

Medicare Physician Fees:

The Data Behind the Numbers

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OVERVIEW — *Medicare's physician fee schedule distributes* nearly \$60 billion annually and is a critical determinant of individual physicians' incomes, beneficiaries' access to health care services, and Medicare spending, as well as the basis for physician fees used by many private payers. The Centers for Medicare & Medicaid Services (CMS) relies on data derived from expert judgment and other sources to update the fee schedule. Although CMS's methods and data for maintaining the fee schedule have improved over the years, concerns remain about medical specialty society involvement and the lack of an effective "counterweight" to vested interests in establishing and updating the relative values in the fee schedule. This issue brief reviews the data used in the fee schedule, including the new, multispecialty practice expense survey, and the role of the American Medical Association/ Specialty Society Relative Value Scale Update Committee.

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The National Health Policy Forum is a nonpartisan research and public policy organization at The George Washington University. All of its publications since 1998 are available online at www.nhpf.org. Medicare payed over \$60 billion in 2008 for physician services, using a fee schedule that ranks each service according to the resources required to provide it. Three types of resources, physician work, practice expense, and malpractice expense, are estimated for each service as relative value units (RVUs).¹ The total RVUs for a service measures its resource use relative to the resource use of all other physician services in the fee schedule. The Medicare payment for a service is the product of its RVUs and a conversion factor that translates the RVUs into dollars. If the RVUs do not accurately reflect the variation in resource use across physician services, then some services in the fee schedule will be overvalued and others undervalued.

Inaccuracies in the fee schedule could cause adverse consequences for Medicare beneficiaries, providers, and the overall program. Access to undervalued services could be compromised if physicians could no longer afford or would be unwilling to provide them. Some believe, for example, that physician visits, called evaluation and management (E&M) services, are undervalued, which has held down the income of physicians in primary care relative to other physician specialties.² This, in turn, is thought to have contributed to declining numbers of U.S. medical school graduates practicing primary care. If some services are undervalued, then others are overvalued, which could have equally negative and widespread consequences for health care delivery. Overvalued procedures may be overprescribed because they boost physician net revenues more than other services. This would contribute to inappropriately high beneficiary out-of-pocket costs and Medicare outlays.

Efforts to improve the relative values and fees are ongoing. Recognizing the importance of ensuring the accuracy of the fee schedule, Congress included a section in the Patient Protection and Affordable Care Act (PPACA) addressing the identification of potentially misvalued services, the collection of data to facilitate appropriate adjustments, and validation of the RVUs. Further, the Centers for Medicare & Medicaid Services (CMS) is required to review and revise the



relative rankings of all physician services at least every five years. In addition to this systematic process, CMS annually assigns values to new services, adjusts rankings for certain existing services, and makes other changes to the physician fee schedule. CMS draws heavily on recommendations from the American Medical Association (AMA)/ Specialty Society Relative Value Scale Update Committee (RUC) and others in making these changes.

The two largest components of the fees, physician work and practice expenses, comprise about 95 percent of Medicare physician payments.³ Even though the data and methods for estimating the work and practice expense resources for each physician service have been updated and improved, annual changes to the fee schedule still raise comments about the accuracy of the

The RUC

The American Medical Association (AMA)/Specialty Society Relative Value Scale Update Committee (RUC) is an independent group of 29 members who represent different medical specialties. Major national medical specialty societies appoint 23 of the RUC members; two seats are reserved for an internal medicine subspecialty, another for any other specialty. The other members include the chair and liaisons to other groups, such as the AMA and the American Osteopathic Association. More than 100 additional medical professionals serve on an advisory committee to the RUC. The RUC meets three times a year to consider data from specialty-sponsored member surveys on the resources used to provide new physician services or services that medical specialty societies, the Centers for Medicare & Medicaid Services, or the RUC itself consider misvalued.

Source: American Medical Association, "AMA/Specialty Society RVS Update Process: 2010"; available at www.ama-assn.org/ama1/pub/upload/mm/380/ rvs-update-booklet.pdf.

