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Effects of the
Implementation of
Resource-Based
Practice Expense
Relative Value Units
Under the Medicare
Physician Fee
Schedule, 1998-2002

*A study conducted by
The Urban Institute for the
Medicare Payment Advisory Commission*

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Relative Value Units under the Medicare Physician Fee Schedule, 1998-2002*

Introduction and Background

In 1992, a resource-based, relative value scale fee schedule replaced the reasonable charge system of payment for physician services furnished to Medicare beneficiaries. The main element of the fee schedule is a relative value scale, which is comprised of three components: physician work or time (which accounts for about 55 percent, on average, of payments made under the fee schedule); physician practice expenses or PE (accounting for 42 percent of payments on average), and professional liability insurance or PLI expenses (accounting for 3 percent of payments on average).¹

In the original fee schedule, the relative value units (RVUs) for physician work were developed using surveys of time and effort, while the PE and PLI relative value units were developed using physicians' historical charges. Under the historical charge-based PE RVUs, procedures received, on average, substantially higher PE payments than evaluative services. Congress required some refinements to the charge-based PE RVUs to help address this. In particular, the Omnibus Budget Reconciliation Act of 1993 required reductions to PE RVUs in 1994 through 1996 for services in which the PE RVU exceeded 128 percent of the work RVU (US House of Representatives 1994), and later the Balanced Budget Act of 1997 required reductions to PE RVUs for services to 110 percent of their work RVU (HCFA 1997a).² The Social Security Act Amendments of 1994 required that the charge-based system be replaced with a resource-based system by 1998. A resource-based system— reflecting the staff, equipment, and supplies necessary to furnish physician services in various settings— was intended to better relate payments to physicians' actual expenses. Given the historical charge patterns a shift in PE payments toward evaluative services and away from procedural services was expected under such a system.

In 1995, efforts by the Centers for Medicare and Medicaid Services or CMS (then the Health Care Financing Administration or HCFA) to develop a resource-based system included

¹ In addition to the relative value scale, the Medicare physician fee schedule is comprised of two other elements: a set of geographic practice cost indices or GPCIs and a conversion factor. Payments are adjusted by GPCIs so that payments reflect differences in local costs. Each component of the relative value scale (work, practice expense, PLI) is adjusted by a separate GPCI. By law, the work GPCI reflects only 25 percent of actual variation in area costs. There are 89 physician payment localities, 35 of which are statewide. A conversion factor is used to translate the adjusted relative values into dollar amounts.

² Under OBRA 93, 1994 PE RVUs were reduced by 25 percent of the amount by which the PE RVUs exceeded the 1994 work RVUs. In 1995 and 1996, the excess, as determined for 1994, was reduced an additional 25 percent each year. PE RVUs were not reduced to an amount less than 128 percent of the 1994 work RVU for a service.

contracting with Abt Associates to conduct a survey on indirect practice expenses (e.g., office staff, office supplies) (Abt 1995; Physician Payment Review Commission (PPRC) 1996). The survey process was halted, in large part due to a poor response rate (27 percent) on the first phase of the survey (PPRC 1997). CMS and Abt also established Clinical Practice Expert Panels or CPEPs to collect data and determine service-specific estimates of direct expenses (e.g., non-physician clinical time, medical supplies). In June 1997, CMS proposed a “bottom-up” method of resource-based PE RVUs, meaning that the methodology began with determining service-specific practice expenses, and then used these estimates to create PE RVUs. CMS used the CPEP data for direct expenses, and used Medicare and American Medical Association (AMA) data to estimate indirect expenses (HCFA 1997b). The proposed rule’s impact analyses estimated that this bottom-up method of developing PE RVUs would significantly reallocate practice expense payments. Physician specialty societies voiced several methodological concerns about the proposed rule, and Congress delayed implementation of a resource-based system from 1998 to 1999. A final rule based on this method was not issued.³

In 1998, CMS issued new proposed and final rules that described a “top-down” approach for determining resource-based PE RVUs, in that total current practice expenses were used as the starting point and expenses were allocated to determine each service’s PE RVU (HCFA 1998a; HCFA 1998b). The new RVUs were implemented in a budget neutral manner, and were phased in with a four-year transition schedule established by the BBA. In January 1, 1999, PE RVUs were a product of 75 percent of the 1998 charge-based PE RVUs and 25 percent of the resource-based RVUs. In each subsequent year, an additional 25 percent of the total PE RVU was resource-based until January 1, 2002, when 100 percent of the RVU became resource-based. CMS has continued to refine the resource-based PE RVUs with input from physician groups. Although PE payments were redistributed across specialties and services types, overall spending on Medicare physician services continued to grow. Aggregate Medicare physician fee schedule spending rose 8.5 percent annually, from roughly \$32.4 billion in 1998 to roughly \$45.0 billion in 2002 (CMS 2004; authors’ analyses).⁴

After the resource-based PE RVUs were fully implemented, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) required that the Medicare Payment Advisory Commission (MedPAC) assess the effects of the implementation of the new PE RVUs. In response, MedPAC contracted with the Urban Institute to examine the effects of the resource-based PE RVUs on physician payment and to examine changes in service volume and physician assignment rates that occurred during the transition period. Below, we summarize the methodology CMS used in developing the resource-based PE RVUs; describe the data and methods we developed to examine the impact of resource-based PE RVUs; and present our findings.

³ Completing the shift toward a full resource-based fee schedule, the BBA also required that resource-based PLI RVUs be developed and implemented.

⁴ Through increases to the fee schedule’s conversion factor, Medicare increased physician payment rates per service by 2.3 percent in 1999, 5.5 percent in 2000, 4.8 percent in 2001, and –4.9 percent in 2002 (Board of Trustees 2004).

Resource-Based Practice Expense Relative Value Units: Summary

The process used in developing resource-based PE RVUs under the top-down approach relied first on collecting total practice expense data for each physician specialty. These expense data then were allocated to six pools, or categories, of practice expenses by specialty. The expense pools then were allocated to individual procedure codes, to ultimately derive PE RVUs for each individual service.⁵

Deriving the Six Practice Expense Pools

To establish the six practice expense pools CMS used AMA Socioeconomic Monitoring Survey (SMS) data to identify practice expenses, by specialty and by expense category, in 1995 through 1997. The six expense categories or pools include three types of direct expenses: non-physician clinical labor; medical supplies; and medical equipment; and three types of indirect expenses: administrative labor; office supplies; and all other expenses.

Three main steps were involved in creating the specialty-specific expense pools. First, the SMS data were used to estimate practice expenses per hour, by expense category and by specialty. Second, for each specialty utilization data and physician time data for each service code were multiplied to estimate the total number of physician hours spent treating Medicare beneficiaries. Medicare claims were the source of the utilization data; time data were available from the AMA Specialty Society Relative Value Update Committee (RUC) and from surveys conducted by Becker, Dunn and Hsaio (1988) during the development of the original fee schedule. Third, for each specialty practice expenses per hour for each category were multiplied by the total physician hours, to obtain aggregate practice expense pools by specialty and by expense category.

Allocating Aggregate Costs to Specific Services

CMS used the service-specific CPEP data to allocate the three direct expense pools (non-physician clinical labor, medical supplies, medical equipment expenses) to individual services. Regarding the indirect expense pools (administrative labor, office expenses, and other expenses), CMS used the CPEP direct expense data as well as the physician work RVUs associated with a service to allocate these expenses to individual services. For services performed by multiple physician specialties, CMS computed a weighted average of the specialties' expenses.

⁵ The “bottom-up” approach is detailed in a June 18, 1997 proposed rule (HCFA 1997b). The “top-down” approach that was implemented is detailed in a June 5, 1998 proposed rule (HCFA 1998a) and November 2, 1998 final rule (HCFA 1998b). Additional refinements to the resource-based PE RVUs are described in subsequent years' proposed and final rules.

Data and Methods

Data Files

We used physician/supplier procedure summary (PSPS) files and relative value unit files in this study. The PSPS file is an annual summary of physician/supplier claims, created by CMS and its carriers.⁶ We obtained annual files of Medicare physician fee schedule RVUs from the AMA, and merged RVUs to the PSPS files by each combination of procedure code, first modifier, and place of service.⁷ We merged the 2002 Berenson-Eggers type of service (BETOS) grouping algorithm to the data files.⁸ We grouped specialties using an algorithm that MedPAC and the former Physician Payment Review Commission used in other physician specialty analyses. We excluded services reimbursed under other fee schedules (e.g., anesthesia services).

