

## Physician customary charges and Medicare payment experience: Study findings

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*Customary charges have had significant impacts in determining reasonable prices under the historic Medicare physician payment system. This article contains new, comprehensive information on customary charges as well as data aggregated at the physician level. These baseline data have some important policy implications, such as the study findings, that indicate that the Medicare fee schedule is likely to have significant impacts on individual physician practices. The study is based on data for medical, surgical, and consultation services for nine States.*

### Introduction

Customary-charge pricing screens have been a major payment determinant in establishing Medicare reasonable prices for physician services. The impacts of these screens have been more significant than those implied by conventional wisdom. Studies of physician payment under Medicare have historically utilized prevailing and allowed charge data. Legislative and regulatory initiatives have been concentrated on modifications to and limitations in the growth of prevailing charges. Although prevailing-charge pricing screens have had the largest overall impact on payment determinations for medical, surgical, and consultation (MSC) services, they only provide partial answers to the Medicare payment puzzle in understanding the interactions and influence of customary, prevailing, and other reasonable pricing screens.

The Office of Research and Demonstrations, Health Care Financing Administration (HCFA), has supported a series of projects for conducting studies to measure the impact of customary charges on the reasonable-charge method of physician payment under Medicare. Included was the acquisition and analysis of related data for nine States (Alabama; Arizona; Indiana; Maryland; Massachusetts; Oklahoma; Oregon; Pennsylvania; and the Washington, D.C. metropolitan area, which for the purpose of this study will be considered a State). This article contains the first published findings from these studies in the form of descriptive analyses.

This article reviews and describes new data on the role of customary-charges in determining physician fees. The

data shed light on cost savings generated by customary-charge pricing screens and provide information on the distribution of and changes over time in customary charges. Also provided are trend data showing variations in the use of pricing screens by the Medicare participation status of physicians.

The project also provides analyses of issues beyond customary-charge impacts. For example, data are included on select impacts of the price freeze imposed between January 1 and March 31, 1988. Further, available data allowed for its aggregation at the physician level. Illustrative data showing various distributions of allowed charges for MSC services rendered by physicians in solo practices are presented.

In addition to reviewing and describing these new data, this article discusses some of the implications and policy considerations that need to be evaluated as the new Medicare fee schedule moves towards implementation. Descriptions of the types of issues that prompted this study follow.

Physician payment under the Medicare program is made through a payment methodology based on the historical charges of physicians. In an effort to control rapidly escalating costs, to limit beneficiary liabilities, and to respond to a variety of policy initiatives, numerous temporary and permanent modifications have been made to the payment rules. A few examples are price freezes, annual price increase limits, price incentives for primary care services and for improving beneficiary access to care, and various payment limitations under inherent reasonableness authority. As a result, the current payment mechanisms have evolved into a cumbersome and complicated payment methodology.

This complex system frequently hinders efforts to evaluate the impact of historical changes made to the program, as well as efforts to estimate future changes that would result from legislative and other policy initiatives. This is perhaps most evident in provisions of the Omnibus Budget Reconciliation Act (OBRA) of 1989 (Public Law 101-239), which represents the most comprehensive attempt to overhaul the Medicare physician payment system since its inception. In order to effectively evaluate the impact of fee schedules relative to the current reasonable-charge methodology, as well as to understand physician behavioral reaction in terms of volume and intensity changes, adequate baseline data are required for comparative applications. The payment reform legislation includes language addressing the need to acquire and disseminate such information.

Data required to understand and evaluate the program, physician, and beneficiary impacts of payments under Medicare are complicated, voluminous, and frequently not available in required analytical formats. A simple comparison with Medicare payments to hospitals under

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the prospective payment system (PPS) illustrates data volume differentials. There are less than 6,000 hospitals included in PPS compared with about one-half million physicians, more than 10,000 physician and supplier procedure codes versus less than 500 hospital diagnosis-related groups, and 11 million inpatient hospital bills relative to one-half billion bills for physicians and suppliers.

Although Medicare is a national program, the physician payment system is administered by Medicare Part B carriers who do not have standardized operating procedures and systems in their 57 operational sites. This is evidenced in many ways, including variations among carriers in terms of defining pricing localities; differences in the use of type of service, type of provider, and procedure modifier codes; applying physician private-business comparability screens for establishing Medicare prices; establishing provider identification numbers for Medicare billing recordation; and so forth. HCFA has made concerted efforts to improve uniformity in such data for recordation in Medicare Statistical System files such as the Part B Medicare Annual Data (BMAD). However, a variety of limitations in data use result from this lack of uniformity.

Program impact evaluations are also hindered by missing data or lack of data in required analytical formats. For example, centralized data have not been historically available on physician customary charges or at physician-aggregation levels. The latter was addressed in the Consolidated Omnibus Budget Reconciliation Act of 1985, Public Law 99-272, which required HCFA to establish a unique identifier for each physician who renders Medicare services. This enables researchers to analyze utilization experience at the physician level, including each practice setting under which a particular physician bills for rendered services. Further, the sheer volume of detailed data, coupled with its complexities, frequently imposes data aggregation and processing constraints limiting user applications.

The data files used in this study include customary, prevailing, and other reasonable (CPR) charge pricing information and claims-related data for applying volume weights. The analyses are driven by the capability to duplicate most of the reasonable-charge pricing screens utilized by Medicare Part B carriers servicing these States through the application of actual utilization data on billed physician services. Data for MSC services were extracted for these evaluations. Data for other types of services, such as X-rays, laboratory services, and anesthesia, are not included.

The complexity of the physician payment system under Medicare makes it difficult to describe CPR impacts in simple, easy to understand terminology without losing technical accuracy in a study such as this. Thus, even readers with a reasonably good knowledge of the payment rules may require concentrated efforts in analyzing certain parts of this article.

## Methods

### Medicare payment

Medicare's payment methodology prior to enactment of OBRA 1989, which introduced the Medicare fee schedule, is very complicated. In simple terms, it specifies that the allowed charge for a physician's service is the lowest of the billed (submitted) charge, the customary charge of the physician, or the prevailing charge in the pricing locality. The customary and prevailing fee amounts are subject to a variety of constraints and incentives such as:

- Medicare Economic Index (MEI) limits on the growth of prevailing charges. The study data set reflects the higher legislated updates for primary care services than for other physician services.
- Lower prevailing fees for non-participating (NON-PAR) physicians. Participation status refers to the choice physicians make annually on whether to accept Medicare determined payments as payment in full, other than beneficiary cost sharing, for all services provided to Medicare patients. Physicians are offered various incentives to sign participation agreements, including higher prevailing charge levels and exclusion from the maximum allowable actual charges (MAAC) limits on NON-PAR physician charge.
- MAAC limits on actual charges for NON-PAR physicians. Under MAAC legislation, limits are placed on the level of actual billed charges of such physicians. Computation of updated MAACs in each fee-screen year (FSY) are based on limited increases over the previous year and on certain relationships with current prevailing charges. Thus, MAACs affect the calculation of customary pricing screens. A physician's customary fee for a specific procedure is the median of actual charges for services rendered during the year ending June 30 immediately preceding the start of an FSY.
- Lower payment levels for certain procedures designated as overpriced.
- Favorable incentives for physicians who practice in rural areas classified as health manpower shortage areas.

Because a major part of this study is focused on the impact of customary-charge screens utilized for paying physician services, the detailed data were aggregated for three specific service categories: medical, surgical, and consultations. These are the major types of service for which payment is determined under the CPR-charge methodology.

### Data files

Because the study data files are carrier-specific, there are variations in the record contents, layouts, and coding schemes for the nine States. The available data consist of reasonable-charge pricing and volume information. The

reasonable-charge pricing information can be thought of as three files that contain provider characteristic data, customary charge data, and prevailing charge data. The volume information consists of claims-related Part B utilization data from which a primary unit of measurement used in this study, i.e., each single specific service or procedure rendered, is obtained.

In the provider files, the key data elements common to each of the States are provider identifiers, types of providers (solo-practice physicians, clinics, etc.), specialties, pricing localities, and Medicare participation status. Although there are variations in how each of the carriers classifies types of providers and services, various crosswalks to HCFA classifications are available. Thus, comparisons can be made across States. In addition to the carrier-acquired provider files, linkages were made with HCFA's national Registry of Medicare Physician Identification and Eligibility Records (MPIER). This was performed for verification purposes, as well as to provide some missing data on provider types for two of the carriers. Data from both of these files resulted in the identification of specific physicians and each of their practice settings, whether solo practice or clinic, through the use of Medicare billing numbers.

*Customary charge files* contain information on provider identifiers, Current Procedural Terminology (CPT) and HCFA Common Procedure Coding System (HCPCS) codes and modifiers, types of service, and actual customary fees. Separate customary charges are not computed for each physician in a group practice. Although each State treats providers in group or clinic settings differently, in essence, physicians in a group setting are merged together to create true customary charges for the group during operations frequently referred to as "profile development." Thus, for physicians in a group setting, only the customary charges for the groups are available. For Pennsylvania, customary charges reflect the application of physician private business comparability screens.

