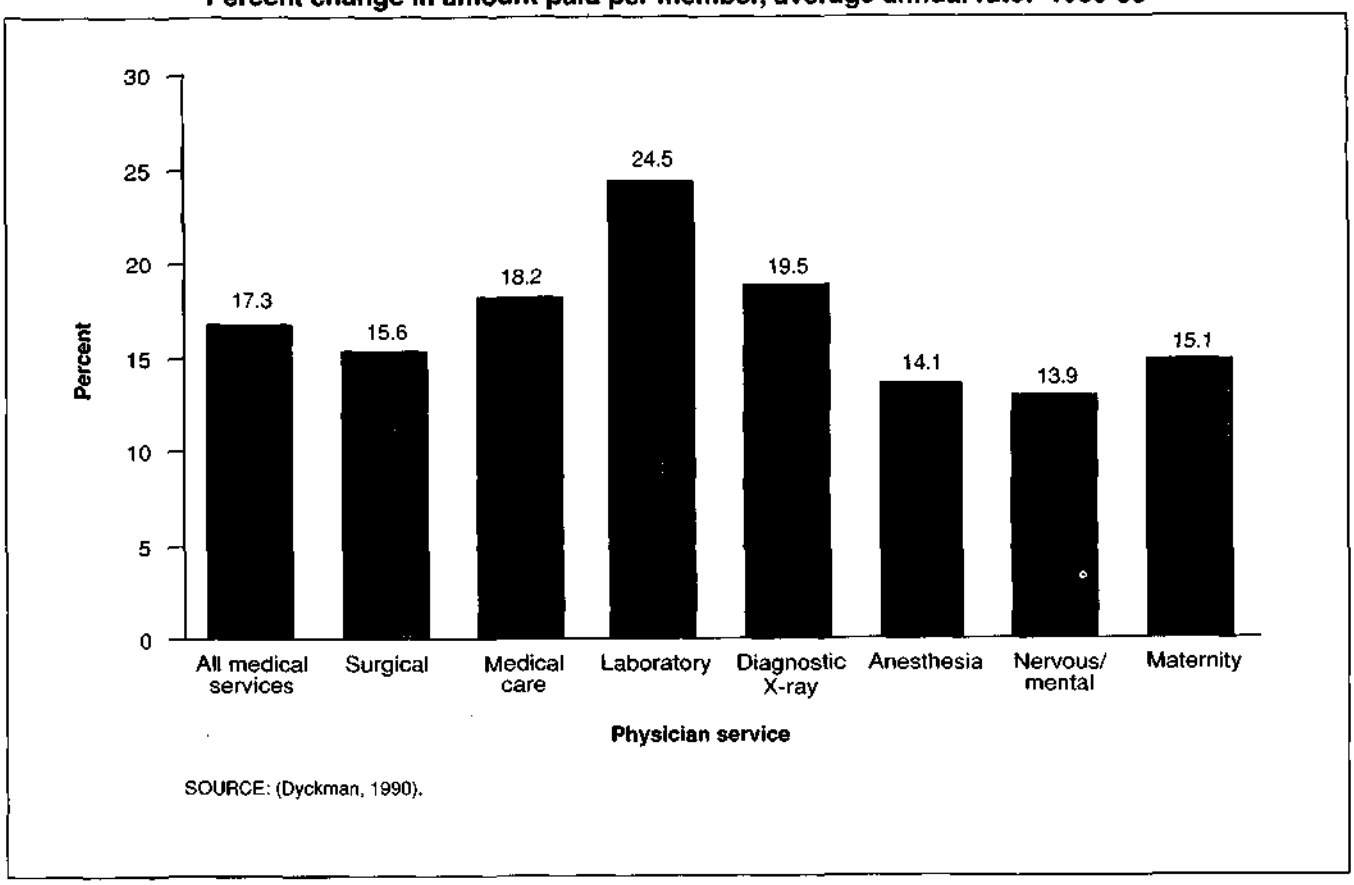
In this section, 1986-88 physician-cost-trend data from the multiplan study with comparable Medicare Part B program data and with national health expenditure (NHE) physician expenditure data are compared. This is done for the total of all physician services, and, for a multiplan-Medicare comparison, for selected TOS categories.

