
How do Medicare Physician Fees Compare With Private Payers?

Mark E. Miller, Ph.D., Stephen Zuckerman, Ph.D., and Michael Gates, B.S.

Under the new fee schedule, Medicare physician fees are 76 percent of private fees. Consistent with the intent of payment reform, Medicare physician fees more closely approximate private fees for visits (93 percent) than for surgery (51 percent) and in rural areas as compared with large metropolitan areas. Variation in private fees across the country is considerably greater than it is for Medicare fees. Consequently, Medicare fees are most generous in areas that compare least favorably with the private market because private fees in these areas are well above average. These results shed light on the impact of the fee schedule and on the implications of using Medicare payment methods as part of a broad-based health reform.

INTRODUCTION

To address the problem of rising Medicare physician expenditures, Congress reformed Medicare physician payments as part of the Omnibus Budget Reconciliation Act (OBRA) of 1989 (Public Law 101-293). The reform has three parts: a fee schedule based on relative values, volume performance standards, and limits on the amount physicians can bill pa-

tients above the Medicare fee schedule (MFS). The MFS, the focus of this article, is a major departure from the customary, prevailing, and reasonable (CPR) reimbursement methodology it replaced. Most importantly, the MFS is intended to reduce the difference in reimbursement for cognitive services relative to procedural services that recent research efforts have found to be unjustified (Hsiao et al., 1992), by granting greater weight to the former in the fee schedule. The MFS is also designed to correct geographic distortions in charging practices thought to be fueled by the CPR methodology.¹

The regulatory impact analysis estimated a 6-percent reduction in Medicare payments per service nationally relative to the CPR reimbursement methods by 1996 when the MFS is fully implemented with varying effects by specialty and State (*Federal Register*, 1991). The regulatory impact analysis focused only on the Medicare program (i.e., the impact of the MFS relative to CPR), and left the question of how physician payments under the MFS compare with private insurance physician fees unanswered.

This question has two important policy implications. Assuming the MFS is used only for Medicare, there is widespread

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¹To this end, the MFS includes a Geographic Practice Cost Index (GPCI) to adjust for differences in practice costs across localities. Additionally, Congress chose to recognize only one-fourth of the physician work GPCI, which has the effect of reducing the difference in payments between urban and rural areas.

consensus that publicly insured beneficiaries' access can be curtailed when payment rates fall well below those in the private sector. This has been particularly well documented for the Medicaid program (Sloan, Mitchell, and Cromwell, 1978; Mitchell and Schurman, 1984; Held and Holahan, 1985; Long, Settle, and Stuart, 1986). In addition, higher Medicare fees, holding private rates constant, have been found to be positively related to decisions to formally participate and accept assignment (Mitchell, Rosenbach, and Cromwell, 1988; Mitchell and Cromwell, 1982; Paringer, 1980; Rice, 1984; Rice and McCall, 1982; Rodgers and Musacchio, 1983).² Private fees, on the other hand, are negatively related to decisions to participate and accept assignment.³ Of course, physicians' ability to leave the Medicare program altogether is presumably more limited than their ability to leave Medicaid—Medicare beneficiaries are high utilizers of physician services, and the program represents approximately 24 percent of physician revenues.

Another reason for analyzing the relationship between Medicare fees and private fees relates to the growing interest in replacing the current payment methodologies used by private payers thought to result in inappropriate pricing patterns with a more rational approach. One possi-

ble approach is the adoption of Medicare payment rules by private payers as part of a broad-based health financing reform. For example, if private payers adopted the MFS, including the conversion factor and geographic adjusters, to set their reasonable charge screens, then the difference between the private and Medicare levels of payments would provide some guide as to how physicians' revenues might be affected. If earlier studies that show the MFS has fees below those in the private sector are correct (Pope et al., 1991), then adoption of the MFS by private payers would suggest that physician revenues could fall. This would mean that payments by private payers would fall and, at the same time, copayments by private patients would be lower. Depending on private sector arrangements, balance billing could offset all or part of this reduction in copayments.

The purpose of this article is to examine the relationship between physician fees under the MFS and private physician fees.⁴ This relationship will be examined by type of service (e.g., do fees for visits compare more favorably than fees for imaging?) and by Medicare payment locality. Although the MFS establishes fee levels designed to address the service type and geographic distortions noted earlier, significant variations in this relationship between Medicare and private fees can still exist by type of service and across localities. Analyzing the relationship between Medicare and private fees by type of service and by locality provides insight into those services and areas of the

²Participation refers to a signed agreement between the physician and the program whereby the physician agrees to accept assignment on all Medicare claims. In accepting assignment, the physician agrees to collect from the patient only applicable deductibles and coinsurance (i.e., Medicare payment is accepted as payment in full). Non-participating physicians can accept assignment on a claim-by-claim basis.

³One additional issue complicates the picture: the physicians' potential ability to induce demand in response to reduced fees. Physicians could respond to lower Medicare fees by inducing more demand among Medicare patients although a more traditional supply response would be for the physician to reduce output to their Medicare patients. The relationship between the MFS and private fees will affect physicians' supply response in both markets.