Analysis Period

To assess the impact of the new PE RVUs we analyze data from 1998 (the year before the transition began) and 2002 (the first year with 100 percent resource-based RVUs), and describe the results in terms of average annual percent change (in PE RVUs, total RVUs, etc.). The intervening years also were available, although as explained in the following section our analyses suggested that the marginal value of the intervening years was limited and thus we did not pursue analysis of them.

⁶ The PSPS file is an aggregation of services at the payment locality level. Each record is a unique combination of 8 items: procedure code, first and second modifier, type of service, place of service, physician specialty, carrier, and payment locality. The file includes 12 additional fields regarding charges (submitted, allowed, denied); total payments; service counts (denied, assigned, total); MITUS (miles, time, units, services) count and indicator code; CMS region code; ambulatory surgical center payment group code; and a claims error indicator code.

⁷ Place of service is required for merging the appropriate PE RVU (facility or non-facility) to a record. The first modifier is required for merging the appropriate RVUs for technical and professional components of services furnished, and for calculating appropriate RVU adjustments for assistant surgeon services.

⁸ The BETOS service classification system groups physician/supplier services into several main categories and additional subcategories. We examined the study results by these categories and subcategories and then collapsed the data into five overall BETOS groups for the tables in this report: 1) evaluation and management (E&M); 2) imaging; 3) major procedures; 4) other procedures; and 5) tests. Evaluation and management (E&M) includes office visits, hospital visits, emergency room services, home and nursing home visits, consultations, and specialist visits. (Specialist visits include E&M provided by ophthalmologists, psychiatrists, pathologists, allergists, and other subspecialties.) Imaging includes standard imaging (routine x-rays and nuclear medicine); advanced imaging (CT scans and magnetic resonance imaging); sonographic imaging; and imaging/procedures (largely cardiac catheterization). Major procedures include breast procedures, colectomy, cholecystectomy, TURP, hysterectomy, cardiovascular procedures, orthopedic procedures, exploratory procedures, and other. Other procedures include eye procedures; ambulatory and minor groupings of skin procedures, musculoskeletal procedures, hernia repair, lithotripsy and other procedures; oncology; endoscopy; and dialysis. Tests include laboratory tests and other tests (largely cardiovascular). We delete detailed BETOS groups that are not paid on the Medicare physician fee schedule or are very low prevalence services (e.g., durable medical equipment; ambulance, chiropractic, and vision/hearing/speech services; enteral/parenteral drugs or nutrition; chemotherapy and other drugs; and not-classified services).

Analytic Approach

To assess the impact of the new PE RVUs we used a price index approach in which the mix of physician services used by Medicare beneficiaries is held constant using the later of the two analysis years. Using payments as an example, this is represented algebraically as:

$$\text{Index} = \frac{\sum_i (P_c^i Q_c^i)}{\sum_i (P_b^i Q_c^i)}$$

where P denotes payments; Q denotes quantity or service mix; superscript i identifies individual services; and subscripts c and b denote current (2002) and base year (1998) periods, respectively. We express the resulting index value in terms of average annual percent change, represented simply as:

$$\text{Percent change} = [\text{Index}^{(1/(c-b))}] - 1$$

where c minus b equals the number of years over which the change occurred.

This price index is a Paasche index, meaning the cost of purchasing a current mix of services is compared with the cost of purchasing the same mix in an earlier period. Fixed-basket indices such as the Paasche may not be appropriate if the analysis period encompasses a substantial change in the mix of services used, for example due to changing Medicare payment policies, new medical technologies, or the introduction of new Medicare-covered benefits (Zuckerman et al. 1993). Fisher's Ideal index (1922) accommodates this change by taking the geometric mean of the Paasche index and the Laspreyes index. The Laspreyes index holds service mix constant using the base period's mix rather than the current period's mix. A more complex approach involves the use of each intervening analysis year and chaining a series of annual indices together, such as a chained Laspreyes index or a chained Fisher's Ideal index (Gordon 1998).

To test the need for a Fisher's index or for a chained approach, we computed both Paasche and Laspreyes indices of PE RVU change and compared the results by BETOS, by specialty, and by BETOS within specialty. The two index approaches yielded similar findings, suggesting that at the national level the mix of Medicare physician services furnished by specialty and by BETOS did not change substantially between 1998 and 2002 (Appendix A). Consequently, we report findings that use the current (2002) mix of Medicare physician services as the weights.

In summary, we derived and evaluated average annual change in five outcome variables: 1) PE RVUs per service; 2) work and PLI RVUs per service combined; 3) total RVUs per service; 4) total Medicare payments per service;⁹ and 5) the impact of the resource-based PE RVUs on payments per service. The “impact” index is calculated as:

$$\text{Impact index} = \frac{\sum_i (\text{Work RVU}_b^i + \text{PE RVU}_c^i + \text{PLI RVU}_b^i) Q_c^i}{\sum_i (\text{Total RVU}_b^i) Q_c^i}$$

where Q denotes quantity or service mix; superscript i identifies individual services; and subscripts c and b denote current (2002) and base year (1998) periods, respectively.¹⁰ The outcome measures were analyzed nationally by BETOS, by specialty, and by specialty/BETOS combination.

Given the study questions specified in the MMA, we also analyzed average annual changes in: 1) utilization, measured as service volume and total RVU volume per beneficiary; and 2) physician participation, measured as rates of assigned services, assigned RVUs, and assigned charges. To hold prices, or RVU values, constant in the utilization and assignment rate analyses, we used the 2002 RVU values.

Findings

Payment Rates per Service

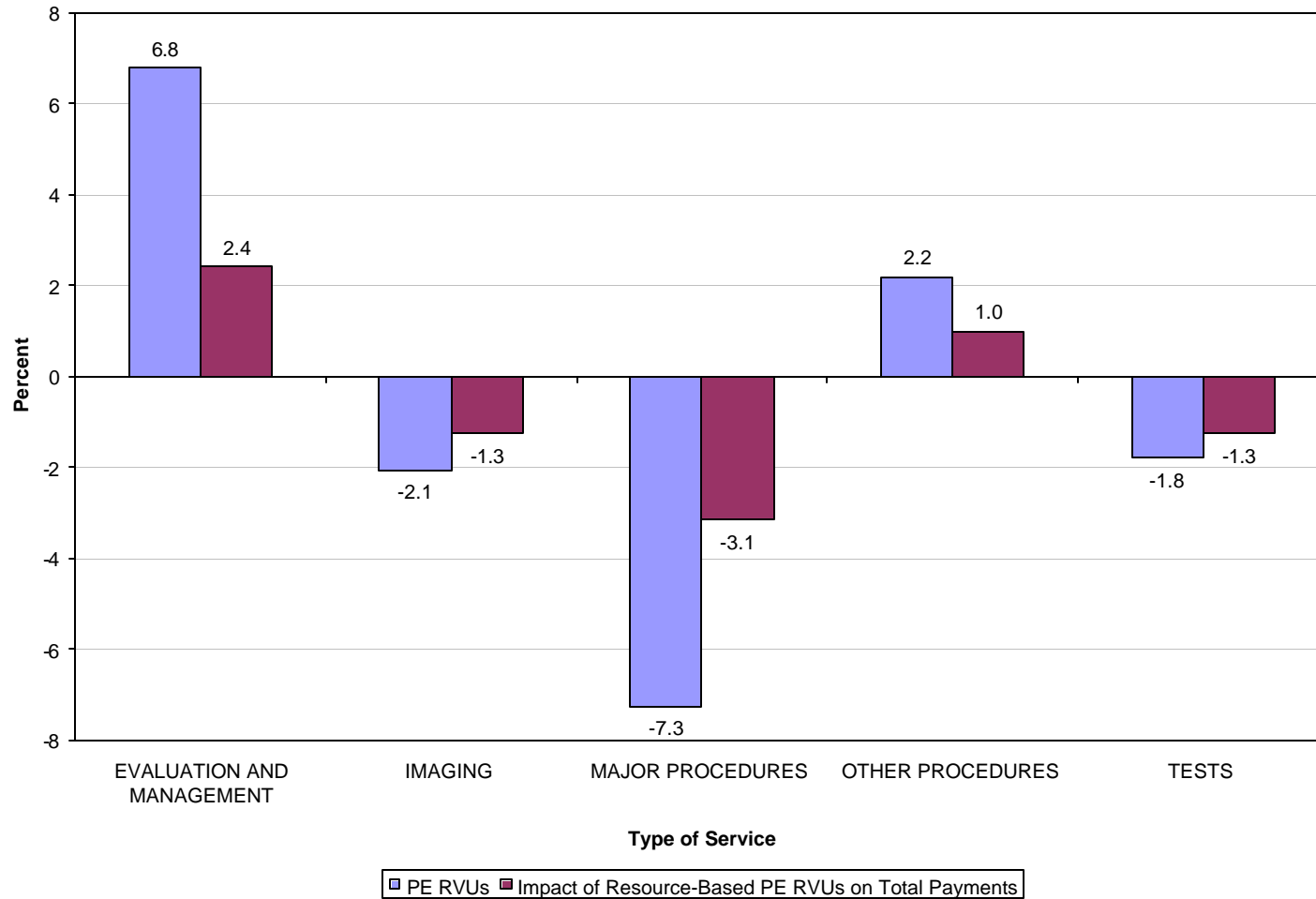
Figure 1 shows how the move to resource-based practice expense RVUs affected PE RVUs per service and payments per service for each of five major BETOS categories. These estimates do not reflect changes in work or malpractice RVUs that took place between 1998 and 2002— but these other changes had minimal effects relative to the introduction of resource-

⁹ We calculated indices using Medicare payments per service and the Medicare fee schedule rates (ie, allowed charges) per service. The results of the two were extremely similar. The tables in this report present change in terms of Medicare payments per service. Allowed charges and payments are based on RVUs multiplied by the fee schedule conversion factor (\$36.39 in 1998 and \$36.20 in 2002).