Table 3 shows Medicare and multiplan trend data on a per enrollee basis for amount paid and amount allowed and per capita NHE expenditure data, which includes physician revenue from all payment sources. The Medicare Part B physician services for which trend data are shown in Table 3 are comparably defined to the physician services used in the multiplan study. This category includes radiology, clinical laboratory, and other professional services. Excluded are claims data for outpatient hospital (facility component), kidney dialysis, rural health clinic, outpatient rehabilitation facility, and home health services. The Medicare data reflect national program experience. Medicare paid and allowed data exhibit a similar pattern as the multiplan data of large increases in 1987 and more moderate increases in 1988. During 1986-88 Medicare payments and allowed charges per enrollee increased at an average annual rate of 10.7 percent and 10.5 percent, respectively. This compares with median plan rates for Blue Cross and Blue Shield plans in the multiplan study of 17.3 percent and 14.9 percent, respectively. Much of the difference between Blue Cross and Blue Shield plans increases and Medicare increases may reflect the limitation of Medicare fee increases resulting from application of the MEI and other fee-control measures. On the whole, Blue Cross and Blue Shield fee limitations, where they existed, were not as stringent as those used by Medicare.

The average annual percent change in NHE per capita physician expenditures during 1986-88 is 12.2 percent, slightly below the midpoint of the increases in amount allowed for Medicare and

Figure 3

Percent change in amount paid per member, average annual rate: 1986-88



SOURCE: (Dyckman, 1990).

Blue Cross and Blue Shield. The NHE data do not exhibit the pattern of larger increases in 1987 than in 1988 observed for both Medicare and Blue Cross and Blue Shield.

The percent changes during 1986-88 in multiplan Blue Cross and Blue Shield allowed charges for specific TOS categories are compared with comparable figures for the Medicare program in Table 4. On the whole, there is a general consistency in trends for the two programs. For both Blue Cross and Blue Shield and Medicare, allowed charges for each TOS category increased more rapidly in 1987 than in 1988. Also for both programs, 1986-88 increases in allowed charges for anesthesia and surgery were smaller than increases for the other TOS categories, while allowed charges increased most rapidly for diagnostic X-ray and laboratory services. An interesting difference between the two programs is that for Blue Cross and Blue Shield plans, laboratory allowed charges increased most rapidly during the 1986-88 (21.4 percent), while for the Medicare program, diagnostic X-ray charges exhibited the largest percent change (15.6 percent). For all TOS categories except diagnostic X-ray, the percent increase in allowed charges was larger for the Blue Cross and Blue Shield plans than for Medicare.

The substantially lower rate of growth in Medicare-allowed laboratory charges than for Blue Cross and Blue Shield plans may be explained by Medicare's use of a laboratory fee schedule and associated payment and billing limitations. Under the 1984 Deficit Reduction Act of 1984 (Public Law 98-369), Medicare allowances were reduced substantially from pre-existing levels, and physicians were prohibited from billing (and adding a surcharge) for tests performed by another independent laboratory. These changes eliminated many of the financial incentives under the Medicare program for physicians to directly perform or order tests from outside laboratories. Performing and/or ordering laboratory tests remains a highly profitable activity under most private, traditional health insurance programs, particularly for office-based primary care physicians and medical specialty physicians.

Physician charges per member

Table 5 shows 1988 total submitted charges per member for the Blue Cross and Blue Shield plans, by TOS category. For all physician services, the range in total charges per member among study plans is from $247 to $666, with mean and median values, respectively, of $415 and $374. The interquartile range (25th–75th percentile) is approximately $330-$460.