⁴The MFS includes a 5-year transition period. Because we will examine the relationship between a fully implemented MFS and private fees, we are implicitly examining the relationship as it will exist in 1996. It is useful to understand these relationships now before they become fully implemented.

country that might be most affected by the move to the MFS and by the use of Medicare payment methodologies to establish private fees. A second step in the analysis will explore the underlying variation in Medicare and private fees—i.e., is the variation in Medicare and private fees across the United States comparable?

The next section of this article contains our methods for constructing the fee indexes. In the Results section, we analyze the relationship of Medicare fees to private fees overall and by type of service. Comparison between Medicare and private fees are made nationally and for groups of localities (i.e., classified into quartiles based on the ratio of Medicare to private fees). We also analyze the underlying variation driving the relationship between Medicare and private fees. The Discussion section discusses implications of the analysis.

METHODS

Medicare fees are computed by applying the Medicare fee schedule payment methodology (i.e., relative value units, GPCI, and conversion factor) to data obtained from the Health Care Financing Administration's (HCFA) Public Use File (PUF) of Physician Services.⁵ The data source for private fees is the Health Insurance Association of America's (HIAA) Medical and Surgical Prevailing Healthcare Charges System (PHCS) for 1990. The PHCS is a major source of billed charge data used in the administration of private health benefit programs. The information is derived from more than 150 major commercial health insurers, Blue

Cross and Blue Shield Plans, third-party administrators, and self-insured groups. Areas in all 50 States and the District of Columbia are represented. HIAA defines areas based on 3-digit ZIP Codes. These areas are defined so that each contains adequate numbers of claims so as to allow reliable estimates of mean and median charges to be derived for individual health care services. The annual fee estimates for 1990 in the PHCS are based on more than 400 million individual charges for medical and surgical physician services. Average fees for the 84 procedures we selected for this study are based on approximately 84 million individual charges.

To measure relative fees, a series of indexes measuring the ratio of MFS fees to private fees were constructed for five types of service—visits, imaging (X-rays, magnetic resonance imaging), ambulatory procedures (hernia repair, endoscopy), major procedures (coronary artery bypass graft [CABG], arthroplasty), and diagnostic tests (cardiovascular stress test), as well as a summary index. The type of service categories for the separate indexes are defined using the recently developed Berenson and Holahan (1992) classification scheme. These indexes are based on a selected set of physician services (i.e., HCPCS codes) that account for a significant proportion of Medicare physician charges, are representative of the spectrum of physician services (e.g., visits, surgery, and diagnostic tests), and are likely to be provided to a non-Medicare population.

The 84 physician services selected for the indexes are shown in Table 1; these services account for 63 percent of Medicare physician services under the MFS. The underlying purpose of this analysis is

⁵The PUF contains, among other elements, aggregate service counts by HCFA Common Procedure Coding System (HCPCS) and modifier for each locality.

Table 1
Selected Physician Services Used to Develop Medicare and Private Fee Index

HCPCS Code	Description	Percent of Total MFS Payments
All Services		
Total Payments		63.124
Imaging Procedures		
Total Payments		3.634
71010 26	Chest X-ray	0.469
71020 26	Chest X-ray, 2 views	0.688
74270 26	Colon X-ray	0.113
76091 26	Mammography	0.203
78306 26	Bone imaging	0.142
70470 26	Computerized-assisted tomography, head	0.182
70551 26	Magnetic resonance imaging, brain	0.090
74160 26	Computerized-assisted tomography, abdomen	0.172
76700 26	Echography, abdomen	0.162
93307	Echocardiography	0.464
93320	Doppler echocardiography	0.151
93547	Combined left heart catheter	0.467
93549	Combined right and left heart catheter	0.331
Visit Services		
Total Payments		44.367
99203	New visit	0.608
99204	Office visit, new patient	1.119
99212	Office visit, established patient	1.088
99213	Office visit, established patient	12.230
99214	Office visit, established patient	1.915
99215	Office visit, established patient	1.335
99222	Initial hospital visit	1.870
99223	Initial hospital visit	1.434
99231	Subsequent hospital visit	5.713
99232	Subsequent hospital visit	5.406
99233	Subsequent hospital visit	0.749
99238	Hospital discharge day	0.803
99291	Critical care first hour	0.534
99283	Emergency department visit	0.522
99284	Emergency department visit	0.892
99285	Emergency department visit	1.161
99312	Nursing facility visit, new or established patient	0.499
99332	Resthome visit, established patient	0.515
92004	Eye exam, new patient	0.540
92012	Eye exam, established patient	0.877
92014	Eye exam, established patient	1.158
99244	Office consultation	0.770
99254	Initial Inpatient consultation	1.992
99255	Initial inpatient consultation	0.639
Major Procedures		
Total Payments		4.870
19240	Mastectomy	0.157
44140	Colectomy	0.246
47605	Cholecystectomy	0.183
52601	Prostatectomy	0.729
33207	Insert pacemaker	0.104
33511	Coronary artery bypass graft	0.161

See footnotes at end of table.

