

Chapter 6

Payment for Packages of Services

Words differently arranged have a different meaning, and meanings differently arranged have a different effect.

—Pascal

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Payment for Packages of Services

INTRODUCTION

Packaging is an approach to physician payment that involves redefining the payment unit from the individual service to a broader “bundle” of services (313).¹ This approach could control both costs and utilization by reducing the number of service units billed and encouraging the judicious use of services within packages. Under packaging, the financial risk would be borne by the individual physician or other recipient of payment (547). This chapter examines variations in packages of services and discusses potential effects of packaging alternatives on quality of care, access to care, costs and efficiency, technological change, and administrative feasibility. Also considered in this chapter are the potential effects of paying for physician services via collapsed procedure codes.²

One objective of paying physicians a specified rate for a group of services would be to give the Medicare program more control over program costs. Unless the rates for packages were set at the same level as or below the mean of current charges, however, payment for packages of services would not necessarily result in a reduction of Medicare expenditures. In most cases, rates for packages would be prospectively determined and would include ancillary services (e.g., clinical laboratory tests, X-rays, injections) so physicians might think carefully about ordering a marginal test or requesting a consultation.

The major difficulties of paying a rate for a package of services stem from the potential for underuse of needed expensive services or denial of care to very ill and potentially resource-intensive patients. The use of appropriate case-mix

measures—measures of the relative frequency with which physicians treat patients with different types of medical conditions—should result in higher payments to physicians who treat more complex patients and should obviate some of the negative effects. Relative to the present customary, prevailing, and reasonable (CPR) Medicare fee screen method, packaging would create situations where physicians might gain or lose income, due to the “averaging effect.”³ So that physicians faced a fixed amount of revenue for each package of services, mandatory assignment would be necessary. Otherwise, physicians would be able to shift the financial risk to Medicare beneficiaries by billing them more than the allowed packaged rate.

Some physicians, for example, surgeons, already provide much care that is paid on the basis of a global or package rate. However, there has been little empirical research testing the applicability of packaging to broader areas of physician payment. To address the lack of research on packaging physicians’ services for inpatients, the Social Security Amendments of 1983 (Public Law 98-21) mandated a study by the Department of Health and Human Services (DHHS) to examine the feasibility of using a diagnosis-related group (DRG)⁴ type of classification to pay for inpatient services provided by physicians to Medicare beneficiaries. In addition, the Office of Research and Demonstrations in the Health Care

¹This chapter uses the term “packaging” synonymously with the term “bundling.”

²Collapsed procedure codes would not produce a “true” package (319), because the unit of payment under collapsed codes would remain the individual service. Although collapsing procedure codes is compatible with Medicare’s customary, prevailing, and reasonable (CPR) payment method (ch. 4) or fee schedules (ch. 5), the concept is discussed here as a means of introducing the concept of packaging.

³Relative to the present, paying an average rate for a package of services would reduce payment for some physicians and increase payment for other physicians.

⁴Diagnosis-related groups (DRGs) are groupings of diagnostic categories drawn from the International Classification of Diseases and modified by the presence or absence of a surgical procedure, patient age, presence or absence of significant comorbidities or complications, and other relevant criteria. DRGs are the case-mix measure mandated for Medicare’s prospective hospital payment system by the Social Security Amendments of 1983 (Public Law 98-21) (141,489). A later section of this chapter discusses the applicability of DRGs to physician payment.

Financing Administration (HCFA) of DHHS is planning demonstrations to study packaging physician services to nonhospital as well as hospital settings (540). Planned demonstrations include incorporating payment for physicians' serv-

ices into hospital DRGs;⁵ and paying prospectively for all Medicare Part B services (540).

⁵HCFA's Office of Research and Demonstrations has budgeted \$1 million for a study demonstrating and evaluating combined physician/hospital payment for fiscal year 1986 (540).

THE CONCEPT OF PACKAGING

What is a package? As suggested above, a package is a group of related medical services (319). During a patient's visit to a physician, for instance, a comprehensive physical examination may include a record of the patient's blood pressure, some laboratory tests, and a medical history. The visit is clearly a package of functions whether or not it is billed as such (319). As illustrated in figure 6-1, packaging expands the concept of fee-for-service payment by including multiple services in the bundle.