The mean and median values of charges were the largest for surgery, followed by medical care. For several plans, most physician office visits are covered under a major medical benefit program and are not included in the reported data. Medical care mean and median values for those plans for which all medical visits are included in the study data set are approximately $105 and $90, respectively. Adjustments were required for nervous and mental services, for which two plans excluded data from their claims data

Table 3

Percent change in per capita physician costs for Blue Cross and Blue Shield, Medicare, and the United States: 1986–88

Study year	Medicare [1]		Multiplan study Blue Cross and Blue Shield plans		National health expenditure
	Amount paid	Amount allowed	Amount paid	Amount allowed	
1986–87	13.8	13.2	19.7	16.7	12.2
1987-88	7.6	7.4	13.6	14.6	12.2
1986-88 (annual percent change)	10.7	10.5	17.3	14.9	12.2

[1]Medicare data for physicians and supplier services exclude outpatient hospital, end-stage renal disease, rural health clinic, and outpatient rehabilitation facility, and home health services.

SOURCES: (Helbing, Latta, and Keene, 1991); (Dyckman, 1990); and (Office of National Cost Estimates, 1990).

Table 4

Percent change in allowed charges per enrollee for multiplan Blue Cross and Blue Shield Plans and Medicare, by type of service: 1986–88

Type of service	1986–87		1987–88		1986–88	
	Blue Cross and Blue Shield [1]	Medicare	Blue Cross and Blue Shield [1]	Medicare	Blue Cross and Blue Shield [1]	Medicare
	Percent change					
Medical care	17.9	13.25	14.5	7.0	14.3	10.1
Surgery	13.5	12.7	11.5	6.0	12.4	9.3
Diagnostic X-ray	18.0	17.3	13.4	14.0	15.0	15.6
Laboratory	23.1	13.8	18.5	12.6	21.4	13.2
Anesthesia	12.6	9.4	11.1	-0.2	11.2	4.5

[1]Median plan percent change among multiplan study plans.

SOURCES: Health Care Financing Administration: Unpublished Medicare program data provided by the Bureau of Data Management and Strategy; and (Dyckman, 1990).

Table 5

Total submitted physician charges per member for Blue Cross and Blue Shield plans, by type of service: 1988

Type of service	Mean	Median
All physician services[1]	$415.00	$374.00
Surgery	120.74	112.13
Medical care	105.00	90.00
Laboratory	36.15	30.61
Diagnostic X-ray	35.57	35.80
Anesthesia	23.01	22.49
Nervous/mental	23.00	19.00
Maternity	18.50	14.86
Assistant surgery	3.71	3.10

[1]Figures shown for All physician services exceed the sum of the figures for the type-of-service (TOS) categories, because charges for one or more TOS categories were not reported separately by most of the Blue Cross and Blue Shield plans.

SOURCE: (Dyckman, 1990).

Table 6

Total allowed physician charges per member for Blue Cross and Blue Shield plans and Medicare, by type of service: 1988

Type of service	Mean	Median	Medicare
All physician services[1]	$370.00	$338.00	$1,047.35
Surgery	104.32	99.77	313.16
Medical care	97.00	88.50	313.05
Laboratory	32.85	27.87	102.64
Diagnostic X-ray	32.86	35.39	97.19
Anesthesia	20.03	18.88	35.19
Nervous/mental	21.00	16.50	—
Maternity	16.50	16.50	—
Assistant surgery	3.71	2.91	11.21

[1]Figures shown for All physician services exceed the sum of the figures for the type-of-service (TOS) categories, because charges for one or more minor TOS categories were not reported separately by Medicare and most of the Blue Cross and Blue Shield plans.

SOURCES: (Dyckman, 1990); and (Office of National Cost Estimates, 1990).

set. The data for all physician services shown in Table 5 reflect adjustments for missing data for several of the plans.[4]

The figures cited here and shown in Table 4 should be considered only as approximations of the true values for the Blue Cross and Blue Shield plans for the United States as a whole because of possible selection bias among plans and because of some differences among plans in the definition of physician services and specific TOS categories. Participating study plans were instructed to exclude from their generally broadly defined category of physician services all provider facility charges (e.g., outpatient hospital, ambulatory surgical center), drugs, and durable medical equipment. Included were professional services provided by non-physician providers.