Table 1—Continued
Selected Physician Services Used to Develop Medicare and Private Fee Index

HCPCS Code	Description	Percent of Total MFS Payments
33512	Coronary artery bypass graft	0.372
33513	Coronary artery bypass graft	0.328
33514	Coronary artery bypass graft	0.129
35081	Direct repair of aneurysm	0.112
36489	Placement of venous catheter	0.107
92982	Coronary artery dilation	0.286
93503	Right heart catheter	0.170
27125	Repair of complete shoulder	0.118
27130	Arthroplasty	0.415
27236	Repair of thigh fracture	0.270
27244	Repair of thigh fracture	0.422
27447	Arthroplasty knee	0.561
Ambulatory Procedures		
Total Payments		8.724
65855	Laser surgery of eye	0.224
66821	Discission of secondary membranous cataract	0.628
66984	Cataract removal with lens insertion	3.859
11642	Excision, lesion—face, eye	0.105
11750	Excision of nail	0.102
19120	Excision of cyst	0.114
49505	Repair of hernia	0.139
10060	Incision and drain of abscess	0.204
11730	Avulsion of nail plate	0.203
17000	Destruction of facial lesion	0.215
20610	Arthrocentesis	0.236
43235	Upper gastrointestinal endoscope	0.453
43239	Upper gastrointestinal endoscope	0.336
45330	Sigmoidoscopy	0.225
45378	Colonoscopy	0.514
45380	Colonoscopy	0.210
45385	Colonoscopy	0.400
52000	Cystourethroscopy	0.249
90935	Hemodialysis	0.179
90937	Hemodialysis	0.129
Diagnostic Tests		
Total Payments		1.529
80500	Clinical pathology consultation	0.066
92567	Basic comprehensive audiometry	0.080
93005	Routine electrocardiogram	0.654
93017	Cardiovascular stress test	0.144
93018	Cardiovascular stress test	0.197
93225	Electrocardiogram monitor or review 24 hours	0.080
93227	Electrocardiogram monitor or review 24 hours	0.167
94060	Bronchospasm evaluation	0.048
95900	Nerve conduction test	0.093

NOTES: HCPCS is HCFA Common Procedure Coding System. MFS is Medicare fee schedule.

SOURCE: The Urban Institute analysis of the Health Care Financing Administration (HCFA) Physician Service Public Use File.

to compare Medicare fees with private fees. Although services were selected to account for a significant proportion of Medicare physicians services, these services also yield an index representative of services received by both elderly and non-elderly patients. For example, among the visit services, only the two nursing visit services are likely to pertain primarily to the elderly; all of the remaining visit codes pertain to both the elderly and non-elderly populations. Certain cardiovascular-related imaging procedures (left heart catheter), major procedures (insert pacemaker, CABG), and diagnostic tests (cardiovascular stress test) are more likely to pertain to the elderly (particularly males), but they are frequently provided to those under 65 years of age. In summary, the majority of procedures selected for the indexes are applicable to both the elderly and non-elderly populations, and those provided almost exclusively in the elderly population do not account for large proportions of MFS payments (and, consequently, will carry less weight in the calculation of the indexes).

As mentioned earlier, the MFS methodology was used to calculate Medicare physicians fees. Although the MFS includes a 5-year transition from historical payment levels to MFS payment levels, we focus on how the MFS will relate to private fees when it is the sole determinant of Medicare's rates. Therefore, Medicare fees for each procedure in each locality were calculated assuming a fully implemented MFS (i.e., no transition rules are reflected). However, because the MFS fee is compared with private fees for 1990, the 1992 conversion factor was deflated to the 1990 factor using the Medicare Economic Index for primary care and other services.

Mapping Data to the Locality

Private insurance fees for the 84 selected physician services were obtained from the PHCS 1990 national data base that, as noted, reports fees for 3-digit ZIP Code areas. These ZIP Code-level data have been mapped to localities. This is accomplished by first mapping fee data for 3-digit ZIP Codes to counties and then aggregating the data for counties to the locality level. Three-digit ZIP Code areas were mapped to counties using the U.S. Postal Service's *National Five-Digit ZIP Code and Post Office Directory*. PHCS fees were assigned to each county within a 3-digit ZIP Code. Using the proportion of the locality population accounted for by the county as a weight, these private fees were averaged across all counties within a locality to produce a weighted average private fee for each locality and service. The county-to-locality mapping draws on the methods used to develop GPCI. For the GPCI, counties were initially mapped to localities using the *Medicare Directory of Prevailing Charges, 1984* and then revised to make the definitions current based on comments from HCFA.⁶

Fee Indexes

The PHCS fee data are mean submitted charges—the data base does not contain what insurers actually pay. What insurers

⁶In situations where a given county falls in two localities, population counts are assigned to portions of the county contained in each locality using postal ZIP Code areas. Thus, the proportion of the county's population located in a given locality can be used to assign values to the locality. Counties that are entirely located within a single locality (the vast majority) will have population proportions equal to 1.0. However, a county with, for example, one-half of its population in one locality and one-half in another will have two population proportions (e.g., .50 and .50)—one associated with each of the respective localities. Attributing private fee means to the locality is accomplished by taking a weighted mean across the complete or partial counties that make up the locality.

Table 2

National Weights Used for Medicare and Private Fee Index, by Type of Service

Type of Service	Weight
Total	1.00
Imaging	0.12
Visits	0.54
Major Procedures	0.12
Ambulatory Procedures	0.20
Diagnostic Tests	0.03

NOTE: Type of service values may not sum to 1.00 because of rounding.