*Prevailing charge files* include information on pricing locality, type of service, specialty, HCPCS codes and modifiers, the 50th percentile customary fees, and the 75th percentile adjusted prevailing fees. (The 75th percentile prevailing actually contains the lower of the

maximum allowable prevailing charge or unadjusted prevailing charge.) For procedures designated as "overpriced," inherent reasonableness fees are included. Payment levels for designated overpriced procedures are based on considerations other than the actual, customary, or prevailing charge levels. These data reflect differences in the MEI updates for primary care services and other physician services as defined by HCFA. The lower prevailing fees for NON-PAR physicians (96 percent in 1987, 95.5 percent in 1988, and 95.0 percent in 1989) are also reflected in the data. For Pennsylvania, private business comparability adjustments are included.

For six of the States, pricing files were obtained for each FSY—1987, 1988, and 1989. For the Washington, D.C., Metropolitan area, Massachusetts, and Pennsylvania, only FSYs 1988 and 1989 are available. FSY 1987 includes the 15-month period for January 1, 1987, to March 31, 1988. FSY 1988 includes the 9-month period from April 1, 1988, to December 31, 1988. OBRA 1987 extended or continued both the customary and prevailing charges for physician services during the first 3 months of calendar year 1988 at 1987 pricing levels. FSY 1989 is the same as calendar year 1989.

*Volume files* contain basic information on the allowed services for which providers submitted Part B bills for treatments rendered to Medicare beneficiaries. The primary data include provider identifiers, dates of services, HCPCS codes and modifiers, amounts billed and allowed for each individual service, and types and places of service. Primarily because this study was conducted in phases over a period of time, the acquired claims-related data represent varying dates of service and processing by the carriers. Thus, overall control counts will not agree precisely with service utilization data contained in HCFA's Medicare Statistical System. Comparisons by State are shown in Table 1.

The fact that this volume data on services does not exactly "control" with comparable data in HCFA's central files, and that there are different processing cutoff dates for the States, does not negatively impact this study because the distributions of the services are significantly more relevant, as may be deduced from the data tables presented in this article.

**Table 1**  
**Comparison of medical, surgical, and consultation approved-charges utilization data:**  
**Fee-screen year 1988**

State	Dates of service	Carrier processing cutoff date	Study files as a percent of BMAD
Alabama	January 1987-February 1989	March 1989	108
Arizona, Oklahoma, and Oregon	July 1986-June 1987	August 1987	
	July 1987-June 1988	July 1988	85-88
	July 1988-June 1989	July 1989	
Washington, D.C. metropolitan area	January 1988-December 1989	December 1989	103
Indiana	January 1988-December 1989	December 1989	103
Maryland	January 1988-December 1989	December 1989	113
Massachusetts	January 1988-September 1989	December 1989	102
Pennsylvania	January 1988-September 1989	September 1989	119

NOTE: BMAD is Part B Medicare Annual Data.

SOURCES: HK Research Corporation: Data from the Customary Charge Study, Baltimore, Maryland; Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

**Table 2**  
**Profile of States in Customary Charge Study: 1988**

Item	Study States										
	United States	Total	Alabama	Arizona	Washington, D.C. metropolitan area <sup>1</sup>	Indiana	Maryland	Massachusetts	Oklahoma	Oregon	Pennsylvania
<b>Supplementary medical insurance (SMI) enrollees, 1988</b>											
Number in thousands <sup>2</sup>	311,297	5,811	545	447	252	716	382	809	424	391	1,845
Percent of U.S. total	100.0	18.6	1.7	1.4	0.8	2.3	1.2	2.6	1.4	1.2	5.9
Enrollees per 1,000 population	127	134	132	128	82	129	119	137	131	141	153
Aged served per 1,000 enrollees <sup>3</sup>	775	780	705	760	824	748	830	791	784	697	815
<b>Prevailing charge index<sup>4</sup></b>											
Value	100.0	105.3	85.0	109.2	121.5	89.4	104.5	114.7	96.9	97.4	110.2
Rank	—	—	14	41	50	24	37	46	32	33	43
<b>Allowed charges, 1988<sup>5</sup></b>											
Medical, surgical, and consultation (MSC) services in millions											
	\$19,393	\$3,736	\$336	\$333	\$232	\$355	\$242	\$506	\$225	\$174	\$1,333
Percent of U.S. total	—	19.3	1.7	1.7	1.2	1.8	1.2	2.6	1.2	0.9	6.9
MSC as percent of total physician and supplier charges:											
Medical care	30.7	33.9	35.0	35.4	35.3	32.1	28.9	31.5	35.2	35.2	35.2
Surgical	31.3	30.7	32.2	31.9	29.7	35.1	32.3	28.6	31.9	32.6	29.0
Consultation	3.3	3.4	2.4	3.0	3.7	2.3	5.7	4.0	1.7	2.3	3.7
Select procedures as percent of total MSC charges:											
Office visits, established patients CPT 90000-90080 <sup>6</sup>	15.6	16.6	15.1	17.9	15.8	14.7	14.6	18.3	16.7	21.5	16.6
Coronary artery bypass CPT 33511-33514 <sup>6</sup>	2.7	2.1	2.5	1.8	2.0	3.0	0.8	1.7	2.6	2.4	2.3
Extracapsular cataract removal CPT 66984 <sup>6</sup>	8.4	7.3	7.6	10.8	6.4	9.3	6.3	6.9	11.1	9.6	5.6

<sup>1</sup> Allowed charge and enrollment data are for the Washington, D.C. metropolitan area, which includes the District of Columbia and parts of Maryland and Virginia.

<sup>2</sup> Includes all aged and disabled persons with eligibility for SMI under Medicare residing in the United States on July 1, 1988.

<sup>3</sup> Includes persons 65 years of age or over who received paid physician and other medical services under SMI in calendar year 1988. Data not available for entire Washington, D.C. metropolitan area; rates shown for District of Columbia and Maryland residents only.

<sup>4</sup> Total derived by weighting allowed charges for the nine States. Developed by Peter McMennamin and JIL Systems for the Health Care Financing Administration.

<sup>5</sup> Based on services rendered in calendar year 1988 and includes bills processed by the carriers servicing each of the States. Services rendered to Railroad Retirement Board beneficiaries are not included.

<sup>6</sup> Current procedural terminology (CPT) Codes.

SOURCES: HK Research Corporation: Data from the Customary Charge Study, Baltimore, Maryland; Health Care Financing Administration, Bureau of Data Management and Strategy: Data from the Medicare Statistical System.

Under Medicare's current payment methodology, there are numerous variations in carrier operating procedures and coding classifications. There are differences in designations of types of service, types of provider, use of HCPCS codes and modifiers, and in the number and content of pricing localities. For example, in some of the study States, there are two types of customary and prevailing charge screens used in the same geographic area. One set of pricing screens is used for physician services rendered in a hospital setting, and another set is used for comparable services performed in other settings. It is essential that these carrier-specific classifications be used because they are required to obtain the appropriate reasonable-charge pricing screens. Thus, the data tables presented here on the relationships between customary, prevailing, and billed charges were produced from detailed carrier data prior to aggregating or standardizing it into HCFA classifications.

### Pricing methodology

Procedures were developed to duplicate the processes utilized in each of the carrier's CPR payment operations, but with a major distinction. Carrier operations require the determination of a reasonable (allowed) charge for each billed service. The procedures developed here, in a sense, work backwards. The allowed charge for each such service is known, and determinations are made retrospectively regarding the pricing screen sources used in establishing the allowed or reasonable charge.

The first step consisted of identifying each Medicare paid service during the appropriate FSY. Information was extracted for each of these services on provider identifiers, type of service, procedure codes, and the billed and allowed charges. The data were then linked with the provider's specialty and pricing locality.

Next, it was necessary to determine the true customary charge for each service. This was accomplished by merging the claims data with the customary charge files using the type of service, procedure, and provider identifier to make the linkage.

In the last step, prevailing charges were obtained. Linkages to the prevailing-charge files were made through type of service, pricing locality, specialty, and procedure code information. Prevailing charges adjusted for MEI, participation status, and inherent reasonableness were used. The prevailing-charge files were also the source for the 50th percentile customaries in situations where a true customary fee was not present.

For some services, the Medicare allowed charge was not equal to the billed amount, customary fee, or prevailing fee. These services are included in the last column of Table 2 as an "other" pricing source. Included in this category are:

- For some services, the allowed charge was reduced below reasonable charge levels. For example, reductions occur when Medicare is the secondary payer or when a physician had already rendered part of the service under a separate procedure previously billed.
- For certain physician services, carriers were unable to establish a customary or prevailing fee. In these situations, carriers utilized processes referred to as "gap filling" to determine reasonable-charge pricing

screens. The available data did not always contain the fee amounts derived from this process and are classified as an "other" pricing source.