Table 6 shows 1988 allowed charges per member by TOS category for the Blue Cross and Blue Shield study plans and for Medicare. Multiplan mean and median allowed charges, after adjustment for excluded claims by several plans noted previously, are $370 and $338, respectively. The comparable figure for Medicare is $1,047. The Medicare reasonable charge reduction (the difference between total submitted charges and allowed charges) is approximately 30 percent. This reduction varied among the study plans that submitted claims data—from 2.5 percent to 20 percent, with a mean plan value of approximately 10 percent.

The ratio of Medicare-allowed charges to median Blue Cross and Blue Shield allowed charges is approximately 3 to 1. For most TOS categories, the Medicare to Blue Cross and Blue Shield ratio is 2.8-3.8 to 1. It is lower for anesthesia, possibly reflecting the more significant impact of the MEI on anesthesia, relative to other categories of services. Allowed charges for nervous and mental and maternity services under the Medicare program are not separately categorized but are included in other TOS categories.

[4]In adjusting data for all physician services for missing medical care data for nervous and mental claims, it has been assumed that claims experience for these TOS categories for the plans with missing data is the same relative to overall study plan median experience as is the aggregate of claims experience for the TOS categories for which data are available.

To help put both the Medicare and Blue Cross and Blue Shield figures for allowed charges in perspective, the Health Care Financing Administration's (HCFA's) 1988 National Health Expenditures estimate of per capita physician expenditures is $414. In addition to covered services under Medicare and private health insurance, the $414 figure reflects physician expenditures for services not covered by insurance as well as services for the Medicaid population and the uninsured.

Individual procedure claims data

A major focus of the multiplan study was the analysis of claims data for individual procedures and narrowly defined procedure groups. Some of the primary study findings are described here.

The sample of study procedures was developed by identifying approximately 90 high-claims cost and/or high-growth rate procedures after evaluating claims data from three Blue Cross and Blue Shield plans. For several diagnostic procedures, data are provided for both the professional component only (*P*) and the complete procedure, including both the professional and technical components. The procedure sample was finalized after review and comment by study plan staff. Included among the procedures in the final sample are those that may not be high-volume or high-growth procedures but that complete narrow categories of procedures (e.g., all new patient office visit procedures) and thereby facilitate analysis of very similar and/or potentially substitutable procedures.

Table 7 shows for each of the study procedures median plan values for several study variables: 1988 allowed charges per member, 1986-88 percent change in allowed charges per member, number of services per 1,000 members in 1988 and 1986-88, and percent change in number of services per member. In addition, data are provided for eight procedure groups that are defined at the bottom of Table 7.

The 10 highest dollar charge procedures among all study plans are shown in Table 8. Two points are worth noting from this list of high-dollar volume procedures:

Table 7

Selected per member claims data for Blue Cross and Blue Shield study plans: 1988 and 1986–88