¹⁰ The impact variable can be interpreted as the impact on payments, allowed charges, or total RVUs. This is because the same conversion factor (the 1998 value of \$36.39) would be applied to the numerator and denominator in the price index calculations, thus adding only a constant value that would be cancelled out in the equation.

based PE RVUs. As the figure shows, implementation of the resource-based system lowered PE RVUs per service and total payments per service for Imaging Services, Major Procedures, and Tests and raised them for Evaluation and Management (E&M) Services and Other Procedures. The effect of the policy change is greater with respect to PE RVUs per service than total payments per service, because practice expenses account for about 42 percent of total payments on average.

Figure 1. Average Annual Change in PE RVUs and in Impact of PE RVUs on Total Payments, by Type of Service, 1998-2002



Note: "Major Procedures" include Breast, Colectomy, Cholecystectomy, TURP, Hysterectomy, Cardiovascular, Orthopedic, Exploratory, and Other. "Other Procedures" include Eye Procedures; Ambulatory and Minor groupings of Skin, Musculoskeletal, Hernia Repair, Lithotripsy and Other Procedures; Oncology; Endoscopy; and Dialysis.

Figure 2 shows that 10 of the 15 specialties examined gained from the move to resource-based practice expenses. Dermatologists and urologists experienced the largest gains in PE RVUs and total payments per service, with their PE RVUs rising over 10 percent annually and total payments rising roughly 5 percent annually. Thoracic surgeons and gastroenterologists experienced the greatest declines, with their PE RVUs and total payments per service falling roughly 10 percent and 4 percent, respectively. Other specialties experienced more modest changes, with increases and decreases in total payments per service ranging from 1 percent to 3 percent annually.

Our findings by specialty are generally consistent with two earlier studies of specialty impacts. HCFA (1998b) simulated the average annual impact over the transition period and the Government Accountability Office or GAO (2001) compared resource-based PE RVUs in 2001 to estimates of PE RVUs had they been charge-based in that year. Twelve specialties shown in Figure 2 are common to the HCFA and GAO analyses. In 11 of the 12 specialties, the direction of impact is the same across the studies, and in about one-half the direction and magnitude of impact are similar. Only pathologists were estimated to experience reduced payments as a result of the new PE RVUs by the other studies, but saw an average increase in their payments per service by 2002.

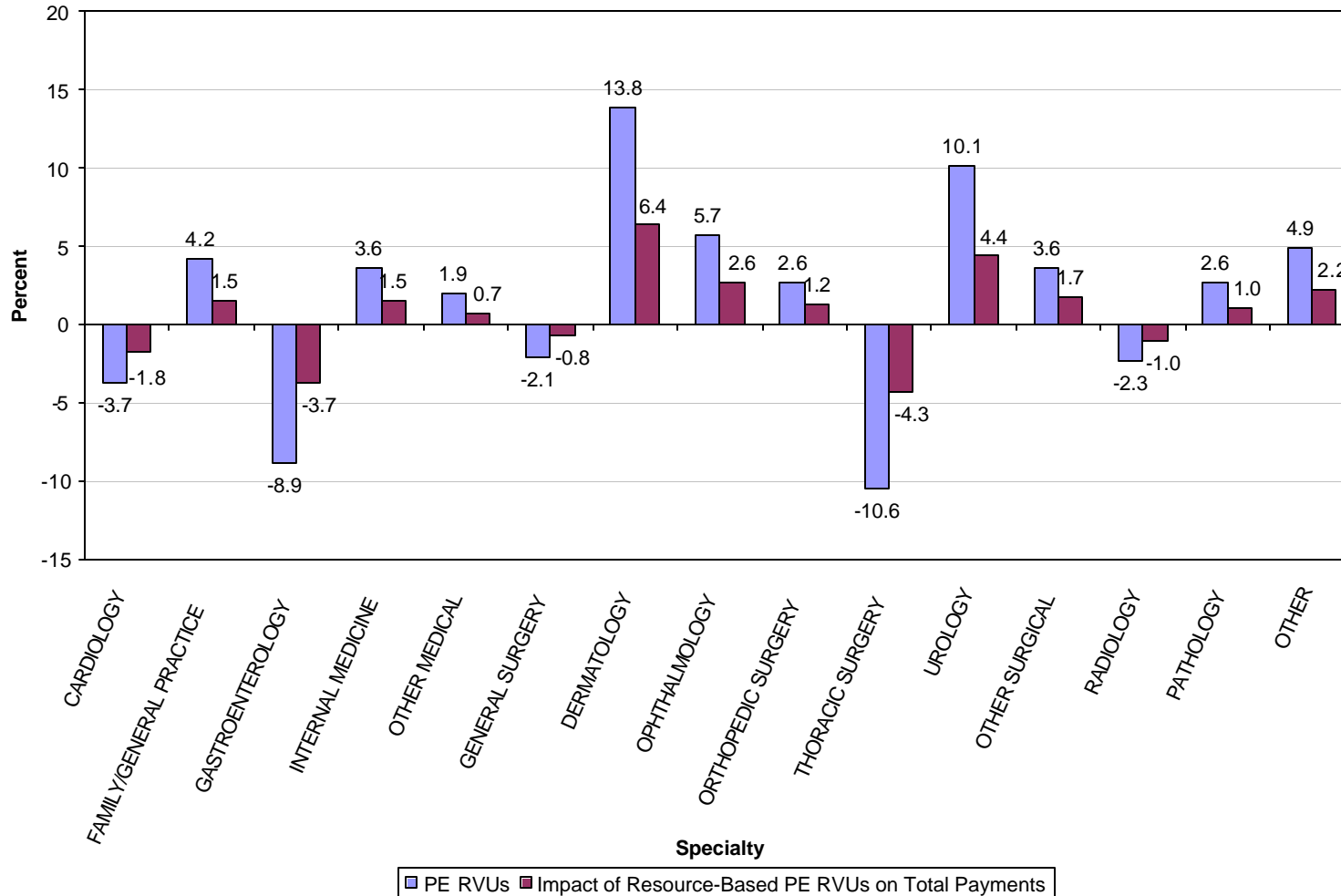
The specialty-specific findings in Figure 2 are related to several factors, including the relative importance of each BETOS group to a specialty, the relative importance of a service within a BETOS to a specialty, and the fact that PE RVUs for each service are based on specialty-specific data on expenses and hours. Table 1 shows the impact of resource-based PE RVUs across specialty/BETOS combinations. The BETOS impacts vary considerably across specialties, which interacts with differences in the relative importance of each BETOS by specialty to produce the patterns seen in Figure 2.¹¹ For example, thoracic surgeons experienced the largest average annual reduction (4.3 percent) in total payments per service as a result of the transition to resource-based PE RVUs. This group's payment decline is driven by the facts that total payments per service within their Major Procedures fell due to the transition by 5.1 percent annually (more than the 3.1 percent overall effect for this BETOS)—and that 82 percent of Medicare payments made to thoracic surgeons are in this BETOS. Further, within the Major Procedures group the PE RVUs were reduced to a greater extent for cardiovascular services, which are the dominant type of major procedures furnished by this specialty (detail not shown).

