Chapter 5
Payment Based on Fee Schedules

Things are only worth what one makes them worth.

—Moliere, Les Precieuses Ridicules

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INTRODUCTION

In one sense, Medicare's customary, prevailing, and reasonable (CPR) charge determination system can be thought of as being neutral with respect to prices in the physicians' services market; Medicare approved charges are simply established by identifying particular prices from the existing distribution of fees charged by the physicians themselves. As a result of this approach, however, even within a single locality and within a single specialty, any two physicians who perform a particular procedure may have different maximum approved charges. In fact, it is possible—although highly improbable—that every physician performing a particular procedure would have his or her own unique Medicare approved charge.

Because one year of a physician's billed charges are used to set the next year's Medicare approved rates, the CPR system has obviously not been neutral with respect to physicians' billed charges in the succeeding years of its implementation. An alternative to a neutral payment system might be designed to take advantage of Medicare's substantial potential market power with respect to physicians services. Further, such a system might be much simpler to understand for both the physicians and the beneficiaries.

In the sections that follow, the notions of fee schedules are reviewed. The chapter begins with an explanation of the concepts of fee schedules, relative value scales (RVSs), and procedural coding and terminology systems. Also discussed are the potential uses of a fee schedule for reimbursement purposes. The initial issues arising prior to the implementation of any fee schedule are enumerated, as are issues revolving around the problems of maintenance of a fee schedule via updating or occasional appropriateness checks for possible recalibration. Two somewhat arbitrary categories for methods of constructing particular fee schedules are then discussed: 1) relative-value-based methods, and 2) "competitive" methods. The concluding sections of the chapter address the potential impacts of all of the various fee schedule options and review the prospects for fee schedules as a whole.

THE CONCEPT OF FEE SCHEDULES

A fee schedule can be viewed as an exhaustive list of physician services in which each entry is associated with one specific monetary amount. (Two basic variations on the fee schedule theme involve possible multiple monetary amounts for each service depending on the geographic location or specialty of the involved physicians.) A concept closely related to a fee schedule is that of an RVS. An RVS is an exhaustive list of physician services in which each entry is associated with one specific numerical value that expresses the value of the service in question relative to an arbitrary numeraire. An RVS can be converted to a fee schedule by multiplying the relative value of each service by a monetary conversion factor.

An ordering sequence for the list of services is generally provided by a procedural coding and terminology system, a taxonomy of physician services. The most commonly used procedural coding and terminology systems are: 1) the various versions of the California Relative Value Studies; 2) *(510)* the system primarily used for diagnostic coding but which also includes the procedural coding scheme used in Medicare's prospective hospital payment system; and 3) the Current Procedural Terminology, 4th Edition (CPT-4) (85) the coding system developed under the auspices of the American Medical Association and currently incorporated in the HCFA Common Procedure Coding System (HCPCS).[1]

I By HCFA policy, by July 1984, all carriers were to have converted to the use of HCPCS for all Medicare Part B data to be submitted to HCFA central office in Baltimore.

Fee schedules offer a method of fee determination within the context of fee-for-service reimbursement that can address many of the problems currently perceived within CPR. These include such issues as variations in approved charges, unpredictability of payment amounts, confusion on the part of beneficiaries and providers, and limited Government control over rising price levels for physician services.

Because under a fee schedule a single fee is paid for a particular service to any physician (within a particular peer group in a particular jurisdiction), variations in approved charges are eliminated within that peer group and jurisdiction. In an extreme form, a national fee schedule that did not recognize specialty distinctions for payment purposes could provide a single payment rate for a specific service for all physicians in all parts of the country. There would be no variations in payment. More likely forms of fee schedules would involve some geographic distinctions for payment purposes, such as fee schedules applicable on a statewide or carrier-wide basis. Under some circumstances, specialty distinctions for payment purposes could be a feature of fee schedules.

The establishment of a set of fee schedules could also highlight differences in payment levels for various services, such as those observed between procedural and nonprocedural services. Because the relative approved charges for any two specific services would be identical across physicians given a fee schedule, it would be easier to identify potential discrepancies in fees in the schedule compared to discrepancies under CPR. In implementing or updating a fee schedule, one could resolve such discrepancies. Discrepancies in payment for a particular physician service by site might also be easier to resolve under the administration of a fee schedule.

Because the payment amount provided as a Medicare benefit for a particular physician service could be known in advance for both beneficiaries and physicians, there would be much less uncertainty about beneficiary coinsurance liability and physicians' expected receipts from Medicare carriers. As a result, one would expect much less confusion on the part of beneficiaries with respect to their financial obligations. Knowing their unassigned liability in advance would also enable beneficiaries to become better buyers. Under such a system, physicians' billings could proceed on a more expeditious basis under fee schedules because payment amounts could be better known in advance.

Given a fee schedule system of payment, a single parameter could be used to revise the level of payments to take account of changes in the costs of producing physician services and perceived changes in the value of those services. This is in sharp contrast to the fee revisions under CPR, which result from the interactions of individual physicians' billing decisions, changes in medical practice and medical practice costs, and departures, if any, from relative values observed in Medicare localities in calendar year 1971. Even under a relative value system with multiple conversion factors for the various types of physician services, there would be potentially greater control of increases in the prices paid by Medicare for physician services.

Uses of Fee Schedules for Reimbursement Purposes

Three alternative approaches to the use of fee schedules for the purpose of determining reimbursements can be identified:

- a schedule of maximum allowances,
- a schedule of absolute reimbursements with no permitted additional patient liabilities, and
- a schedule of Medicare reimbursements without regard to potential patient liabilities.

These alternatives are not mutually exclusive. Furthermore, any or all of these alternatives might also be combined with an expenditure cap, which might be implemented by either disallowing claims above the cap or by discounting claims until there was a reasonable expectation that the cap would not be exceeded.

In effect, Medicare's current reasonable charge process operates as a schedule of maximum allowances, with individual maximum allowances available for each procedure provided by any physician (or physician practice). For physicians

whose customary charge for a particular procedure exceeds the adjusted prevailing charge, the value of the maximum allowance is equal to that of the adjusted prevailing charge. For a physician whose customary charge is at or below the adjusted prevailing charge, the value of the maximum is equal to that of the customary charge. For all physicians, however, for any claim submitted with a charge below the lesser of the *customary* or prevailing charge, the approved charge is the submitted charge. In calendar year 1984, 18.3 percent of all Part B claims were submitted at or below the CPR limits (535).

Alternative Reimbursement Approaches

A fee schedule implemented as a schedule of maximum allowances would set upper bounds on approved charges for specific services. For example, were the fee schedule amount for cataract excisions with intraocular lens insertions to be established at $1,500, the approved charge for a physician who billed for that procedure would be set at the lower of the submitted charge or $1,500. As under the current system of coinsurance, beneficiaries would have an incentive to secure needed physician services from a provider who would bill for an amount lower than the approved charge. This incentive would be diminished for those beneficiaries with Medigap coverage that "filled in" coinsurance amounts.

A fee schedule implemented as a schedule of absolute reimbursements with no additional patient liabilities permitted would involve a significant departure from the present Medicare system of physician reimbursement. This option would involve a form of mandatory assignment—in effect, a prohibition of physician billing above the Medicare allowance. Under such a system a physician would receive only that portion of the fee schedule amount above the coinsurance (and any deductible) regardless of the submitted charge. The submitted charge, if any, might be disregarded; only the procedure code for the service would be used in determining the appropriate reimbursemerit.[2] Other things being equal, physician price under such a system would have no effect on beneficiaries' decisions with respect to individual physicians since there would be no difference in beneficiary liability for specific services.

The third alternative with respect to establishing reimbursement amounts from a fee schedule would involve an even more radical departure from the present Medicare system of determining approved charges for physician payment. A fee schedule implemented as a schedule of Medicare reimbursements without regard to potential patient liabilities would in effect be universal nonassignment. This new arrangement would involve payment of only the fee schedule amount (above the deductible and any coinsurance) regardless of the physician's submitted charges. (Although physicians might still bill carriers directly, there would be no implication that the approved charge in such cases would necessarily be payment in full.) Because the beneficiaries would be responsible for paying for the difference between the physician's bill and the Medicare allowance under this kind of system, beneficiaries would have a substantial incentive to seek physicians with low submitted charges for needed services. Such a system might also be implemented to allow a beneficiary to keep any difference between the fee allowed by the schedule and any lower fee charged by and paid to the physician.

Expenditure Cap

Any or all of the three methods of using a fee schedule for Medicare reimbursement might be modified to implement an aggregate expenditure cap for physician services. One form of such a system has been employed under the health insurance program in the Canadian province of Quebec *(388).* Under an expenditure cap system, reimbursements might be made at some fraction of the relevant amount as long as there was a possibility that the expenditure cap might be exceeded. Most likely (and comparable to the compensation schemes used by some individual practice associations (IPAs)) would be a discounting program involving payments at, say, *85* to 95 percent of expected amounts with rebates to physicians (based on billing volume) if the expenditure cap exceeded total interim payments. A somewhat unlikely version of an expenditure cap might in-

[2]Under a comparable system used for pharmaceutical reimbursement under the Medicaid program in California, providers billed for specific services often without specifying a charge, since that charge was irrelevant with respect to reimbursement.

volve payments at 100 percent of the expected level until the cap had been reached, after which no claims would be paid. (It is alleged that some Medicaid programs, in effect, employed such a system by deferring until their next fiscal year payment on all current year claims starting from the time that their expected budget limit had been reached.) Another alternative might involve payments at 100 percent during the initial quarter of the year with quarterly downward adjustments, if needed, based on projections of anticipated claims in succeeding quarters. Unfortunately, this might have the effect of producing "gaming" behavior by physicians with patients who presented afflictions during the last quarter of the year. In this regard, in Quebec it is reported that some physicians at or near their billing limits join "billing-pools" to take advantage of unused billing quotas of other colleagues at the end of a billing period (388).

One other issue that might arise in the implementation of an expenditure cap implemented through discounting would involve beneficiary coinsurance and nonassigned liability. If beneficiary coinsurance were calculated on the basis of the discounted approved charge, there would be a net decrease in expected beneficiary liability and, possibly, an increase in beneficiary utilization in response to the change in price. Other things being equal, a budget neutral proposal would retain beneficiary coinsurance liability with respect to the undiscounted charge. A more serious problem might be anticipated with respect to nonassigned liability under a discounting system. If physicians collected from the beneficiaries the full difference between their submitted charge and the discounted approved charge, the later rebates, if any, would involve double payments to physicians since the rebate amount would already have been collected from the beneficiaries. Further, even if beneficiaries were "indemnified" in this process by being reimbursed for the entire undiscounted approved charge on unassigned claims, under this system physicians would have an increased incentive to not accept assignment. Having the certain beneficiary payment in lieu of the potential rebate would minimize the "loss" to the physician that might occur if the expenditure cap were exceeded.

Initial Implementation Issues

In addition to issues with respect to the ability to administer a fee schedule *on* a *continuing basis* (to be addressed later in this chapter), there are a variety of issues that relate to problems attendant solely to the initial implementation of a fee schedule. Such issues include the following:

- who might participate in the development of a fee schedule (specifically involving antitrust related prohibitions with respect to physician organizations);
- whether the method of fee schedule construction needs to be the method of fee schedule maintenance over time; and
- how to handle the transition from CPR to a fee schedule.[3] The last issue prompts the question of exactly how close to a fee schedule is the current distribution of approved charges?

The **Antitrust** Issue

As a purely mechanical exercise, any Medicare carrier could be instructed to estimate average approved charges for each service that it has reimbursed. A listing of the resulting charges by service could be used as a fee schedule. However, because of technological change in medical practice this fee schedule would soon become inadequate. Continuing input from physicians would be necessary to update the fee schedule, both with respect to new procedures and to changes among the established ones.

Physician input in the development of a fee schedule clearly is useful and probably is essential. The method through which that input is obtained, however, may be suspect because of possible violations of one or more of the antitrust

[3]Basically, there would be few administrative difficulties in converting from CPR to a fee schedule. The major complication would be what policies, if any, would be used in the case of physicians whose approved charges would be reduced following the conversion. Previous physician payment reform proposals have suggested the use of "hold-harmless" measures that, in effect, would freeze individual physician's approved charges rather than reducing them until the time when increases in other charges brought the frozen charges into proper alignment. Another alternative would involve blending the new rates with the established ones as has been used in the conversion of hospital payment policies under the prospective payment system.

statutes. It is hard to imagine physicians' establishing a fee schedule as something other than pricefixing. In fact, the Federal Trade Commission (FTC) has sued several medical associations with respect to their actions involving the *publication* of relative value studies or participation in fee review efforts. FTC has also issued a number of advisory opinions that have had the effect of circumscribing concerted physician action with respect to the development of fee schedules. The effect of these opinions is not to prohibit physician input into the development of fee reforms. Individual physicians and medical societies may not negotiate fees but may discuss reimbursement issues—including relative values—with third-party payers without running afoul of antitrust prohibitions *(93).*

FTC has modified its consent orders with several physician associations to note specifically that a physician association is not prohibited from "providing information or views, on its own behalf or on behalf of its members, to third party payers concerning any issue, including reimbursement" (554). What has been proscribed by FTC orders are agreements between physician associations and third-party payers, "whether extracted by negotiation or coercion, and any conduct in furtherance of such a result" (554).