CPT-4 procedure	Allowed charges 1988	Percent change in allowed charges 1986–88	Number of services per 1,000 members 1988	Percent change in number of services 1986–88
10040 - ACNE SURG	$0.11	8.8	4.8	-1.0
11750 - EXC NAIL	0.59	43.7	3.8	29.7
17100 - DEST. SKIN LES	0.38	13.2	10.7	2.3
19120 - EXC BREAST LES	0.91	45.5	2.5	31.0
27130 - TOTAL HIP	0.59	29.3	0.3	15.6
27447 - TOTAL KNEE	0.58	68.0	0.2	54.3
29881 - ARTHROSCOPY	1.53	357.9	1.5	304.2
30520 - SEPTOPLAS	0.72	54.9	0.8	43.6
33511 - BYPASS 2 GRAFTS	0.52	25.7	0.2	25.3
33512 - 3 GRAFTS	1.11	28.4	0.3	22.1
33513 - 4 GRAFTS	1.03	17.5	0.2	21.7
33514 - 5 GRAFTS	0.32	0.9	0.1	0.3
42820 - T&A < 12	0.40	30.6	1.0	14.1
43235 - EDNO UPPER SDX	1.24	33.3	3.7	23.7
44950 - APPY	0.59	5.3	0.9	-10.1
45378 - COLONO	1.33	67.2	2.9	45.2
47600 - CHOLY	0.58	13.7	0.6	4.8
47605 - W/CHOLANG	1.18	29.9	1.3	22.4
49505 - ING HERNIA REP	0.90	31.8	1.4	16.1
50590 - LITHOTRIPSY	0.56	94.5	0.3	75.1
52602 - TUR PROSTATE	0.73	29.8	0.6	11.0
58120 - D&C	0.99	8.2	3.3	-8.7
58150 - HYSTER, TOTAL	3.11	14.3	2.9	-5.7
58260 - VAGINAL	0.67	16.9	0.6	7.4
58980 - LAPAROSCOPY	0.93	20.2	1.6	-4.3
58982 - W/LESIONS	0.61	9.1	1.1	-7.6
59400 - OBSTET CARE	7.48	35.6	7.1	8.0
59500 - C SECTION	0.71	22.8	1.0	14.0
59501 - C SECTION +	2.56	37.3	2.3	5.3
63030 - EXC DISK LUMBAR	1.14	50.9	0.6	30.3
64721 - NEURO	0.56	38.7	1.0	22.5
66980 - EXT LENS [1]	—	—	—	—
69437 - TYPANOS	0.61	19.5	2.4	9.4
70450 - CAT SCAN, BRAIN	0.37	40.3	1.0	31.9
70450P- PROFESSIONAL	0.40	58.8	3.2	49.5
70460 - CAT SCAN, BRAIN	0.13	-8.5	0.4	-24.0
70460P- PROFESSIONAL	0.13	-6.8	1.1	0.9
70470 - CAT SCAN, BRAIN	0.64	20.1	1.6	6.7
70470P- PROFESSIONAL	0.55	12.3	4.3	14.1
70551 - MRI, BRAIN	0.79	623.7	1.3	501.7
70551P- PROFESSIONAL	0.22	534.3	1.5	494.0
71020 - CHEST X-RAY	2.41	29.2	56.8	16.4
71020P- PROFESSIONAL	1.29	28.6	55.7	20.7
76091 - MAMMO	2.17	82.8	29.6	85.9
76091P- PROFESSIONAL	0.49	53.4	13.5	80.1
76629 - ECHOCARD	0.06	137.9	0.2	80.3
76629P- PROFESSIONAL	0.01	205.3	0.1	217.6
76805 - ECHO, PREG	0.98	54.8	9.4	30.7
76805P- PROFESSIONAL	0.30	13.9	3.4	4.7
80019 - >19 CHEMS	1.61	60.8	66.9	69.1
81000 - UA	1.61	23.7	186.6	13.5
85031 - HGM	0.51	4.5	32.1	-1.5
87060 - THROAT CU	0.39	33.6	26.0	20.6
88150 - CYTO	0.95	34.4	75.6	24.1
88304 - SURG PATH	1.22	47.9	25.3	21.1
90000 - NEW PT, BRIEF	0.57	22.5	20.6	10.2
90010 - NEW PT, LTD	2.25	40.9	63.5	30.9
90015 - NEW PT, INT	2.89	33.9	71.9	23.2
90017 - NEW PT, ETC	0.85	84.3	17.0	65.0
90020 - NEW PT, COMP	3.73	27.3	48.8	17.0
90030 - EST PT, MIN	0.60	72.4	40.9	38.0
90040 - EST PT, BRIEF	4.64	28.3	214.6	16.0
90050 - EST PT, LTD	14.67	46.6	593.1	36.6
90060 - EST PT, INT	11.36	36.8	414.9	18.6
90070 - EST PT, EXT	2.45	48.5	56.5	30.0

See footnotes at end of table.