RVUs. Questions persist about the adequacy of the data, the transparency of the processes, the involvement of medical specialty societies, CMS oversight, and the standards against which the estimates are evaluated.

MEDICARE PHYSICIAN FEES

Medicare's physician fee schedule is based on the resource-based relative value scale (RBRVS), which ranks services by their resource use, as measured by RVUs. The fee schedule is intended to promote payment equity across services through the resource-based fees and across physician specialties by providing the same fee for a service, regardless of the medical specialty of the physician providing the service. The RVUs are determined separately for three categories of resources required to provide a service.

 The physician work component, which is intended to compensate for the time, technical skill and effort, mental effort and judgment, and stress associated with providing a service, comprises over half of aggregate physician payments.

- **Practice expenses**, which include nonphysician clinical and nonclinical labor and expenses for building space, equipment, and supplies, account for about 44 percent of payments. Direct practice expenses are those that are used to provide a particular service and can be attributed to that service, such as clinical staff, medical supplies, and equipment. Indirect practice expenses, such as rent, utilities, and administrative personnel, cannot be attributed to a particular service but are required to maintain a physician office.
- Malpractice insurance premiums comprise the remaining share of total physician payments.

Estimating Physician Work

The physician work component of each fee is based on estimates of the physician time to provide the service and the intensity of the physician's effort. The original work estimates were based on research conducted at Harvard University that was completed in the late 1980s.⁴ Physicians were surveyed about the time and effort to provide each service. Physician panels reviewed and adjusted the survey data to ensure appropriate rank orders of services, so that the more time-consuming and difficult services received higher work values. The panels also examined all of the estimates and made appropriate adjustments to ensure that the ranges of work values and proportions of differences in work values were reasonable.

RUC work recommendations — Over time, most of these Harvarddeveloped RVUs have been revised to reflect changes in the practice of medicine, and RVUs for new services have been added to the physician fee schedule each year.⁵ CMS relies on the RUC to recommend work values for services that have been identified for review and possible revision as well as values for new services. The RUC uses a process that is similar to the one used in the original Harvard study to develop its recommendations. The RUC has refined the original process to make it more systematic and to incorporate more extensive comparisons across services.

After a service has been identified for review, the RUC asks national medical specialty societies and other health care professional organizations about whether they are interested in developing recommendations. Interested specialties that provide the service survey at least 30 practicing physician members about the identified service. The survey instrument collects detailed information on the work and the direct practice expense resources associated with the service. The instrument includes a vignette that describes a typical patient receiving the service (see text box below); it also lists 15 to 25 other services that may be similar to the service being reviewed.

Three Physician Services: Descriptions and Vignettes of Typical Patient

Chest X-Ray, in office (71020) — Radiologic examination, chest, two views, frontal and lateral

A 70-year-old female with stage 4 breast cancer and known pleural and pulmonary metastases presents to her physician with new onset dyspnea and fever. Posteroanterior and lateral chest radiographs are ordered.

ECG, in office (93000) — Electrocardiogram, routine ECG with at least 12 leads; with interpretation and report

A 69-year-old male is seen in the office for evaluation of chest tightness and palpitations. A 12-lead electrocardiographic (ECG) tracing is obtained by technical personnel along with clinical and drug therapy data. The tracing is reviewed by the physician, appropriate measurements are made (including axis, intervals, and voltages), and an overall interpretation is made. The tracing is compared with previous ECG tracings when available. Potential etiologies for any electrocardiographic findings observed, such as myocardial infarction, hypokalemia, or digoxin toxicity, are proposed. A report is prepared, signed, and transmitted to the patient's medical record.

E&M, in office (99213) — Office or other outpatient visit for the evaluation and management of an established patient, which requires at least two of these three key components: an expanded problem focused history, an expanded problem focused examination, medical decision making of low complexity. Counseling and coordination of care with other providers or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs. Usually, the presenting problem(s) are of low to moderate severity. Physicians typically spend 15 minutes faceto-face with the patient and/or family.