SOURCE: The Urban Institute analysis of the Health Care Financing Administration Physician Service Public Use File.

actually pay in an area will be affected by fee screens and the presence of non-traditional reimbursement methods (e.g., capitation, fee schedules). Traditionally, commercial insurers use prevailing charge fee screens ranging from the 80th to the 95th percentile charge. Pope et al. (1991) performed a sensitivity analysis using PHCS fee data and found mean fees at the metropolitan statistical area level to be insensitive to the range of percentile cutoffs (e.g., using a 90th-percentile cutoff reduced the mean charge by only 1 percent). This may not be surprising given that only 10 percent of the charges are affected by the screen, and many submitted charges above the 90th percentile may be reduced by very little in determining the payment rate. Nonetheless, because the sensitivity analysis had limitations (i.e., fee screen cutoff percentiles vary across payers, the geographic basis of the fee screens varies, and non-traditional payment methods cannot be simulated), Pope et al. (1991) conclude that private fee estimates based on submitted charges are likely to be overestimates of what is actually paid. To compensate for this potential overstatement, we used 95 percent of the mean private fee (rather than the mean) in our indexes.

As noted earlier, five service-specific indexes were created—visits, imaging, ambulatory procedures, major procedures, and diagnostic tests—that summarize the ratio of Medicare fees to private fees within the locality.⁷ A summary index was also created as a weighted average of the five service-specific indexes.

To create this summary index, national weights for each type of service were developed using all physician services subject to MFS. We chose to use physician services subject to MFS because our indexes pertain only to these services. Table 2 reports the national weights for each type of service category. These national type-of-service weights are affected by the definition of physician services and the use of payments (rather than charges or service volume, for instance). By focusing on physician services paid under MFS, for example, the professional component of many laboratory services (which are reimbursed under a separate fee schedule) are not relevant in the computation of the summary index.⁸ Similarly, if the national weights had been calculated using allowed charges for all services in the 1989 Part B Medicare Annual Data, the national weights would have been skewed more toward surgery and diagnostic tests and away from visits. This is because the intended effect of MFS

⁷The definition of certain visit codes changed under the MFS. This creates no complication for determining the MFS fees—each of the new codes has the relevant RVU and GPCI values needed to calculate a fee. However, determining average private fee requires that old visit codes be crosswalked to the revised visit codes (*Federal Register*, 1991). There is no complexity when a single old code is replaced by a single new code or when two old codes are replaced by a single new code. Complexity arises when one old code is replaced by several new codes (e.g., 70 percent of the time old code 90200 becomes 99204 and 30 percent of the time it becomes 99205). In these instances, the assigned private fee is the weighted average of its old codes.

⁸Also note that the files used to compute the physician services weights did not include anesthesia services.

shifts payments to cognitive from procedural services.

Before moving to the results, one caveat should be noted. The Medicare payment locality is the unit of analysis for this study (*Federal Register*, 1991). (Five California localities served by two different carriers were combined.) Localities are defined by Medicare carriers strictly for Medicare physician payment purposes and locality definitions vary widely (e.g., the entire State, individual cities, groups of cities, contiguous counties, and non-contiguous counties). Locality must serve as the unit of analysis for this study because localities are the basis of the geographic practice cost (work, overhead, and malpractice) adjustments in the Medicare payment amount, and because the locality is the unit that will be affected by the move to MFS. However, since private fees are not generally defined by Medicare localities, our comparison of the MFS rate with the locality level

weighted average private fee may not precisely reflect fee differentials faced by many physicians and patients.

RESULTS

As shown in the first column of Table 3, nationally, MFS fees for all physician services are 76 percent of private fees. This is consistent with previous research. Using a nine-State data base, Pope et al. (1991) compared fees under the model-fee schedule with private fees using PHCS data and found that Medicare fees ranged from 76 percent of private fees in large metropolitan areas to 79 percent in rural areas.

Not surprisingly, we found that the relationship of MFS fees to private fees varies by type of service. MFS visit fees are 93 percent of private-visit fees, and MFS fees for imaging services are 71 percent of comparable private fees. However, MFS fees for major procedures (51 percent), ambulatory procedures (52 percent), and

Table 3
Ratio of Medicare to Private Fees, by Locality and Type of Service¹

Type of Service	National Mean n = 230	Locality		
		Bottom Quartile n = 57	Middle Quartiles n = 116	Top Quartile n = 57
All Services	0.7580 (.0764)	0.6631 (.0350)	0.7643 (.0310)	0.8705 (.0320)
Visit Services	0.9251 (.1157)	0.7872 (.0553)	0.9331 (.0550)	1.0914 (.0594)
Imaging Procedures	0.7070 (.0783)	0.6353 (.0426)	0.7177 (.0740)	0.7748 (.0438)
Major Procedures	0.5134 (.0569)	0.4772 (.0431)	0.5081 (.0388)	0.5787 (.0632)
Ambulatory Procedures	0.5199 (.0408)	0.4833 (.0381)	0.5266 (.0318)	0.5508 (.0302)
Diagnostic Tests	0.4577 (.0626)	0.4329 (.0558)	0.4571 (.0647)	0.4935 (.0465)

¹Classification into quartiles based on Medicare-to-private-fee ratio for all physician services.