The six variations reviewed in this chapter range from least comprehensive (collapsed procedure codes) to most comprehensive (total episode of care):

- ***Collapsed procedure codes.*** —The coding system used to pay for physicians' services under Medicare's Part B, the Physicians' Current Procedure Terminology, 4th edition (CPT-4),⁶ includes codes for 7,040 procedures.⁷ Combining codes for procedures that have only fine distinctions would reduce the number of allowable billing units.
- ***Ambulatory-visit package.*** —An ambulatory-visit package would incorporate all physicians' services and ancillary services (e.g., clinical laboratory tests, X-rays, and injections) related to one visit.
- ***Special-procedure package.*** —A special-procedure package would include all or some physicians' services and ancillaries associated with a single therapeutic or diagnostic procedure, such as cataract surgery, extracor-

poreal shock wave lithotripsy (ESWL), colonoscopy, or magnetic resonance imaging (MRI). If selected diagnostic and therapeutic procedures were paid based on a rate for a package of services, other parts of the system might still be paid by CPR or by a fee schedule.

- ***Ambulatory-episode-of-care package.*** —A package for an ambulatory episode would include all physicians' services and ancillaries associated with an illness treated in ambulatory settings.⁸
- ***Inpatient-episode-of-care package.*** —This package would incorporate all physicians' services associated with a hospitalized patient.
- ***Total-episode-of-care package.*** —A package for a total episode of care would incorporate all ambulatory and inpatient physician services and ancillaries related to an episode of medical care.

As shown in table 6-1, packages can be defined by a number of different variables, including: 1) the unit of payment, 2) case-mix adjustor (if any), 3) recipient of payment, 4) scope of services, 5) approach to payment, and 6) time period. Mitch-

⁶The CPT-4 coding system, developed by the American Medical Association, lists descriptive terms and identifying codes for reporting medical services performed by physicians. (85).

⁷HCFA's Common Procedure Coding System (HCPCS) also includes codes for nonphysician services, such as durable medical equipment, ambulance services, eyeglasses, rehabilitation services, and injectable drugs.

⁸Medicare now pays the primary physician treating end-stage renal disease (ESRD) patients a fixed monthly payment that is similar to an ambulatory-episode package. The rate is based on a weighted average of dialysis sessions per month, prevailing charges for a medical specialists' brief followup visit for an established patient, and prevailing charges for intermediate followup visits, weighted by national averages of the percentages of patients dialyzed in facilities and at home (48 FR 21254) (see app. C). If patients are admitted to the hospital, physicians are paid on a fee-for-service basis instead of their monthly payment (if a patient is in the hospital 1 day and the physician converts to fee-for-service, the monthly payment is reduced by 1/30), and hospitals are paid under Medicare's prospective payment system for inpatient services. Physicians may elect to remain on the monthly payment during the hospital stay, but the vast majority choose to bill fee-for-service (426). Out-of-package care—any care not related to dialysis—is also paid on a fee-for-service basis, generally to other physicians.

Figure 6-1.—Alternative Methods of Medicare Payment for Packages of Services Provided to a Hypothetical Patient Presenting the Symptom of Extreme Flank Pain^{a,b}

First office visit: primary care physician	First office visit: urologist	Urinalysis	Intravenous pyelogram (IVP)	Radiologist service for IVP	In-hospital radiologist service for KUB X-ray ^c	Anesthesiologist service for ESWL ^d	Urologist service for ESWL	In-hospital urologist visit	Hospital visits: urologist	Posthospital office visit: urologist	IVP or KUB X-ray	Radiologist service for IVP or KUB X-ray	Post-hospital office visit: urologist
Ambulatory visit			Ambulatory visit		Inpatient episode of care					Ambulatory episode of care			
Ambulatory episode of care													
Total episode of care													

^aThis is a hypothetical example of how a patient with flank pain might be treated during a total episode of care.

^bThis example excludes a special-procedure package, which would include the services of an anesthesiologist and urologist and the ESWL procedure.