Office visit for a 55-year-old male, established patient, with a history of hypertension and hyperlipidemia who presents for follow-up.

Source: American Medical Association, RBRVS Data Manager, 2010.

Level of Effort of Physician Work

The level of effort required to perform a physician service is determined by assessing the following factors:

- Number of possible diagnoses or management options to be considered
- Amount and complexity of information that must be reviewed
- Urgency of decision making
- Skill required
- Physical effort required
- Risk of significant complications
- Role of physician skill and judgment on patient outcome
- Risk of malpractice with poor outcome

Source: American Medical Association/Specialty Society RVS Update Committee, "Physician Work RVS Update Survey," 2010; available at www.ama-assn.org/ama1/pub/upload/mm/380/worksurveyxxther.doc. The respondent may choose to use one or more of these reference services as points of comparison. The respondent estimates the time required to see the patient or perform the service and the corresponding level of effort, which, combined, is termed intraservice work (see text box for factors involved in assessing level of effort). The respondent also estimates the preservice work time, when the physician may review records or consult with colleagues or the patient's family or prepare for a procedure, and the postservice work time, when the physician may document the service or communicate with others.

The specialties that conducted the survey then present the survey results plus information from specialty expert panels to the RUC. The RUC members question the specialty representatives and compare the survey results with the resources required for similar or related services. Concerns have been raised that the spe-

cialties that provide the service may have incentives to inflate the required resources. The RUC believes, however, that the discussion and review by the entire committee ensures a fair and appropriate final recommendation to CMS. The RUC members recognize that, because of the budget neutrality requirement in the fee schedule, an increase to the RVUs of any service causes a corresponding decrease in RVUs for others. This means that payment increases to one specialty may cause decreases to all others.⁶

Accuracy of work values — Although there appears to be widespread agreement that physician surveys and judgment are necessary to establish the work estimates and there is general satisfaction with the estimates in the fee schedule, there are some indications that physicians may not provide reliable estimates of the time required to provide individual services. One study conducted for CMS pointed out discrepancies between the fee schedule descriptions of the various types of evaluation and management services and the typical amount of time the physician spends with the patient.⁷ A study of surgical times found that intraservice time estimates used to develop the work RVUs for certain surgical services were overstated.⁸ The study compared the time estimates with actual operating room logs that were used in hospital scheduling. Although this study was also conducted for CMS, its results have not been systematically incorporated into the process for developing the work RVUs. Overstating physician time would not necessarily affect the accuracy of the fee schedule, if the overstatements were consistent across specialties and services. This is because the fee schedule is based on relative resource differences across services rather than absolute differences. However, both studies indicated that the amount of the overstatements differed across medical specialties and type of service.

Estimating Practice Expense

The original Harvard studies did not estimate practice expense RVUs, so in the RBRVS practice expenses were based on historical physician charges until 1999, when CMS began phasing in resource-based practice expense RVUs. CMS's method for developing resource-based practice expense RVUs relies on estimates of servicespecific, direct expenses, pricing data, and specialty-specific, practice-level expenses.⁹ Because the practice expenses are determined for each service with a "bottom up" approach, the direct and indirect practice expenses are scaled to the aggregate survey data to ensure that the practice expense RVUs do not exceed what is indicated by the survey data.

Enumerating and pricing direct practice resources — The direct practice resources required to provide a service are enumerated through the same surveys and specialty expert panels that the RUC uses to collect the work estimates. (See Table 1, next page, for the direct practice resources of three example services.) The medical specialties that collect these data compile them for presentation to the RUC. The RUC reviews the data and then submits a recommendation to CMS for the direct resources.¹⁰