Table 7—Continued

Selected per member claims data for Blue Cross and Blue Shield study plans: 1988 and 1986–88

CPT-4 procedure	Allowed charges 1988	Percent change in allowed charges 1986–88	Number of services per 1,000 members 1988	Percent change in number of services 1986–88
90080 - EST PT, COMP	3.08	32.7	61.0	31.0
90215 - INT HOSP INT	0.72	-5.5	9.9	-17.0
90220 - INT HOSP COMP	3.00	9.8	28.3	3.1
90240 - SUBS HOSP BRIEF	0.57	-1.6	16.6	-10.2
90250 - SUBS HOSP LTD	2.79	10.4	60.2	-8.7
90260 - SUBS HOSP INT	3.56	5.4	68.3	-6.0
90270 - SUBS HOSP EXT	1.00	20.6	14.9	5.1
90280 - SUBS HOSP COMP	0.48	27.3	5.6	15.3
90500 - ER PT MIN	0.03	-11.8	1.5	-3.3
90505 - ER PT BRIEF	0.20	31.5	7.3	6.4
90510 - ER PT LTD	0.84	45.7	19.1	22.7
90515 - ER PT EXT	0.77	47.8	14.8	25.9
90550 - ER PT COMP	0.14	56.2	3.6	39.7
90610 - CONSUL EXT	0.59	27.2	7.1	20.3
90620 - CONSU COMP	1.88	31.5	18.0	16.4
90630 - CONSUL COMPL	0.53	47.0	4.4	29.7
90782 - THER INJECT	0.76	6.8	75.8	3.8
90841 - PSYCH	0.48	9.9	10.6	6.8
90843 - 20-30 MIN	0.88	18.1	20.5	15.9
90844 - 45-50 MIN	5.55	16.3	77.3	33.0
92982 - ANGIOPLASTY	1.56	365.7	0.8	365.2
93000 - EGG	2.02	26.0	57.2	16.6
93015 - STRESS TEST	1.30	45.1	8.1	26.4
93547 - LFT CARD CATH	1.52	33.7	1.7	28.3
93549 - L/R CARD CATH	0.49	37.1	0.5	22.1
GROUP1 - 33511 - 33514	3.15	29.6	0.8	17.4
GROUP2 - 59400 - 59501	9.74	32.5	9.3	7.6
GROUP3 - 70450 - 70551P	3.07	80.6	15.3	47.9
GROUP4 - 90000 - 90020	10.35	31.1	234.2	16.2
GROUP5 - 90030 - 90080	40.69	40.3	1,463.7	26.5
GROUP6 - 90215 - 90220	4.05	11.5	41.7	-2.5
GROUP7 - 90240 - 90280	7.91	9.1	191.8	-7.3
GROUP8 - 90500 - 90550	2.25	58.6	50.1	23.6

[1]Poor quality data because of change in procedure code during study period.

NOTES: For complete procedure titles, see American Medical Association: Physicians' Current Procedural Terminology, 1990.

GROUP 1—Coronary bypass
GROUP2 — Obstetrics
GROUP3 — Imaging
GROUP4 — New patient office visits
GROUP5 — Subsequent patient office visits
GROUP6 — Initial hospital visits
GROUP7 — Followup hospital visits
GROUP8 — Emergency room visits

SOURCE: (Dyckman, 1990).

- Charges and payment amounts of physician services are highly fragmented by procedure. No single procedure accounts for more than 4 percent of total allowed charges. After the top two procedures, none accounts for more than 2 percent of total charges.
- Most of the highest charge procedures are medical visit procedures—high-volume, low-cost procedures. None is a "high tech" procedure.

The charges for the eight procedure groups for which data are provided in Table 7 range in size from $3 in allowed charges per member (coronary bypass and imaging procedures) to $41 (subsequent patient office visits). The procedure groups are of interest primarily to assist in measuring and interpreting growth of specific narrowly defined types of services.

Allowed charges for virtually all procedures increased over the 2-year period, in most cases by 20 percent or more. However, as shown in Table 9, several procedures stand out because of their extremely high growth rates.

Allowed charges increased for all eight of the procedure groups shown at the bottom of Table 7. Increases in the median plan percentage were particularly large for Group 3 (imaging—81 percent) and Group 8 (emergency room visits—59 percent). Allowed charges for Groups 6 and 7 (hospital visit groups) increased only moderately during 1986-88, by less than 12 percent. The relatively large increase in allowed charges and number of services for two of the three computerized axial tomography (CAT) scan procedures, coupled with large increases for Group 3 as a whole suggest that the high growth rate observed for magnetic resonance imaging (MRI) does not reflect primarily a substitution for older imaging procedures, but additional net expenditures and number of services.