At the outset, it should be noted that the Medicare program (and any State Medicaid program) cannot be held to be in violation of antitrust prohibitions. If the Health Care Financing Administration (HCFA) unilaterally issued a fee schedule without physician input or if it adopted without modification the *1974* California Relative Value Study, there would be no violation. There is a "deemed repeal" of the antitrust acts for organizations established through the direct actions of the U.S. Congress. State actions (such as those that might involve Medicaid) are also exempt *(377).*

Procuring physician aid even in a legal fee schedule development process, however, might be somewhat convoluted. The antitrust laws were instituted to prohibit "unreasonable" restraints on trade and competition (377). The drafters of those acts can be presumed to have believed that vigorous competition among many sellers would be the preferred state in any market because a system of competition would foster efficiencies unless restricted by private agreements or actions. However, that competition in the (physician) market might not produce good results is, in and of itself, not an acceptable antitrust defense. That the alternative, for example, to a fee schedule "competitively" derived from bilateral monopoly negotiations between a private market insurer and a medical society might not involve perfect competition is also not relevant. Therefore, that physicians might perceive an agreement to cooperate in the development of a relative value scale—much less a fee schedule-to be an antitrust violation might inhibit needed physician cooperation even though many types of physician contributions to such an effort would not be perceived by FTC itself to be potential antitrust violations,

Three ingredients are needed to prove an antitrust violation: 1) there must be an agreement between two or more otherwise independent parties (usually in the same line of business); 2) the agreement must restrain trade or competition; and 3) the agreement must be "unreasonable" in terms of its effects on competition *(267).* An illegal agreement would be one that suppresses or destroys competition, not merely an agreement that regulated the behavior of the parties concerned while promoting competition,

FTC has promulgated its judgment that RVSs for physician services may have anticompetitive consequences including the following (554):

- establishment of price relationships without regard to quality, efficiency, or demand differences;
- fragmentation of billing categories, with separate charges for individual services resulting in higher prices;
- concerted or interdependent adherence to relative value scales by physicians; and
- establishment of a "starting point" from which collusion may occur,

In addition, FTC also noted in its advisory opinion to the American Society of Internal Medicine (ASIM) that an agreement by ASIM's members to adhere to its proposed "relative value guide" would do the following *(556):*

- tamper with market pricing structures;
- pose a danger of higher prices with respect to some medical services;

- stabilize prices artificially; or
- restrict output of certain services, viz., procedural services, and possibly restrict the output of nonprocedural services as well.

The major objections involve the possible effects on the price structure in the markets for physician services.[4] In fact, any relative value scale adopted by Medicare would likely find use in the private market by both physicians and other health care insurers. Physicians, insurers, and health care financing researchers continue to use the California Relative Value Study even though its publication has been enjoined by FTC since 1979.

Should HCFA initiate fee negotiations or request or be granted congressional authorization to conduct fee schedule negotiations with one or more medical societies, the implied repeal of antitrust violations would be effective. However, were HCFA to issue a solicitation in the form of a Request for Proposals for an RVS, some medical societies that considered responding would be unlikely to respond because they might consider themselves to be in danger of being sued by FTC or a competing physician association for violating antitrust prohibitions.

Implementation v. Maintenance

Clearly, any particular method of creating a fee schedule could be replicated any number of times as needed to adjust for changes over time. Because of this, it might be possible to establish a fee schedule system for which the method of updating fees was identical with the method of original implementation. An easy example might be the use of one year's average submitted charges to estimate a next year's fee schedule. Some methods, however, do not lend themselves to easy or at least inexpensive replication, viz., empirical estimates of resource costs associated with specific procedures. In such cases, replication as a means of updating might imply a very expensive system—perhaps, therefore, an infeasible system.

Replication, however, is not the only means of updating. The Medicare Economic Index (MEI), for example, which is used in the process of updating Medicare prevailing charges, could be used to update a fee schedule regardless of the process used to derive that schedule. Other price or cost indexes might also serve this function. Use of an index might allow for the establishment, for example, of an RVS through a one-time physician consensus development process for each procedure or set of procedures. This process would not have to be repeated every year. Replication of the original process for the reconsideration of relative values (or relative fees) might be necessary only to establish levels for newly introduced procedures or for other practice changes that were believed to warrant such reconsideration.

A varied mix of methods might be used to improve the rationality of any particular fee schedule over time. For example, one might initially change to a Medicare fee schedule by having carriers estimate average approved charges for each procedure to establish a baseline RVS. For payment purposes, this RVS might be converted to a fee schedule that might be updated each year using the MEI. New procedures might be given interim payment rates following a consensus development process. Final payment rates could be established following estimations of resource costs, perhaps 18 to *36* months after the interim rates had gone into effect. Finally, the members of an independent physician payment review commission might review and recommend changes to correct any interjurisdictional or interspecialty differences brought to their attention.

Transition From CPR to a Fee Schedule

If a particular fee schedule were identified and deemed to be desirable, an initial problem would involve the transition from the current system to that schedule of fees. The expectation under the current system is that for approximately no less than 25 percent of the Medicare volume for any procedure, the approved charge is equal in value to that of the adjusted prevailing charge, with the

[4] The fragmentation issue arises in the evolution of procedural coding and terminology systems; it is not a function of RVSS. The output restrictions referred to in the FTC's advisory opinion to ASIM involve procedural services most likely performed by physicians who are not internists. One infers from the FTC opinion that surgeons, for example, would rationally reduce the supply of their services if their payment rates declined. If ASIM members or other physicians, however, were successful in raising the prices of their own services attendant to publication of their relative value guide, buyers might reduce their purchases of those services (555).

rest of the distribution of charges at a variety of lower levels. For some time, however, there has been speculation that Medicare payment levels were moving in the direction of de facto fee schedules because of the implementation of the MEI. To the extent that this phenomenon has occurred, a transition to a de jure fee schedule might be less of a problem.

By the early **1970s,** it was clear that the use of one year's submitted charges to establish the next year's customary and prevailing charges provided an incentive to accelerate fee increases. As a result, there was a concern expressed that Medicare fees were fostering inflation in medical care prices, rather than merely following changes in the costs of providing physician services. To attempt to ensure that increases in Medicare approved charges followed rather than led inflation in physician fees, legislation was passed to institute a procedure to cap prevailing charges. The level of the cap would be changed each year through the use of an "economic index, " which explicitly estimated both increases in the costs of providing physician services[5] and increases in general earnings levels. The MEI was mandated in section 223 of the Social Security Act Amendments of 1972 (Public Law 92-603). Because of the imposition of the Economic Stabilization Program in 1972, the provisions of the MEI were not implemented until July 1, 1975.

Prevailing charges in effect at the passage of the legislation provided the initial caps on approved charges. Thus, the base year for the MEI was July 1, 1972 through June 30, 1973, fee screen year 1973.[6] In any subsequent fee screen year, the "adjusted" prevailing charge for any service would be the lower of the 75th percentile of the distribution of volume weighted customary charges—now known as the "unadjusted" prevailing—or a value equal to the product of the prevailing charge from fee screen year 1973 multiplied by the current value of the MEI. For example, for a procedure that had a fee screen year 1973 prevailing charge of $100 and for which the fee screen year 1982 "unadjusted" prevailing charge was $185, the "adjusted" prevailing charge would have been $179—the value of the MEI times the base year prevailing charge (116).

From the MEI base year through June 1983, physician prices as measured by the Consumer Price Index (CPI) increased 258 percent while the MEI increased 206 percent. Because of this disparity, it has been assumed that the MEI might ultimately transform the CPR system into a fee schedule based on the fee screen year 1973 prevailing. However, because the particular limit (submitted, customary, prevailing, or other charge) used to establish the approved charge for any physician bill to Medicare has not generally been recorded by carriers during the payment process until recently, there has never been a complete national source of statistics on the constraints imposed by the MEI. Thus, it has been impossible to distinguish whether an MEI induced fee schedule will be achieved or merely approached asymptotically.

The available evidence is equivocal with respect to how close the current system is to a fee schedule. For some years, the *Medicare Directory of Prevailing Charges (532)* has included an indicator to identify for 110 common physician services those prevailing charges that have been established through the use of the .MEI. In fee screen year *1984, 55* percent of all prevailing charges listed in the *Directory* for general practitioners and *62* percent of the procedures for specialists were established by the MEI *(532).* These numbers, however, have been relatively stable if not declining since at least *1981,* a pattern that is not indicative of the imminent coming of fee schedules for all services.

Using the MEI indicators and other data collected for the fee screen year 1984 *Directory,* the Congressional Budget Office (CBO) estimated that *60* percent of approved charges in the Medicare program are priced at levels determined through the MEI. They estimate that by *1990,* this will increase to *70* percent. Those estimates, however, are probably somewhat upward biased because of peculiarities in the data definitions in the in-

[5]The components of physician practice expenses that are included in the MEI are staff salaries, rental costs, automobile expenses, supplies, professional liability insurance, and "all other" costs.

[6]Approved charges for that time period had been established through statistical manipulations of physician charges submitted during calendar year 1971.

structions to Medicare carriers for collecting these data.[7]

An alternative source is an analysis of calendar year 1983 carrier data from the State of South Carolina (247). This analysis of data on physician services excluding anesthesiology showed that *43.2* percent of approved charges were established at the level of the adjusted prevailing. Because the adjusted prevailing is the lower of the MEI cap or the actual 75th percentile of the distribution of volume weighted customary charges, 43.2 percent must be considered an upper bound estimate of the impact of the MEI in that State. In addition to this aggregate estimate, Juba estimated comparable percentages for a variety of types of services. These ranged from 65.2 percent and 64.6 percent for office and hospital visits, respectively, to 38.9 percent and 30.3 percent for radiology (professional component only) services and surgery, respectively. These statistics suggest that the MEI may be closer to producing a fee schedule for physician visits and other nonprocedural services than for surgeries and some of the more technical services. It does not suggest that a fee schedule is at hand as a result of the MEI.

If this interpretation is correct, however, transition to a fee schedule may become both easier and somewhat more complicated. The ease in transition would be found in the problem of establishing fees for the office visits and hospital visits, services responsible for significant fractions of Medicare expenditures. To the extent that there is relatively little variation in approved charges with respect to individual visit types, intraspecialty disputes over appropriate prices maybe lessened. Standard deviations with respect to average approved charges for the four most common office and hospital visits (in South Carolina) were found to be between $2.35 and $3.40 (247) (see table 5-1). If the distribution of approved charges is roughly normal, approximately two-thirds of the approved charges for any of those visits are within $3.40 or less of the average. In fact, 85 percent of the limited followup office visits exhibited approved charges within 25 percent of the State mean approved charge across all specialties, and 94 percent were within 10 percent of the relevant specialty mean. Thus, establishing a fee schedule amount at the average approved charge would not imply substantial changes in unit payments.

On the other hand, standard deviations for some of the surgical procedures, for example, are 10 to 100 times greater than those of the most common visits. This relationship implies that for a particular patient or—for some physicians—all patients, a single fee schedule amount, even if based upon the average, might involve a nontrivial loss of unit revenue. Such a prospect might cause a physician to change his or her clinical decisions about the patient's therapy or his or her entrepreneurial decisions about assignment or participation in the Medicare program.

To the extent that this problem exists, it may be advisable to phase-in a change to a fee schedule. In the past, proposed Medicare physician payment changes have been designed to be phased-in through the use of "hold-harmless" provisions. Under this approach, the payment for a particular procedure to a physician whose approved charge would otherwise exceed the fee schedule amount is frozen at the previous approved charge level until such time as approved charge increases for other physicians bring the fee schedule amount to that level. This approach has the effect of temporarily rewarding physicians whose fees are above average. If the expenditures for those

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'Data for the ***Directory*** submitted by the carriers for each of 110 services include: the adjusted prevailing charge, the 50th and 75th percentiles of the distributions of volume weighted customary charges, and the total number of services whose prices were used to establish the prevailing charge. By assuming that the distribution of customary charges is statistically normal or near normal, one can estimate the actual percentile of the prevailing. The total units of service can then be used to aggregate expenditures over the entire set of procedures. This is basically the CBO procedure.

Because the 50th and 75th percentile estimates are established by identifying the lowest customary charge that is no less than (i.e., equal to or ***greater*** than) the desired percentile, the resulting CBO percentile estimates will be biased upward by varying degrees. Further, to the extent that procedures introduced since **1971** have been less affected by the MEI, the 110 procedures included in the ***Directory*** will be less representative of the distribution of all physician services provided to Medicare beneficiaries, again contributing an upward bias to the estimates. Finally, of the 110 procedures included in the ***Directory,*** inpatient surgical procedures tend to be underrepresented, because the surgeries included in the ***Directory*** are a **much smaller proportion of approved charges** for all surgeries than the comparable proportion represented by the specific types of physician visits included in the ***Directory.*** Because recent evidence (247,294) suggests that visits are relatively more constrained by the MEI than surgeries, the underrepresentativeness of surgeries in the ***Directory*** will impart an additional upward bias to the resulting estimates of MEI impact.