^cKidney, ureter, and bladder X-ray.

^dThe facility cost for extracorporeal shock wave lithotripsy (ESWL) would be included in the hospital DRG. A urine culture might also be administered in the hospital, but would be covered by the hospital DRG.

SOURCE: A. Jenkins, University of Virginia Medical Center, Charlottesville, VA, personal communication, Nov. 26, 1985.

ell and colleagues have described these and other variables for defining packages (319).

The unit of *payment* for packages maybe a procedure, a visit, or a case. In a sense, packaging would still be a type of fee-for-service payment, but the unit of payment would be expanded, in general, to include more than one service (see fig. 6-1). In the case of collapsed procedure codes, the unit of payment would remain the service. In the case of an ambulatory-visit package, the unit of payment would be the visit. In the case of a special-procedure package, the unit would be either a procedure or a case. Per-case payment, i.e., paying the physician a specific amount for each case regardless of the number of services provided or additional physicians involved, is also applicable to ambulatory-, inpatient-, and total-episode-of-care packages. Per-case payment would usually be adjusted by case-mix measures, such as DRGs.

The purpose of a case-mix *adjustment* is to recognize differing patient needs or resource use. In general, the more comprehensive the package, the more likely that a case-mix measure would be needed. Case-mix approaches can distinguish units

of payment by visit or procedure type, diagnosis, or demographics. Age or sex would be an example of another case-mix adjustment. Investigators have also examined reason for visit or admission as a case-mix adjustment (319).

As indicated in table 6-1, with collapsed procedure codes, no case-mix measurement would be necessary. The case-mix for an ambulatory visit could be adjusted by diagnosis, reason for visit, visit type (e.g., new or established patient), or ambulatory visit group. Case-mix for an ambulatory episode of care could be adjusted by ambulatory visit groups, diagnosis, or reasons for visit.

The proper unit for billing ambulatory care is more difficult to define than those for inpatient care (270). For instance, patients visiting physicians' offices for routine hypertension treatment require physician resources different from those required by a patient with uncontrolled hypertension. In addition, principal diagnosis may not be so clear in the office setting as it would be for inpatient care or for ambulatory surgery.

Different types of case-mix measures may be needed for emergency room ambulatory care,

Table 6-1.-Variations in Packages of Services

Variable	Collapsed procedure codes	Ambulatory visit	Special procedure	Ambulatory episode of care	Inpatient episode of care	Total episode of care
Unit of payment	Procedure	Visit	Procedure	Ambulatory episode of care	Inpatient episode of care	Total episode of care
Case-mix adjustor	None	AVGs, ^a reasons for visit, or visit types	Diagnoses, DRGs, PMCs, ^b or severity-of-illness index ^c	AVGs, diagnoses, or reasons for initial visit	DRGs, staging, ^d APACHE, ^e PMCS, severity of-illness index, or MEDISGRPS ^f	AVGs, DRGs, or ICD-9-CM codes ^g May need new classification system
Recipient of payment	Physician or physician group	Primary physician or physician group	Primary physician or physician group	Primary physician or physician group	Physician, physician group, medical staff, hospital, combined medical-hospital staff	Primary physician or physician group
Scope of services	Procedure	Visit and ancillaries	Physician services and ancillaries included for ambulatory patients but excluded for inpatients	Physician services and ancillaries entire episode of ambulatory care	Inpatient physician services ^h	Inpatient and ambulatory physician services and ancillaries
Approach to payment	Prospective or retrospective	Prospective	Prospective	Prospective	Prospective	Prospective
Time period	Immediate ⁱ	Immediate	Fixed interval	Episodic or fixed interval	Episodic	Episodic or fixed interval

^aAmbulatory visit groups (AVGs), a classification system similar to DRGs, define similar visit types in relation to the amount of time a physician spends with a patient (140).

^bPatient management categories (PMCs) are based on patients' clinical characteristics and severity of illness (586).

^cThe severity-of-illness index reflects the patients' overall severity of illness, not just the severity of each diagnosis (219,220).

^dStaging was developed to measure the biological progression of an illness within diagnostic categories (173,489).