NOTE: Numbers in parentheses are the standard deviations of the mean.

SOURCES: The Urban Institute analysis of the Health Care Financing Administration Physician Service Public Use File and the Health Insurance Association of America Medical and Surgical Prevailing Healthcare Charges System File for 1990.

diagnostic tests (46 percent) are only about one-half of those allowed by private insurers.

Although Medicare fees appear to compare unfavorably with private fees overall, it is important to bear in mind that there are several reasons to believe that private-fee data are higher than what physicians actually receive. As noted, private-fee data are based on submitted charges and private insurers employ fee screens to reduce submitted charges for payment purposes. Since private-fee screens are usually based on submitted charges, the physician has a strong incentive to submit high charges in the hopes of raising future fees (Lee and Hadley, 1981). In addition, there is increasing use of non-traditional reimbursement methods (e.g., preferred provider organizations). Furthermore, physicians face bad debt as well as administrative costs in pursuing uncollected charges such that the submitted charge does not reflect what is actually received (Cromwell and Burnstein, 1985).

To examine the relationship between Medicare and private fees in greater detail, we classified localities into quartiles based on the ratio of Medicare-to-private fees for all physician services (i.e., using the summary index). Localities where Medicare fees compare less favorably (lowest quartile) with private fees tend to be large and medium metropolitan areas. Localities where Medicare fees compare more favorably (highest quartile) tend to be rural areas and small metropolitan areas. Note that counter-examples can also be found in both the highest and lowest quartiles. (Table 4 reports the localities found in the upper and lower quartiles.)

Table 3 also reports the mean ratio for localities (in quartile groups, middle two

quartiles are combined) by type of service. Across all physician services, MFS fees in the bottom quartile localities are 66 percent of private fees as compared with 87 percent in the top quartile localities. This pattern is true for each type of service category, except that the differences between the bottom and top quartiles vary. The largest differences between the lowest and highest quartiles are for visit services (79 versus 109 percent, respectively) and imaging services (64 versus 77 percent, respectively). The differences between the lowest and highest quartiles for major procedures, ambulatory procedures, and diagnostic tests, on the other hand, are smaller; for example, Medicare fees for major procedures are 48 percent of private fees in the bottom quartile versus 58 percent in the top quartile. Probably the greater concern for these latter three service types is that MFS fees do not compare well with private fees across all localities.

The actual range in relative visit fees ratios among localities is remarkable—from about 65 percent in Manhattan and Miami to about 125 percent in Normal and Peoria, Illinois, a 60-percentage point difference (data not shown). With very few exceptions, the 57 highest quartile localities have visit-fee ratios at or above 100 percent. Although substantial, variation in the remaining fee ratios is not as great as that for visit services. Imaging fee ratios range from 52 percent (Flagstaff) to 89 percent (Peoria); major procedure fee ratios range from 36 percent (Manhattan) to 73 percent (Detroit); ambulatory procedure fee ratios range from 40 percent (Manhattan) to 63 percent (Spokane and Richland, Washington); and diagnostic test service fee ratios range from 30 per-

Table 4
Localities in the Highest and Lowest Quartiles Based on Fee Ratio for
All Physician Services