Table 5-1.—Mean Approved Charges and Standard Deviations for Selected Medicare Services,[a] South Carolina, 1983

	Percent of total approved charges in State	Mean approved charge	Standard deviation
Office visits:			
90080 Comprehensive: established patient	1.03%	$ 42.48	$ 15.47
90020 Comprehensive: initial patient	0.81	38.11	17.53
90060 Intermediate: established patient	1,37	18.23	3.68
90050 Limited: established patient	9.57	12.83	2,35
90040 Brief: established patient	0.72	11.54	2.74
Hospital visits:			
90220 Comprehensive examination	4.56	54.63	13.76
90250 Limited: followup	11.86	16.26	3.40
90240 Brief: followup	0.53	13.99	2.59
Other medical procedures:			
93547 Selective angiography	0.67	563.27	46.64
90620 Consultation: initial comprehensive	1.85	63.01	10.91
90630 Consultation: initial complex	0.53	63.01	9.43
99174 Critical care: extended	0.65	39.69	10.53
99173 Critical care: intermediate.	0.73	36.56	7.97
93000EKG	1.56	23.27	3.20
Surgery:			
33513 Quadruple bypass	0.65	3,691.17	175.67
33512Triple bypass. .....,	0.92	3,617.33	344.82
27130 Athroplasty	0.66	2,009.57	257.69
66980 Lens prosthesis: cataracts	7.15	1,335.70	139.51
27244 Femoral fracture	0.89	1,003.70	93.50
44140 Colectomy	0.67	984.54	123.80
27236 Femoral fracture: proximal end	0.52	835.26	55.86
66920 Cataract removal extraction lens	0.61	794.57	40.62
52601 Transurethral resection of prostate.	2.44	792.16	35.72
47605 Cholecystectomy with cholangiography	0.69	702.04	72.98
43239 Upper G.I. endoscopy with biopsy	0.52	229.48	34.54
43235 Upper G.I. endoscopy .',	0.72	208.59	35.79
Radiology:			
74240Upper G.I. tract and exam	0.51	31.12	3.22
77405 Therapeutic: intermediate	0.51	24.10	3.05
71020 Two-view chest X-ray	1.34	13.76	1.44
71010 Single-view chest X-ray	1.01	9.71	.77
Pathology:			
82947 Glucose test	0.53	5.59	1.04
81000 Urinalysis.	0.70	3.79	.48

[a]Procedures that account for at least 0.5 percent of approved charges in the State.

SOURCE: D.Juba, "AnalyslsoflssueaRelating tolmplementing aMedicare Physician FwSchedule;' prepared for the US. Congress, Office of Technology Assessmerit, Washington, DC, November 19S5.

"above average" fees are used, in effect, to reduce the increases allowed for other physicians, the hold-harmless approach penalizes those physicians whose fees were below average. An alternative would involve blending fee schedule payments with CPR payments during a transition period. This approach allows for a faster transition to single payment rates than would "hold harmless'' provisions, while reducing the magnitude of any windfall losses or gains that might attend an "overnight" implementation of a fee schedule.

Updating, Maintenance, and Appropriateness Checks

As indicated earlier, the method of fee schedule origination need not be the method of updating. For this reason, relatively costly methods of creating fee schedules or RVSs could be consid-

ered to take advantage of any of their potential design features. (Replication could remain a method of updating either on an annual basis or for less frequent or partial recalibration.) In the absence of replication, there are two general problems that can be anticipated in updating a fee schedule: 1) identifying appropriate aggregate changes in the level of fees, and 2) identifying appropriate changes in relative fees within the schedule. (One might note that these are the two primary functions given to the Prospective Payment Assessment Commission (ProPAC) under Public Law 98-21, which established the prospective payment system for Medicare Part A.)

If the market for physicians' services were perfectly competitive and if CPR did not contain incentives to raise billed charges in one year to increase approved charges in the next, CPR would have a theoretical advantage with respect to maintenance of payment levels. Other things being equal, if the costs of practice of all physicians rose, billed charges would also rise appropriately to reflect input cost increases, and approved charges would follow. If the costs of producing a particular physician service rose more than other services, one should observe a greater increase in approved charges for that service under CPR. However, it has been noted that CPR's incentives can influence billed charge levels. Further, although competitive, the market for physicians services is not perfectly so. Given a conversion to a fee schedule by Medicare, some other alternative to sole reliance on the prior year's billings would have to be adopted for fee schedule updating.

Aggregate Changes Over Time

The model of a perfectly competitive market can be used to examine how prices should change over time in an efficient economy. Such an examination can provide guidance in the development of policy for updating a fee schedule. Specifically, in a perfectly competitive market, suppliers would behave as if they were minimizing the costs of producing their services for any level of total output. Increases in input prices would be reflected in changes in suppliers' cost functions,[8] from which one could infer the price increase that would be anticipated in a competitive market with a fixed level of output. The mathematical results of this exercise are the following: the expected proportional change in cost for a cost minimizer given changes in input prices is equal to the weighted sum of proportional changes in input prices, where the weights are the shares of total cost of the various inputs. Hence, one could develop an index to estimate the most "efficient" increase in fees that would be appropriate given observed increases in physicians' costs of practice.

There are two available indices that relate to physicians' costs and prices. They are the Professional Services Index of the Medical Care Component of the CPI and the MEI. The former is somewhat better known to the general public and has been computed on a monthly basis longer than the Medicare program has been in existence. It is based on 79 somewhat general physician services,[9] the billed charge for which is requested on a monthly or bimonthly basis from a fixed cohort of roughly 650 physicians located in urban areas across the United States. For historical reasons, the services of ophthalmologists are included in a separate vision care index, and the services of anesthesiologists and pathologists are included in the Hospital Price Index subcomponent of the CPI.

For the purpose of updating a fee schedule, the CPI professional service subcomponent does have the advantage of being an index of fees that physicians charge their patients. Because it is based on a fixed basket of services, for a fixed cohort of physicians who are asked prices charged to private-pay patients, it may even be biased downward as an index of physician fees in general. In any case, it does not directly reflect changes in the costs of physicians' practices,

The MEI was mandated by the Social Security Act Amendments of *1972* (Public Law 92-603) in response to concerns that increases in Medicare approved charges led rather than followed inflation in physician fees. To break this pattern, the Senate Finance Committee had proposed to limit increases in Medicare prevailing charges by com-

[8] A cost function denotes the mathematical relation between input prices and the minimum cost of production of a particular level of output for a particular production process.

[9] The exact number of specific services included is much larger, since each physician practice in the sample provides his or her billed charge for a specific service within one or more of the somewhat general categories.

paring the prevailing to an index based on increases in the costs of producing physician services and increases in general earnings levels. The Finance Committee did not specify the exact form of the index, but it did suggest that the weighted sum of the price changes for various practice inputs might be an acceptable approach. The notion is common sensical: if the prices of 40 percent of one's inputs are increasing by 10 percent and the remainder are increasing by 15 percent, then on average input costs are increasing by 13 percent (13,251).

Although neither the Senate staff nor the Social Security Administration staff who developed the MEI (118) began with a cost function analysis, the index that was developed is a closer analog than the CPI to a predictor of the price increases expected from efficient physicians who faced increasing input prices. There are a number of refinements that might be introduced in the MEI, particularly with respect to the question of productivity changes, but the existing MEI might be an appropriate index for use in updating the general level of fees in a Medicare fee schedule. In an RVS-based fee schedule, one would simply multiply the change in the MEI by the existing conversion factor to obtain the appropriate increase in the conversion factor.

Recalibration

The index approach to fee schedule updating is administratively easy, but it embodies the implicit presumption that relative fees within the schedule are correct and remain correct. At this point, one could reprise the justifications for locality and specialty differentials, restate the arguments for using the payment system to encourage the provision of some services and to discourage others, and review the appropriate way to establish and monitor approved charges for new procedures that enter the repertoires of a significant number of physicians. Because the circumstances that underlie these issues are dynamic, one would want the fee schedule system itself to have a mechanism for responding to such dynamics.

For example, if the Medicare approved charge for a particular service were *$25* in Manhattan and $20 in northern New Jersey, there could be a periodic review of the need to continue such a differential. Similarly, specialty differentials for specific services could be reviewed. The approved charges of new procedures not only could be reviewed over time to verify efficiencies that could be expected to evolve, but the approved charges of any procedures that are replaced by new ones could be examined to determine any continued justification for paying different prices for services with equal results.

Keeping Fee Schedule Levels and Cavitation Levels Commensurate

Within the framework of the fee schedule as a method of payment for physician services, aggregate price levels and relative price levels remain the two basic issues. However, even if fee-for-service continues as the predominant method of payment, whether by fee schedules or not, there are a substantial number of Medicare beneficiaries whose physician services will be provided under cavitation arrangements, such as competitive medical plans (CMPs) or health maintenance organizations (HMOs). Comparisons of the expenditures for physicians' services under the two systems may provide another means of assessing the appropriateness of fee levels under fee-for-service. If there were HMOs that maintained disaggregate data on their costs of treating specific ailments on an ambulatory basis, such costs might be used to examine approved charges for the physician services used in those treatments.

The comparisons might also be used to examine the appropriateness of payments made under prepayment arrangements. For example, in California it was recently observed that the State pays more per Medi-Cal (Medicaid) recipient enrolled in HMOs than it does for recipients who receive services in the fee-for-service sector (74).10 Nonetheless, because the level of costs of CMPs may rise to the level of prepayment amounts, one might justifiably use fee schedule payment level changes to assess proposed changes in prepayment levels.'[1]

IOThis appeared to be a resldt of **State stringency in raiSing fee** levels for fee-for-service providers rather than as a result of HMO inefficiencies.

"Under a worst case scenario, average adjusted per capita cost (AAPCC) levels for competitive medical plans (CMPS) would be overestimates because of beneficiary selection favorable to the CMPS. CMP costs, however, could rise even further as they compete for healthy patients by offering additional benefits or amenities. AAPCC levels based on non-CMP enrollees would also rise due to exacerbated adverse selection. As a result, neither CMP costs nor aggregate expenditure levels for the nonenrolled beneficiaries would be an appropriate guide to future CMP prepayment levels.

APPROACHES TO THE INITIAL CONSTRUCTION OF FEE SCHEDULES

For the purpose of discussion, methods to construct fee schedules will be partitioned into two categories. The first includes all approaches based on the concept of an RVS—whether a charge-based, resource-cost-based, or consensus RVS. The second labeled "competitively" developed fee schedules, includes four methods that for the most part are based on either implicit or explicit use of market mechanisms to develop a set of fees. The first two involve unilateral buying policies that might be adopted by the Medicare program in developing a fee schedule. The third involves soliciting for competitive bids from physicians or other suppliers of physician services from which a fee schedule would be constructed. The fourth alternative involves direct negotiations between the Medicare program and physician groups to explicitly develop a fee schedule.

Relative Value Scales

An RVS, in and of itself, is not a fee schedule. Given a procedural coding and terminology system listing all physician services, an RVS is a cardinal ranking of each of those services with respect to some conception of value.[12] For example, a total hip replacement might have a ranking of 40.0 compared to the ranking of an inguinal herniorraphy of 9.0 (76). Each service's ranking allows an ordering of that service ***relative*** to all others. The difference between any two services' rankings in some sense is a measure of a difference in value (192).

Conversion of an RVS to a fee schedule is relatively straightforward. Assigning a monetary conversion factor to a relative value unit allows the computation of a fee for any service: the fee is simply the product of the service's relative value in units multiplied by the conversion factor. Alternately, there might be different conversion factors associated with different types of service. Thus, two services might have the same relative value, but be assigned different fees. The health insurance programs in France use this type of system (115).

RVSs for physician services area relatively recent phenomenon. The Casualty Actuarial Society developed RVSs for commercial insurers in the 1940s (430). The best known of the RVSs are those that were published by the California Medical Association. Separate editions were published in 1956, 1957, 1960, 1964, 1969, and 1974. (As noted above, the California Medical Association was enjoined from publishing any further editions in 1979.) Other professional societies, such as the American Society of Anesthesiologists and the American College of Obstetrics and Gynecology, have also developed RVSs.

The Value in Relative Value

The concept of value embodied in any RVS is important. Differences in the concept to be used may lead to quite different sets of relative values. One might argue that the values in an RVS should reflect differences in the costs of producing the services. This approach would tend to establish RVS based fees to physicians that did not distort their clinical decisionmaking. On average the resulting approved charges would be a constant multiple of estimated costs and there would be no expectation that any one set of services would be particularly encouraged by the payment system. However, even if this type of RVS were to be based on the costs of the most efficient ways of producing the services, there might be an objection that some services of little or no medical benefit to patients should not be valued at cost.