Utilization rates are shown in column 3 of Table 7 along with allowed charges to provide a better understanding of where the plans are spending claims cost dollars, and to identify possible aberrant cost and utilization problems for further study. In addition, analysis of relative utilization rates within procedure

Table 8

10 highest dollar charge procedures among all study plans

CPT-4 Code	Procedure	Median allowed charges per member
90050	Established patient, limited office visit	$14.67
90060	Established patient, intermediate office visit	11.36
59400	Obstetrical care	7.48
90844	Psychotherapy, 45–50 minutes	5.55
90040	Established patient, brief office visit	4.64
90020	New patient, comprehensive office visit	3.73
90260	Subsequent hospital, intermediate visit	3.56
58150	Hysterectomy, total	3.11
90220	Initial hospital, comprehensive visit	3.00
90250	Subsequent hospital, limited visit	2.79

NOTE: CPT is Current Procedural Terminology.

SOURCE: (Dyckman, 1990).

Table 9

Procedures with extremely high growth rates

CPT-4 Code	Procedure	Median 1986-88 percent change in allowed charges
29881	Arthroscopy	358
70551	MRI, brain	534–623
76629	Echocardiography	138–205
92982	Angioplasty	366

NOTES: CPT is Current Procedural Terminology. MRI is magnetic resonance imaging.

SOURCE: (Dyckman, 1990).

groups (e.g., followup hospital visits) can identify possible coding abuses and inappropriate billing patterns. Among plans, substantial variation was found in utilization rates, particularly for highly elective surgical procedures (e.g., acne surgery), emergency room visits, and the more sophisticated diagnostic procedures (e.g., MRI and CAT scans). For these types of procedures, the 75th percentile value among plans was typically three to five times the 25th percentile value.

Rates of increase in utilization generally paralleled growth rates in allowed charges. Per enrollee utilization of arthroscopy, MRI, and angioplasty procedures each increased more than 300 percent from 1986 to 1988. Among the procedure groups, utilization for Group 3 (imaging) increased 48 percent, Group 5 (subsequent patient office visits) increased 27 percent, and Group 8 (emergency room visits) rose by 24 percent. The number of both initial and followup hospital visits declined, reflecting reduced inpatient hospital utilization rates.

Conclusion

It is only in the past 2 to 3 years that most traditional health insurers have begun to consider aggressive cost-containment strategies for physician services comparable to those employed for hospital inpatient care. However, information relating to utilization and cost patterns, which is required before effective cost-containment initiatives can be implemented, often was sorely lacking. The multiplan study of physician costs enabled participating Blue Cross and Blue Shield plans to examine and evaluate their own physician charge, cost, utilization, and allowance data and to compare their experience with other plans within their own region and throughout the United States. The comparative information should help plans identify potential problems, develop approaches to resolve them, and improve their claims-cost experience. A major focus of the study, not reported in this article, was an identification of some of the utilization management and payment system approaches implemented by the participating study plans that have been proven successful in containing cost. These include procedure unbundling software, global service definition edits to identify separately billed medical visits before and after surgery, and utilization review procedures for chiropractic and various therapy-type services.

The participating Blue Cross and Blue Shield study plans found that their own double-digit rates of growth in physician-claims cost were not unique although considerable variation among plans exists in growth rates for specific procedures and categories of procedures. Although HCFA may not necessarily find it comforting that private insurers have experienced even more rapid rates of growth in physician-claims cost than HCFA experienced under Medicare, by most measures 3-5 percent greater per year, it can profitably examine the detailed cost and utilization experience of private payers and, particularly, the measures being taken by some payers to seek to control costs. Both private insurers and the Medicare program would likely benefit from a greater interchange of information on their respective utilization and cost experience and on the success of efforts to moderate the continued rapid growth in physician costs.

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