^eThe Acute Physiology and Chronic Health Evaluation, Modified Version (APACHE) consists of 12 commonly used physiologic measures weighted to produce a total score for an intensive care unit patient.

^fThe Medical Illness Severity Grouping System (MEDISGRPS) groups patients by severity on the basis of data acquired after admission (59).

^gThe International Classification of Disease, Clinical Modification, 9th edition (ICD-Q-CM), developed in the late 1970s, is a diagnostic lexicon of 10,241 five-digit codes, that encompass the realm of diseases known at that time.

^hHospital ancillaries are assumed to be incorporated in the hospital DRG.

ⁱImmediate time period refers to the services related to a single patient-provider encounter.

^jThe services associated with the interval surrounding the procedure.

SOURCE: Adapted from J.B. Mitchell, K.A. Calore, J. Cromwell, et al., "Alternative Methods for Describing Physician Services Performed and Billed," prepared for the Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, November 1983.

physician office visit ambulatory care, and specialized ambulatory care including chemotherapy or ambulatory surgery (270). A study is currently being conducted in California to develop emergency department groups for both hospital and physician costs of emergency room treatment (78).

Investigators have examined the effects of three different case-mix measures on the creation of ambulatory-visit packages. Mitchell and colleagues found that reason for the visit, diagnosis combined with the visit type, and ambulatory patient groups (the name was later changed to ambulatory visit groups, were not superior to diagnosis alone in explaining the variation in services associated with an office visit (319). The number of categories created by the different methods varied significantly. Using diagnosis/visit type produced hundreds of packages; ambulatory patient groups produced 154; and reason for visit produced 14 (319). Substantial variation in services remained even after adjustment for case-mix (319).

The simplest special-procedure packages would be based on collapsed procedure codes and combined services; therefore, case-mix might not need to be adjusted (319). For instance, a package might include the surgeons' services, the anesthesiologists' services, and assistant surgeons' services as well as X-rays. If case-mix were adjusted, DRGs or patient management categories might be used for inpatients, and other categories could be chosen for ambulatory patients. An inpatient episode of care might be classified by DRGs or patient management categories. New classification systems would need to be developed for a total episode of care.

Packaged payment may introduce new administrative and competitive arrangements for physicians depending on who is paid. The **recipient of payment** for a packaged fee, if assignment were

made mandatory, could be the individual physician, a single specialty physician group, a multi-specialty physician group, a facility, or a combined facility-physician corporate entity.¹⁰ Although Medicare can determine how it will pay for physicians' services, the Medicare program cannot control how physicians are paid within a group setting. For instance, although a group of physicians may bill on a fee-for-service basis, the group may pay its members a salary or offer a salary plus a percentage of income earned above a base figure. How an individual physician is paid bears particular importance for packaging, because the intended positive incentives of packaging, such as those for the judicious use of services, may be diluted if physicians are far removed from the direct payment (364). On the other hand, removing physicians from the negative incentives of a particular payment mechanism, such as for the underuse of services, may be beneficial.

Paying an individual coordinating physician for some of the more complex packages would involve substantial financial risk to that physician. For instance, if a patient's episode of care for myocardial infarction was complicated by another chronic illness, such as diabetes, the coordinating physician would be financially liable for additional visits and payment for other physicians' consultative services. Empirical research has shown that many physicians have small inpatient caseloads and may experience large losses because of random variation in case-mix severity (313). Although a large group of physicians might be better able to handle these variations in payment, an individual physician may have difficulty doing so (320). Payment to a larger entity, such as the medical staff, produces greater opportunity for risk pooling and averaging (314). Medical staffs could form an individual practice association, an organizational form that has become more common in recent years.

The scope *of services* covered by a package may either be narrow or broad (see table 6-1). An example of a package with a narrow scope is an ambulatory-visit package, which is limited to the services associated with one visit to a physician.