Alternately, therefore, one might argue that values in an RVS should reflect differences in the statistically expected value of a change in health status (compared to not receiving the service) of a patient who receives a particular service. Physicians might be able to acheive some concensus on this issue, although patients' perceptions of the value of physicians services might well be varied, and might differ from those of the physicians, as

12The units of re]ative value for any RVS are arbitrary. ~tho@ one might choose a numeraire semice (228), the choice of a numeraire service would itself be arbitrary and none of the issues of the California RVS, for example, was based on such a numeraire. The number of RVS units for any service has no meaning except in relation to the number of units of some other service.

well as from the values that might be discerned by the Medicare program. In addition, from the latter perspective, the value of a particular service might be placed in the context of all of the other nonphysician services that might be provided in conjunction with the services in question. A service provided in an ambulatory care setting, for example, might be preferred to an apparently equivalent service provided in a hospital because the total cost to the program would be lower.

Relative values, therefore, could reflect not only the costs of efficient production, including the costs of physicians' time, but also the preferences and costs of patients, the Medicare program, and probably those of society as a whole. It is unlikely that any set of RVSs would meet each of these requirements. (One might argue that, if nothing else, because historical charges represent the resultant of: 1) physician costs; 2) Medicare, insured, and private-pay patients' preferences; and 3) Medicare rules and regulations, the relative values implicit in charge histories are an appropriate source for an RVS.)

As a practical matter, however, there area variety of ways of constructing an RVS. These methods can be assessed in terms of the derivation of their relative values and possible impacts of their use for establishing a fee schedule. At the outset, it should be noted that attempts to date to compare relative value scales from various sources have found few aggregate differences among alternative RVSs (191,227). Some of those differences, however, may be significant for the choice of RVS or modification of an RVS that might be employed in establishing a fee schedule. Similarity among alternative RVSs strengthens the case for using a relatively inexpensive method of constructing an RVS.

Charge-Based Relative Value Scales

One first option for fee schedules would involve the use of carriers' patient history data to establish an RVS. Estimation of a central tendency measure (mean, median, specified percentile) for each physician service would establish that service's relative value. Based on the total approved charges for all procedures, a single conversion factor would be established that would make the resulting fee schedule budget neutral compared to CPR.

Hadley and colleagues found that the choice of the central tendency measure does not appreciably affect RVS scores (191). This would argue for the use of average charge values, which are mathematically easier to compute than percentiles. If the incidence and magnitude of outliers were found not to be similar across procedures, use of the median charge might replace the use of averages.

Hadley and colleagues examined submitted charges, prevailing charges, and reimbursements for specific procedures and found that the choice of charge measure also had little effect on the resulting RVS scores that might be computed from history data (191). Data used for that analysis included fee screen year 1982 national data from the Medicare *Directory of Prevailing Charges* and 1978 Medicare claims data from the State of California. In light of the recent findings that allowed charges for visits appear to be a smaller fraction of billed charges than for the more technical services *(247,294),* one might expect that an RVS based on submitted charges would differ from one based on allowed charges, especially with respect to visits. To the extent that submitted charges reflect current private market values that source would be preferred as a source of relative values .13

This option is the only one for which there exists empirical data on any of the effects of a change from the current CPR system. Claims data from the State of South Carolina[14] from calendar year

IJR$_{egar}$dl$_{e}$ss of th$_{e}$choice, approved charges would be used to determine the conversion factor to preserve a budget neutral change to this type of RVS-based fee schedule.

liA1th$_{ou}$@ the State of South Carolina is relatively small and approved charges per claim in that jurisdiction are **14 percent lower than** the **national average, its implementation** of the CPR system for determining approved charges is not believed to be unrepresentative of all carriers. In March of 1983, for example, the net claims assignment rate in South Carolina was **56.7 percent compared to 53,2** for the United States as a whole **(530). In the first quarter of fiscal year 1983, the approved charges as a percentage of billed charges** in South Carolina were **78.1 percent and 76.2 percent, respectively, on assigned and unassigned claims. The comparable U.S. statistics *were* 76.1 percent and 76.6 *percent, respectively. Where*** South Carolina's claims processing system is different from the nation's as a whole is in its early introduction of the use of CPT-4 as the procedural coding and terminology system for physician services, a system that is now required of all carriers. For that reason, data analysis of potential chan~es in South Carolina maybe representative of national effects that may be forthcoming.

1983 to assess the effects of a change to a fee schedule based on average approved charges without specialty differentials (247). By design, the system was budget neutral, so there was no change in estimated Medicare expenditures. The major effect of the simulated change to a fee schedule was to increase payments to general and family practitioners and to reduce program payments to internists. Payments to surgeons and radiologists were largely unaffected, i.e., total payments for the services of those specialists remained within 1 percent of actual payments under CPR (see table 5-2). With no changes in physicians' assignment decisions following the change to a fee schedule, anticipated total Medicare revenues of physicians would change by smaller amounts than the change in Medicare payments. The reason is that beneficiary costs on unassigned claims would increase for some of the patients of physicians whose approved charges had been reduced.

Juba's examination of aggregate estimated changes in physicians' Medicare revenues showed that for individual physician practices roughly two thirds of all physicians would have observed either no change in Medicare revenues or a change of less than 5 percent (see table s-3). A total of 6.4 percent of all physicians would observe losses of more than 10 percent percent, including 14.3 percent of all internists. Nearly 10 percent of all physicians would observe increases in excess of 10 percent, including 19 percent of all general practitioners and 11.3 percent of family practitioners, but only 3.8 percent of radiologists and 1.5 percent of all internists (see table s-3).

Similar results were found by Sulvetta in simulating a fee schedule based on average approved charges using California data from 1980 (455). Total anticipated Medicare revenues for four out of five specialties[15] studied were changed by less than 1 percent; internists' Medicare revenues were reduced by 1.64 percent. Of greater interest is the range of gains and losses within each specialty: 86.2 percent of physicians were found to experience revenues under the fee schedule within 5 percent of their previous experience (with *29* percent of physicians experiencing no change). However, 6 percent of physicians were found to experience gains of more than 5 percent, and 7.7 percent to experience losses greater than 5 percent. The latter group included 12 percent of the internists and 10 percent of the orthopedic surgeons.

Resource-Cost-Based Relative Value Scales

It has long been recognized that sound reimbursement principles require that (physician) payment levels not be greater than needed to procure sufficient, high quality physician services, but also not be less than needed to reflect the costs of *efficiently* producing those services, including a return on physicians' investments in training. Hence there has been interest in the development of a resource-cost-based RVS.

On the face of it, the steps involved in estimating resource costs should be straightforward. One begins with the enumeration of the constituent re-

[15]The five specialties were general practice, general surgery, internal medicine, orthopedic surgery, and ophthalmology.

Table 5-2.—Simulated Percent Changes in Medicare Program Payments Following Conversion to a Fee Schedule" From CPR Payment, South Carolina, 1983

	All specialties	General practice	Family practice	Internal medicine	General surgery	Orthopedic surgery	Ophthalmology	Radiology
Office visits	0.0	19.60/o	16.60/0	– 16.50/o	1.2%	–6.00/0	—	—
Hospital visits	0.0	17.4	11.5	–8.8	6.6	—	—	—
Surgery	0.0	–	—	8.4	0.1	–0.9	0.0	—
Radiology	0.0	—	—	—	—	—	—	–0.1
Pathology	0.0	1.3	– 1.8	1.8	0.1	–4.5	—	—
All types of services [bc]	0.0	16.5	11.9	–7.5	1.0	–0.6	0.1	–0.2

—Procedures in the cell account for less than 5 percent of total approved charges for that specialty.
[a]Fee schedule bag@ on statewide average approved charges without regard to physician specialty.
[b]Includes physicians in listed specialties and others.
[c]Includes other medical services; excludes anesthesia.

SOURCE: D. Juba, "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule," prepared for the US. Congress, Office of Technology Assessment, Washington, DC, November 1985.

Table 5-3.—Simulated Percent Changes in Physicians' Medicare Revenues Following Conversion to a Fee Schedule[a] From CPR Payment, South Carolina, 1983

	Reductions greater than 25°/0	– 1 1 % –250/o	– 6 % –10!40	– 1 % t o –5%	N o change	+ 1 % to +5%	+6% to + 10%	+11 to + 15%	Increases greater than 25%
All specialties	0.5%	5.9%	6.50/o	21.9"/0	23.1 %	22.30/o	10.1 %	7.3%	2.5°10
General practice	0.0	0.4	1.0	1.0	26.0	33.8	18.7	13.7	5.3
Family practice	0.0	1.4	0.0	2.8	20.9	39.4	24.1	9.2	2.1
Internal medicine	1.0	13.3	13.0	43.5	16.4	8.3	3.1	0.9	0.6
General surgery	0.0	0.9	7.9	29.0	16.4	29.4	6.1	8.4	1.9
Orthopedic surgery	0.0	0.0	1.9	33.7	34.6	15.4	4.8	7.7	1.9
Ophthalmology	0.0	1.0	4.9	22.6	41.2	12.8	7.8	7.8	2.0
Radiology	0.0	0.0	7.6	50.6	14.2	15.2	7.6	3.8	0.0

[a]Fee schedule based on statewide average approved charges without regard to physician specialty.
[b]Includes physicians in listed specialties and others.

SOURCE: D. Juba, "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule, " prepared for the U S. Congress, Office of Technology Assessment, Washington, DC, November 1985, '

sources that comprise the costs to be measured. These variables can be readily identified. At a very basic level, *two* categories have been identified: 1) all overhead costs such as salaries, rents, utilities, supplies, professional liability insurance, and other services; and 2) physicians' own time resources. There is a general consensus on the relative total costs of physician and overhead resources within individual physician practices. Net physician revenues have consistently been found to be approximately 60 percent of gross professional revenues. This result has remained virtually constant since the American Medical Association has published data on physician practice costs. HCFA survey data have also been consistent with this results. Comparable data are reported in the journal Mecial ***Economics*** based on survey data. The most recent findings published in that journal indicate that the median practice expense proportion was *38.2* percent (355). There is not much variation in this ratio among specialties, nor is this ratio much affected by legal form of organization.

The current empirical literature, however, is sparce specifically with respect to resource costs for particular procedures. There has been little or no attempt to assess resource costs for actual practices. Wagner describes the difficulties involved in identifying and collecting data for assessing resource costs *(561).* She describes it as a "bottom-up" approach since it involves measuring the quantity of each type of input involved in producing each kind of product. Unit prices are also needed for each type of input. The vector product of all of the units of input and the unit prices of those inputs yields an estimate of the costs of the final product.

Crucial assumptions involved are: 1) that the observed level of utilization of capacity (of both equipment and personnel) be optimal, 2) that the organization and technology of the observed settings be optimal, 3) that the proficiency of the performers in the observed settings be optimal, and 4) that the observed quality of services provided be optimal. Any deviation from these assumptions at a minimum would introduce statistical noise into estimates derived from several different practice locations. In fact, violations of one or more of the assumptions would involve comparing different products or different inputs. For example, if measured by the gross professional revenue per patient contact minute, the apparent cost of physician time for a fully occupied physician may appear to be much less than a second physician with an identical income but with some free time for seeing additional patients. In fact, the contrary is the correct view. The opportunity costs[16] for the first physician can be seen as the greater because slack time generates no additional revenue or output of patient services.

Differing quality levels in the estimates obviously involve different products, but even differing technologies used to produce seemingly iden-

[16]"'opportunity cost" is a concept used in economics generally defined as the return available from the best alternative use of a particular resource, One is told that "there is no such thing as a free lunch, " because there are remunerative or at least satisfying alternatives to being treated to an otherwise "free" meal.

tical products may also imply different products. Similarly, practitioners of different competencies may also produce "identical" services that are far from identical. In theory this might invalidate any micro-costing study as a guide to more general application, specifically its use in a relative value study. In fact, however, some theoretical compromises are necessary once it is recognized that there is some statistical variation about any measures of average performance that may become available.

Wagner examined micro-costing studies of radiology procedures in two large teaching hospitals, clinical laboratory tests in a British hospital, and six hospital-based obstetrics/gynecology procedures in a large U.S. teaching hospital (561). She did not find a great deal of correspondence between the relative values produced by these studies and the relative values published in the 1974 California RVS. Unfortunately, there was no way to examine the variations in relative values that might have been found through these studies since they were based on such small samples and each of the studies was focused on a different set of procedures.

The most relevant attempt to date to estimate resource costs for physician procedures was the study by Hsiao and Stason for HCFA (227). In this study, data from the Study of Surgical Services in the United States were assembled to estimate average physician patient contact time for a selection of so surgical services. The authors estimated total resource cost relative values as the product of estimated average physician time, relative complexity, imputed physician opportunity costs (to correct for differences in the length of specialty training), and relative overhead by specialty: [17]

$$\text{resource cost-relative value}_{ij} = \text{MD time}_i \times \text{complexity}_i \times \text{opportunity cost}_j \times \text{overhead}_j$$

where i and j refer to the ith procedure and the jth physician specialty, respectively.