CMS reviews and may modify the RUC recommendation on direct resources and then attaches a monetary value to each input so they can be converted to RVUs. These values come from a CMS database on the prices of direct expense items. Clinical labor costs per minute, which were updated for the 2002 fee schedule, are derived from Bureau of Labor Statistics surveys and other sources. CMS last updated all supply prices for the 2004 fee schedule with information from manufacturer catalogues and other sources. Equipment prices were updated for the 2005 and 2006 fee schedules. CMS has no stated

TABLE 1 Direct Practice Resources for Three Physician Services

RESOURCES	Chest X-Ray, in office (71020)	Electrocardiogram (ECG), in office (93000)	Evaluation & Management, in office (99213)
Equipment	Film alternator (motorized film view box)	ECG, 3-channel	Otoscope-ophthalmoscope
	Film processor (wet)	Table, exam	Table, exam
	Room, basic radiology		
Clinical Labor	Radiologic technologist (14 minutes)	Registered nurse (12 <i>minutes</i>)	Registered nurse/licensed practical nurse/medical technical assistant (36 <i>minutes</i>)
Supplies	Gown, patient (1)	Electrode, ECG (single) (10)	Pack, EM visit (1)
	Film, x-ray 14" by 17" (2)	Paper, recording (4 sheets)	
	X-ray developer solution (2 oz.)	Gauze, non-sterile, 2" by 2" (2)	
	X-ray envelope (1)		
	X-ray fixer solution (2 oz.)		

Source: U.S. Department of Health and Human Services, "PFS Federal Regulation Notices" (2010 Direct PE " Correction Notice 4), May 11, 2010; available at www.cms.gov/PhysicianFeeSched/PFSFRN/itemdetail.asp?filterType=none&filterByDID=-99&sortByDID=4&sortOrder=descending&itemID=CMS12 30135&intNumPerPage=10.

> plans to systematically revise the data, although the Medicare Payment Advisory Commission (MedPAC) and the RUC have suggested establishing an update schedule to ensure the prices are complete and accurate.¹¹

> For new types of supplies or equipment, CMS requests pricing data from medical specialties and may receive input from the RUC on the type and quantity of the supply or equipment used. CMS reviews these data, which must include detailed descriptions and pricing information from sources such as catalogue pages, invoices, or Web site pages, before incorporating the prices in its database. MedPAC has expressed particular concern about the database prices for new supplies or equipment.¹² It has recommended that these prices be revised after the supply or equipment has been on the market for a certain number of years, because initial prices may fall with increased competition from additional suppliers. In its proposed rule for 2011, CMS outlined a regular process for considering public requests to change prices for supplies and equipment used in providing physician services. In addition, it proposed using an existing

government pricing schedule to establish prices for high-cost (\$150 or more) supplies.¹³

Estimating the cost of equipment used to provide a particular service requires assumptions about the equipment purchase price, its useful life, the cost of financing, and the hours the equipment is in use. Equipment purchase price is generally obtained from manufacturers' catalogues and useful life from published hospital information. CMS has been calculating the cost of equipment based on assumptions that equipment was financed at an interest rate of 11 percent and that it is in use 50 percent of the time the physician's office is open, although there was no strong evidence to support either assumption. In fact, MedPAC research indicated that physician practices typically used their expensive equipment for the majority of hours their offices were open.¹⁴ In response to concerns that its low equipment use assumption overestimated equipment expense, CMS proposed for the 2010 fee schedule to raise the assumption to 90 percent, but only for diagnostic equipment priced at more than s1million.¹⁵ Subsequent legislation, however, reduced the use assumption to 75 percent.

Allocating indirect practice expenses — Ensuring that the fees appropriately account for the indirect expenses required to maintain a physician practice is complicated because there is no universal standard for allocating indirect practice expenses to individual services. Further, the relationship between indirect and direct practice expenses varies across specialties, and most services are provided by multiple physician specialties.¹⁶ For example, the ratio of indirect to direct expenses for dermatology and ophthalmology are more than 60 percent above the average. Emergency medicine, psychiatry, and anesthesiology have an indirect share that is about 50 percent below the average.