Highest Quartile Localities	Physician Service-Fee Ratio	Lowest Quartile Localities	Physician Service-Fee Ratio
Peoria, Illinois	0.99	Manhattan, New York	0.55
Normal, Illinois	0.97	Miami, Florida	0.56
East St. Louis, Illinois	0.97	Los Angeles, California (1st of 8)	0.62
Quincy, Illinois	0.94	Los Angeles, California (2nd of 8)	0.62
Decatur, Illinois	0.94	Los Angeles, California (3rd of 8)	0.62
Rock Island, Illinois	0.93	Los Angeles, California (4th of 8)	0.62
Springfield, Ohio	0.93	Los Angeles (5th of 8)	0.62
Nebraska	0.93	Los Angeles, California (6th of 8)	0.62
Southeast Illinois	0.92	Los Angeles, California (7th of 8)	0.62
Southern Illinois	0.92	Los Angeles, California (8th of 8)	0.62
Kankakee, Illinois	0.91	Hawaii	0.64
Northwest Iowa	0.91	Queens, New York	0.64
Small eastern cities, Missouri	0.90	Anaheim-Santa Ana, California	0.65
Southwest Iowa	0.89	Las Vegas, and all Nevada cities	0.65
Northwest (Lima) Ohio	0.89	New York City suburbs and Long Island, New York	0.66
Rest of Indiana	0.89	Baltimore and surrounding counties, Maryland	0.66
Northwest, Illinois	0.89	Houston, Texas	0.66
Urban Indiana	0.89	South Central Connecticut	0.66
Rest of Mississippi	0.89	Grayson, Texas	0.66
Rural northwest counties, Missouri	0.88	Dallas, Texas	0.66
West Central (Lake Plains), Ohio	0.88	San Diego and Imperial, California	0.66
Urban Mississippi (city limits)	0.88	Fort Lauderdale, Florida	0.67
East Central (Steubenville), Ohio	0.88	Santa Barbara, California	0.67
South Central (excluding Des Moines), Iowa	0.88	Philadelphia and Pittsburgh medical schools and hospitals, Pennsylvania	0.67
North Kansas City (Clay and Platte), Missouri	0.88	Wichita Falls, Texas	0.67
Mansfield, Ohio	0.87	San Bernardino and East Central California	0.67
Green Bay (Northeast) Wisconsin	0.87	Yuma (City), Arizona	0.67
Baton Rouge, Louisiana	0.87	Texarkana, Texas	0.67
Dayton, Ohio	0.87	Rhode Island	0.68
Rest of Missouri	0.87	Rest of Nevada	0.68
Springfield, Illinois	0.87	Mc Allen, Texas	0.68
Michigan, excluding Detroit	0.87	Monterey and Santa Cruz, California	0.68
Detroit, Michigan	0.86	Washington, DC and Maryland and Virginia suburbs	0.68
Small cities (city limits), Kentucky	0.86	Urban Massachusetts	0.68
Scioto Valley, Ohio	0.86	Riverside, California	0.68
Wyoming	0.86	Fort Worth, Texas	0.69
Marion and surrounding counties, Ohio	0.86	Suburbs and rural cities, Massachusetts	0.69
Utah	0.86	Ventura, California	0.69
Southeast (including Iowa City), Iowa	0.86	Laredo, Texas	0.69
St. Joseph, Missouri	0.85	San Francisco, California	0.69
North Central Iowa	0.85	Bakersfield, California	0.69
Cincinnati, Ohio	0.85	Urban (city limits), North Carolina	0.69
St. Louis and large eastern cities, Missouri	0.85	Temple, Texas	0.69
Rest of Kentucky	0.85	Delaware	0.70
Southeast (Ohio Valley), Ohio	0.84	Rest of Arizona	0.70
De Kalb, Illinois	0.84	Brownsville, Texas	0.70
Spokane and Richland (cities), Washington	0.84	Tucson (City), Arizona	0.70
Lafayette, Louisiana	0.83	San Mateo, California	0.70
South Idaho	0.83	South and Eastern Shore, Maryland	0.70
Akron, Ohio	0.83	Southwest Connecticut	0.70
Toledo, Lucas, Wood, Ohio	0.83	Marin, Napa, Solano, California	0.70
Buffalo and surrounding counties, New York	0.83	Corpus Christi, Texas	0.70

See footnote at end of table.

Table 4—Continued
Localities in the Highest and Lowest Quartiles Based on Fee Ratio for
All Physician Services

Highest Quartile Localities	Physician Service-Fee Ratio	Lowest Quartile Localities	Physician Service-Fee Ratio
Victoria, Texas	0.83	Flagstaff (city), Arizona	0.71
East Central and Northeast (excluding Spokane) Washington	0.83	Phoenix, Arizona	0.71
Suburban Kansas City, Kansas City	0.83	Northeast Rural Texas	0.71
North Idaho	0.83	Poughkeepsie and North New York City suburbs, New York	0.71
Montana	0.82	North Dakota	0.71

SOURCES: The Urban Institute analysis of the Health Care Financing Administration Physician Service Public Use File and the Health Insurance Association of America Medical and Surgical Prevailing Healthcare Charges System File for 1990.

cent (Philadelphia) to 67 percent (Spokane and Richland, Washington).

The findings that Medicare fees more closely approximate private fees in rural and small metropolitan areas and that Medicare fees more closely approximate private fees for visits as compared with surgery underscore the intended impacts of MFS. The recognition of only one-fourth of the physician work component GPCI was intended to reduce payment differences between urban and rural areas, thereby encouraging physician practices in rural areas. The resource-based relative value scale was intended to reduce the differences between cognitive and procedural services.

Our next step was to explore the variation underlying the observed relationship between Medicare and private fees. For example, we found that Medicare visit fees are 93 percent of private-visit fees but that the mean varies from 79 percent to 109 percent for localities in the lowest and highest quartiles, respectively. Is the variation in the Medicare-to-private-fee ratios driven by variation in Medicare fees or by variation in private fees? Table 5 addresses this question by presenting the ratio of the Medicare fee to the national mean Medicare fee for each quartile. Similarly, the ratio of the private fee relative to

the national mean private fee is presented for each quartile. (Again, the middle two quartiles are combined for presentation in Table 5.)

The first point that is apparent from Table 5 is that private-fee variation is substantially greater than that for Medicare fees. For all physician services, private fees range from 121 percent of the national mean to 83 percent of the national mean in the lowest and highest quartiles, respectively. (Recall, that localities are classified into quartiles based on the ratio of Medicare to private fees for all physician services.) In contrast, overall Medicare fees range from 107 percent of the National mean in the lowest quartile to 97 percent of the national mean in the highest quartile. In summary, the observed variation in the ratio of Medicare-to-private fees for all physician services is not primarily attributable to geographic variations in Medicare fees. Rather, private fees appear to vary dramatically; and it is this variation that accounts for differences in the Medicare-to-private-fee ratios between the lowest and highest quartiles.