[17] Average patient contact time in the operating room was derived directly from Study of Surgical Services in the U.S. statistics. Estimated pre- and post-operative patient time was developed by a consensus measure of visit time for any operation. Procedure complexity measures were developed using a Delphi method with a panel of **25 physicians from the Boston area. Training length estimates came from American Medical Association data, and overhead estimates came from *Medical Economics*** survey data.

This formulation assumes that the average patient contact time estimate is a fairly reliable estimate for all physicians within a specialty; that all sources of variation in required physician skill levels can be accounted for in a single complexity measure; that a physician's opportunity costs are solely related to length of training; and that overhead by specialty is uniformly related to all services within that specialty.

The simplifying assumptions were necessary for any estimates to be produced. Within that context, the exercise was useful in identifying the issues involved in estimating resource costs and in demonstrating that a plausible set of estimates could result (see table s-4). In general, there has been no controversy with respect to the specific estimates produced by Hsiao and Stason in 1979. Any current objections to the results involve the timeliness of the data used and data refinements that might increase the potential realism of the assumptions. The data for the physician time estimates used for each service were collected in the early 1970s and may no longer reflect current physician practices. The simplifying assumptions from the original study might now be relaxed or refined given better data on individual physician practices and their finances. There are some other perspectives, however, on the general problems of estimation of resource costs for payment purposes that are presented in the following sections.

Should It Cost What It Costs? —Another range of issues involves the contrast of concerns between providers and Medicare as a payer. "Resource costs" is fundamentally a supply side concept; reimbursement is more often the subject of demand side considerations. In particular, one must exercise a general caution in applying any resource cost estimation methodology for the purpose of establishing relative payment levels, particularly with the purpose of identifying a "just price" (187). Empirical studies in health care and other industries have verified the economists' theoretical prediction that the costs of production will rise (and occasionally fall) to the level of the purchase price. The most common example cited is the cost of producing airline services prior to deregulation. When the Civil Aeronautics Board established price levels for certain airline trips, the commercial carriers' competition for passengers drove up the provision of in-flight amenities, and hence the

Table 5-4.—Resource Cost Relative Values and Relative Reimbursements per Hour Implied by Medicare Prevailing Charges, Massachusetts, 1978

Physician service (and specialty)	Relative value	Medicare prevailing charge	Payment per hour
Hemorrhoidectomy	0.9	$271	$193
Inguinal hernia repair	1.0[a]	339	218
Appendectomy	1.0	339	272
Cholecystectomy	1,6	570	275
Hysterectomy	1.9	640	279
Lens extraction	1.7	678	679
Suprapubic prostatectomy	1.8	720	399
Transurethral prostatic resection		678	475
Initial office visit (general practitioner)	0.19	20	40
Routine brief office visit (general practitioner)	0.08	10	40
Initial office visit (internist)	0.21	34	68
Routine brief office visit (internist)	0.09	15	60

[a]By design, inguinal hernia repair was selected as the numeraire service thereby establishing its relative value as 1.0.

SOURCE: W.C. Hsiao and W.B. Stason, "Toward Developing a Relative Value Scale for Medical and Surgical Services," *Health Care Financing Review* 1(2):23-3S, fall 1979.

cost of producing those trips. Similar results have been found with respect to the costs of in-center maintenance dialysis given the HCFA's fixed limit on dialysis payments (56).

This result does not even require explicit and direct competition between sellers. To paraphrase one of the earliest neoclassical economic theorists, Alfred Lord Marshall, if the price that the final purchaser is willing to pay is relatively high and relatively flexible, the sellers' purchases of product inputs will also tend to be relatively high and relatively flexible (289). Thus, if Medicare's reasonable charge levels for endoscopic examinations, for example, were initially in excess of resource costs, physicians who purchase endoscopes would be less likely to try to bid down the price of that type of equipment. Other things being equal, over time the "costs" of producing endoscopic exams would rise to the level of the purchase price, the reasonable charge.

Other Resource Cost Issues.—There are several issues that have been identified with respect to the problem of resource cost estimation:

- demand side adjustments to resource cost estimates that might be introduced in a relative value scale such as
  - —identification of physician services generally believed to be ineffective,
  - —identification of services whose provision should be encouraged,
  - —identification of sets of "equally effective" physician services;
- Ž task delegation and physician time estimates;
- variations in practice input unit costs;
- . variations in physician incomes with respect to specialty and experience;
- . variations in physician practice styles; and
- variations in estimates of resource costs for specific physician services.

Potential Demand Side Adjustments. —As noted above, there might be a need for an adjustment factor in a resource-cost-based RVS to reflect differences in the general effectiveness of specific services. Although some generally effective services may not prove to be effective with respect to a particular patient, there are some services that are generally believed to be ineffective and some, for example, gastric freezing, that have been shown to be ineffective. The costs of ineffective services-however inexpensive—need not warrant equal treatment with the costs of services of proven efficacy. On the other hand, one might also want to examine a multiplier adjustment for such services as effective preventive care such as pneumococcal vaccination, if it were believed that payment levels above costs would lead to the additional provision of such services. Finally, a possibility exists that within the set of generally effective physician services, there will be sets of equally effective services that are substitutes for one another. In this case, a pure demand side ap-

preach would require that payment for the two services be equal and set at the level of the lower priced service.

Physician ***Time*** Estimates **and Task *Delegation.*** —It is expected that the most significant observable resource involved in the production of physician services would be individual physician time. The varieties of styles of medical practice, however, suggest that physicians have a great deal of choice with respect to whether they individually perform certain tasks or delegate those tasks to appropriately trained staff. For example, many medical practices routinely delegate blood pressure testing to nurses or physician assistants. If not properly accounted for, the substitution of staff time for physician time could confound any resource cost estimates, or at least introduce additional variation in the estimates of the averages.

A common approach has been to measure only direct physician time and to allocate all costs for support personnel to physician overhead without regard to the specific services in which those personnel may participate. This relatively simple approximating strategy has some merit. The single most common category of employee in physicians' offices is "secretary, receptionist, bookkeeper" (499). These employees are unlikely to be directly involved in the production of medical services. However, there are a significant number of physician assistants employed in medical practices, and appropriate weighting strategies for including those costs would have to be explored (490).

Variations in Practice Input Unit Costs. —Surveys of physician practice costs and incomes by HCFA, the American Medical Association and ***Medical Economics*** have been successful in eliciting information from physicians on their total annual expenditures for practice inputs. The survey approach has been somewhat less successful in estimating unit costs because of data definition problems and difficulties in determining the appropriate measures of units. Annual expenditure statistics are clearly less burdensome to collect than would be unit costs: there would also be less required detail. As a result, however, the impact of differences in unit costs on practice decisions is unknown.

The notion of the estimation of average resource costs of specific physician services from a sample of practicing physicians would rely on the assumption that there is some degree of uniformity in the production of those services. Although there exist certain (recipe driven) production processes in which there are no choices with respect to amounts of inputs, physicians can and do make choices with respect to the organization of their practices.

Although for the most part physicians' business decisions rather than their clinical decisions are involved, these choices affect the costs of providing clinical services and may affect the estimates of the costs of those services. A simple example can be seen in decisions with respect to office space. In an area of relatively low rentals, a physician practice may acquire office space with relatively large rooms. The net impact on actual rental overhead or absolute rent expenditures is uncertain. Costs could be higher, lower, or identical with the corresponding expenses of practices in areas with higher rental rates. However, in the absence of good data on the unit costs of each practice, use of average rental rates for estimation will make it appear that this practice carried either a relatively larger overhead for office rental expense or absolutely larger rental expenses for each physician service performed in the office.

Variations in Physician Incomes With Respect to Specialty and Experience, —The remaining unit cost of interest is the physician cost. Except for the case of salaried physicians, for the most part this statistic is not directly available. Relevant estimates that are currently available relate to physician net incomes after practice expenses—that often include deferred income. As might be expected, net incomes are computed as residuals. The unit cost measure that results is net professional revenues per year or per hour.

Actual net income is only one of several available means of valuing physician time. The most simple method of valuing the physician resources employed in the provision of a specific service would be to multiply the average net income per hour and the time, in hours, used to produce the service. Actual incomes embody the results of so

many individual choices, however, that computation based on any small sample of practices might not lead to accurate results. The alternate method of establishing a relative value of phyician time used in the literature is to base those values on relative complexity and opportunity costs (227,271).

Variations in Physician Practice Styles. —One of the implicit assumptions involved in the development of any resource cost method for potential use in payment reform would be that there are not too many clinical options with respect to performing specific physician services. The underlying distribution of tasks and time would exhibit only some limited variation. If, however, there is a continuum of clinical options, then the averages generated from the observations in an estimation study might not represent any one style of practice. Payment rates derived from such estimates might be too high for some styles of practice and too low for others. For example, in estimating the total approved physician charges associated with Medicare beneficiaries hospitalized in particular diagnosis-related groups, Mitchell, et al. found that the costs attributed to any observation were significantly affected by the presence of an assistant at surgery (320). payments based on the average would be too high for cases without an assistant, too low otherwise. Given variation in practice styles across physicians performing the same service, one might expect a comparable result.

Variations in Estimates of Resource Costs for Specific Services. —Finally, for all of the reasons discussed above plus any other natural occurrences of variation, one would expect that there would be variation about any average resource cost estimate that can be produced for an individual physician service. The relative size of the variations among a set of services whose resource costs have been estimated is crucial. Even with the most accurate estimation method, resource costs estimates that are not found to be significantly different from one another due to inordinate variation will not prove to be a compelling guide to reimbursement reform.

Relative Value Scales Achieved Through Negotiations/Consensus Development

Both the charge-based and resource-cost-based RVSs would be derived primarily from empirical analysis of quantitative data. The former would involve a somewhat mechanical determination of central tendency values from distributions of charges; the latter would involve a somewhat more thoughtful examination of physician practice cost data, perhaps supplemented with information on the relative complexity of various procedures. An alternative that would place greater reliance on physicians' professional judgments might involve explicit negotiations or consensus development processes to achieve an RVS.

The developers of previous RVSs have employed professional judgments in modifying the results obtained from statistical manipulations. For example, in the preface to the 1960 version of the California Relative Value Studies, it is noted that although basic relative values were established by statistical analysis of data from 6,800 physicians with respect to roughly 600 procedures (75):

> [I]n a few instances it was apparent from analysis of the data and from consideration of subsidiary data that strict adherence to the survey values would produce unrealistic results. In such instances, values were set by consultative means.

Thus, the use of professional judgments in the establishment or revision of an RVS through negotiations or consensus development procedures is not unprecedented. In fact, considerable physician consensus with respect to relative values has been shown to exist. In the **1950s,** Horton demonstrated this fact through analysis of surveys of physicians in Connecticut and Montana (225,226). Hsiao and Stason found such consensus within a set of surgical services although not between surgical services as a class and office visits as a class (227). Recently, Egdahl and Manuel have used a consensus development process to rank surgeries with respect to complexity and severity (119).

Types of Decisions. —One should make distinctions between the various types of decisions that

might be the subject of an RVS negotiation or consensus development process. (For the purpose of discussion they will be described as changes in relative values. The same types of decisions would also have to be made in the initial development of an RVS.) Negotiations with respect to the value of a conversion factor or factors used to transform an RVS into a fee schedule are one example, but will be discussed in a later section. Other examples are as follows:

- changes in relative values with respect to a numeraire service whose price is to remain fixed,
- changes in relative values for a class of services while the price of all other services remains fixed, and
- changes in relative values subject to the constraint that projected total relative values be fixed given anticipated volumes for each service.

The relation or lack of relation between the RVS and one or more prices in a fee schedule changes the nature of the negotiations; hence the distinctions made above. The first example might involve specific services perceived to be either undervalued or overvalued with respect to actual payment levels; hence the need for revisions in a relative value scale without a general change in conversion factors. The second example is itself best exemplified in the current discussions with respect to the relative values of nonprocedural services. One might expect discussions on the merits of raising the relative values of those services while holding the conversion factors for all other services constant, the expectation expressed by FTC (554). Alternatively, one might discuss the merits of reducing the relative values of all other services, holding the conversion factor for nonprocedural services constant. The final example would involve "pure" changes in relative values, but this would imply much less certainty about results, since all prices in any fee schedule derived from the RVS in question would be subject to change.[18]

[18]The process might be as follows: Given a revised set of relative values, one could sum the anticipated total of relative value units, assuming that the volume of services from a prior time period would remain unchanged. Given that volume, one would compute the conversion factor implied by a specific budget target. Since any set of relative values would imply its own conversion factor, all prices in the resulting fee schedules would be changed.

Possible Outcomes.—Berenson has discussed various options that might be employed in establishing a relative value scale through group-decisionmaking processes (33). He suggested that although costly, a commission representing the community at large might be better able to develop an RVS that reflected a broad view of what should constitute the values of a range of medical services than a commission constituted of "experts" representing each of the various specialties. He also noted that there are no models available that could be used to predict the impact on the relative value of any service that might result from such complex decisionmaking processes.