- For some medical and surgical services, allowed charges are determined through price lists or procedure fees not reflected in available pricing files. There are differences by carrier as to how such reasonable charges are recorded in their internal files. For example, in Maryland, about 30 percent of services in the "other" category represent one procedure, venipuncture under CPT 36415, for which a flat fee is used in price determination. In Indiana, one out of four services represents various injections that are not priced under a customary- or prevailing-charge methodology but from a redbook price list.
- For Maryland and Massachusetts, services include adjustment actions that are reflected in the "other" category. These adjustments, such as reconsideration of bills previously submitted, are excluded for the other seven States.
- Because the acquired provider and pricing files contain point-in-time information, required data were not available for some physicians. Over the course of an FSY, certain modification, accretion, and deletion actions that were required in daily carrier operations are not reflected in these study files.

### Profile of study States

In the first phase of this project, data files were collected directly from Medicare Part B carriers serving the States of Alabama, Arizona, Oklahoma, and Oregon. Under Phase 2, comparable data were acquired, processed, and analyzed for the Washington, D.C. metropolitan area, Indiana, Maryland, Massachusetts, and Pennsylvania. The Washington, D.C. metropolitan area includes the District of Columbia and certain surrounding areas of Maryland and Virginia. The geographic distribution of the States is depicted in Figure 1.

Table 2 contains select data that are useful for comparing the nine States with national experience. Included are Medicare data on enrollees, relative pricing levels, and select allowed charges for physician and supplier services.

Of the aged and disabled persons eligible for supplementary medical insurance (SMI) under Medicare in the United States, 18.6 percent resided in the study States on July 1, 1988. Allowed Medicare charges for MSC services in the study States represent 19.3 percent of those for the entire Nation.

When comparing these data, certain definitions should be noted. First, the approved charges for the study States represent services rendered by physicians and suppliers in 1988 for which bills were processed by the Part B carriers servicing each of them. Thus, they do not represent aggregations by residence of Medicare beneficiaries, as do the enrollment data. The Washington, D.C. metropolitan area serviced by Pennsylvania Blue Shield includes the District of Columbia, Prince Georges and Montgomery Counties in Maryland, and Fairfax and Arlington Counties and the city of Alexandria in Virginia. The two Maryland



Table 3

**Number of allowed medical, surgical, and consultation (MSC) services and percent distribution, by source of allowed charges and selected characteristics: Fee-screen year 1988**

Characteristic	Number of allowed services	Source of allowed charge					Allowed charges (customary source as percent of total)
		Total	Customary <sup>1</sup>	Submitted	Prevailing	Other <sup>2</sup>	
Total MSC services	55,068,258	100.0	41.5	5.9	45.3	7.3	29.7
Percent distribution							
<b>Type of service</b>							
Medical services	46,346,794	100.0	42.3	5.5	45.4	6.8	40.5
Surgical services	6,981,533	100.0	39.3	8.9	40.6	11.1	17.9
Consultation services	1,739,931	100.0	30.0	4.5	61.0	4.4	28.0
<b>Participation status<sup>3</sup></b>							
Participating	34,837,798	100.0	39.6	5.3	47.4	7.7	28.2
Non-participating	20,010,429	100.0	45.0	6.8	42.1	6.0	32.9
<b>State</b>							
Alabama	6,039,472	100.0	44.5	5.2	43.0	7.3	29.2
Arizona	3,554,404	100.0	49.2	6.5	36.4	7.9	34.4
Indiana	5,780,675	100.0	43.3	10.7	31.9	14.1	32.3
Maryland	3,496,080	100.0	43.5	5.5	40.8	10.2	27.8
Massachusetts	7,162,831	100.0	30.6	6.1	49.9	13.3	23.2
Oklahoma	2,977,407	100.0	29.3	4.5	59.8	6.4	20.2
Oregon	2,258,511	100.0	33.7	4.7	56.2	5.3	23.4
Pennsylvania	20,844,414	100.0	46.5	4.9	45.8	2.9	33.9
Washington, D.C. metropolitan area	2,954,464	100.0	30.4	5.8	55.3	8.5	24.4
<b>Specialty</b>							
General practice	10,681,708	100.0	49.1	5.9	38.9	6.2	46.0
Medical specialties	24,328,381	100.0	39.8	5.0	48.7	6.4	36.0
Surgical specialties	11,293,391	100.0	44.4	6.3	43.0	6.3	21.5
Other	8,764,778	100.0	33.4	7.7	46.8	12.1	27.7
<b>Medical procedures</b>							
Primary care <sup>4</sup>	34,339,368	100.0	43.4	3.4	49.0	4.2	40.9
Other medical services	12,118,722	100.0	39.0	11.3	35.6	14.0	39.0

<sup>1</sup>Includes services where customary charge was equal to submitted and/or prevailing charge. (See Table 4 for more detail.)

<sup>2</sup>Includes services where source of pricing screen was other than customary, prevailing, or submitted.

<sup>3</sup>Does not add to total MSC services because participation status was unknown for some services.

<sup>4</sup>Includes office medical, emergency department, home medical, skilled nursing, intermediate care, and long-term care medical, nursing home, boarding home, and domiciliary or custodial medical care services.

SOURCE: HK Research Corporation: Data from Customary Charge Study, Baltimore, Maryland.

The classification of services by source of CPR pricing screen used in this study is somewhat arbitrary because submitted, customary, or prevailing charges are sometimes of equal value in determining allowed charges. A customary, submitted, and prevailing charge order of classification is used here. If a service had a customary-charge equal to the allowed charge, it is counted as a customary-charge source in Table 3. If the submitted charge was less than the customary and equal to the allowed charge, it is classified as a submitted-charge source. The prevailing-charge source includes services where the prevailing charge was equal to the approved charge and was less than both the customary and submitted charges. For those services where the customary charge was the price screen utilized, Table 4 displays the percent of services for which the customary charge was lower than, or equal to, the submitted or prevailing charge.

The pricing source classified as "other" in the tables includes services for which the allowed charge was not equal to the customary, submitted, or prevailing charges contained in the available data files. This category

includes services for which allowed charges were determined by local carrier reasonableness screens that were not recorded in the CPR pricing files available for this study.

The pricing source data from Tables 3 and 4 for all States combined are summarized in Table 5.

Customary charges have a larger impact in determining payments for medical services than for surgical services. Customary determined charges represented more than 40 percent of total allowed medical charges but were only 18 percent of charges for surgical procedures. This is also evident in differences for medical and surgical specialty classifications shown in Table 3.

These differentials indicate that the higher priced surgical procedures are less apt than lower priced procedures to have reasonable prices determined by customary screens. This reflects in good part the impact of OBRA 1986 and 1987, which reduced payment levels of certain procedures designated as overpriced under inherent-reasonableness authority. Starting in FSY 1988 (1987 for cataract surgery), this legislation reduced prevailing charge levels for 38 costly surgical procedures.

**Table 4**

**Percent distribution of program and beneficiary savings from use of customary-charge pricing screen for medical, surgical, and consultation (MSC) services, by selected characteristics: Fee-screen year 1988**

Characteristic	Customary charge equal to allowed charge		Customary less than submitted and prevailing	Customary equal to submitted and less than prevailing	Customary equal to prevailing	Allowed charges in thousands <sup>1</sup>	Savings in thousands <sup>2</sup>	Savings as percent of allowed charges
	Number of allowed services in thousands	Total						
			Percent distribution					
Total MSC services	22,875	100.0	73.7	18.3	8.1	\$2,615,239	\$152,236	5.8
<b>Total of service</b>								
Medical services	19,607	100.0	73.0	18.8	8.3	1,327,602	104,493	7.9
Surgical services	2,746	100.0	77.9	15.4	6.7	1,157,072	41,587	3.6
Consultation services	522	100.0	77.6	16.0	6.5	130,565	6,156	4.7
<b>Participation status<sup>3</sup></b>								
Participating	13,803	100.0	69.3	18.2	12.5	1,778,521	89,319	5.0
Non-participating	9,012	100.0	80.2	18.5	1.3	832,936	62,445	7.5
<b>State</b>								
Alabama	2,690	100.0	71.1	16.8	12.0	248,287	19,638	7.9
Arizona	1,749	100.0	75.3	16.5	8.2	193,112	10,643	5.5
Indiana	2,503	100.0	73.4	17.5	9.1	235,680	10,603	4.5
Maryland	1,521	100.0	71.6	21.7	6.8	186,653	9,728	5.2
Massachusetts	2,191	100.0	70.6	18.2	11.2	355,189	16,024	4.5
Oklahoma	873	100.0	68.8	26.5	4.7	130,750	4,929	3.8
Oregon	762	100.0	79.2	15.0	5.8	106,978	4,068	3.8
Pennsylvania	9,688	100.0	75.3	17.9	6.8	992,792	68,992	6.9
Washington, D.C. metropolitan area	897	100.0	72.0	22.1	5.9	165,798	7,611	4.6
<b>Specialty</b>								
General practice	5,241	100.0	75.5	16.7	7.8	249,224	20,867	8.4
Medical specialties	9,693	100.0	74.6	18.3	7.1	944,977	62,945	6.7
Surgical specialties	5,012	100.0	70.9	19.4	9.7	1,117,896	45,954	4.1
Other	2,929	100.0	72.0	19.2	8.8	303,143	22,470	7.4
<b>Medical procedures</b>								
Primary care <sup>4</sup>	14,910	100.0	73.8	18.2	8.0	980,107	70,277	7.2
Other medical services	4,725	100.0	70.3	20.6	9.1	357,665	34,628	9.7

<sup>1</sup>Excludes charges for services where source of pricing screen was other than customary, submitted, or prevailing.