This is seen more clearly by examining, for example, the Washington, DC and Detroit payment localities. In both areas, Medicare's physician fees are about 10

percent above the national average of MFS (data not shown). However, private fees are 21 percent above the national private mean in Washington, DC, whereas in Detroit private fees are 5 percent below the national average. This causes MFS to appear to be much less generous in Washington, DC, than in Detroit when, in fact, its payment rates are almost identical. Moreover, areas like Manhattan, Miami, and Los Angeles—where Medicare fees are between 5 and 15 percent above the MFS average—have been identified as potential access trouble spots (Sullivan, 1992). This appears to be due to the fact that private fees in these areas are 64, 41, and 37 percent, respectively, above the national mean private fees.

The same patterns appear to be true across the individual types of service, ex-

cept that the differences between the lowest and highest quartiles for private fees vary to a greater extent. The largest difference in private fees between the lowest and highest quartiles are for visit services (123 and 81 percent, respectively, of the national private fee mean) and imaging services (120 and 86 percent, respectively, of the national private fee mean). The private-fee differences between the lowest and highest quartiles for major procedures, ambulatory procedures, and laboratory tests are almost as large.

In summary, this analysis of variation suggests three points. As mentioned, it is variation in private fees that appears to drive the relationship between Medicare and private fees. In the lowest quartile localities, where Medicare fees compare

Table 5
Ratio of Medicare and Private Fees to Their Respective National Means, by Locality and Type of Service¹

Type of Service	National Mean n = 230	Locality		
		Bottom Quartile n = 57	Middle Quartiles n = 116	Top Quartile n = 57
All Services				
Medicare	1.0000	1.0655	0.9792	0.9700
Private	1.0000	1.2129	0.9576	0.8295
Visit Services				
Medicare	1.0000	1.0594	0.9811	0.9729
Private	1.0000	1.2314	0.9563	0.8078
Imaging Procedures				
Medicare	1.0000	1.0750	0.9762	0.9657
Private	1.0000	1.2029	0.9515	0.8608
Major Procedures				
Medicare	1.0000	1.0816	0.9731	0.9652
Private	1.0000	1.1642	0.9732	0.9052
Ambulatory Procedures				
Medicare	1.0000	1.0776	0.9758	0.9630
Private	1.0000	1.1585	0.9572	0.9301
Diagnostic Tests				
Medicare	1.0000	1.1000	0.9691	0.9514
Private	1.0000	1.1718	0.9603	0.8781

¹Classification into quartiles based on Medicare-to-private-fee ratio for all physician services.

SOURCES: The Urban Institute analysis of the Health Care Financing Administration Physician Service Public Use File and the Health Insurance Association of America Medical and Surgical Prevailing Healthcare Charges System File for 1990.

least favorably with private fees, Medicare fees are the most generous—above the national mean for each type of service. At the same time, for the services that Medicare fees compare most favorably with (i.e., visits and imaging), on average, private fees demonstrate the greatest degree of geographic variation.

DISCUSSION

We find that overall Medicare physician fees are about 76 percent of private physician fees and that Medicare fees for visit and imaging service compare more closely with private fees than do Medicare fees for major procedures, ambulatory procedures, and tests. At the same time, we found that the geographic variation in private fees is considerably greater than that for Medicare fees. In terms of its potential impact on future payment policies, this study's most important finding may relate to areas in which Medicare's rates are low relative to the private market. In these areas, both Medicare and private fees are above their respective national averages. However, the extent of the differential between the area and the national average is much greater for private fees than for Medicare, causing Medicare's payment rates to seem low in comparison with the private sector.

These findings raise an important question that will need to be addressed as MFS is implemented and revised for Medicare and considered for use by other payers: For services or areas with private fees that are well above their national average, are these private rates "too high" or have Medicare's rates been set "too low?" A useful perspective on the level of private fees is provided in Welch, Katz, and Zuckerman (1993). Although our re-

sults show that Medicare fees are well below private fees, Welch et al. show that Medicare payment rates are approximately 67 percent above those paid to Canadian physicians.

Some might argue that private fee levels represent market conditions which would suggest that Medicare fees are low, particularly in certain areas and for certain services. However, given consumers' weak incentives to seek out low-cost providers and their inadequate information regarding the appropriateness of most medical services, it is hard to defend the present set of private fees as the result of a competitive market process. Furthermore, recall that private fee screens are usually based on submitted charges giving physicians strong incentives to submit high charges in the hopes of raising future fees (Lee and Hadley, 1981). The MFS was developed to correct perceived inequities in the fee differentials across both services and geographic areas. The resource-based relative value scale (Hsiao et al., 1992) focuses on historically undervalued fees for cognitive services relative to procedural services. The GPCs (Welch, Zuckerman, and Pope, 1993) provide a mechanism for adjusting fees so that they reflect only justifiable geographic differences in practice costs. Thus, to the extent that usual, customary, and reasonable reimbursement methods still drive variations in mean private fees, these fees still reflect the distortions MFS is intended to remove. If MFS were used for all physician services, certainly some of the variation in private physician fees across services and areas would be dampened.