A similar pattern is evident for gastroenterologists (whose total payments per service fell 3.7 percent annually due to the new PE RVUs). Other Procedures is the dominant BETOS group for these physicians, accounting for 53 percent of their total payments. Although total payments per service for Other Procedures rose 1.0 percent annually across all specialties due to the new PE RVUs, total payments per service in this BETOS for gastroenterologists actually fell 6.6

¹¹ Changes in RVUs and payments by specialty and by BETOS (separately) are shown in Appendix B.

percent annually due to the PE changes. This occurred because PE RVUs were substantially reduced for upper gastrointestinal endoscopies and colonoscopies—two services within Other Procedures that account for nearly half of gastroenterologists' total Medicare payments (detail not shown).

Figure 2. Average Annual Change in PE RVUs and in Impact of PE RVUs on Total Payments, by Specialty, 1998-2002



Note: Specialty "Other Surgical" includes Neurosurgery, Ophthalmology, Obstetrics/Gynecology, Otolaryngology, Plastic/Reconstructive Surgery. Specialty "Other Medical" includes Neurology, Physical Medicine/Rehabilitation, Psychiatry, Pulmonary Disease, Nephrology, Allergy/Immunology. Specialty "Other" includes several non-physician services (eg, therapy services, physician assistant services); physician group practices and other organizations (e.g., labs, imaging centers); seven other (low Medicare prevalence) physician specialties (e.g., maxillofacial surgery); other/unknown care providers.

Table 1. Average Annual Change in Payment Rates and RVUs, by Specialty and Type of Service, 1998-2002

	2002 Payment Distribution (Percent)	Average Annual Percent Change				
		PE RVUs	Work and PLI RVUs	Total RVUs	Payment Rate	Impact of PE RVUs on Total Payments
Total	100.0	1.9	-0.3	0.7	1.9	0.7
Cardiology	100.0	-3.7	-0.8	-2.3	-1.0	-1.8
Evaluation And Management	38.0	5.1	0.0	1.7	3.3	1.7
Imaging	35.5	-3.4	-2.3	-3.1	-2.1	-2.3
Major Procedures	14.6	-15.1	-1.0	-6.9	-6.0	-6.3
Other Procedures	0.4	-5.1	-0.8	-3.1	-3.1	-2.6
Tests	11.6	-6.9	-0.3	-4.3	-3.4	-4.3
Family/General Practice	100.0	4.2	0.2	1.7	3.6	1.5
Evaluation And Management	86.3	4.7	0.2	1.7	3.8	1.5
Imaging	3.6	-1.3	-1.8	-1.3	0.0	-1.0
Major Procedures	1.1	-7.6	1.0	-2.1	-2.1	-2.9
Other Procedures	6.7	11.0	0.2	4.9	6.4	4.7
Tests	2.4	-3.4	-1.0	-2.6	-1.0	-2.3
Gastroenterology	100.0	-8.9	-0.3	-4.0	-2.9	-3.7
Evaluation And Management	44.0	4.0	0.0	1.2	2.9	1.2
Imaging	0.6	-0.8	-1.8	-1.0	-0.3	-0.5
Major Procedures	1.8	-3.1	2.4	0.5	0.5	-1.0
Other Procedures	53.1	-15.5	-0.8	-7.3	-6.6	-6.6
Tests	0.4	-4.3	-1.3	-3.1	-1.8	-2.6
Internal Medicine	100.0	3.6	0.0	1.5	3.1	1.5
Evaluation And Management	82.4	5.9	0.0	1.9	4.0	1.9
Imaging	5.5	-2.1	-2.3	-2.1	-0.8	-1.5
Major Procedures	0.8	-11.3	0.2	-4.6	-3.7	-4.6
Other Procedures	8.2	1.0	-0.5	0.2	1.0	0.5
Tests	3.0	-4.8	-0.8	-3.4	-2.3	-3.1
Other Medical Specialties	100.0	1.9	-0.3	0.5	1.9	0.7
Evaluation And Management	72.2	2.2	-0.3	0.5	1.9	0.7
Imaging	1.5	-1.5	-1.5	-1.5	-0.5	-1.3
Major Procedures	1.2	-4.3	1.0	-1.0	0.7	-1.5
Other Procedures	17.0	2.2	-0.3	0.7	2.2	1.0
Tests	8.0	1.5	-0.8	0.5	1.7	1.0
General Surgery	100.0	-2.1	0.7	-0.5	0.5	-0.8
Evaluation And Management	28.0	4.7	0.0	1.7	3.6	1.7
Imaging	5.6	-3.4	-1.0	-2.6	-1.8	-2.1
Major Procedures	45.0	-5.1	1.5	-1.0	-0.8	-2.1
Other Procedures	20.3	-2.1	0.5	-0.5	0.2	-0.8
Tests	1.2	-5.1	-2.6	-4.3	-3.4	-3.4
Dermatology	100.0	13.8	-0.3	6.4	8.2	6.4
Evaluation And Management	26.4	10.7	-0.3	4.7	6.6	4.7
Imaging	0.0	-1.0	0.0	-0.5	-0.5	-0.5
Major Procedures	0.1	11.9	-2.3	3.3	2.6	4.7
Other Procedures	73.2	15.0	-0.3	7.0	8.8	7.0
Tests	0.3	6.8	0.2	5.1	5.5	4.9
Ophthalmology	100.0	5.7	-0.8	2.4	4.0	2.6
Evaluation And Management	47.6	19.2	0.0	8.6	11.4	8.6
Imaging	3.0	7.2	-1.8	4.2	4.9	4.9
Major Procedures	0.4	5.3	0.0	2.4	3.6	2.4
Other Procedures	49.0	-3.1	-1.3	-2.3	-1.5	-1.5
Tests	0.0	0.7	-1.8	0.0	1.5	0.5

Table 1 (con't.) Average Annual Change in Payment Rates and RVUs, by Specialty and Type of Service, 1998-2002						
	2002 Payment Distribution (Percent)	Average Annual Percent Change				
		PE RVUs	Work and PLI RVUs	Total RVUs	Payment Rate	Impact of PE RVUs on Total Payments
Orthopedic Surgery	100.0	2.6	-0.5	0.7	1.5	1.2
Evaluation And Management	23.4	10.7	0.0	4.0	6.4	4.0
Imaging	8.6	-0.5	-1.0	-0.8	-0.3	-0.5
Major Procedures	44.6	-4.3	-1.0	-2.6	-2.1	-1.8
Other Procedures	23.4	11.6	-0.3	5.1	5.1	5.3
Tests	0.1	2.4	-1.0	1.0	0.0	1.5
Thoracic Surgery	100.0	-10.6	0.5	-4.0	-3.4	-4.3
Evaluation And Management	11.1	2.6	0.0	1.0	2.9	1.0
Imaging	2.6	-3.7	-1.3	-2.9	-2.1	-2.3
Major Procedures	81.6	-12.4	0.7	-4.6	-4.3	-5.1
Other Procedures	3.9	-2.3	-0.3	-1.3	-1.3	-1.0
Tests	0.9	-5.4	-1.8	-4.3	-3.7	-3.4
Urology	100.0	10.1	-0.3	4.4	6.2	4.4
Evaluation And Management	35.5	9.9	0.0	3.8	6.4	3.8
Imaging	4.7	0.0	-1.0	-0.3	0.5	0.0
Major Procedures	19.0	5.7	-0.8	2.4	3.6	2.6
Other Procedures	40.6	14.2	-0.3	6.6	8.2	6.6
Tests	0.1	4.9	-0.8	2.9	2.6	3.1
Other Surgical Specialties	100.0	3.6	-0.3	1.5	2.6	1.7
Evaluation And Management	38.2	10.7	0.0	4.2	6.8	4.2
Imaging	2.6	0.2	-1.5	-0.3	-0.5	0.2
Major Procedures	26.5	-6.3	-0.3	-2.9	-2.9	-2.6
Other Procedures	28.4	7.0	-0.3	3.1	4.2	3.3
Tests	4.3	1.7	-6.3	0.5	2.4	1.5
Radiology	100.0	-2.3	-0.5	-1.5	-0.3	-1.0
Evaluation And Management	2.0	1.9	0.0	0.7	4.0	0.7
Imaging	75.1	-2.3	-0.5	-1.5	-0.3	-1.0
Major Procedures	5.7	-7.6	0.5	-2.6	-0.8	-2.9
Other Procedures	17.0	-1.0	-1.0	-1.0	-0.8	-0.8
Tests	0.3	-7.3	-2.1	-5.1	-4.0	-4.3
Pathology	100.0	2.6	-0.3	0.7	1.9	1.0
Evaluation And Management	80.4	1.2	-0.5	0.2	1.2	0.5
Imaging	0.4	-2.1	-1.0	-1.5	0.7	-1.0
Major Procedures	0.1	-11.6	-1.0	-5.7	-6.3	-5.1
Other Procedures	1.5	3.1	-0.3	1.0	1.2	1.0
Tests	17.7	10.3	0.2	3.6	5.9	3.6
Other Professionals	100.0	4.9	0.0	2.2	3.1	2.2
Evaluation And Management	50.8	9.2	0.0	3.3	3.8	3.3
Imaging	12.3	-0.8	-2.3	-1.0	-2.1	-0.5
Major Procedures	4.0	-4.8	0.0	-2.3	-3.4	-2.3
Other Procedures	28.2	5.1	0.5	2.4	4.9	2.2
Tests	4.6	6.8	-0.8	4.2	4.9	4.4