¹⁰These investigators used the 1979 and 1980 National Ambulatory Care Survey as a means of examining the services associated with different types of office visit packages (319). The National Ambulatory Care Survey asks a nationally representative sample of office-based physicians to provide information on all services ordered, even if the physicians do not provide them. There are a number of limitations to the data: volume of service cannot be determined; no physician fee data are collected; there are no data on patient office followup; no ambulatory department (hospital) information is collected; and all possible ancillary services are not covered.

¹⁰If assignment remained optional, the beneficiary could also receive the payment.

A special-procedure package has a somewhat broader scope, covering most of the services associated with a single procedure, such as ESWL. An ambulatory-, inpatient-, or total-episode-of-care package would cover an even broader scope of services (including more days and services). A typical inpatient-episode-of-care package could include office visits for a week on either side of the hospitalization (320). ”

The more comprehensive a package, the less likely it would be that care related to a specific medical condition would be provided outside of the package, and the stronger the incentive for the provider to skimp on services within packages because physicians would be paid a fixed rate no matter how many services they performed. With payment based on a visit or a hospital episode, physicians might provide care in a different site or outside of the package in order to maintain or increase revenue. For instance, a physician might provide laboratory tests to a patient in the office prior to hospitalization. Alternatively, a patient might be discharged earlier than usual from a hospital but be seen more frequently in the physician’s office for separate followup visits. The physician’s ability to provide care outside of the package would depend on a patient’s willingness to return for extra visits or to attend preadmission testing despite the increase in cost-sharing for the patient.

The **approach to payment** for most packages would be prospective, i.e., payment rates for a particular procedure or package of services would be set in advance. As discussed in appendix C,

¹¹The ancillary services for an inpatient episode of care are assumed to be included in the hospital’s DRG payment.

Medicare’s current CPR payment system has retrospectively determined rates. With collapsed procedure codes, payment could either be prospective or retrospective.

Under collapsed procedure codes, physicians could continue to be paid by the current fee screen method or by a fee schedule. Determining payment for comprehensive packages, such as ambulatory-, inpatient-, or total-episode-of-care packages, would be more complex, requiring, first, the selection of an appropriate classification system for patients, diseases, procedures, cases, or episodes, and second, the determination of relative weights for various categories within the classification system.¹² To create a payment schedule, these weights would have to be converted to prices by standardized rates (conversion factors). Adjustments might be made for differences in costs of living among areas, or the payment schedule could consist of a set of national rates.

The time period covered by a package could be either immediate, fixed interval, or episodic, depending on the package. An immediate time period would incorporate all services associated with one patient encounter with a physician (e.g., an ambulatory visit for essential benign hypertension). A fixed-interval time period might include all services for a defined period of time (e.g., a 1-month ambulatory-episode-of-care package for hypertension). A variable episodic situation would depend on the length of the time needed to “cure” an illness, such as a strep throat, or to recover from an operation, such as cataract surgery.

¹²One method of determining relative weights would be to base them on historically approved physician charges (242).

IMPLICATIONS OF ALTERNATIVE METHODS OF PAYMENT FOR PACKAGES OF SERVICES

Certain implications are common to payment for all of the packages of services. Prime among these is underuse of services within packages. Because of this potential for underuse, packaging

might adversely affect quality of care. In the case of services that appear to have been overused in the past, such as certain laboratory tests, the tendency for underuse might actually improve qual-

ity of care. But if the incentive for underuse affects services that have not been overused in the past, quality of care problems might occur.

Mandatory assignment would reduce participation in the Medicare program by physicians whose approved charges had been above the packaged rate. The access to care of beneficiaries who used those physicians could be reduced accordingly. In the absence of mandatory assignment, some physicians would refuse assignment for cases likely to be complex and more costly than the packaged rate, such as cataract surgery for diabetic beneficiaries.

Efficiency would be encouraged within packages but not across packages. The cost to Medicare and to society under packaging would depend on the extent to which physicians shifted care outside the package and the extent to which care for more complicated patients was shifted to other non-Medicare payers in either the private or public sector. The costs to Medicare beneficiaries under packaging would depend on the nature of their illness and *on* whether assignment was mandatory. If assignment was mandatory, beneficiaries would know their costs in advance and would be charged the same amount no matter how many services were used within a package. If payment rates were set at the mean, beneficiaries with less complex and expensive illnesses would pay more and those with more complex and expensive illnesses would pay less than they would have in the past.