Experience to date with negotiating systems used in other countries gives little additional guidance on outcomes. The West German sickness funds have tried without much success to reduce the relative fees paid for laboratory services and to raise fees for basic medical services so as to increase the relative incomes of general practitioners (162). However, most governments that have been involved in such negotiations have been perceived to be more interested in adjusting fees to control expenditures in the aggregate rather than in fine-tuning with respect to individual services (33).

"Competitively" Developed Fee Schedules

The CPR system, to a certain extent, is neutral with respect to price competition in the markets for physician services. Physician fees evolve, for whatever reasons, and the CPR process educes a set of approved charges from the middle to upper ranges of the fee distribution. At best, this is a passively competitive posture: Medicare as a price taker without searching for the lowest price. However, more competitive postures for the program are available. These would include pricing policies that would be more directly analogous to perfect competition, bilateral monopoly, or the use of the purchasing power of a monopsonist. [19]

[19]perfect competition describes an idealized market for a homogeneous good in that there area substantial number of both (cost minimizing) buyers and (profit maximizing) sellers, no one of which has a direct effect on the price of the good in question. (Hence, the phrase "price taker.") Bilateral monopoly describes a market in which there is a single seller and a single buyer. Monopsony describes a market in which there are many sellers but only a single buyer. Perfect competition and monopoly (or monopsony) are not opposite ends of a spectrum with respect to competition. The op-

HCFA has used various analogs of such reimbursement policies for the purchases of pharmaceuticals, durable medical equipment, and laboratory tests (292).

Four approaches to "competitive" physician payment policies are discussed below. The first two involve unilateral buying policies that might be adopted by the Medicare program in developing a fee schedule. The third involves soliciting for competitive bids from physicians or other suppliers of physician services from which a fee schedule would be constructed. The fourth alternative involves direct negotiations between the Medicare program and physician groups to explicitly develop a fee schedule.

Lower the Price

In theory, a virtue of the CPR system is that it allows beneficiaries in any locality the expectation that a significant fraction of the charges for a physician service will be covered by Medicare almost without regard to the beneficiary's choice of a physician. Only those beneficiaries who receive services from the most expensive doctors should expect to have substantial additional liabilities, and those liabilities would apply only on nonassigned claims. This flexibility was one of the reasons that prompted the National Association of Blue Shield Plans to adopt the UCR[20] concept in the mid-1960s. Perhaps equally important, UCR offered the Blue Shield Plans the opportunity to sell a product that would nearly always give subscribers paid-in-full benefits without the additional cost of setting (national) fee schedule payments at a level high enough to guarantee physician participation in all parts of the country (312). Obviously, the same would be true for Medicare under CPR even if the jurisdictions in question were each of the States as an alternative to the Nation as a whole.

Although the degree of physician participation was and is an important marketing consideration for Blue Shield Plans, it is not clear that the Medicare analog—physician acceptance of assignment—is as important for the Medicare program given that: 1) carriers do not act as insurers that underwrite the Medicare program, and 2) there is recent evidence from the Medicare participating physician program that a significant number of physicians will agree to accept assignment on 100 percent of claims (521). Assignment is important to both Medicare beneficiaries and to the Medicare program. However, a fee schedule alternative to CPR need not involve a relatively high price uniform in all jurisdictions to guarantee high assignment statistics. A relatively low price may suffice in some localities. Specifically, if an approved charge of $2,000 is necessary to elicit an assignment rate of 50 percent for cataract extraction operations in New York City, that does not imply that $2, 000 should be the approved charge for that operation for all of New York State, much less all of the country. Lower prices might elicit equal or higher assignment rates for that operation in jurisdictions outside of New York City.

One might establish fee schedule payment levels below current prevailing charge levels. In fact, a relatively low percentile level might be selected, such as the 50th percentile of approved charges or lower. (Under Medicare's "lowest charge limitations" applied to certain laboratory tests and items of durable medical equipment in the late 1970s, payment levels were restricted to the 25th percentile.) With few exceptions, use of the 50th percentile would produce a fee schedule comparable to that that would be produced by using average approved charges to develop a relative value scale. If the distributions of approved charges for individual physician services are skewed to the left, selection of the 50th percentile as the fee schedule standard might have a slight downward effect on total Medicare expenditures for physician services. Such a decline, however, would be moderated if there were volume increases observed with respect to physicians' experiencing reductions in approved charges.

Find the Lowest Sufficient Price

A potential difficulty with the use of the 50th percentile as the fee schedule amount is that in

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posite of competition—whether perfect or monopolistic—involves a lack of (low) price searching by buyers and a lack of purposive behavior by sellers to either maximize profit, surplus, or market share.

[20]UCR stands for "usual, customary, and reasonable charges, " the pricing concept used primarily by Blue Shield plans. It was developed prior to the introduction of Medicare, and was the model adopted for CPR. Blue Shield's "usual" charge became Medicare's "customary" charge, Blue Shield's "customary" charge became Medicare's "prevailing" charge.

some jurisdictions that amount will be too high and in others too low to secure sufficient access for beneficiaries to needed health care services. Were the level too high, one might observe an increase in the number of physicians becoming Medicare "participating practices" and an increase in the percentage of claims for which assignment was accepted. In contrast, were the level too low, one would expect to observe a decrease in physician participation or acceptance of assignment.

Rather than merely reacting to these changes in beneficiary access, a policy might be initiated to explicitly identify the lowest fee schedule amounts subject to the constraint of achieving comparable expected levels of beneficiary access in each jurisdiction. For example, carriers might be instructed to identify the lowest approved charge for a particular physician service that would include 25 percent of the physicians who had provided such services to Medicare beneficiaries. (Once the fee schedule amount had been established, however, any and all physicians could provide the service at that price.) Alternatively, the carriers might be instructed to identify the lowest approved charge (for each service) that would encompass a particular fraction of assigned services in each locality.

By design, these types of procedures for establishing fee schedules would draw maximum fees from the lower end of the distributions of approved charges rather than the upper end as in the current CPR system. The pricing philosophy in this case is analogous to that used in the Maximum Allowable Cost program that HCFA has implemented for purchases of pharmaceuticals—primarily in the Medicaid programs (261).

To remain competitive within the Medicare system, physicians would have to restrain their fees or possibly subject their Medicare patients to substantial amounts of nonassigned liability. Alternatively, the physicians whose fees were at or below fee schedule amounts might find additional Medicare patients requesting their services in lieu of continuing to obtain services from the relatively higher priced physicians in a particular locality. In contrast, under the current CPR system (as supplemented by Medigap insurance), there is little or no advantage to a physician in having relatively low fees.

Solicit Bids

If there were some uncertainty that physicians would supply sufficient services to Medicare beneficiaries under either of the two empirical methods of establishing fee schedules from existing distributions of approved charges, an alternative approach to competitively procuring such services would be to solicit bids. This approach might take the form of exclusive or semi-exclusive bidding. Under the former, a single physician group or consortium of groups willing to supply up to a specific quantity of a particular service for a fixed unit price would bid for the exclusive right to provide those services to the Medicare population in a specific geographic area. Obviously this would imply restricting beneficiary freedom of choice in that area. Partly for this reason, it might be particularly applicable to such services as extracorporeal shock wave lithotripsy (ESWL), where a relatively small number of providers can be expected in each market. This approach, however, would seem to be inappropriate for a service such as the provision of pneumococcal vaccine that is easily and generally available from many providers.

Alternatively, a semi-exclusive approach might be tried. Under that approach bids for particular physician services would be solicited from all practices in a particular locality. These bids would be in the form of both a price and an expected quantity of service to be supplied at that price. All physician bids would be examined to identify the lowest bid price sufficiently high to provide the expected utilization of the service in question. Again, any and all physicians in that locality might be allowed to provide the specific service at that price. In fact, much as in the U.S. Treasury's auctions for its bills, physicians might bid "the auction price" for their expected provision of the service in question, explicitly accepting the price to be determined by the bidding. This approach would work well for pneumococcal vaccinations. However, it might vitiate any potential Medicare market advantage in procuring lithotripsy or magnetic resonance imaging services if all bidders knew they might participate at the winning price.

A problem with either of these potential bidding schemes is the multiplicity of both services

and localities. Conduct of the bidding even on just a one-time basis could be extremely complicated. Further, under a simpleminded version of the exclusive bidding option, one might expect absurd results, such as one practice in the northern part of a city with exclusive rights to limited office visits, while the rights to limited hospital visits might be won by a competing practice on the other side of town. There is also the potential problem of the creation of a local monopoly for a single winning bidder. If market entry required substantial resources, a single winning bidder without competition might successfully resist subsequent Medicare cost containment initiatives.

For these reasons, semi-exclusive bidding might be conducted with respect to relative value unit conversion factors for a complete set of physician services. Alternatively, exclusive bidding for a relatively compact set of related services might be conducted with any additional services not in the bidding set to be priced based on the RVS conversion factor implied by the bid. Finally, exclusive bidding might be used only for relatively homogeneous services with high expected volume or expenditure levels, such as cataract excisions (with intraocular lens insertions) or laboratory tests. All other services might be priced using one of the other alternative approaches to developing a fee schedule.

Negotiate

The final "competitive" option would involve explicit negotiations between the Medicare program and physicians providing services to Medicare beneficiaries. In theory, this could take the form of service-by-service discussions to arrive at a fee schedule, although more likely would be negotiations with respect to conversion factors to be used with an existing RVS. The latter has been the more commonly observed pattern among government programs in other countries (33). In Canada, for example, the Ontario Health Services Insurance Plan has adopted every version of the RVS promulgated by the Ontario Medical Association, negotiating primarily with respect to the conversion factor (578).

Due to FTC interpretations, this is an option that exists only for Medicare or other government-sponsored programs, such as Medicaid. Blue Shield ***negotiations*** with physician groups, for example, would be prohibited although physician input in the form of discussions about fees would not be prohibited. The problems facing the Medicare program in implementing negotiations, however, would start with identifying a group with whom to negotiate. The American Medical Association is the largest single association of physicians in this country, but its membership includes just more than half of all U.S. physicians. A new physician group might have to be constituted to sit on the other side of the negotiating table.

Other countries with experience in negotiating fees have tended to recognize existing physician associations. In Canada, the Medical Care Act of 1966 established that a uniform schedule of fees would be negotiated periodically between the medical association of each province and the provincial agency responsible for their payment (28). In West Germany, the Cost Containment Act of 1977 mandated the establishment of a National Health Conference including all major interest groups active in the health care sector, specifically including the associations of sickness funds' physicians. A national relative value scale is periodically negotiated between the association of sickness funds and the associations of sickness funds' physicians (387).

IMPLICATIONS OF PAYMENT BASED ON FEE SCHEDULES

The dimensions by which to assess the conversion of Medicare physician payments from CPR to a fee schedule are: quality of care, access to care, cost, technological change, and administrative feasibility. Much of the following analysis will be speculative, because of the lack of data available to examine even the initial changes in fees that might be wrought by a conversion to fee schedules, much less to project behavioral changes that might be induced thereafter. In addition, al-

though the conversion to a fee schedule for the most part would be a quantitative rather than a qualitative change in payment policy, in the aggregate the expected effects of this type of change would be small. The CPR system is basically a fee schedule system with physician-specific fees for many services of most physicians and locality-specific and/or specialty-specific fees for the remaining services/physicians.

In that both CPR and any of the alternative fee schedules involve fee-for-service payments, the impacts of a switch to the latter may rest solely on any difference in the level of payment rather than in the method of fee determination. Given that a physician's clinical choices with respect to specific services are also influenced by considering patient preferences, available practice resources, and medical indications with respect to modalities within the physician's repertoire, other things being equal, the effects on clinical choices of changes in that physician's approved charges for specific services should be small. More likely are changes in physicians' entrepreneurial decisions with respect to agreeing to provide services to Medicare patients in the first place and/or accepting assignment on those services.

Paradoxically, conversion of Medicare physician payments from CPR to a fee schedule system would both make more rigid the structure of relative values for physician services and allow more Government flexibility in changing those relative values. The use of a fee schedule for payment purposes would imply that the ratio of the approved charge for any service to the approved charge for any other would be a constant. If a fee schedule were based on a single national relative value scale, such ratios would be fixed for all services in all jurisdictions. Because of this, changes in a single fee in the schedule could dramatically change relative values. In theory, correcting any perceived imbalances in approved charges, such as those involving procedural/nonprocedural differences, would be simpler in a fee schedule world than in a world of CPR. But because the effects of such changes would be more pervasive under fee schedules, there might be more resistance to such change. For this reason, advocates of such changes might prefer that procedural/nonprocedural imbalances be corrected in the initial implementation of the fee schedule.

Quality and Access

There are no data with respect to the relationship, if any, between quality of care and ***method*** of payment. And even any such relationship between quality and level of payment as exists would be unlikely to be discerned if a fee schedule conversion led to relatively small differences in payment levels. In terms of the technical quality of performance of specific services-once the choice has been made to provide those services—price can be expected to be of little importance in the short run.[21] In the long run, however, lower Medicare payments might lead physicians to obtain lower quality supplies, facilities or personnel.