CMS uses survey data to estimate, by specialty, total practice expenses and the direct and indirect expense shares. Indirect expenses are allocated to each service in proportion to its direct expenses plus work.¹⁷ When multiple specialties provide a service, its indirect share is calculated as a utilization-weighted average of the indirect shares for each specialty that provides it. In this way, higher indirect expenses are allocated to services with higher direct expenses or higher work values (or both) and to services predominantly performed by specialties with higher indirect expenses.

Updated practice expense data — Originally, data from the AMA's Socioeconomic Monitoring System (SMS) were used to estimate aggregate practice expenses by physician specialty. The SMS data reflect practice costs from 1995 through 1999. In response to growing concerns that the SMS data were too old, Congress required CMS to accept specialty-specific survey data to supplement the SMS data. From 2001 through 2006, CMS accepted the supplemental data from 13 specialties. These specialties fielded surveys of their members on practice expenses that met CMS requirements with respect to the survey design, sampling methods, and robustness of the data. For each of these 13 specialties, the supplemental data indicated that practice expenses were higher than those measured by the inflation-adjusted SMS survey data. As a result, the practice expense RVUs of the services predominantly performed by the specialties that submitted supplemental survey data were increased. And, because of the budget neutrality requirement, specialties that did not field supplemental surveys faced reduced practice expense RVUs for their services.

In 2007 and 2008, the AMA, along with medical specialty societies, fielded the Physician Practice Information Survey (PPIS) to collect updated practice expense data. The PPIS data, which CMS purchased, are believed to better represent current practice patterns and costs than the SMS and are collected with a consistent survey instrument.

CMS was satisfied by the response rate achieved with the PPIS, and the AMA adjusted the data to account for nonresponse bias. CMS noted that its goal for the survey was to obtain 100 responses for each specialty and that, for the majority of physician specialties, this goal was achieved. However, the number of surveys that were complete enough to calculate practice expense per hour was much lower. Of the 42 physician specialties, only 23 had 70 or more responses used in calculating the practice expense per hour.¹⁸ Eight specialties had fewer than 50 complete responses.

Incorporation of updated data — CMS planned to substitute the PPIS data for the SMS and the supplemental survey data in calculating the practice expense RVUs for the 2010 fee schedule.¹⁹ However, after reviewing comments on its proposal, CMS indicated that rather than basing the practice expense RVUs completely on the new data, it would implement a transition. The practice expense RVUs will be calculated with decreasing proportions of the historical data and increasing proportions of the PPIS data so that, by 2013, they will

be based totally on the 2007–2008 PPIS data. For clinical oncology, however, CMS will continue to use the 2003 supplemental data for oncology drug administration services. This is to comply with the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (section 303).²⁰

Although the transition to the new data will allow more time for providers to adjust to fee changes, it will also extend the use of fees that are not as accurate as they could be in reflecting practice expenses. If the new data had been used without a transition for the 2010 rates, some specialties, such as cardiology, hematology/oncology, interventional radiology, nuclear medicine, urology, and radiology, would have seen 5 percent to 15 percent reductions in practice expense RVUs. Other specialties like family practice, geriatrics, oph-thalmology, and physical medicine, however, would have seen modest increases.²¹

Identifying Services for Review

MedPAC and the RUC itself have been concerned about the way services in the fee schedule are identified as misvalued and, therefore, candidates for RUC review. Medical specialty societies have identified most of the services. The specialty societies, however, have financial incentives to identify only undervalued services. Indeed, the vast majority of recommended changes from the RUC have been to increase the RVUs of reviewed services (see text box above for recommendations from three five-year reviews).

MedPAC made a series of recommendations to the Secretary of Health and Human Services about how to identify services that may be overvalued in the fee schedule. It recommended establishing "a standing panel of experts to help CMS identify overvalued services and to review recommendations from the RUC."²² The commission noted several factors that may indicate that the resources required to provide a service may have changed, including alterations in length of stay, site of service, volume, and practice expenses. While recognizing the valuable contributions and role of the RUC, MedPAC stressed the need to examine Medicare claims data for indications of changes in resources and that CMS should lead those efforts.