<sup>2</sup>Difference between customary (when used) and next higher pricing screen.

<sup>3</sup>Does not add to total MSC services because participation status was unknown for some services.

<sup>4</sup>Includes office medical, emergency department, home medical, skilled nursing, intermediate and long-term care, medical, nursing home, boarding home, and domiciliary or custodial medical care services.

SOURCE: HK Research Corporation: Data from Customary Charge Study, Baltimore, Maryland.

Customary pricing screens are the reasonable-charge price determinant more often for services rendered by NON-PAR providers than for those classified as participators (PARs) in the Medicare program. For the study States in total, customary charges were the pricing source for 45 percent of services performed by NON-PARs compared with 40 percent for PARs. This differential reflects in good part the fact that NON-PARs submit lower average fees for the same services and also reflects the impact of MAAC provisions on non-participants. Differentials by participation status and the influence of MAACs are described in more detail in the section "Trends by Participation Status."

Large variations in the use of customary screens by State and physician specialty grouping are also evident in Table 3.

### Customary-charge savings

The use of customary pricing screens results in substantial Medicare program and, in many situations, beneficiary savings. Beneficiaries benefit from lower coinsurance payments, less out-of-pocket expenses for services rendered by physicians who accept Medicare payments in full through "assignment" billing, and to a lesser degree, from lower deductible costs. Table 4 contains data on such savings for FSY 1988 in dollar amounts and as a percent of total allowed MSC charges.

The concept of savings resulting from a price screen determined by a physician's customary, or usual, charges is often misunderstood. Savings occur as a result of two primary factors used in calculating customary screens. First, the current actual charges billed by physicians are frequently higher than their customary-charge pricing

**Table 5**  
**Pricing source data for the nine study States**  
**combined, by pricing screen: Fee-screen**  
**year 1988**

Pricing screen	Percent
Pricing screen equal to allowed charge:	
Customary; lowest charge	31
Customary; lowest charge but equal to submitted	8
Customary; lowest charge but equal to prevailing	3
Submitted; lowest charge but may equal prevailing	6
Prevailing; lowest charge	45
Available pricing screen not equal to allowed charge:	
Other	7

SOURCE: HK Research Corporation; Data from Customary Charge Study, Baltimore, Maryland.

screens because the latter are developed from previous time periods. For example, for FSY 1990, customary charges are computed from a physician's median actual charges during the base year period July 1, 1988, to June 30, 1989. Second, for NON-PAR physician services, increases in the amount of submitted charges used to calculate customary screens are limited under MAAC provisions.

The estimated dollar amounts of such savings were calculated as follows. For each service where the allowed and customary charges were equal, the customary charge was subtracted from the next higher pricing screen, i.e., either the submitted or prevailing charge. For such a service where the customary was also equal to either the submitted or prevailing charge, the difference is zero, thus representing no program savings.

These accumulated savings are then shown as a percent of total allowed charges for services where the pricing screen used was either the customary, prevailing, or submitted charge. Allowed charges determined through an "other" source of pricing screen were excluded from the denominator. This exclusion was made because the "other" pricing source category includes services for which the pricing source could not be determined from carrier files.

For the nine States in aggregate, savings resulting from use of customary pricing screens represent almost 6 percent of total charges for MSC services. Assuming that the States are representative of national experience and that this estimated savings percent was valid for the entire calendar year 1988, savings resulting from use of customary charges are estimated to be around a billion dollars for the year. This rough estimate was calculated as follows from Tables 2, 3, and 4:

$\$19,393$  (allowed charges, for MSC services in 1988, United States)  $\times$  0.927 (percent of allowed MSC charges determined by a customary, prevailing, or submitted price screen)  $\times$  0.058 (customary charge savings as percent of allowed charges) =  $\$1,042$  million (estimated program or beneficiary savings)

The 8-percent savings for medical services was more than twice as high as that for surgical services. Table 4 shows other variations in savings by State and physician participation status.

## Customary charges relative to prevailing charges

Quantitative relationships between customary- and prevailing-charge pricing screens for office visits by established patients are presented in Figure 2 for participating solo-practice physicians and in Figure 3 for the physicians who did not have participation agreements. Data are displayed separately for physicians and services for the combined study States. Included are only those physicians who had at least one allowed service for office visits in FSY 1988.

The X-axes display customary charges less prevailing charges expressed as a percent of prevailings. Positive percentages represent customaries greater than prevailings and negative percentages, the reverse. Each percentage point shown on the axis has a tolerance range of  $\pm 2.5$  percent. Thus, the zero line represents customary charges within a range of 2.5 percent higher or lower than prevailing charges. The two graphs in each figure show variations between physician and service weighting. Percentile values are also shown. To illustrate, the 75th percentile for PAR physicians indicates that 25 percent of the physicians had customary charges that were at least 20 percent greater than their prevailing charge. The sharp increases in the last point on the tails of each curve represent the cumulative effects of combining outliers. If the X-axes were extended, the slopes of the curves would trend toward zero at the tails.

The distributions are more similar between physicians and services within each participation status than between PARs and NON-PARs. The shapes of the curves for both physicians and services within participation status are almost identical. A major difference between participation classifications is that a higher percentage of customary charges are approximately equal to prevailing charges for PAR physicians and services than those for NON-PARs.

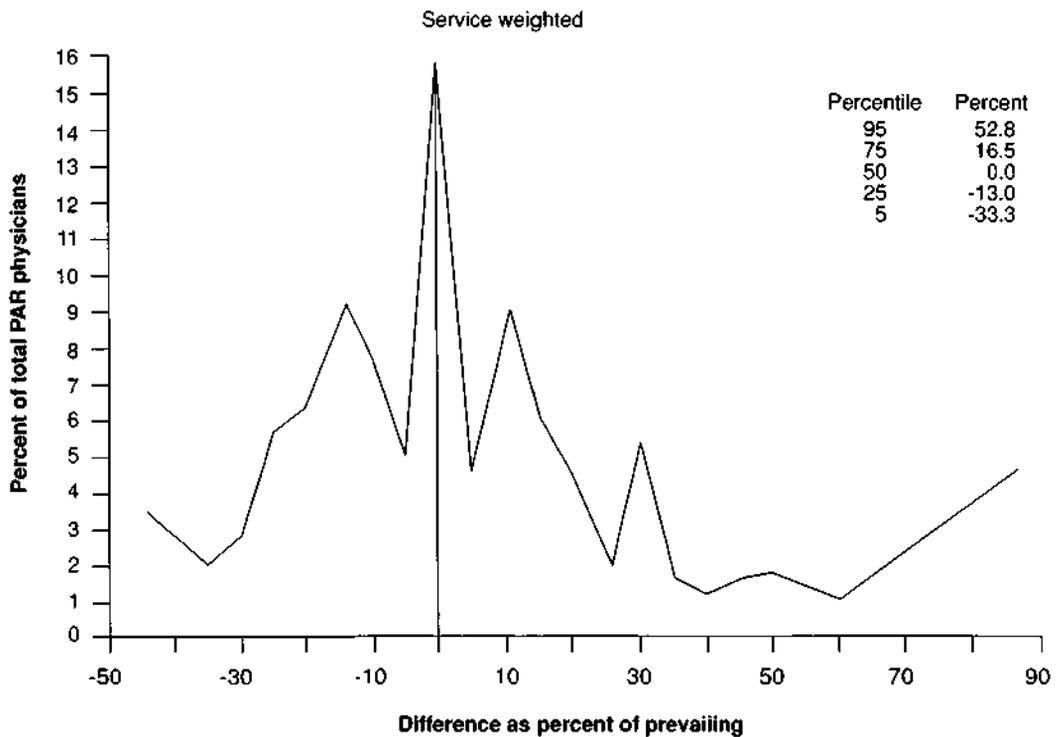
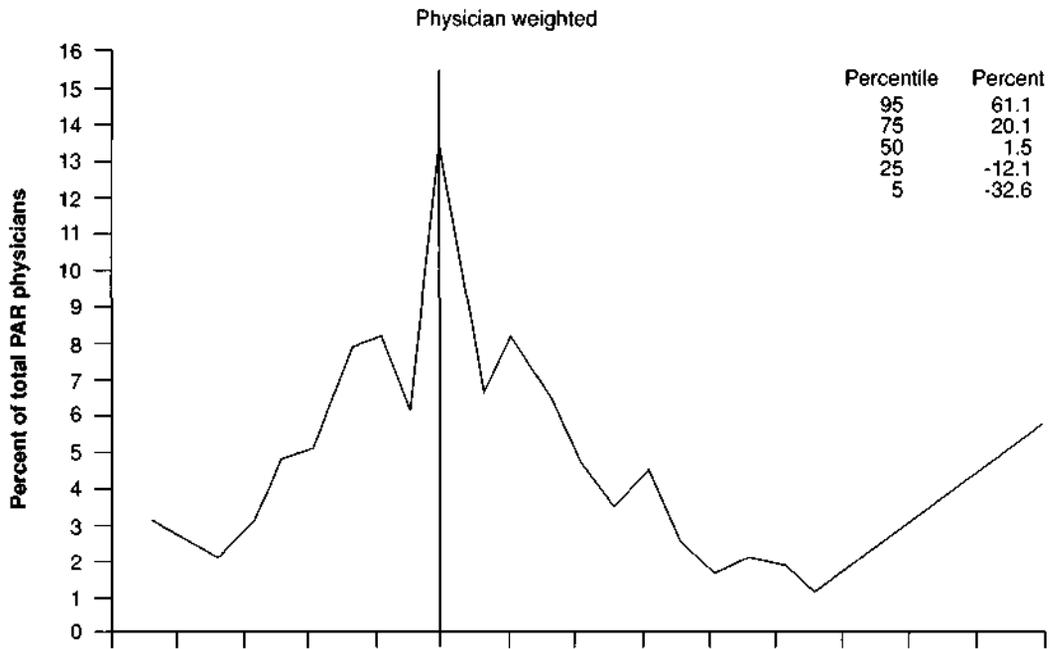
Customary charges for office visits are, on the average, 7 percent higher than prevailing charges for PAR physicians. When weighted by the number of services, they are 4 percent higher. For NON-PAR physicians, the mean shows customaries 4 percent greater than prevailings, but only 1 percent less for their services. Corresponding medians are shown in the percentile values.