The quality impact of price—in this case, the level of the Medicare approved charge under a fee schedule—is likely to be indirect through its effects on access to particular physicians and the facilities in which they practice. That impact will depend on the opportunity cost to the individual physician of the use of his or her time to attend to an alternative, non-Medicare patient. To the extent that private insurance pays a physician higher amounts than Medicare and to the extent that patients with such insurance demand the physician's services, that physician's Medicare patients may not receive as much time or attention as otherwise. And to the extent that those private patients recognize quality and demand the services of physicians perceived to provide relatively high quality services, the opportunity costs for those physicians of attending to Medicare patients will be higher. If it were the case that physicians who provided relatively high quality care indeed perceived higher opportunity costs in the private market (regardless of the level of their Medicare approved charges relative to peer physicians) and responded by not participating in the Medicare program, quality of care for Medicare patients might decline.

[21] The "short run" denotes a period of time during which physicians' capital and other resources cannot be changed. By construction, therefore, the costs of discriminating between patient payer classes with respect to quality could be substantial.

How the resulting level of quality would compare to that under CPR is uncertain. The major theoretical difference between a fee schedule and CPR is that CPR would allow a higher payment to a physician who, because of superior quality, had a higher customary charge. Of course CPR allows higher payments to any physician with higher customary charges, regardless of origin. Hence, it is unclear that only the physicians of highest quality are disadvantaged by Medicare payment levels.

Within the category of fee schedules, any options that eliminated specialty differentials or locality differentials might also affect quality in this regard. In general, quality could be enhanced to the extent that physicians who provide relatively high quality services respond to increases in their approved charges by increasing their participation in the Medicare program. Other physicians, however, might also respond comparably. Further, quality could be reduced in response to an aggregate increase in approved charges to the extent that those increases lead to a increase in the probability of beneficiaries' receipt of services of inappropriately high risk or of little effectiveness. These gross effects can be anticipated with any physician payments regardless of whether there are increases or decreases in average approved charges. Which effects will predominate cannot be predicted, a priori.

If the initial estimates from the resource cost based RVS approaches are correct (227), one might expect that the approved charges for office visits would increase relative to surgical services under a fee schedule derived from such a study. If the approved charges were realigned by raising average approved charges for office visits relative to current levels without changing the average approved charges for other services, one might expect an increase in the provision of the nonprocedural services. This increase would improve quality of care only to the extent that the expected value of changes in health status attendant to such visits exceeds current approved charges. (There is no evidence, however, of current "underuse" of such services given current levels of approved charges.) If average approved charges were lowered for the surgeries leaving office visit average approved charges unchanged, one would not expect an improvement in quality resulting from an increase in the provision of primary care. However, to the extent that surgical services that are not risk-free are provided in response to current approved charges that exceed either costs to the physicians or benefits to the Medicare patients, a decline in surgeries might lead to an improvement in quality for Medicare beneficiaries.

Access and Assignment

As indicated in chapter 2, a positive correlation between the level of Medicare approved charges and assignment has been well established. Conversion of Medicare physician payments from CPR to a fee schedule based on average or median (or some other central tendency measure of) approved charges would result in increases in approved charges for some physicians for some services and decreases for others. Therefore, one would expect a decrease in the probability of assignment, being accepted in those instances where approved charges were reduced and an increase where approved charges were raised. (Similarly, one would expect an increase in the probability that a physician would become a "participating physician" if his or her approved charges had been increased.) Unfortunately, use of the available models of assignment to make projections can only provide aggregate expected effects; in particular, a budget neutral fee schedule of any variety would be estimated to have an expected zero net impact on assignment. Within such models individual beneficiaries would be projected to experience increases or decreases in assignment with the accompanying changes in liabilities for physician services. More refined models than those currently available would have to be developed and validated to estimate specific supply responses and allow **a** more realistic estimation of aggregate changes in response to conversion to a fee schedule embodying a specific level of aggregate fees.

If Medicare converted to fee schedules and imposed mandatory assignment, some physicians could be expected to no longer provide services to Medicare beneficiaries. Those physicians who

dropped out of the Medicare program would be likely to be those with relatively high billed charges compared to their peers in individual localities. This could reduce beneficiaries' access to certain types of physicians. If, on the other hand, the fee schedule amount was established only as the Medicare allowance and not necessarily implying payment in full, beneficiaries' access to physician services would become primarily a question of their personal finances. Beneficiary financial barriers to access to the services of physicians with relatively high billed charges could be increased. With respect to any single physician so affected, this would hurt his or her poorer Medicare patients more than the more affluent ones.

costs

Medicare Program Costs

With respect to Medicare expenditures for physician services at any point in time, the cost impacts of a change to fee schedules would depend more on the level of payment than the method of fee determination. Assuming that a budget neutral conversion to fee schedules were imposed, one might expect little initial impact on total Medicare Part B expenditures. On the other hand, one might speculate that physicians whose approved charges were constrained would respond by increasing the intensity or quantities of services billed, such as billing for longer, and more expensive, visits or providing additional ancillary services; hence there might be some increase in costs. (Those physicians who experienced an increase in approved charges might not raise their charges so much as otherwise in future years, but they would not be expected to bill for fewer or less expensive services on average in the year of the conversion.) As indicated in chapter 2, the evidence with respect to physicians' volume responses to changes in approved charges is equivocal. Unless there was a substantial volume response, under a fee schedule conversion conducted to coincide with the advent of a new fee screen year (that would be accompanied by higher aggregate approved charges regardless of the conversion), any initial cost impacts might be undiscernible.

If a fee schedule conversion embodied a selective reduction in average approved charges—e.g., a reduction in approved charges for services for which costs were believed to have declined substantially since their introducton—savings might accrue to Medicare. If there were no change in the volumes of such services, the savings would be proportional to the reduction in approved charges. If physicians reduced the provision of such services, the savings to Medicare would be greater. Further, to the extent that the financial incentives in the current high payments cause inappropriately high utilization levels for such services where there is also patient risk, a reduction in use might imply an improvement in quality for Medicare beneficiaries. If physicians responded to reduced approved charges by increasing volumes the cost reductions and potential quality enhancements would be smaller than otherwise.

In order to examine and estimate changes that might occur under a budget-neutral conversion to fee schedules that simultaneously reduced some procedural/nonprocedural imbalances, a simulation analysis was conducted (247). Assuming there were no charges in volume, if approved charges were unchanged on average, but the fee schedule introduced was designed to "adjust" approved charges to increase payments for office visits—chosen to illustrate the effects of raising the relative approved charges of nonprocedural services to levels commensurate with the estimates from earlier studies (227), total Medicare costs, by assumption, would be unchanged, but payments for office visits would nearly double (247). Revenues for general practitioners and family practitioners would increase 50.8 and 37.3 percent, respectively. Internists' revenues from Medicare would be nearly constant, but radiologists and surgeons would experience declines.

If the fee schedule were initially based on average approved charges, but—for illustration—approved charges for office visits were increased as above, holding all other fees in the schedule constant, total Medicare physician payments might increase by 3.9 percent, including a 36.7 percent increase in payments made for office visits assuming that carriers paid the lower of the billed charge or the fee schedule amount (247). Paying the fee

schedule amount in all cases would require additional increases in expenditures.

Changes in Medicare costs over time might be influenced by a change to fee schedules for two reasons. The first involves the fee screen updating process. Under CPR this is a mechanical, if not mindless process. Increases in approved charges are somewhat limited by MEI, but there are still a considerable number of services not constrained by the Index. Further, average approved charges can increase by more than the increase in MEI even for those services where the prevailing charge is established by MEI.[22] A potential virtue of a fee schedule is that the entire price structure can be controlled during the fee schedule updating process. In fact, a study of physician payments in Medicaid programs found that expenditure increases were lower in those States that used fee schedules compared to those that used CPR approaches to fee setting (215).

A second, and much less likely, reason why Medicare expenditure increases might be reduced under a fee schedule regimen involves the relative approved charges for preventive care. This argument suggests that if, for example, under a resource-cost-based RVS, approved charges for office visits were increased, a greater number of preventive care services would be provided. As a result, there would be a reduced need for acute curative services in later time periods. Although there might be an initial increase in expenditures given the increase in approved charges for the nonprocedural services, the rate of increase in total expenditures—if not the level of expenditures—would decline. The cogency of this argument is reduced, however, by recent evidence that has not verified that those persons who forgo preventive care in one time period experience greater costs in future time periods (343,348). Furthermore, if greater use of preventive services increased life expectancy, the total Medicare expenditures would probably increase as survivors incurred medical expenses in their additional years of life (437,485,576).

[22]The MEI will constrain the increase in the maximum approved charge for a given service. Until 100 percent of the volume of a particular service is limited by the MEI, the average approved charge for that service can increase faster than the maximum.

The additional effects on the Medicare program's costs of any changes in assignment policy that accompanied a conversion to fee schedule should be neglible compared with a fee schedule conversion without assignment changes given that Medicare only pays that portion of the bill equal to the approved charge. To the extent, however, that a mandatory assignment policy reduced the participation of physicians with relatively high charges, declines in expenditures that might otherwise have been made for the services of such physicians might exceed the increase in payment levels for physicians whose prior approved charges had been relatively low. Beneficiaries who formerly received services from physicians with above average approved charges who elected to no longer accept Medicare patients would be expected to either switch to less expensive physicians or forgo the use of services that might otherwise have been provided. Both effects would tend to reduce aggregate Medicare obligations. A net increase in Medicare expenditures would be expected only if the above average charge physicians who remained in the program increased volumes by more than enough to offset the reductions effected by beneficiaries' receiving services at or below the previous average approved charge. Under a fee schedule implemented as the Medicare allowance only, beneficiaries might reduce their utilization of services in the aggregate. This might lower Medicare expenditures, but primarily by shifting Medicare costs back to the beneficiaries.

Whether an expenditure cap would, in fact, cap expenditures is an open question. For example, the evidence from the Canadian province of Quebec has been interpreted to both support and refute the effectiveness of an expenditure cap in the form of individual physician revenue limits—a system with direct rather than indirect physician incentives under a payment system with a single payer rather than many payers as in the United States. It is alleged to have produced gaming behavior on the part of the physicians (388), but other Canadian observers conclude that the limits were set so high that they may not have had any aggregate effect (135). An expenditure cap system with less direct incentives for individual physicians would be unlikely to be more effective in constraining expenditure increases.

Beneficiary Costs

As would Medicare program expenditures (and assuming a continuation of the present participation/assignment policies), beneficiary costs would depend more on the level of payment than on the method of approved charge determination within a fee-for-service system. Further, under a budget neutral conversion to fee schedules, unless there were substantial changes in service volumes that were not counterbalancing, the net impact on beneficiary costs should be zero. In fact, given the increases and decreases in approved charges, one would expect both decreases and increases, respectively, in nonassigned liabilities and increases and decreases, respectively, in beneficiary cost-sharing liabilities. For example, a beneficiary whose physician experiences an increase in approved charges will be more likely than otherwise to have that physician accept assignment, thereby reducing the expected nonassigned liability. At the same time, however, that beneficiary will face an increase in coinsurance liability equal to 20 percent of the increase in the approved charges. With respect to any single physician, the expected change in nonassigned liability will exceed the expected change in coinsurance. The total net effect on any one beneficiary will depend on his or her physicians' combined assignment/participation behaviors and changes in approved charges.

A fee schedule implementation that is designed to reduce Medicare program expenditures probably will result in increased beneficiary liabilities as long as the case-by-case assignment choice remains an option for physicians and as long as there exists a private market for physicians' services. A net decrease in average approved charges can be expected to lead to reductions in assignment by nonparticipating physicians and reductions in the numbers of physicians who elect to become participating physicians. These results will be somewhat ameliorated only if some physicians in competitive markets find it necessary either to participate or accept assignment in a high percentage of cases in order to retain desired patient loads. In this regard, where beneficiaries faced with increased liabilities can identify physicians who continue to accept assignment, they maybe able to avoid the increase in out-of-pocket expense by switching physicians.

In simulating a conversion to a fee schedule based on average approved charges, Juba estimated several outcomes based on possible values for the relation between approved charges and assignment (247). The more responsive physicians were to changes in approved charges, the greater was the potential increase in beneficiary costs since reductions in approved charges for physicians would be more likely to be countered by decreases in assignment by the physicians so affected. If physicians did not change their service volumes or assignment decisions following a conversion to a fee schedule based on average approved charges, changes in beneficiary liability would be minimal .23 The more responsive physicians are assumed to be to changes in approved charges, the greater the estimated increase in beneficiary costs (see table 5-5). For this reason, provider revenues would be less affected by a conversion to a fee schedule based on average approved charges than would Medicare program costs.

In the very short run, beneficiary financial costs would be reduced by a policy of mandatory assignment. In the first quarter of 1985, the beneficiary nonassigned liability was nearly $33 on an average unassigned claim (535). Nonfinancial costs, however, such as waiting times and delays in scheduling appointments, might increase if fewer physicians participated in the Medicare program because of a mandatory assignment policy. Under a schedule of Medicare allowances, potential extra billings by physicians would be unlimited, but beneficiaries' choices with respect to their total out-of-pocket costs for specific physicians would determine whether their aggregate expenses increased or decreased. Given the added financial incentives to identify relatively inexpensive physicians, total beneficiary costs could decline.