Rather than establishing an expert panel, CMS encouraged the RUC to identify overvalued services and to evaluate those that had never

FIVE-YEAR RBRVS REVIEWS: SUMMARY OF RUC RECOMMENDATIONS ON RVUS

Review Year	Increase	Same	Decrease
1995	296	650	107
2000	467	311	27
2005	285	294	33

Source: American Medical Association, "AMA/ Specialty Society RVS Update Process: 2010"; available at www.ama-assn.org/ama1/pub/upload/ mm/380/rvs-update-booklet.pdf. been reviewed and still had Harvard-valued work RVUs or that had had substantial changes in practice expenses.²³ The RUC's Five-Year Review Identification Work Group focused on identifying services that were often billed together, were fast-growing, experienced shifts

The RUC's Five-Year Review Identification Work Group focused on identifying services that were often billed together, were fast-growing, experienced shifts in site of service, or were of high intensity. in site of service, or were of high intensity. CMS supported the RUC's development and use of "compelling evidence standards" for considering a specialty society's argument that the RVUs are no longer correct.²⁴ Starting from the position that current values are correct, compelling evidence to initiate a review would be documentation in peer-

reviewed literature of changes in technique, patient population, siteof-service, or other factors that suggest a change in physician work.

In its proposed rule for the 2011 fee schedule, CMS lays out how it will comply with the PPACA directive to identify misvalued services.²⁵ In addition to specifying situations that may show that a service is misvalued in the fee schedule, the PPACA suggests that CMS may conduct surveys, collect data in other ways, or conduct analyses to determine whether a service is misvalued and to facilitate the appropriate adjustments to its RVUs. It indicates that services with low relative values that are performed multiple times in a visit may be appropriate for combining for a single payment. The law also stipulates that CMS develop a method for validating the RVUs.

Quality of Data Used to Establish the Fees

CMS and the RUC have worked over the years to systematically update their processes for collecting information on the resources used to provide physician services and for reviewing and adjusting the RVUs. The data on physician practice expenses, in particular, has been substantially revised and improved. In the end, however, most of the detailed information on physician resources must come from physicians, who have a direct economic incentive in how these data affect the fee schedule. Medical specialty societies conduct the service-specific surveys for the RUC process and worked with the AMA to field the PPIS. If they fail to raise questions or provide the information about potentially misvalued services, CMS may not have objective, credible data to use in improving the accuracy of the fee schedule. CMS has declined to form its own group of experts, as recommended by MedPAC, to provide input on misvalued services and to review RUC recommendations.²⁶ CMS indicated that it would not know how to incorporate information from the group into the rulemaking process and coordinate this group with the RUC. Along with the formation of the RUC's Five-Year Review Identification Work Group, other changes have been initiated to identify

services that are potentially overvalued; together, these may balance the interests of medical specialty societies in identifying only undervalued services. CMS has also lacked the resources to analyze physician data to better inform the fee schedule adjustment process. Because

The data underlying the fee schedule are often not robust enough to compare resource use across physician practice arrangements, types of patients, or geographic areas.

CMS does not have the data, it must ask the AMA to perform any additional analyses of total practice expenses with the PPIS data. The AMA has complied with all requests.

The data underlying the fee schedule are often not robust enough to compare resource use across physician practice arrangements, types of patients, or geographic areas. The American College of Cardiology, for example, was concerned that the PPIS data were not representative of cardiology practices because the practice expense per hour calculated from it was much lower than the practice expense per hour calculated from the SMS and from the supplemental data. CMS asked its contractor to evaluate this concern, but it was not able to fully address the questions because of the small number of PPIS responses.²⁷ There also are not enough responses to the specialty-conducted surveys that support the RUC process to evaluate resource use differences across respondents. Such analyses would be particularly instructive as policymakers search for alternative health care delivery models to slow spending growth.