Note: To hold service mix constant, we applied 1998 and 2002 payments and RVUs to the 2002 service mix. Results are very similar using the 1998 service mix (Appendix A). "Major Procedures" include Breast, Colectomy, Cholecystectomy, TURP, Hysterectomy, Cardiovascular, Orthopedic, Exploratory, and Other. "Other Procedures" include Eye Procedures; Ambulatory and Minor groupings of Skin, Musculoskeletal, Hernia Repair, Lithotripsy and Other Procedures; Oncology; Endoscopy; and Dialysis. Specialty "Other Surgical" includes Neurosurgery, Ophthalmology, Obstetrics/Gynecology, Otolaryngology, Plastic/Reconstructive Surgery. Specialty "Other Medical" includes Neurology, Physical Medicine/Rehabilitation, Psychiatry, Pulmonary Disease, Nephrology, Allergy/Immunology. "Other Professionals" include several non-physician services (eg, therapy services, physician assistant services); physician group practices and other organizations (e.g., labs, imaging centers); seven other (low Medicare prevalence) physician specialties (e.g., maxillofacial surgery); other/unknown care providers.

Source: Urban Institute analysis of 1998 and 2002 summaries of physician/supplier claims.

Among specialties who gained as a result of the PE RVU changes, Table 1 shows that they experienced large PE RVU increases in the BETOS groups that dominate their Medicare practices. Dermatologists, who gained the most (6.4 percent annually) in terms of total payments per service from the PE RVU changes, receive 73 percent of their Medicare revenues from Other Procedures and 26 percent from E&M services. While the new PE RVUs raised payments for these BETOS groups overall, the impact was particularly high for these services among dermatologists, with total payments per service increasing 7.0 percent annually for Other Procedures and 4.7 percent annually for E&M.

Urologists witnessed 4.4 percent annual increases in their total payments per service due to the new PE RVUs, due to increases in each of their dominant BETOS groups. Among these physicians, the new PE RVUs increased payments per service by 6.6 percent annually for Other Procedures, 3.8 percent for E&M, and 2.6 percent for Major Procedures. Combined, these BETOS groups account for 95 percent of their Medicare payments. Further, the services urologists furnish within these groups had increases well above the average of the overall BETOS groups (detail not shown).

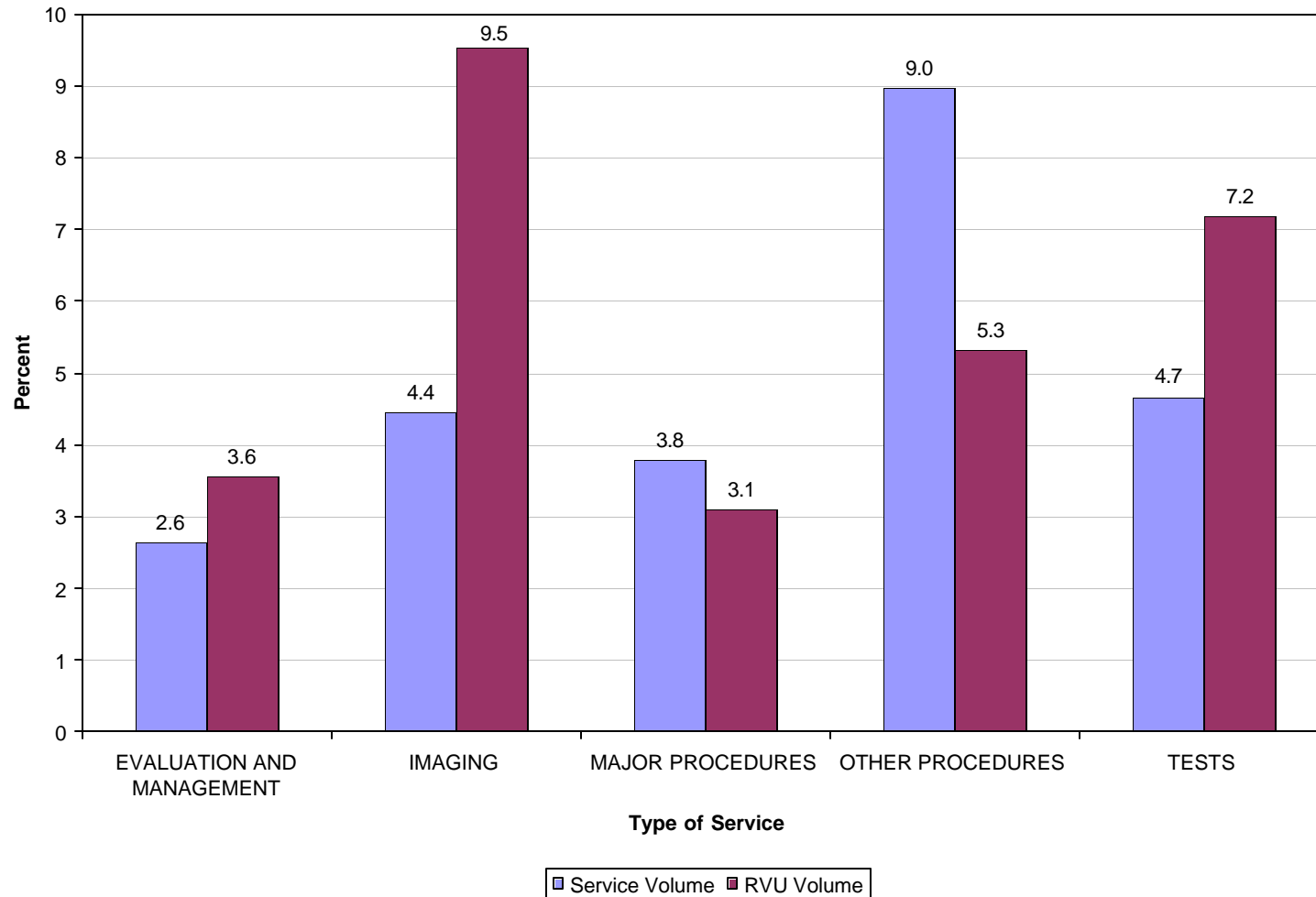
The third largest payment gain by specialty occurred among ophthalmologists, whose total payments rose 2.6 percent annually due to the new PE RVUs. Their gains are due largely to payment increases within E&M services, which account for 48 percent of ophthalmologists' Medicare revenues. The new PE RVUs increased ophthalmologists total payments per service among E&M by 8.6 percent annually, compared to a 2.4 percent annual increase among all physicians. This gain was large enough to offset a 1.5 percent average annual reduction in ophthalmologists' total payments per service for Other Procedures, which accounts for a large share (49 percent) of their Medicare revenues.

Beneficiary Utilization

Change in payments per service by BETOS or specialty did not appear to be accompanied by systematic changes in beneficiary utilization. As seen in Figure 3, both service use and total RVU volume per beneficiary increased on an average annual basis in all five BETOS groups, despite the fact that payments per service increased for some groups and decreased for others. For example, the largest increases in total RVU volume per beneficiary occurred in Imaging Services (9.5 percent) and Tests (7.2 percent)—two BETOS groups whose payments each fell 1.3 percent annually due to the new PE RVUs. However in Major Procedures, total RVU volume per beneficiary rose only 3.1 percent, while total payments fell substantially (3.1 percent) in this BETOS group due to the new PE RVUs.