## Trends by participation status

In evaluating the use of customary pricing screens under CPR payment, there are important differences between billed services of PAR and NON-PAR providers under Medicare. Overall, not only do customary pricing screens impact more extensively for NON-PAR services but the trend in such impact is either increasing or stable in the study States. For PAR services, the trend is completely different, showing rapid decreases between FSYs 1987 and 1989. Table 6 indicates that for seven of the nine States, the customary charge use rates were higher (significantly for most) for NON-PAR services in FSY 1989 than they were for PARs. Overall, prevailing screens are used more often than customary screens to establish reasonable charges for PAR services.

**Figure 2**

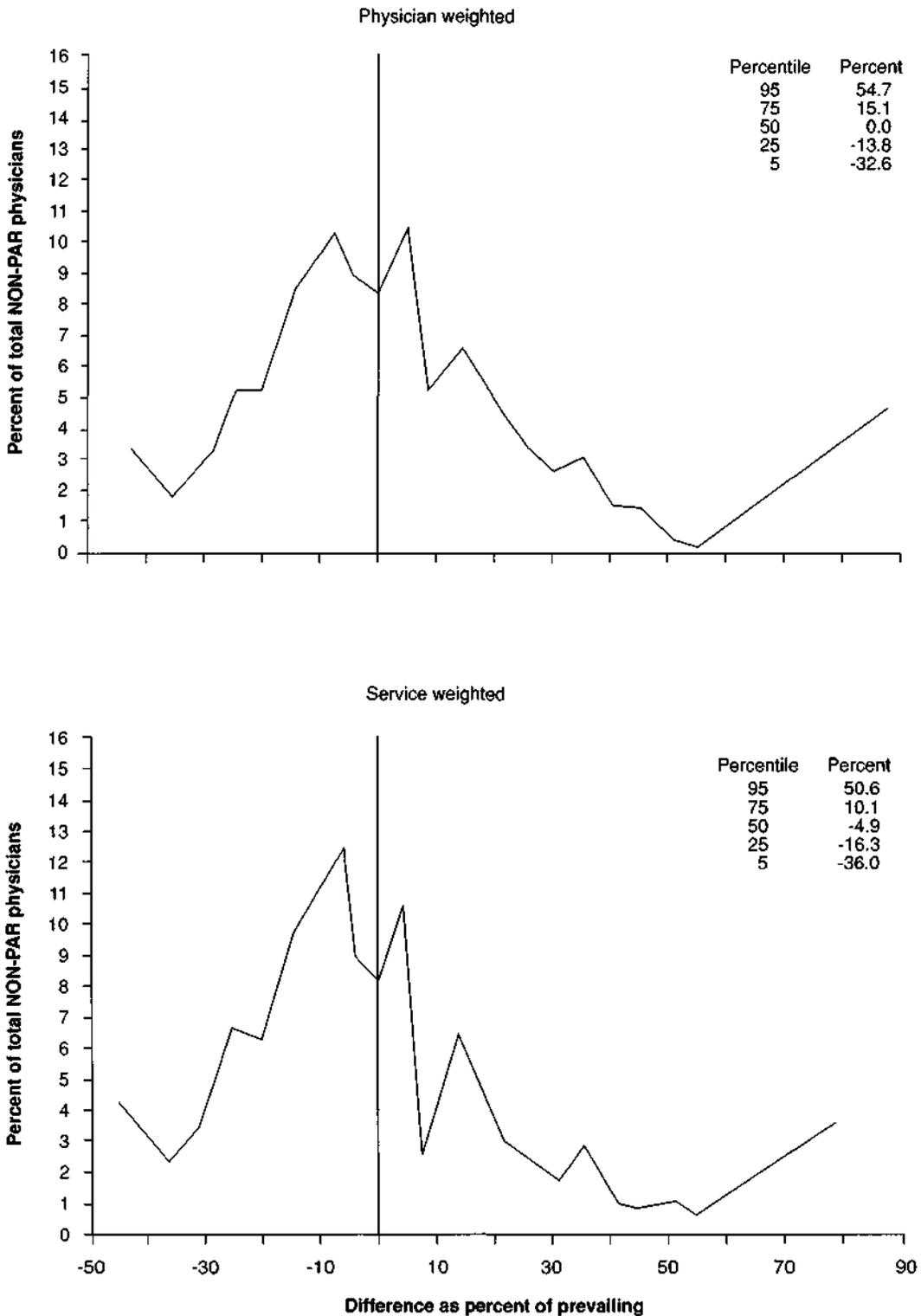
**Customary less prevailing charge as a percent of prevailing charges distributed by the percent of solo-practice participating (PAR) physicians and services for office visits, by established patients:  
Fee-screen year 1988**



SOURCE: HK Research Corporation: Data from the Customary Charge Study, Baltimore, Maryland.

**Figure 3**

**Customary less prevailing charge as a percent of prevailing charges distributed by the percent of solo-practice, non-participating (NON-PAR) physicians and services for office visits, by established patients: Fee-screen year 1988**



SOURCE: HK Research Corporation: Data from the Customary Charge Study, Baltimore, Maryland.

Table 6

**Percent of allowed medical, surgical, and consultation services with customary charges equal to approved charges, by provider participation status, fee-screen year, and State**

State	Participating provider services			Non-participating provider services		
	1987	1988	1989	1987	1988	1989
Alabama	35.5	36.3	29.8	47.9	57.3	58.1
Arizona	54.7	48.4	44.5	41.6	51.8	51.0
Indiana	66.7	47.4	41.5	32.7	38.7	43.2
Maryland	47.1	41.5	33.1	43.6	47.0	50.4
Massachusetts	NA	29.4	26.4	NA	41.3	41.8
Oklahoma	41.4	37.6	32.6	22.2	25.4	25.2
Oregon	48.8	45.3	36.8	20.2	26.1	26.3
Pennsylvania	NA	43.5	43.1	NA	52.5	51.9
Washington, D.C. metropolitan area	NA	27.6	29.8	NA	35.5	35.8

NOTES: NA is not available. Source data file completeness varies by State and fee-screen year. Thus, percents were derived only for services for which data were available, not on 100 percent data for each of the years shown.

SOURCE: HK Research Corporation: Data from Customary Charge Study, Baltimore, Maryland.

The use of customary charges as a payment determinant is decreasing for services of PARs in all of the States, except the Washington, D.C. metropolitan area. This trend away from use of customary screens for PARs can also be seen between 1987 and 1989 for Oklahoma and Oregon, the only two States with higher customary-charge screen rates for services rendered by NON-PARs.