Even though the new data sources are widely acknowledged as improvements over existing ones, they have not been fully incorporated into the process for establishing the RVUs as soon as they become available. The PPIS data will be blended with the SMS data over a four-year period. For physician specialties that had practice expenses derived from SMS or supplemental survey estimates that were higher than estimates from the PPIS data, this blending will keep RVUs from falling as quickly. Specialties that have SMS data with lower practice expense estimates than those derived from the PPIS data will not be able to recoup higher practice expenses as quickly.²⁸ Further, these data will become outdated over time, and there is no plan to repeat the PPIS or develop a new data source.

CONCLUSION

Medicare's physician fee schedule has been cited as a cause of physician specialty imbalances, overuse of certain well-paid services and underuse of poorly paid services, and physician payment inequities. Yet even with such high stakes, ensuring the accuracy of the fee schedule continues to rely on limited data. Collecting and incorporating new and possibly more robust data into the development of the fees is costly, time consuming, and often controversial. Significant additional improvements to the underlying data, therefore, may not come easily. Such improvements may come only if Medicare requires physicians to submit auditable service-level and practice-level data, much as facilities must submit annual cost reports. Alternatively, major changes to the fee schedule may require more normative standards for what Medicare is willing to pay based on the value of the particular service.

ENDNOTES

1. Laura A. Dummit, "Relative Value Units (RVUs)," National Health Policy Forum, The Basics, February 12, 2009; available at www.nhpf.org/library/the-basics/Basics_RVUs_02-12-09.pdf.

2. Laura A. Dummit, "Primary Care Physician Supply, Physician Compensation, and Medicare Fees: What Is the Connection?" National Health Policy Forum, Issue Brief No. 827, November 3, 2008; available at www.nhpf.org/library/issue-briefs/ IB827_Physician_Income_11-03-08.pdf.

3. The RVUs for malpractice expenses are developed and updated in a different manner. They are not discussed in this issue brief.

4. William C. Hsiao *et al.,* "Resource-based Relative Values: An Overview," *Journal of the American Medical Association,* 260 (October 1988): pp. 2347–2353; available with subscription at http://jama.ama-assn.org/cgi/reprint/260/16/2347.pdf.

5. Services are identified by Current Procedure Terminology (CPT) codes. The CPT code set is maintained by the CPT Editorial Panel, whose members are predominantly nominees of the American Medical Association and includes members nominated by representatives of other health care associations. This coding system is updated annually to ensure that the codes accurately reflect the current practice of medicine. 6. Any changes to RVUs, either because of the addition of new services to the fee schedule or as a result of adjustments to the RVUs of existing services, must maintain budget neutrality. In this case, budget neutrality means that the changes cannot increase or reduce Medicare outlays by more than \$20 million. Maintaining budget neutrality, therefore, requires the Centers for Medicare & Medicaid Services (CMS) to adjust the RVUs of other services. Budget neutrality does not restrict increases in Medicare physician spending—rising volume and intensity of services continue to boost Medicare outlays—but it does constrain individual fees.

7. Jerry Cromwell *et al.*, "Validating CPT Typical Times for Medicare Office Evaluation and Management (E/M) Services," *Medical Care Research and Review*, 63, no. 2 (April 2006): p. 236; available with subscription at http://mcr.sagepub.com/cgi/ reprint/63/2/236.

8. Nancy McCall *et al.*, "Validation of Physician Survey Estimates of Surgical Time Using Operating Room Logs," *Medical Care Research and Review*, 63, no. 6 (December 2006): p. 764; available with subscription at http://mcr.sagepub.com/cgi/reprint/63/6/764.

9. The Balanced Budget Act of 1997 directed CMS to "utilize, to the maximum extent practicable, generally accepted cost accounting principles which: (1) Recognize all staff, equipment, supplies and expense, not just those which can be tied to specific procedures; and (2) use actual data on equipment utilization and other key assumptions."