These results can be used to roughly assess the impact on physician revenues of a decision by private insurers to pay at

MFS levels of payments. Based on data from the National health expenditure accounts, about 46 percent of physician revenues are derived from private insurers' payments (Levit et al., 1991). If these payment rates were to fall to MFS levels (a reduction of 24 percent, on average) and if there were no offsetting volume responses, the physician revenues (and private insurer payments) would decline by about 11 percent (46 percent of 24 percent). The effects of this potential change in private payers' policies would vary substantially across both specialties and geographic areas. These reductions would even be larger if patients' copayments were taken into account and if physicians were unable to make up any shortfalls through increased balance billing.

With respect to the impact of MFS on Medicare alone, although we found that Medicare fees are higher in areas with higher private fees, Medicare fees compare least favorably with private fees in these same areas. In the interest of maintaining participation rates and access and limiting induced demand in these areas, these results might suggest that MFS should reflect, at least in part, private market fees. However, if a major goal of MFS is to correct geographic inequities in physician charging patterns, then it is contradictory for the level of private fees to be reflected in a geographic adjustment for Medicare's payment to physicians. Finally, relying on the private market to set Medicare fees would forsake Medicare's significant market share and its ability to act as a price setter.

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REFERENCES

- Berenson, R., and Holahan, J.: Sources of Growth in Medicare Physician Expenditures. *Journal of the American Medical Association* 267(5):687-691, February 1992.
- Cromwell, J., and Burnstein, P.: Physician Losses from Medicare and Medicaid Discounts: How Real are They? *Health Care Financing Review* 6(4):51-81, Summer 1985.
- Federal Register*. Medicare Program: Fee Schedule for Physician Services. Vol. 56, No. 227, 59502-59819. Office of the Federal Register, National Archives and Records Administration. Washington. U.S. Government Printing Office, November 25, 1991.
- Held, P.J., and Holahan, J.: Containing Medicaid Costs in an Era of Growing Physician Supply. *Health Care Financing Review* 7(1):49-60, Fall 1985.
- Hsiao, W.C., Braun, P., Becker, E.R., et al.: An Overview of the Development and Refinement of the Resource-Based Relative Value Scale. *Medical Care* 30(Supplement):NS1-NS12, November 1992.
- Lee, R.H., and Hadley, J.: Physicians' Fees and Public Medical Care Programs. *Health Services Research* 16:185-203, 1981.
- Levit, K.R., Lazenby, H.C., Cowan, C.A., and Letsch, S.W.: National Health Expenditures, 1990. *Health Care Financing Review* 13(1):29-54, Fall 1990.
- Long, S.H., Settle, R.F., and Stuart, B.C.: Reimbursement and Access to Physicians' Services Under Medicaid. *Journal of Health Economics* 5:235-251, 1986.
- Mitchell, J.B., Rosenbach, M.L., and Cromwell, J.: To Sign or Not to Sign: Physician Participation in Medicare 1984. *Health Care Financing Review* 10:17-26, Fall 1984.
- Mitchell, J., and Schurman, R.: Access to Private Obstetrics/Gynecology Services Under Medicaid. *Medical Care* 22:1026-1037, November 1984.
- Mitchell, J., and Cromwell, J.: Physician Behavior Under the Medicare Assignment Option. *Journal of Health Economics* 1:245-264, 1982.

Paringer, L.: Medicare Assignment Rates and Physicians: Their Responses to Changes in Reimbursement Policy. *Health Care Financing Review* 1(3):75-89, Winter 1980.

Pope, G.C., Cromwell, J., Davidson, S.M., and Mitchell, J.: *A Comparison of Medicare Physician Fees, Physician Charges, Fees of Other Payors, and Model Medicare Fee Schedule Amounts*. Cooperative Agreement Number 99-C-99256/1-06. Prepared for the Health Care Financing Administration. Waltham, MA. Center for Health Economics Research, July 1991.

Rice, T.H.: Determinants of physician assignment rates by type of service. *Health Care Financing Review* 5(4):33-42, Summer 1984.

Rice, T.H., and McCall, N.: Changes in Medicare Reimbursement in Colorado: Impact on Physicians' Economic Behavior. *Health Care Financing Review* 3(4):67-85, June 1980.

Rodgers, J.F., and Musacchio, R.A.: Physician Acceptance of Medicare Patients on Assignment. *Journal of Health Economics* 2:55-73, 1983.

Sloan, F., Mitchell, J., and Cromwell, J.: Physician Participation in State Medicaid Programs. *Journal of Human Resources* 13(Supplement):211-245, 1978.

Sullivan, L.W.: *Report to Congress: Monitoring Utilization of and Access to Services for Medicare Beneficiaries Under Physician Payment Reform*. Health and Human Services, Washington, DC. 1992.

Welch, P.W., Katz, S.J., and Zuckerman, S.: Physician Fee Levels: Medicare Versus Canada. *Health Care Financing Review* 14(3):41-54, Spring 1993.

Welch, P.W., Zuckerman, S., and Pope, G.: *The Geographic Medicare Economic Index: Alternative Approaches*. Working Paper 3839-01-01. The Urban Institute. Washington, DC. June, 1989.

Reprint requests: Mark E. Miller, Ph.D., The Urban Institute, 2100 M Street, NW., Washington, DC 20037.