Payment rates could be set at percentiles lower than those currently used to calculate approved charges in an attempt to reduce Medicare expenditures. Lowered payment would exacerbate potential problems such as underuse of services within packages or access difficulties for complex, expensive patients.

Different incentives for utilization of care would exist for beneficiaries and physicians. Because beneficiaries would face fixed and predictable cost-sharing for specific packages, they might request additional services. Physicians would have an incentive to provide the least expensive care to their

patients consistent with good quality. This incentive would lead physicians to consider more carefully and probably to reduce the use and expenses of ancillary and consultative services, such as additional laboratory tests and assistants at surgery. Packaging is likely to encourage the development of cost-saving procedural technologies that would save physician time.

Over time, either collapsed procedure codes or packaging would be easier to administer than Medicare's current payment system because fewer billing categories would exist. In the short run, administrative difficulties might arise for carriers, physicians, and beneficiaries as the changes were implemented. Since the coordinating physician or other recipient of payment would bear the financial risk for the packages of services provided, these physicians would have major new administrative responsibilities, such as negotiating payment rates with other physicians and monitoring utilization within packages.

Collapsed Procedure Codes

Why collapse procedure codes? CPT-4, which is the coding system used for the physicians' services portion of HCFA's Common Procedure Coding System (HCPCS), has been criticized as being overly detailed, and allowing physicians too much latitude in billing (319). In fact, this latitude may allow physicians to bill Medicare or private insurers for an upgraded service without really altering the content of the service (because two codes may have minimal distinctions) and to bill separately for each test (319).

The number of CPT codes increased 238 percent between 1966 (2,084 codes) and 1985 (7,040 codes) (85,319,328). To some degree, coding increases were influenced by the rapid increases in medical knowledge and technological developments. As new procedures, such as fiberoptic or ESWL, are developed, terminology is updated to provide a means for reporting on and reimbursing for them. Substantial increases came from fragmenting procedures into a number of detailed codes in place of a single descriptor (569). When

California converted from the 1964 California relative value scale to the expanded 1969 version for Medicare billing purposes, billed or approved charges attributable to terminology changes increased 5 percent for office visits and 7 to 8 percent for hospital visits (442).

If procedure codes were collapsed, the 11 existing codes for visits or the 9 for chest X-ray might be reduced to fewer categories for payment (see table 6-2). A group of experts could be convened to determine which codes to collapse on the basis of current codes used. For example, payment could be based on the most frequently billed code for a particular category (569). In other cases, a group of codes being considered for collapsing might have an equal or near equal distribution, and calculations of the payment rates could be based on a weighted average (319). Physicians could either continue to bill with the multitude of codes as they do now (and codes could be collapsed at the carrier level)¹³ or they could be given new code books.

The potential effects of collapsed procedure codes on quality of care, access to care, costs and efficiency, technological change, and administrative feasibility are discussed below.

Quality of Care

Since payment for physician services under collapsed procedure codes would be similar to the current payment system, the payment level would be more likely to affect quality of care than the collapsing per se. If only 3 visit codes instead of the current 11 were allowed and payment rates

Table 6.2.—Procedure Codes for Office Medical Services (Visits) and Chest X-Rays

<i>Codes for office medical services (visits):</i>	
<i>New patient:</i>	
90000	Brief service
90010	Limited service
90015	Intermediate service
90017	Extended service
<i>Established patient:</i>	
90030	Minimal service
90040	Brief service
90050	Limited service
90060	Intermediate service
90070	Extended service
90080	Comprehensive service
<i>Codes for chest X-rays:</i>	
71010	Radiologic examination, chest; single view, frontal
71015	stereo, frontal
71020	Radiologic examination, chest, two views, frontal and lateral;
71021	with apical lordotic procedure
71022	with oblique projections
71023	with fluoroscope
71030	Radiologic examination, chest, complete, minimum of four views;
71034	with fluoroscope
71035	Radiologic examination, chest, special views (e.g., lateral decubitus, Bucky studies)

SOURCE: S.B. Clauser, C.M. Fanta, A.J. Finkel, et al. (eds.), *Physicians' Current Procedures/ Terminology, 4th Edition, CPT4* (Chicago, IL: American Medical Association, 1985).

were set at the mean, 14 physicians who earned less per visit than they had in the past might either provide unneeded laboratory tests or bill separately for previously included laboratory tests (332). In addition, some physicians might reduce the time spent in face-to-face contact with their patients in order to see more patients per day. These incentives would not apply to those physicians who earned more per visit.