10. Because the direct and indirect resources vary depending on whether the service is provided in the physician office (nonfacility) or another setting (facility), such as a hospital outpatient department or an ambulatory surgery center, there will be two estimates of the direct practice expenses for any service that can be provided in either setting. The physician practice expenses usually are lower when the service is provided in a facility, because the facility, not the physician practice, incurs many of the practice expenses. Typically, the facility will hire the clinical staff and provide necessary equipment and supplies, for example. The facility is paid for these expenses through Medicare's facility payment. Even when the physician service is provided in a facility, though, the practice will incur certain indirect costs, such as those associated with maintaining an office and billing.

11. Federal Register, 71, no. 231, (December 1, 2006), p. 69650; available at http://edocket.access.gpo.gov/2006/pdf/06-9086.pdf.

12. Medicare Payment Advisory Commission (MedPAC), *Report to the Congress: Increasing the Value of Medicare*, June 2006, pp. 89–92; available at www.medpac.gov/ documents/jun06_entirereport.pdf.

13. *Federal Register*, 75, no. 133 (July 13, 2010), pp. 40079–40081; available at http://edocket.access.gpo.gov/2010/pdf/2010-15900.pdf.

14. MedPAC, *Report to the Congress: Increasing the Value of Medicare*, June 2006, pp. 90–95, available at www.medpac.gov/documents/jun06_entirereport.pdf; and MedPAC, *Report to the Congress: Medicare Payment Policy*, March 2009, pp. 107–109; available at www.medpac.gov/documents/Mar09_EntireReport.pdf.

15. *Federal Register*, 72, no. 133 (July 12, 2007), p. 38132; available at http://edocket. access.gpo.gov/2007/pdf/07-3274.pdf.

16. Federal Register, 74, no. 226, (November 25, 2009), p. 61753; available at http://edocket.access.gpo.gov/2009/pdf/E9-26502.pdf.

17. For services with little or no physician work, the clinical labor expense is used in this part of the calculation.

18. For example, there were 145 surveys from cardiology, but only 55 were used in calculating the practice expense per hour. Similarly, 229 surveys were obtained from family medicine and 98 were used in the calculation. From urology there were 152 surveys, with 80 used in the calculation. See "Practice Expense Per Hour 2007/2008 PPI Survey" (AMA PPIS wkst1); available at www.cms.gov/ PhysicianFeeSched/PFSFRN/itemdetail.asp?filterType=none&filterByDID=-99&sortByDID=4&sor tOrder=descending&itemID=CMS1223902&intNumPerPage=10.

19. Federal Register, 74, no. 132, (July 13, 2009), p. 33530–33531; available at http://edocket.access.gpo.gov/2009/pdf/E9-15835.pdf.

20. Federal Register, November 25, 2009, p. 61752.

21. Federal Register, November 25, 2009, pp. 61983-61984.

22. MedPAC, *Report to the Congress: Medicare Payment Policy*, March 2006, p. 132; available at www.medpac.gov/documents/Mar06_EntireReport.pdf.

23. Kerry Weems, CMS, letter to William L. Rich III, June 19, 2008; available at www.ama-assn.org/ama1/pub/upload/mm/380/cmsapplause.pdf.

24. Federal Register, November 25, 2009, pp. 61941-61943.

25. Federal Register, July 13, 2010, pp. 40065-40082.

26. Federal Register, July 13, 2009, pp. 33556-33557.

27. Lewin Group, "CMS – 1413-P Response to Public Comments, Part 1," undated; available at www.cms.gov/physicianfeesched/downloads/Lewin_Group_Analysis_of_ Cardiology_Radiology_Urology.pdf.

28. CMS indicated that it would not blend the supplemental survey data with the PPIS because blending "weakens the advantage of using the Physician Practice Information Survey (PPIS) data." However, because "some specialties experience significant payment reductions with the use of the PPIS data," it will provide for a four-year transition from the current practice expense RVUs to the new ones calculated with the PPIS data. See *Federal Register*, November 25, 2009, p. 61751.