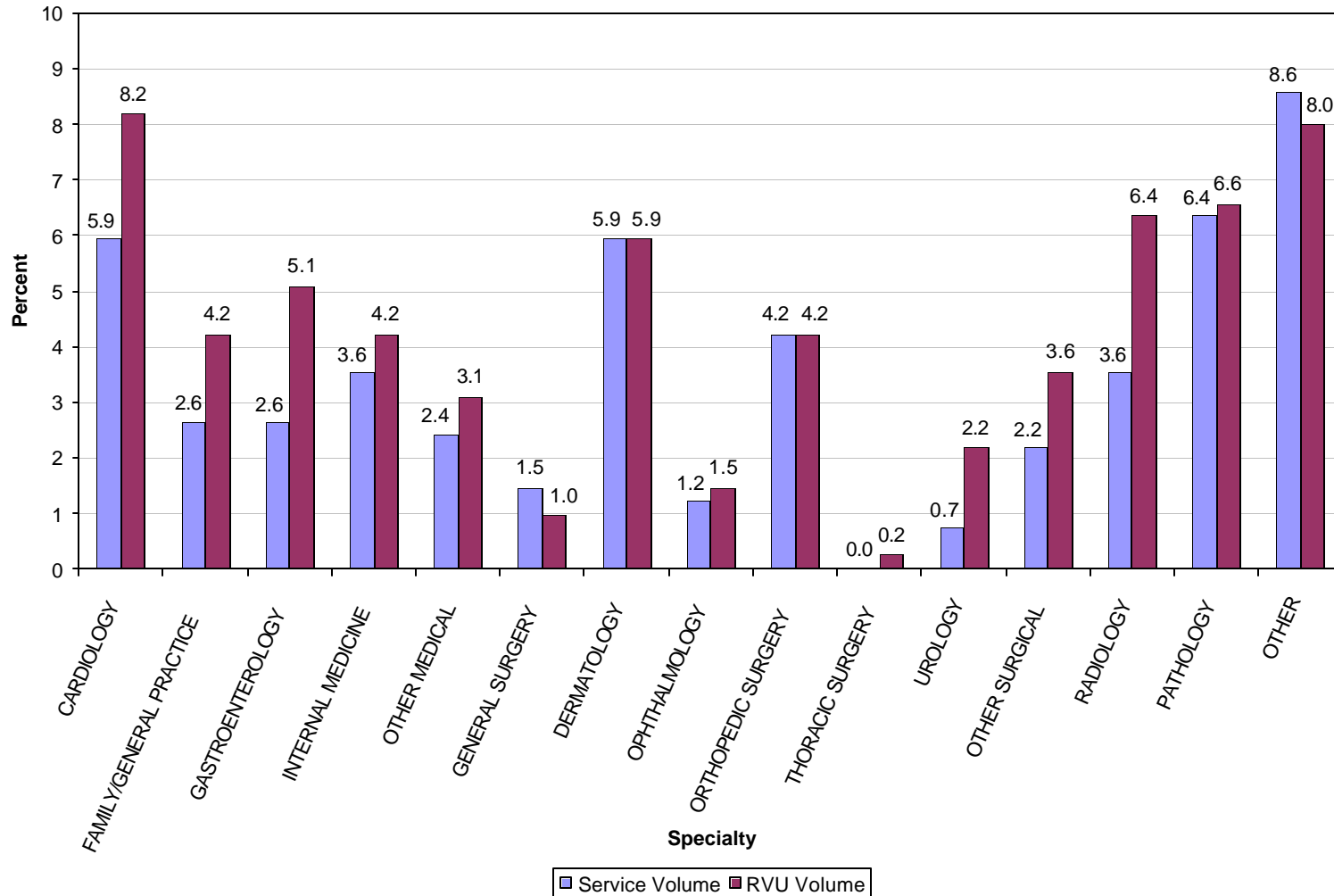
Figure 4 shows that service use and total RVU volume per beneficiary increased across all specialties, but the average annual rates of increase varied considerably, from a low of 0.2 percent to 8.2 percent. However, this variation does not seem to be related to the magnitude or direction of the changes in payments by specialty. The largest average annual increase in RVU volume occurred for cardiologists (8.2 percent), whose total payments per service fell by 1.8 percent annually due to the PE RVU changes. An offset pattern was not evident, however, among thoracic surgeons. This specialty lost the most payments per service as a result of the new PE RVUs (4.3 percent annually), while their RVU volume per beneficiary increased only

Figure 3. Average Annual Change in Per Beneficiary Use of Services, by Type of Service, 1988-2002



Note: "Major Procedures" include Breast, Colectomy, Cholecystectomy, TURP, Hysterectomy, Cardiovascular, Orthopedic, Exploratory, and Other. "Other Procedures" include Eye Procedures; Ambulatory and Minor groupings of Skin, Musculoskeletal, Hernia Repair, Lithotripsy and Other Procedures; Oncology; Endoscopy; and Dialysis.

Figure 4. Average Annual Change in Per Beneficiary Use of Services, by Specialty, 1998-2002



Note: Specialty "Other Surgical" includes Neurosurgery, Ophthalmology, Obstetrics/Gynecology, Otolaryngology, Plastic/Reconstructive Surgery. Specialty "Other Medical" includes Neurology, Physical Medicine/Rehabilitation, Psychiatry, Pulmonary Disease, Nephrology, Allergy/Immunology. Specialty "Other" includes several non-physician services (eg, therapy services, physician assistant services); physician group practices and other organizations (e.g., labs, imaging centers); seven other (low Medicare prevalence) physician specialties (e.g., maxillofacial surgery); other/unknown care providers.

0.2 percent annually. With the possible exception of thoracic surgery (and their near-zero annual increases in service use and total RVU volume), the increases in volume seen on Figures 3 and 4 suggest that access problems are not apparent at the national level, by BETOS and or by specialty.

Table 2 shows the change in service use and RVU volume per beneficiary for each specialty/BETOS combination. There are a few instances in which utilization declined for a specialty/BETOS combination. In particular service use, total RVU volume, or both fell per beneficiary for Tests furnished by five of the 15 specialty groups. Tests comprise less than 4 percent of physician payments overall, and even less for the five specialties. Among the other BETOS groups, utilization of E&M and Other Procedures increased across all specialties. Utilization fell slightly (roughly 1.0 percent or less) for Major Procedures furnished by each of three specialties (general surgeons, ophthalmologists, thoracic surgeons) and for Imaging Services furnished ophthalmologists.¹²

Simple utilization trends are difficult to interpret, since changes in per beneficiary utilization can be due to many factors. For example, clinically appropriate changes may occur due to technological advances that increase the provision of some services and decrease use of other services. Changes in payment rates can create incentives to increase or decrease service provision as well, although the appropriateness of these changes cannot be assessed in isolation. While the increased utilization rates on Table 2 do not offer preliminary indication of access problems by specialty or BETOS during the implementation period of the new PE RVUs, it is beyond the scope of this project to analyze factors affecting utilization change or to draw conclusions regarding the appropriateness of the change that occurred.

Assignment Rates

Congress asked MedPAC to identify changes in Medicare participation and assignment rates during the transition period to the new PE RVUs. A participating physician is one who agrees to accept assignment on all of his or her Medicare physician claims for the coming year. Assignment refers to accepting the Medicare fee schedule amount as full charge for a service and thus billing beneficiaries only for applicable Medicare deductible and coinsurance amounts. Participating physicians receive program payments directly from Medicare, while non-participating physicians do not receive direct payment and are paid based on only 95 percent of the fee schedule amount.

We examined a standard measure of physicians' willingness to accept assignment—the percent of allowed charges paid on assignment—by BETOS, specialty, and specialty/BETOS

¹² An extreme volume increase is seen in dermatologists' provision of imaging services. Our data explorations suggest the presence of original claims coding errors regarding specialty group. Imaging is a negligible share of dermatologists' 2002 payments (about one-third of one percent).

combination. We also examined the rate of assigned services and total RVUs. We found extremely little change in these measures during the transition to the new PE RVUs. Table 3 shows that the percent of assigned charges rose from 98 percent in 1998 to 99 percent in 2002 overall, and was generally as high or higher for most specialty/BETOS combinations.