Access to Care

If payment rates with collapsed procedure codes appeared reasonable to physicians and if specialists were still allowed to bill different rates from generalists, access to care might remain stable (319). Specialty-specific billing in certain ways serves as a partial proxy for case-mix adjustment (319). Without specialty-specific rates, 80 to 90 percent of the specialists in one study would have lost money under collapsed procedure codes relative to the present system (319). If payment rates

¹³“payment rates for all packages were set at the median, some of the skewing that an average produces might be avoided (569).

¹³In the past, carriers collapsed codes by default. From the inception of the Medicare program until HCPCS was required in 1984, carriers used different coding systems: 1) one of two early versions of the California relative value scale, 2) a national Blue Shield Association coding system, 3) CPT, or 4) carrier adaptations of coding systems, such as the 1964 California relative value scale. Those carriers using systems other than CPT might have been billed by physicians with CPT codes. In order to pay physicians, carriers would have needed to collapse the CPT codes to fit into the California Relative Value Studies scale (569). Some carriers may have collapsed codes on a predetermined basis, and others may have done so on an ad hoc basis (55).

For the first year of HCPCS, carriers are also, in effect, collapsing payment. Carriers who in the past used coding systems with fewer visit codes than CPT-4, would have only historical charges for those codes. Therefore, the carriers would have to assign a visit code to one of the categories for payment purposes (58). By the second year, charges would then exist for the 11 CPT-4 visit categories.

did not appear reasonable to physicians and specialty-specific billing was not maintained, patient access to care might suffer.

Analysis of South Carolina Part B data from 1981 showed that overall assignment rates for collapsed office visit codes would fall only slightly if specialty-specific billing were maintained (319). The Medicare market share in an area and in a physician's practice might determine whether access is a problem or not (319). In South Carolina, one-fifth of the physicians, for instance, provided one-half of all visits to Medicare beneficiaries (319). Medicare would be able to exert considerable leverage over these physicians.

Costs and Efficiency

Although collapsed procedure codes could control the rate of increase of Medicare expenditures, they would not necessarily reduce Medicare expenditures. The effect of collapsed procedure codes on Medicare expenditures would depend on the nature of the collapsed codes, utilization patterns, and the patient's severity of illness. With payment rates set at the mean, the effects would be similar to those described above.

Mitchell and colleagues collapsed 12 codes for colonoscopy¹⁵ (a type of colon examination) in two different ways (319):

- into a single collapsed procedure code (with a weighted average of charges for all 12 procedures), and
- into two different codes based on the extent to which the fiberolescope was inserted during colonoscopy.

With a single code for all 12 procedures, the price for a colonoscopy was **\$247**. With two codes based on distance into the colon, the price was **\$165** for the less complicated procedure and **\$293** for the more complicated procedure (see table 6-3). If all 12 colonoscopy codes were collapsed into one, physicians who lost money relative to the current system would be paid \$21 to **\$102 less** than at present; physicians who gained money relative to the present system would earn between \$14 and \$106 more. Medicare might save the amounts

listed for physicians who lost income relative to the present on colonoscopies that go higher into the large intestine. Conversely, Medicare would have some losses for lower level colonoscopies. Should present assignment rules continue, a beneficiary would be likely to have higher cost-sharing liability if a simple colonoscopy was performed but a lower liability for a colonoscopy higher into the large intestine. The same would apply to Medicare program costs. If assignment was not mandatory, physicians who stood to lose money on particular cases might refuse assignment in order to be able to bill patients for additional amounts.