Societal Costs

The initial cost effects of a Medicare fee schedule conversion with respect to nonfederally insured or private pay patients should be small.

[23] There might be an aggregate increase in beneficiary liability if approved charges were based on the fee schedule amount even in those cases where the physician's billed charge was less than that amount.

Table 5=5.—Simulated Alternative Percent Changes in Beneficiary Liabilities by Provider Specialty Following Conversion to a Fee Schedule[a] From CPR Payment, South Carolina, 1983

Elasticity[b]	All specialties	General practice	Family practice	Internal medicine	General surgery	Orthopedic surgery	Ophthalmology	Radiology
0.00	0.8	–11.5	– 10.0	8.9	0.8	1.7	2.7	–0.2
0.50	2.8	–11.1	–9.9	11.5	4.2	3.1	3.2	1.8
1.00	4.6	–1 1.1	– 10.0	13.9	7.3	4.4	3.6	3.7

aFee Schedule bagecfon statewide average approved charges.
bAss$_{ume}$d values for Ph@~ians responses to changes in approved charges with respect to assignment without respect to physician specialty, For example, an dt3StiCi-ty of 0.00 implies there would be no change in physicians' assignment decisions; an elasticity of 1.00 implies that for any given percentage change in approved charges, there would be an equal and opposite change In assignment rates.
cl_{ic}l,d,s physicians 'in listed .SpeClaltieS and others.

SOURCE: D. Juba, "Analysis of Issues Relating to Implementing a Medicare Physician Fee Schedule," prepared for the U.S. Congress, Office of Technology Assessment, Washington, DC, November 1985.

Medicare represents 17 percent of the market for physicians services (353). Most Blue Shield plans and most of the rest of the physician insurance market establish prices through usual, customary, and reasonable fee determination systems much like CPR. If a substantial number of physicians did not experience great changes in approved charges under a conversion to a fee schedule by Medicare, little else would be expected to change solely because Medicare adopted a fee schedule approach to physician payment. The increasing number of physicians in the United States might lead to a decline in the rate of increase in physician prices, but such a deceleration would also be relatively unaffected by a change in Medicare payment policy. Other things being equal, only if patients in the non-Medicare market (and their insurers) were unresponsive to physician prices would there be a possibility for an aggregate increase in expenditures for physician services in the absence of a relative reduction in fees charged to those patients.

If Medicare did switch to a fee schedule, there might be increased interest by the private insurers in establishing their own fee schedules, particularly if the Medicare program published a comprehensive relative value scale. Given the competitive nature of the market for health insurance, however, no insurer would want to be in a position where it could not offer at least one line of paid-in-full benefits on a price competitive basis. Locally adjusted fee schedules might be attractive to employer groups given their implicit cost-saving incentives and the relative predictability of benefit expenses. On the other hand, programs for national accounts with fee schedules that could not guarantee nearly uniform insurance coverage for members in different parts of the country would be resisted by labor and management alike. It was this set of interests that led to the adoption of UCR programs in the first place (312).

Conversion of Medicare payments to a fee schedule that lowered approved charges on average would prompt concern about cost-shifting. The apprehension of many nongovernmental third-party payers would be that the effects of such a fee schedule would be to lower Medicare payments without reducing physicians' costs, thus increasing the charges to all other payers. To the extent that there is a competitive market for medical insurance, this issue may be irrelevant. The various insurers offering health insurance coverage for physician services cannot afford to let benefit costs rise unreasonably without having to raise premiums, hence jeopardizing market share. Although it has long been recognized that there are circumstances when it will be advantageous to sellers to have different prices paid by different purchasers, given a decrease in prices paid by Medicare under such circumstances, a rational (physician) seller would decrease rather than increase charges to other payers in order to maximize revenues (at a new, lower expected charge level given the change in relative fees available for treating patients from the various payer groups.)

A reduction in Medicare approved charges for physicians that have substantial Medicare patient loads or aggregate reductions in charges by all payers might serve to increase incentives for efficiency in the production of physician services for physicians so affected. There would be no expected change, however, in efficiency in the pro-

duction of health care services requiring inputs in addition to physician services except to the extent that those inputs are complements to physician services. Nor would greater efficiency be expected in the combination of services used to treat a medical condition or in the weighing of the costs and benefits of services.

Technological Change

Technological change may be one area in which method of fee determination can have an effect in addition to level of payment. In this regard, as long as payment rates are determined prospectively without regard to costs, it will always be the case that the higher the level of potential payment, the greater the potential return to innovation, particularly cost-saving innovation. Interest in cost-saving innovation, however, may be greater the less is the difference between payments and current costs. Quality-enhancing innovations that involve increases in cost would probably be advanced more under current CPR than any other alternative physician payment system because payments are based on charges that can be increased to reflect increases in costs. Such innovation would thrive more under most fee schedules than under packaging or cavitation. A new fee for a new service would probably be introduced within a fee schedule system. But under packaging and cavitation, adoption of cost-increasing technologies would add to cost but not to revenue, and payment recipients would have little financial incentive to adopt such technologies except to prevent losing patients.

Where the physician payment includes both professional and technical components, payment levels can provide (or fail to provide) incentives for technological change, particularly with respect to cost-saving innovations. However, where total payments for a service are split between physicians' professional components and facility or equipment expenses, the effects of physician payments on technological change are uncertain. Further, the specific effects of ***Medicare*** physician payment policies may be negligible with respect to any technologies where Medicare beneficiaries are only a small fraction of the relevant patient population and hence where innovation and diffusion may be driven by the policies of private insurers.

Even where Medicare policies may make a difference, as long as Medicare ***institutional*** payments to hospitals, outpatient departments, and ambulatory surgical centers are large compared to payments to physicians for particular services dependent on acquisition of resources paid by Medicare intermediaries under either Part A or Part B, innovation in such physician services may depend more on institutional payment policies than physician payment policies. If those facility or equipment expenses are not recognized as covered services or if institutional payment levels are too low, many physicians may be unable to secure access to such equipment for their Medicare patients regardless of how remunerative the Medicare approved charge for the professional service may appear to physicians. (Although hospitals may continue to compete for physicians and patients by attempting to acquire "prestigious" and costly new equipment, there have been neither studies nor anecdotes to suggest that such acquisitions have been associated with the payment levels for physician services associated with the use of such equipment.) Only where the physician payment levels were too low might physicians not adopt certain technologies for their Medicare patients even where the institutional payment policies did not inhibit acquisition of the resources required for the technology in question.

Within the fee schedule options, treatment of new services will almost always be an incidental matter. Obviously, vendors of new services can be expected to recommend high approved charges rather than low ones. Therefore, advocates of any new potentially cost-saving service, such as extracorporeal shock wave lithotripsy, will want to argue on relative value grounds for establishing an approved charge based on an existing substitute service. Advocates of potentially cost-increasing innovations such as MRI for many conditions would prefer resource-cost-based approaches. Were exclusive competitive bidding to become a generally accepted means of establishing fees, the potential advantages to providers of cost-saving innovations would increase, spurring additional innovation along those lines. However, to the ex-

tent that competitive procurements were periodically reopened for bids, the potential physician returns to innovation can be expected to be bid to zero. The diffusion of technologies whose approved charges are lowered is likely to be retarded.

Administrative Feasibility

Compared to CPR and packaging, fee schedule administration would be easier. CPR, in particular, requires the equivalent of maintenance of individual fee schedules for each physician practice. Under all of the fee schedule approaches considered, the need to retain ***physician-specific*** fee data would be eliminated although aggregate fee data might be retained for updating purposes. In addition, beneficiary and provider inquiries should be reduced because the payment levels for any service can be established and disseminated in advance.

With respect to updating, relative ease of administration would depend on whether replication was selected as the means to update the fee schedule over time. Some of the fee schedule options would require fairly elaborate construction efforts for an initial implementation. Replication in those cases would be costly. None of the fee schedule approaches would necessarily require replication for updating. In fact, updating through the use of an index such as the current MEI or a more refined index could be performed as a purely ministerial exercise for any fee schedule option.

Periodic examination of fee schedules for recalibration within the schedule or for proper evaluation of new services would be a useful adjunct to any of the options. Here again, replication is an option for such periodic examinations, but not a requirement. Combinations of fee schedule development methods for this purpose would not be illogical. As indicated in an earlier illustration, one might initially change to a Medicare fee schedule by having carriers estimate average approved charges for each procedure to establish a baseline RVS. (For payment purposes, this RVS might be converted to a fee schedule that might be updated each year using the MEI.) New procedures might be given interim payment rates following a consensus development process. Final payment rates could be established following estimations of resource costs, perhaps 18 to 36 months after the interim rates had gone into effect. Finally, the members of an independent physician payment review commission might review or recommend changes to correct any interjurisdictional or interspecialty differences brought to their attention.

There are major differences among the fee schedule options in terms of the efforts required for implementation. Use of historical charge data by the carriers clearly would be the easiest method. Estimation of the lowest prices needed to procure certain levels of (assigned) utilization would be straightforward, but would require greater effort. Development of resource-cost-based relative values for even a significant fraction of the over 7,000 available procedures in HCPCS would be a substantial undertaking. Unfortunately, the efforts required for consensus development, competitive bidding, and fee schedule negotiations cannot be estimated at this time. There is little or no experience in the use of these methods specifically for the purpose of pricing physician services in the United States. They are likely to require more effort than the purely data driven approaches. Whether they would require more or less resources than resource-cost-based estimates is uncertain.

CONCLUSION

The primary potential advantages of fee schedules are rationality, predictability, and simplicity, and therefore ease of understanding for both beneficiaries and providers. In addition, a fee schedule system would not involve the maintenance of what amount to individual price schedules for each physician as is required under the current CPR system. Further, fee schedule updating could be accomplished using methods that would allow greater control over annual increases in average price levels than are currently possible under CPR even with the use of the MEI.

The various options that have been reviewed each have their advantages and disadvantages. Fee schedules based on historical data on average approved charges would be fast and simple to construct. There would not be much initial change in approved charges for most physicians, and presumably there would be little initial disruption in the Part B program. Such fee schedules, however, would preserve—if not embed—any existing disparities in payment observed between procedural and nonprocedural services as well as geographic and specialty differentials. Although such disparities and differentials might be addressed and resolved over time, a direct approach to these problems would be preferred by many observers.

In fact, many of those same observers would prefer to develop fee schedules based on analyses of the relative resource costs of individual services. In theory, such a system would have an advantage over current effective payments in that resource cost based rates would be neutral with respect to clinical decisionmaking. In addition, it is argued that such a system would reduce, if not eliminate, the alleged disparities between procedural and nonprocedural services. There is little experience with fee schedules based on this kind of estimate so the effects are uncertain. In any event, construction of a complete fee schedule based on this approach would be likely to be very expensive. Further, it is not clear that the results of such an effort would be as reliable a guide to appropriate Medicare pricing as its advocates contend. Although some concept of resource costs should be included in the consideration of Medicare payment levels, there are so many arguments for including other considerations that even if statistically reliable resource cost estimates could be obtained, they would not provide a definitive guide to relative values.

Consensus development efforts involving physicians and other groups might prove to be a faster method to educe acceptable and meaningful relative values. The acceptability of the results of such an approach, however, is uncertain. What would be expected to be the primary problem would be establishing the relative values of specific procedural and nonprocedural services. The composition of the consensus groups could be crucial, especially given an exercise conducted to produce a budget neutral fee schedule conversion.

The competitive approaches are relatively untried. It would be relatively straightforward to instruct carriers to determine relatively low levels of approved charges representing some specific fraction of current Medicare utilization levels for particular services or even all services. There is no precedent, however, for predicting the aggregate effects on Medicare expenditures, or beneficiary costs in particular and access in general. There are no data, much less studies, that would allow predictions as to whether geographic or specialty or procedural/nonprocedural differences would be reduced or increased under that kind of approach.

Similarly, competitive bidding for physician services or what would be, in effect, bilateral competition between the Government and the medical profession with respect to price are untried in this country. Both might achieve a fee schedule with the general advantages attendant to a fee schedule. That either of such fee schedules might specifically reduce the perceived unwarranted variations in payments in the Medicare program is unlikely although not impossible. Competitive bidding in itself could involve such administrative complexities that trying to tie a series of services to specific relative charge levels would prove daunting. The foreign experience in negotiations between health insurance officials and physician representatives suggests that shifts in relative prices would not be soon forthcoming (162,578).

No one system is entirely superior to all others for the development and evolution of fee schedules. A judicious mix of the various methods might enable the achievement of a variety of goals, including directly addressing the perceived inequities in the administration of benefits under the Part B program. However, pending the acquisition of additional data and the development of more sophisticated models to resolve the question of the changes, if any, in the use of services in response to fee schedule changes, what remains uncertain are the specific effects on Medicare expenditures and beneficiary expenditures, access to services, and quality of care. There is no evidence that such effects would be substantial, but there is also no consensus on whether their net effects would be beneficial or detrimental to either beneficiaries or the Medicare program as a whole.