The numerous changes made to the CPR payment methodology have had mixed impacts in calculating and utilizing both customary- and prevailing-charge pricing screens. To illustrate, OBRA 1987 contained a number of provisions related to Medicare payments for NON-PARs. Effective in FSY 1988, NON-PARs received 95.5 percent of the prevailing fees for PARs, down from 96 percent in FSY 1987. This provision lowered the prevailing fees for NON-PARs, which would have led to the increased use of prevailing-charge pricing screens. On the other hand, certain changes made to MAAC provisions for NON-PARs resulted in an overall increase in the use of customary-charge pricing screens.

NON-PAR physicians are limited in the amounts that they can charge Medicare beneficiaries. The actual charge of a NON-PAR physician for a particular service cannot exceed that physician's MAAC for the service. Actual charges, as limited by MAACs are utilized in calculating customary pricing screens during the base period, as previously described, which precedes the FSY.

OBRA 1987 changed the way MAACs were calculated. Prior to FSY 1988, the MAAC could be exceeded on an individual claim basis, but it could not be exceeded for the average of all claims during the period. Starting with services rendered in FSY 1988, the MAAC could not be exceeded on an individual claim basis. Any charges in excess of these limits were not recognized in computing NON-PAR customary screens for FSY 1988 from the base period July 1, 1986, to June 30, 1987.

The large increase in use of customary screens for NON-PAR services in FSY 1988, as may be observed in Table 6, reflects in good part the impact of this MAAC provision of OBRA 1987.

Although MAAC limits partially account for differentials in the use of, and trends in, customary-charge pricing screens by participation status, the primary underlying reason for the difference is that PARs

generally have higher actual charges than NON-PARs have for the same MSC services.

For eight leading procedures, which represent 30 percent of total allowed MSC charges in the study States, the actual submitted charges for services rendered by PARs were compared with those of NON-PARs in FSY 1988. For the nine States and eight procedures representing 72 data cells, PAR-submitted charges were higher than those of NON-PARs in 68 of the cells. Using an approximate weighting of the differences by the number of services, PAR-submitted charges averaged about 21 percent higher than those of NON-PARs for the States in total. The range was from about 37 percent higher in Massachusetts to about 8 percent in Oregon. The eight procedures include CPT codes 27130, 33512, 66984, 90050, 90060, 90250, 90260, and 90620.

Precise evaluations of charge differentials by participation status are beyond the scope of this study. However, participating providers not only submit higher Medicare charges but, except for Alabama, they render a disproportionately higher share of MSC services than do NON-PARs in each of the States. Table 7 ranks the States by the largest percent difference between PAR- and NON-PAR-submitted charges and by PAR services as a percent of total MSC services.

The State rankings by submitted charge differentials are very similar to rankings by service-utilization differentials. The States with the highest percents of total services rendered by PARs are the States with PAR-submitted charges proportionately higher than those of NON-PARs. Thus, the data indicate that PARs have larger shares of Medicare business and charge more for their services than do NON-PARs. It is interesting to note that Oklahoma and Oregon, the only States for which customary charges were utilized at higher rates for PARs than for NON-PARs, had the lowest rates of physician participation in Medicare. Both States also had, by far, the lowest percent of total MSC services rendered by PARs.

The reasons why customary charges are used more extensively for NON-PARs and that prevailing screens are the major pricing source for PAR services may be summarized as follows: First, PARs charge Medicare higher fees than NON-PARs do for the same services. Next, they render a larger proportion of Medicare

Table 7

**Comparisons of participating (PAR) and non-participating (NON-PAR) providers, by State rankings of submitted charges and medical, surgical, and consultation (MSC) services-utilization differentials: Fee-screen year 1988**

State	PAR less NON-PAR as a percent of NON-PAR average submitted charges	PAR as a percent of total MSC services	PAR as a percent of total physicians (April 1988)	PAR services as a percent of total MSC services
	State rank			
Massachusetts	1	1	46	90
Pennsylvania	2	2	37	67
Maryland	3	3	39	64
Indiana	4	6	37	52
Washington, D.C. metropolitan area	5	4	34	65
Oklahoma	6	9	28	32
Alabama	7	5	74	61
Arizona	8	7	39	52
Oregon	9	8	33	40

SOURCE: Health Care Financing Administration: Participating physician data and HK Research Corporation: Data from Customary Charge Study, Baltimore, Maryland.

services than do NON-PARs. The resulting prevailing-charge pricing screens are heavily weighted by PAR services. The fact that prevailing charges are constrained by MEI price limits and include lower priced services of NON-PARs results in their higher use for determining reasonable prices for PAR services. Reduced levels of prevailing fees for NON-PAR services are not enough to offset the fact that prevailing charges are established using a larger percent of higher priced PAR services. This, coupled with the impact of MAAC limits, results in customary-charge pricing screens being used more often than prevailing-charge pricing screens for establishing reasonable prices for NON-PAR services.

### Effects of 1988 price freeze

OBRA 1987 held both the customary and prevailing charges for physician services rendered from January 1, 1988, through March 31, 1988, at FSY 1987 pricing levels. Table 8 contains estimates of certain effects of this price freeze on MSC services under the hypothetical situation where FSY 1988 became effective on January 1, 1988, together with other related provisions of the legislation.

For MSC services during this 3-month period, actual allowed charges were compared with simulated allowed charges that were computed under static assumptions by applying FSY 1988 customary- and prevailing-charge prices to the same allowed services during the period. Included were only those services for which a customary-, submitted-, or prevailing-charge pricing screen was used to compute the actual allowed charge. Those services for which the allowed charges were based on an "other" source (7.2 percent of total) were excluded from the estimates because a CPR price equal to the approved charge was not available. The 1988 screens account for general and primary care updates in pricing levels, the revised MAACs for NON-PAR physicians that were held at 1987 levels during the period, and the reduction in prevailing charges for NON-PAR physicians from 96.0 percent of PAR physician prevails in 1987 to 95.5 percent in 1988. Further, the estimates assume that physician participation status in effect during the first 3 months of 1988 would have remained unchanged.

The estimated difference between the higher simulated allowed charges using FSY 1988 prices and the actual allowed charges is more than 4 percent of total actual allowed charges. In deriving such hypothetical savings, the calculations did not include any offsets for changes in physician behavior resulting from the price freeze. Such offset assumptions are commonly included in related cost impact estimates. To the extent that physicians may have increased the volume or intensity of services rendered as a result of the price freeze, the cost savings estimates provided here are somewhat overstated.

The estimates in Table 8 are presented for eight States in the study. Required data were not available from the data files for Massachusetts.

The percents of hypothetical savings varied considerably by State, ranging from a high of almost 8 percent in Maryland to a low of about 1 percent in Arizona. The 5-percent savings for medical services were greater than the 4-percent savings for surgical services, reflecting various provisions of OBRA 1987 such as higher MEI updates for primary care services and reduced prevailing charges for procedures classified as overpriced under the inherent-reasonableness authority.

Variations in the applications of customary-charge pricing screens as the source of price determinations are also provided in the table. Most notable are the differentials by provider-participation status. If FSY 1988 had become effective on January 1, 1988, the use of customary-charge pricing screens would have been greater for NON-PAR services and less for PAR. The primary reason for this is the expanded MAAC limitations described previously.

It should be stressed that the estimates provided in Table 8 are intended to illustrate various distributional impacts resulting from the 3-month price freeze and implementation of other provisions in OBRA 1987. They are not intended to accurately portray trust fund savings or costs, such as those resulting from the extension through March 31, 1988, of the 2.3-percent reduction in payments for physician services under the sequestration order of the Balanced Budget Emergency Deficit Control Act issued on November 20, 1987.

Table 8

**Selected effects of price freeze on medical, surgical, and consultation (MSC) services rendered during January-March 1988, by selected characteristics**

Characteristic	Number of allowed services in thousands <sup>1</sup> January-March 1988	Allowed charges		Difference in thousands in allowed charges: Simulated less actual	Difference as a percent of actual allowed charges	Percent of services for which customary is used as pricing screen	
		Actual 1987	Simulated 1988			Actual 1987	Simulated 1988
Total MSC services	15,408	\$766,984	\$801,201	\$34,218	4.5	3.8	3.9
<b>Type of service</b>							
Medical services	13,058	390,280	409,558	19,277	4.9	39.0	40.4
Surgical services	1,869	339,287	352,545	13,258	3.9	34.4	32.0
Consultation services	481	37,416	39,098	1,682	4.5	30.1	29.0
<b>Participation status<sup>2</sup></b>							
Participating	8,556	455,655	481,965	26,310	5.8	39.6	39.0
Non-participating	6,801	309,237	317,045	7,808	2.5	36.4	39.0
<b>State</b>							
Alabama	2,029	90,426	94,521	4,095	4.5	41.7	34.3
Arizona	1,442	84,556	85,624	1,069	1.3	49.2	49.8
Indiana	1,867	85,923	92,156	6,232	7.3	49.6	41.8
Maryland	1,138	66,603	71,697	5,094	7.6	45.6	37.8
Massachusetts	NA	NA	NA	NA	NA	NA	NA
Oklahoma	1,056	49,829	50,682	853	1.7	28.0	29.3
Oregon	793	39,247	40,157	910	2.3	30.4	33.0
Pennsylvania	6,147	294,980	309,186	14,206	4.8	34.8	40.8
Washington, D.C. metropolitan area	936	55,420	57,178	1,758	3.2	22.7	32.4
<b>Specialty</b>							
General practice	3,319	80,646	84,199	3,554	4.4	43.6	47.1
Medical specialties	7,380	313,527	329,765	16,238	5.2	37.8	37.0
Surgical specialties	2,706	295,913	305,239	9,326	3.2	38.2	39.9
Other	2,004	76,897	81,998	5,100	6.6	30.6	31.4

<sup>1</sup>Excludes services for which the source of allowed charges was other than customary, submitted, or prevailing in fee-screen year (FSY) 1987.