Table 2. Average Annual Change in Per Beneficiary Use of Services, by Specialty and Type of Service, 1998-2002

	Average Annual Percent Change	
	Service Volume	RVU Volume
Total	4.2	4.7
Cardiology	5.9	8.2
Evaluation And Management	3.6	3.3
Imaging	11.2	15.7
Major Procedures	7.6	7.8
Other Procedures	4.2	3.8
Tests	4.2	7.4
Family/General Practice	2.6	4.2
Evaluation And Management	1.9	4.0
Imaging	1.9	7.4
Major Procedures	3.3	3.1
Other Procedures	7.4	5.3
Tests	6.6	5.3
Gastroenterology	2.6	5.1
Evaluation And Management	1.7	2.6
Imaging	-2.6	1.5
Major Procedures	-0.5	3.1
Other Procedures	5.3	7.4
Tests	-3.1	0.7
Internal Medicine	3.6	4.2
Evaluation And Management	3.3	4.0
Imaging	3.3	8.8
Major Procedures	-0.8	0.5
Other Procedures	7.8	4.7
Tests	0.2	1.7
Other Medical Specialties	2.4	3.1
Evaluation And Management	1.7	2.4
Imaging	2.9	5.9
Major Procedures	0.2	2.9
Other Procedures	3.3	3.1
Tests	5.5	9.4
General Surgery	1.5	1.0
Evaluation And Management	0.2	1.5
Imaging	9.7	11.2
Major Procedures	0.5	-0.5
Other Procedures	1.9	1.7
Tests	1.7	3.1
Dermatology	5.9	5.9
Evaluation And Management	3.1	3.3
Imaging	56.6	49.7
Major Procedures	6.4	5.3
Other Procedures	7.4	7.0
Tests	2.6	7.2

Table 2 (con't). Average Annual Change in Per Beneficiary Use of Services, by Specialty and Type of Service, 1998-2002		
	Average Annual Percent Change	
	Service Volume	RVU Volume
Ophthalmology	1.2	1.5
Evaluation And Management	1.2	1.7
Imaging	0.0	-1.3
Major Procedures	-0.8	-1.0
Other Procedures	1.9	1.5
Tests	-6.3	-5.7
Orthopedic Surgery	4.2	4.2
Evaluation And Management	2.4	2.9
Imaging	3.6	6.2
Major Procedures	3.1	3.8
Other Procedures	8.6	5.7
Tests	-2.1	-2.9
Thoracic Surgery	0.0	0.2
Evaluation And Management	0.2	1.0
Imaging	5.3	6.4
Major Procedures	-1.0	-0.3
Other Procedures	1.9	5.5
Tests	-4.6	-3.4
Urology	0.7	2.2
Evaluation And Management	0.2	1.2
Imaging	0.5	0.5
Major Procedures	0.7	5.5
Other Procedures	1.5	2.2
Tests	32.0	1.2
Other Surgical Specialties	2.2	3.6
Evaluation And Management	0.7	1.0
Imaging	6.6	11.9
Major Procedures	6.2	5.5
Other Procedures	4.9	4.4
Tests	3.3	3.8
Radiology	3.6	6.4
Evaluation And Management	2.9	3.3
Imaging	3.3	6.2
Major Procedures	6.2	4.9
Other Procedures	7.0	7.8
Tests	-0.3	2.9
Pathology	6.4	6.6
Evaluation And Management	4.4	5.1
Imaging	-2.3	-3.4
Major Procedures	5.7	4.4
Other Procedures	7.2	6.4
Tests	12.6	14.9
Other Professionals	8.6	8.0
Evaluation And Management	5.1	5.3
Imaging	3.1	19.2
Major Procedures	9.4	5.1
Other Procedures	16.8	10.5
Tests	7.6	11.4

Note: To hold RVU valuation constant (data column 2), we applied 2002 RVUs to the 1998 and 2002 data. Results are very similar using 1998 RVUs. "Major Procedures" include Breast, Colectomy, Cholecystectomy, TURP, Hysterectomy, Cardiovascular, Orthopedic, Exploratory, and Other. "Other Procedures" include Eye Procedures; Ambulatory and Minor groupings of Skin, Musculoskeletal, Hernia Repair, Lithotripsy and Other Procedures; Oncology; Endoscopy; and Dialysis. Specialty "Other Surgical" includes Neurosurgery, Ophthalmology, Obstetrics/Gynecology, Otolaryngology, Plastic/Reconstructive Surgery. Specialty "Other Medical" includes Neurology, Physical Medicine/Rehabilitation, Psychiatry, Pulmonary Disease, Nephrology, Allergy/Immunology. "Other Professionals" include several non-physician services (eg, therapy services, physician assistant services); physician group practices and other organizations (e.g., labs, imaging centers); seven other (low Medicare prevalence) physician specialties (e.g., maxillofacial surgery); other/unknown care providers. Source: Urban Institute analysis of 1998 and 2002 summaries of physician/supplier claims.

Table 3. Percent of Allowed Charges Paid on Assignment, by Specialty and Type of Service, 1998 and 2002		
	Percent in:	
	1998	2002
Total	0.98	0.99
Cardiology	0.99	0.99
Evaluation And Management	0.98	0.99
Imaging	0.99	1.00
Major Procedures	0.99	1.00
Other Procedures	0.98	0.99
Tests	0.99	0.99
Family/General Practice	0.97	0.98
Evaluation And Management	0.97	0.98
Imaging	0.98	0.99
Major Procedures	0.99	1.00
Other Procedures	0.96	0.98
Tests	0.95	0.99
Gastroenterology	0.99	0.99
Evaluation And Management	0.98	0.99
Imaging	0.97	0.98
Major Procedures	0.98	0.99
Other Procedures	0.99	0.99
Tests	0.95	0.95
Internal Medicine	0.97	0.98
Evaluation And Management	0.96	0.98
Imaging	0.97	0.99
Major Procedures	1.00	1.00
Other Procedures	0.98	0.99
Tests	0.96	0.97
Other Medical Specialties	0.98	0.99
Evaluation And Management	0.98	0.98
Imaging	0.99	1.00
Major Procedures	0.99	1.00
Other Procedures	1.00	1.00
Tests	0.98	0.99
General Surgery	0.99	0.99
Evaluation And Management	0.99	0.99
Imaging	0.99	1.00
Major Procedures	0.99	1.00
Other Procedures	0.99	0.99
Tests	0.99	1.00
Dermatology	0.96	0.98
Evaluation And Management	0.95	0.97
Imaging	0.97	0.99
Major Procedures	0.98	0.99
Other Procedures	0.96	0.98
Tests	0.92	0.93
Ophthalmology	0.98	0.99
Evaluation And Management	0.97	0.98
Imaging	0.98	0.99
Major Procedures	0.99	0.99
Other Procedures	0.99	0.99
Tests	0.98	0.99
Orthopedic Surgery	0.99	0.99
Evaluation And Management	0.99	0.99
Imaging	0.99	0.99
Major Procedures	0.99	0.99
Other Procedures	0.99	0.99
Tests	0.99	1.00

Table 3 (con't.) Percent of Allowed Charges Paid on Assignment, by Specialty and Type of Service, 1998 and 2002

	Percent in:	
	1998	2002
Thoracic Surgery	0.99	0.99
Evaluation And Management	0.99	0.99
Imaging	1.00	1.00
Major Procedures	0.99	0.99
Other Procedures	0.99	0.99
Tests	0.99	0.99
Urology	0.98	0.99
Evaluation And Management	0.98	0.99
Imaging	0.99	0.99
Major Procedures	0.98	0.99
Other Procedures	0.98	0.99
Tests	0.99	1.00
Other Surgical Specialties	0.97	0.98
Evaluation And Management	0.97	0.98
Imaging	0.97	0.98
Major Procedures	0.98	0.99
Other Procedures	0.98	0.99
Tests	0.97	0.99
Radiology	0.99	0.99
Evaluation And Management	0.99	0.99
Imaging	0.99	0.99
Major Procedures	1.00	1.00
Other Procedures	0.99	0.99
Tests	0.99	1.00
Pathology	0.99	0.99
Evaluation And Management	0.99	0.99
Imaging	0.95	1.00
Major Procedures	0.96	1.00
Other Procedures	0.99	0.99
Tests	0.99	1.00
Other Professionals	0.97	0.98
Evaluation And Management	0.99	0.99
Imaging	0.99	1.00
Major Procedures	1.00	0.99
Other Procedures	0.98	0.99
Tests	0.99	1.00

Notes: To hold charges constant in calculating assignment rates, we applied 2002 charge rates. Results were similar using 1998 charge rates. "Major Procedures" include Breast, Colectomy, Cholecystectomy, TURP, Hysterectomy, Cardiovascular, Orthopedic, Exploratory, and Other Major Procedures. "Other Procedures" include Eye Procedures; Ambulatory and Minor groupings of Skin, Musculoskeletal, Hernia Repair, Lithotripsy and Other Procedures; Oncology; Endoscopy; and Dialysis. Physician specialty "Other Medical" includes Neurology, Physical Medicine/Rehabilitation, Psychiatry, Pulmonary Disease, Nephrology, Allergy/Immunology. "Other Surgical" includes Neurosurgery, Ophthalmology, Obstetrics/Gynecology, Otolaryngology, Plastic/Reconstructive Surgery. "Other Professionals" include several non-physician services (eg, therapy services, physician assistant services); physician group practices and other organizations (e.g., labs, imaging centers); seven other (low Medicare prevalence) physician specialties (e.g., maxillofacial surgery); other/unknown care providers.

Source: Urban Institute analysis of 1998 and 2002 physician/supplier procedure summary files.

The largest drop in assignment— from 97 percent in 1998 to 89 percent in 2002— occurred among Tests furnished by family practitioners and general practitioners. These services account for only 2.4 percent of this group’s payments, and include tests not paid under the Medicare fee schedule. Rates of assigned services and total RVUs are virtually identical to the assigned charge results (not shown).

Summary

Payments to physicians comprise about 30 percent of all Medicare payments, and practice expenses are 42 percent on average of physician payments under the Medicare physician fee schedule. In 1994, Congress required that a resource-based system be developed for PE payments to replace the prior payment system based on physicians’ charges. The new PE system was phased in between 1999 and 2002.

This study analyzed the impact of the new payment policy on PE relative value units (RVUs) and total Medicare payments per service, by physician specialty, type of service (BETOS group), and specialty/BETOS combination between 1998 and 2002. It also identified changes in beneficiary utilization rates and physician assignment rates during the period.

As expected, the resource-based PE system resulted in some redistribution of payments across types of service and specialties. In terms of service types, the largest change occurred for E&M Services and Major Procedures. Total payments per service among E&M services increased an average of 2.4 percent per year due to the new PE RVUs, and fell 3.1 percent per service among Major Procedures. Total payments per service increased as a result of the new PE RVUs for ten of 15 specialty groups analyzed. Dermatologists and urologists experienced the largest average annual gains, with total Medicare payments per service increasing 6.4 percent and 4.4 percent, respectively. Thoracic surgeons and gastroenterologists experienced the largest average annual losses due to the new PE RVUs, with Medicare payments per service falling 4.3 percent and 3.7 percent, respectively. Our findings of actual change over the period are fairly consistent with the program’s initial predictions of impacts by specialty (HCFA 1998b).

Total RVU volume per beneficiary grew over the period across all BETOS groups, with increases ranging from 3.1 percent (Major Procedures) to 7.2 percent (Tests). Total volume also grew across all specialties, although the range of increase was much greater, from a low 0.2 percent annually for thoracic surgeon services to 8.2 percent annually for cardiology services. The assignment rate rose from 98 percent to 99 percent over the period, and was uniformly high for most specialty/BETOS combinations.

Acknowledgements

We gratefully acknowledge Sherry Smith and Todd Klemp, American Medical Association, for their assistance in providing annual RVU files, and Mark Miller, Kevin Hayes, Nancy Ray, and Cristina Boccuti, MedPAC, for their comments on earlier drafts of this report.

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Appendix A. Impact of Controlling for Service Mix with 1998 versus 2002 Data in Calculating Price Index Variables, by Type of Service, 1998-2002

Type Of Service	PE RVUs (1998 Service Mix)	PE RVUs (2002 Service Mix)	Payment Rate (1998 Service Mix)	Payment Rate (2002 Service Mix)	Impact of PE RVUs on Total Payments (1998 Service Mix)	Impact of PE RVUs on Total Payments (2002 Service Mix)
Total	1.7	1.9	1.9	1.9	0.7	0.7
Office Visits	13.0	13.0	7.8	7.8	5.3	5.3
Hospital Visits	-4.3	-3.7	0.2	0.2	-1.3	-1.0
Emergency Room Visits	-10.2	-9.9	-0.5	-0.3	-2.6	-2.3
Home Visits	10.3	12.1	3.8	4.4	3.1	3.6
Nursing Home Visits	-4.3	-3.7	1.9	1.9	-1.3	-1.0
Specialist Visits	12.6	13.3	6.8	7.2	4.9	5.3
Consultations	1.0	1.7	1.9	2.2	0.2	0.5
Major Procedures (Other Than Cardiovascular And Orthopedic)	-4.8	-3.1	-1.0	-0.3	-1.8	-1.3
Major Procedures Cardiovascular	-13.1	-12.7	-4.8	-4.6	-5.4	-5.1
Major Procedures Orthopedic	-2.9	-3.1	-1.5	-1.8	-1.3	-1.3
Eye Procedures	-4.8	-4.6	-2.3	-2.3	-2.3	-2.3
Ambulatory Procedures	8.2	8.4	4.4	4.7	3.8	3.8
Minor Procedures	12.6	12.8	7.6	7.8	5.5	5.5
Oncology	-0.3	-0.3	-0.3	-0.3	-0.3	-0.3
Endoscopy	-7.9	-8.9	-3.4	-4.0	-3.4	-4.0
Dialysis Services	3.1	3.1	2.6	2.6	1.2	1.2
Standard Imaging	-1.0	-0.8	0.5	0.2	-0.5	-0.5
Advanced Imaging	-1.0	-1.0	-0.5	-0.8	-0.8	-0.8
Echography	-3.7	-3.7	-2.1	-2.1	-2.3	-2.3
Imaging/Procedures	-9.9	-8.9	-3.1	-3.1	-3.7	-3.4
Lab Tests	16.5	16.6	9.2	9.4	6.8	7.0
Other Tests	-4.3	-3.4	-2.3	-1.5	-2.9	-2.1

Note: "Other tests" include Electrocardiograms, Cardiovascular Stress Tests, EKG Monitoring, and Other.

Source: Urban Institute analysis of 1998 and 2002 summaries of physician/supplier claims.

Appendix B. Average Annual Change in Price Index Variables, by Type of Service and by Specialty, 1998-2002

Type of Service or Specialty	2002 Payment Distribution (Percent)	Average Annual Percent Change				
		PE RVUs	Work and PLI RVUs	Total RVUs	Payment Rate	Impact of PE RVUs on Total Payments
Total	100.0	1.9	-0.3	0.7	1.9	0.7
Evaluation And Management	52.0	6.8	0.0	2.4	4.2	2.4
Imaging	14.2	-2.1	-1.3	-1.8	-1.0	-1.3
Major Procedures	9.7	-7.3	0.0	-3.1	-2.6	-3.1
Other Procedures	20.3	2.2	-0.5	0.7	1.9	1.0
Tests	3.8	-1.8	-0.8	-1.5	-0.3	-1.3
Cardiology	10.3	-3.7	-0.8	-2.3	-1.0	-1.8
Family/General Practice	10.6	4.2	0.2	1.7	3.6	1.5
Gastroenterology	2.9	-8.9	-0.3	-4.0	-2.9	-3.7
Internal Medicine	17.1	3.6	0.0	1.5	3.1	1.5
Other Medical Specialties	9.3	1.9	-0.3	0.5	1.9	0.7
General Surgery	4.3	-2.1	0.7	-0.5	0.5	-0.8
Dermatology	3.2	13.8	-0.3	6.4	8.2	6.4
Ophthalmology	7.6	5.7	-0.8	2.4	4.0	2.6
Orthopedic Surgery	4.8	2.6	-0.5	0.7	1.5	1.2
Thoracic Surgery	1.4	-10.6	0.5	-4.0	-3.4	-4.3
Urology	2.7	10.1	-0.3	4.4	6.2	4.4
Other Surgical Specialties	3.5	3.6	-0.3	1.5	2.6	1.7
Radiology	8.5	-2.3	-0.5	-1.5	-0.3	-1.0
Pathology	1.4	2.6	-0.3	0.7	1.9	1.0
Other Professionals	12.5	4.9	0.0	2.2	3.1	2.2

Note: To hold service mix constant, we applied 1998 and 2002 payments and RVUs to the 2002 service mix. Results are very similar using the 1998 service mix (Appendix A). "Major Procedures" include Breast, Colectomy, Cholecystectomy, TURP, Hysterectomy, Cardiovascular, Orthopedic, Exploratory, and Other. "Other Procedures" include Eye Procedures; Ambulatory and Minor groupings of Skin, Musculoskeletal, Hernia Repair, Lithotripsy and Other Procedures; Oncology; Endoscopy; and Dialysis. Specialty "Other Surgical" includes Neurosurgery, Ophthalmology, Obstetrics/Gynecology, Otolaryngology, Plastic/Reconstructive Surgery. Specialty "Other Medical" includes Neurology, Physical Medicine/Rehabilitation, Psychiatry, Pulmonary Disease, Nephrology, Allergy/Immunology. "Other Professionals" include several non-physician services (eg, therapy services, physician assistant services); physician group practices and other organizations (e.g., labs, imaging centers); seven other (low Medicare prevalence) physician specialties (e.g., maxillofacial surgery); other/unknown care providers.

Source: Urban Institute analysis of 1998 and 2002 summaries of physician/supplier claims.