<sup>2</sup>Does not add to total MSC services because participation status was unknown for some services.

NOTES: NA is not applicable. The provisions of the Omnibus Budget Reconciliation Act of 1987 relating to physician payment under Medicare became effective on April 1, 1988. This, in effect, extended FSY 1987 for 3 months, covering services rendered during January-March 1988. This table provides results of the hypothetical situation where FSY 1988 became effective on January 1, 1988, together with all provisions of the legislation. No physician utilization offsets as a result of the price freeze are assumed.

SOURCE: HK Research Corporation: Data from the Customary Charge Study, Baltimore, Maryland.

## Physician aggregated charges

This section provides information on Medicare-allowed charges that are aggregated at the physician level for those in solo practices. Knowing how large a role Medicare plays in a physician's practice may be an important determinant of how behavior responds to changes in payment policy. Although the data do not provide information on the Medicare shares of total physician revenue, they do provide interesting and related findings on how Medicare-allowed charges are distributed among solo practitioners.

Tables 9 and 10 contain data on allowed MSC charges in calendar year 1988 for physicians in solo practices. If a physician had more than one solo-practice setting with a separate Medicare billing number for each setting, the data were aggregated for the physician. For physicians who had solo practices and were also members of groups or clinics, approved charges for the group settings are not included. Obviously, the data do not include charges for other types of services such as diagnostic laboratory and X-ray, radiology, or anesthesia. Further, data are included for only those physicians with some Medicare-allowed MSC charges during the year.

Both tables group the physicians into deciles by the amounts of MSC charges allowed during 1988. For example, the first decile includes 10 percent of physicians with the lowest amount of approved charges, whereas, the 10th decile includes the 10 percent of physicians with the highest charges. Such decile distributions were computed separately for each State, by participation status, and by physician specialty. The leading 15 specialties ranked by the total amount of allowed MSC charges are shown.

Table 9 presents the average annual allowed MSC charges for physicians in each of the deciles. Large variations in average annual charges by physician specialty and participation status may be noted.

Ten percent of the physicians accounted for about 50 percent of the total MSC-allowed charges, 20 percent accounted for about 70 percent of the dollars, and 60 percent provided services representing more than 98 percent of total charges. This pattern was consistent across the study States (Table 10).

Although similar patterns are evident in the decile distributions shown by physician specialty, the 10th decile of physicians had smaller shares of total allowed charges for the leading 15 specialties. This

Table 9

**Number of physicians and average annual allowed charges for medical, surgical, and consultation (MSC) services per physician in solo-practice settings, by State, participation status, and specialty: Calendar year 1988**

State, participation status, and specialty	Number of physicians <sup>1</sup>	Average per physician by decile in thousands									
		1	2	3	4	5	6	7	8	9	10
<b>State</b>		MSC allowed charges <sup>2</sup>									
Alabama	5,502	\$0.1	\$0.4	\$1.5	\$4.2	\$9.7	\$22.4	\$43.5	\$73.1	\$117.9	\$272.6
Arizona <sup>3</sup>	4,285	0.1	0.6	1.9	4.1	8.7	16.6	29.7	52.5	89.7	234.5
Indiana	4,836	(4)	0.3	1.3	3.4	7.6	14.7	24.5	37.4	63.8	181.0
Massachusetts	6,891	(4)	0.1	0.5	1.4	3.3	7.7	18.2	38.1	66.9	157.4
Maryland	3,403	0.1	0.8	2.5	6.5	13.7	25.0	42.7	65.3	99.6	217.7
Oklahoma <sup>3</sup>	4,267	0.1	0.6	2.0	4.4	8.4	14.6	25.0	42.0	70.7	199.3
Oregon <sup>3</sup>	3,464	0.1	0.4	1.3	3.2	6.4	11.7	20.4	32.6	54.3	136.1
Pennsylvania	15,115	(4)	0.3	1.0	2.7	6.0	11.8	22.6	39.8	67.6	156.1
Washington, D.C. metropolitan area	4,041	(4)	0.2	0.5	1.3	3.2	7.6	16.2	28.7	49.6	123.3
<b>Participation status</b>											
Participating	25,148	0.1	0.8	2.7	6.5	13.1	24.3	40.2	61.8	95.6	222.6
Non-participating	26,263	(4)	0.1	0.5	1.4	3.2	6.8	13.9	26.5	49.7	139.1
<b>Specialty ranked by total allowed charges</b>											
Internal medicine	7,946	0.1	1.0	5.5	14.5	26.4	40.1	55.6	74.5	99.2	172.2
Ophthalmology	1,912	0.1	1.9	10.5	30.4	64.8	108.7	155.6	217.5	313.0	645.3
General surgery	2,962	0.2	2.3	9.5	21.1	33.7	48.2	64.4	82.7	113.8	192.6
Family practice	4,993	0.1	1.0	3.7	8.0	13.4	19.4	26.4	35.3	49.9	89.0
Cardiovascular	1,349	0.1	0.7	5.8	21.8	45.5	67.7	91.1	122.5	168.5	301.0
Orthopedic surgery	1,731	0.1	1.1	6.8	19.5	33.9	47.3	63.4	83.6	112.8	191.4
General practice	4,741	(4)	0.3	1.8	4.6	8.5	13.9	20.0	27.7	40.3	78.4
Urology	886	0.1	1.7	15.7	43.8	66.6	86.4	106.4	127.7	156.1	223.7
Gastroenterology	566	0.2	4.2	29.2	57.3	79.9	101.8	127.0	157.5	206.9	303.0
Podiatry	1,948	0.4	2.8	7.4	12.5	18.2	24.5	31.8	42.1	56.4	99.8
Thoracic surgery	399	0.3	3.7	16.0	52.0	88.2	120.0	158.0	200.5	284.6	490.0
Dermatology	876	0.2	2.5	9.6	18.4	28.6	39.5	53.9	68.3	91.7	168.1
Pulmonary disease	441	0.1	0.6	3.6	16.2	38.5	60.6	80.2	103.7	143.5	228.7
Otol-Laryn-Rhin	884	0.1	2.0	7.3	15.2	22.4	29.5	36.8	46.4	59.9	103.8
Neurology	736	0.1	0.5	2.3	7.2	15.5	26.1	39.1	53.3	73.1	136.6
All other	19,434	(4)	0.1	0.3	0.7	1.4	2.4	4.1	7.0	12.9	59.5

<sup>1</sup>Includes only those physicians with some approved charges generated from solo-practice settings within each of the study States. Physicians with more than one solo-practice setting are counted once.

<sup>2</sup>Allowed charges for physicians with more than one solo-practice setting are combined for each such physician.

<sup>3</sup>Includes approximately 88 percent of allowed charges for Arizona, 85 percent for Oklahoma, and 87 percent for Oregon.

<sup>4</sup>Less than \$50.

NOTE: Otol-Laryn-Rhin is Otolaryngology-Laryngology-Rhinology.

SOURCE: HK Research Corporation: Data from the Customary Charge Study, Baltimore, Maryland.

ranged from a low of about 26 percent of total dollars for urologists to a high of almost 41 percent for ophthalmologists. The shares of total dollars for the displayed specialties were higher than the State aggregates in the first to eighth deciles.

Average allowed annual charges for 1988 are also shown in Table 10. PARs had annual charges that were about twice as high as those for NON-PARs, \$47,000 compared with \$24,000. For the 15 leading specialties, ophthalmologists and thoracic surgeons had the highest average charges, whereas general and family practitioners had the lowest. In comparing average annual charges of physicians by State, it should be noted that dollars are about 12-15 percent understated for Arizona, Oklahoma, and Oregon because data files were incomplete.

Analyses of variations in annual charges for solo-practice physicians by State should include consideration of the percent of total allowed MSC charges accounted for by physicians in solo practices. In 1988, physicians in solo practices represented only 49 percent

of total allowed MSC charges. However, this varied dramatically by State. Solo practitioners in Alabama had the highest average annual charges of about \$54,000 but also the highest (82) percent of total allowed MSC charges for all practice settings in the State. On the other hand, the Washington, D.C. metropolitan area had the lowest annual charges per solo-practice physician, averaging about \$22,000. For this area, solo practices represented only 38 percent of the total dollars.

Obviously, extensive analyses of the numerous factors that underlie the data contained in these tables are not provided in this article. Differences in the sizes of Medicare populations at risk and their economic status, the Medicare shares of physician practices, the prices charged and paid, the volume of services provided to each patient, the various mix of such services as surgeries rendered, the supply of physicians per Medicare population, and numerous other variables influence the displayed charge data for each of the States. However, given all of these variations, very similar patterns are evident for each of the States in the decile distributions.

**Table 10**  
**Number of physicians and allowed charges for medical, surgical, and consultation**  
**(MSC) services for physicians in solo-practice settings, by State, participation status, and specialty:**  
**Calendar year 1988**

State, participation status, and specialty	Number of physicians <sup>1</sup>	Total in thousands	Average per physician	Percent of total by decile						
				1-4	5	6	7	8	9	10
<b>State</b>		<b>MSC allowed</b>	<b>charges<sup>2</sup></b>							
Alabama	5,502	\$298,640	\$54,279	\$1.1	\$1.8	\$4.1	\$8.0	\$13.5	\$21.8	\$49.7
Arizona <sup>3</sup>	4,285	187,186	43,684	1.6	2.0	3.8	6.8	12.0	20.6	53.3
Indiana	4,836	161,089	33,310	1.5	2.3	4.4	7.4	11.2	19.2	54.0
Maryland	3,403	160,333	47,115	2.1	2.9	5.3	9.1	13.9	21.2	45.5
Massachusetts	6,891	201,304	29,213	0.7	1.1	2.6	6.2	13.0	22.9	53.3
Oklahoma <sup>3</sup>	4,267	156,359	36,644	1.9	2.3	4.0	6.8	11.5	19.3	54.2
Oregon <sup>3</sup>	3,464	91,794	26,500	1.9	2.4	4.4	7.7	12.3	20.5	50.7
Pennsylvania	15,115	465,030	30,766	1.3	1.9	3.9	7.4	12.9	22.0	50.6
Washington, D.C. metropolitan area	4,041	92,384	22,862	0.9	1.4	3.3	7.1	12.6	21.7	53.0
<b>Participation status</b>										
Participating	25,148	1,176,244	46,773	2.2	2.8	5.2	8.6	13.2	20.4	47.6
Non-participating	26,263	633,341	24,115	0.9	1.3	2.8	5.8	11.0	20.6	57.6
<b>Specialty ranked by total allowed charges</b>										
Internal medicine	7,946	388,409	48,881	4.3	5.4	8.2	11.4	15.2	20.3	35.1
Ophthalmology	1,912	292,682	153,076	2.8	4.3	7.1	10.2	14.3	20.5	40.8
General surgery	2,962	167,479	56,543	5.9	6.0	8.5	11.4	14.7	20.2	33.3
Family practice	4,993	122,645	24,563	5.2	5.5	7.9	10.8	14.4	20.4	35.9
Cardiovascular	1,349	111,465	82,628	3.4	5.5	8.2	11.0	14.8	20.5	36.5
Orthopedic surgery	1,731	95,862	55,380	5.0	6.1	8.6	11.5	15.2	20.5	33.1
General practice	4,741	92,219	19,451	3.5	4.4	7.2	10.3	14.3	20.7	39.7
Urology	886	73,031	82,428	7.5	8.1	10.5	13.0	15.6	19.0	26.3
Gastroenterology	566	59,907	105,842	8.6	7.6	9.7	12.1	15.0	19.7	27.3
Podiatry	1,948	57,595	29,566	7.8	6.2	8.3	10.8	14.3	19.1	33.6
Thoracic surgery	399	56,529	141,677	5.1	6.2	8.5	11.2	14.2	20.1	34.7
Dermatology	876	41,795	47,711	6.5	6.0	8.3	11.4	14.4	19.3	34.2
Pulmonary disease	441	28,567	64,779	3.2	6.1	9.5	12.6	16.3	22.6	29.6
Otol-Laryn-Rhin	884	28,258	31,966	7.7	7.0	9.3	11.6	14.6	18.9	30.8
Neurology	736	25,762	35,003	2.9	4.4	7.5	11.2	15.3	21.0	37.7
All other	19,434	171,915	8,846	1.3	1.6	2.8	4.7	7.9	14.6	67.1

<sup>1</sup>Includes only those physicians with some approved charges generated from solo-practice settings within each of the study States. Physicians with more than one solo-practice setting are counted once.

<sup>2</sup>Allowed charges for physicians with more than one solo-practice setting are combined for each such physician.

<sup>3</sup>Includes approximately 88 percent of allowed charges for Arizona, 85 percent for Oklahoma, and 87 percent for Oregon.

NOTE: Otol-Laryn-Rhin is Otolaryngology-Laryngology-Rhinology.

SOURCE: HK Research Corporation: Data from the Customary Charge Study, Baltimore, Maryland.

This suggests that on a national basis, there are some common factors regarding how solo-practice physicians interact with the Medicare program. Perhaps, these data will allow for additional research focus on these subjects.

## Conclusions

Customary charges have had a significant impact in determining Medicare-reasonable prices for medical, surgical, and consultation services rendered by physicians in the nine study States. Customary charges were equal to approved charges for about 4 out of 10 of the services in 1988. About 30 percent of total allowed charges represented services for which customary-charge pricing screens were the pricing determinant.

The use of customary-charge pricing screens resulted in estimated program savings representing almost 6 percent of the total allowed charges in calendar year 1988. Assuming that the study States are representative of

national experience, customary-charge pricing screens resulted in savings amounting to roughly a billion dollars during the year.

Customary charges have a considerably larger impact in establishing reasonable prices for medical and NON-PAR services than for surgical or PAR services. The use of customary charges as a price determinant has decreased for PARs, whereas for NON-PARs, recent trends show either increasing or stable use rates.

Other major data findings include the distributions of allowed charges for physicians in solo-practice settings. There is a concentration of Medicare physician payments in a small percent of solo practitioners, and a large percent of physicians receive a relatively small share of dollars. In 1988, 10 percent of the physicians accounted for about 50 percent of the total approved charges, 20 percent accounted for over 70 percent of the dollars, and 60 percent had over 98 percent of the approved charges. The average annual allowed charges for PARs in solo practice were about twice as high as those for NON-PARs.

The last major data finding is that the legislated price freeze in the first quarter of 1988 resulted in hypothetical program savings amounting to over 4 percent of total approved charges.

The data also lead to a number of relevant conclusions that affect policies and research on physician payment under Medicare.

Current CPR pricing screens will have a continuing impact on physician payments after implementation of the Medicare fee schedule starting in 1992. Legislative provisions require a blending in of new fee-schedule amounts with "adjusted historical payment basis" amounts for those services where 1991 prices are not within 15 percent of new fees. Historical payments consist of weighted-average prevailing charges, without regard to physician specialty, and are adjusted to reflect payments for services with customary charges below prevailing charges or other regulatory payment limitations. Thus, estimates of such historic payment amounts, based on specialty-adjusted prevailing charge data, must include adjustments to account for services where allowed charges were determined by customary-charge pricing screens.

The findings from this study indicate that the impacts of Medicare fee schedule implementation may have more significant impacts on individual physician practices than generally anticipated. Although various estimates have been made on the redistributive payment impacts by physician specialty, variations between individual physicians, even those within the same specialty, may also be substantial.

This article does not address potential changes in physician behavior resulting from changes in payment methodology, such as the Medicare fee schedule. The data do not allow for the analysis of how large a role Medicare plays in a physician's practice, such as shares of total revenue. However, it does show that a relatively small percent of physicians in solo practice receive a disproportionately large share of Medicare payments for MSC services. A large percent of physicians, on the other hand, receive a relatively small share of dollars. Further, large variations occur within physician specialties, by participation status, and by State. One might speculate that physician responses to higher or lower prices resulting from fee-schedule payment could vary and correlate highly, depending on how much income, especially for physicians within the same specialty, is derived from the Medicare program. Data that allow for

distinctions between, or classifications by, physicians with such diversities in the amounts of Medicare income could enhance related analysis.

To effectively evaluate the redistributive payment impacts of fee schedules on physicians, adequate baseline data aggregated at the physician level are required prior to transition, during transition, and after full implementation. Especially relevant is that many data classifications will change after implementation. Some examples include uniform visit codes, global surgical codes, and the use of local procedure codes. To the extent that fee-schedule experience can be cross-walked to pre-fee schedule data, systematic evaluations of such data can optimize the potential for understanding relationships between market forces and regulatory change to the extent that they are measurable with available program data.

Finally, although prevailing charge screens have had the largest overall impact on price determinations under current physician payment rules, their historic, extensive use in physician payment studies only provide partial answers to the relationships and interactions between CPR pricing screens.

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