Mitchell and colleagues also collapsed 11 visit codes in two different ways (319). In the first situation, 11 visit codes were collapsed into 2 types of visits according to the type of patient seen (new or established). In the second situation, the 11 visit codes were collapsed into 5 codes (2 for new patients and 3 for established patients). Rates **were** set using a weighted average of charges in the various visit categories. When specialty was taken into account and 5 codes were used, the amounts paid to physicians would have been comparable to the present. Results similar to those for colonoscopy occurred when visit codes were all collapsed into one code. Patients' cost-sharing liability would rise if their visits were classified in a category with a higher average charge, and cost-sharing liability would fall for patients in a category with a lower average charge than in the past.

Technological Change

The incentives for technological change under collapsed procedure codes would be similar to those under the present system. If the collapsing of visit codes was coupled with the inclusion of certain laboratory tests in the visit rate (as was done in Quebec (28)), physicians would have an incentive to use fewer and less expensive laboratory tests.¹⁶

¹⁵The newest edition of CPT-4 lists 13 codes for colonoscopy.

¹⁶In Quebec, Canada, between 1971 and 1976, the average number of base services, such as visits to physicians, provided to patients remained stable even with fee constraints and rising physician expenditures. But the number of associated diagnostic and therapeutic services accompanying base services rose 53 percent (28). And the average fee per examination rose 20 percent more than average.

Table 6-3.-Collapsed Procedure Code Package: Diagnostic Colonoscopy

CPT-4 code	Procedure	Relative frequency (n =358)	Usual charge	Medicare approved charge	Beneficiary 20-percent copayment if deductible is met
45360	Colonoscopy, fiberoptic, beyond 25 cm to splenic flexure: diagnostic procedure	0.28	\$188	\$141	\$28.20
45365	with biopsy and/or collection of specimen for cytology	0.05	251	222	44.00
45367	with removal of foreign body	0.00	—	—	—
45368	with control of hemorrhage.	— ^a	300	200	40.00
45370	with removal of polypoid lesion(s)	0.03	388	306	61.20
45371	with retrograde lavage (e.g., water pik)	0.00	—	—	—
<hr/>					
Collapsed procedure (CPT-4 codes 45360-45371) package price		0.36	\$211	\$165	\$33.00
Coefficient of variation			46.70/o	46.60/o	
<hr/>					
45378	Colonoscopy, fiberoptic, beyond splenic flexure: diagnostic procedure	0.33	\$315	\$267	\$53.40
45379	with removal of foreign body	0.01	267	233	46.60
45380	with biopsy and/or collection of specimen for cytology	0.12	350	283	56.60
45382	for control of hemorrhage	— ^a	400	275	55.00
45385	with removal of polypoid lesion(s)	0.18	452	349	69.80
45386	with retrograde lavage (e.g., water pik)	0.00	—	—	—
<hr/>					
Collapsed procedure (CPT-4 codes 45378-45386) package price.		0.64	\$359	\$293	\$58.60
Coefficient of variation			29.1 %	20.6%	
<hr/>					
Total collapsed procedure (CPT-4 codes 45360-45371, 45378-45386) package price		1.00	\$306	\$247	\$49.40
Coefficient of variation			48.70/o	45.6%	

^aFrequency less than 1 Percent.

SOURCE: J.B. Mitchell, K.A. Calore, J. Cromwell, et al., "Alternative Methods for Describing Physician Services Performed and Billed," prepared for the Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, November 1983.

Ambulatory-Visit Package

As has been mentioned previously, principal diagnosis is not so easily defined in the ambulatory setting as in the inpatient setting (270). The implications of paying for ambulatory visits in package form are discussed below.

Quality of Care

Because of the potential for underuse of ancillary services within packages, payment by ambulatory-visit packages might adversely affect quality of care. Incentives for underuse of needed services, however, would be tempered by the current malpractice climate, by physician's ethics

(79), and by the fact that physicians see in-office provision of laboratory tests as a patient convenience (80).

In order to maintain consistent levels of payment or to increase payment levels, physicians might request that patients return for more ambulatory visits than in the past. Since these return visits would increase beneficiary cost-sharing and time costs, beneficiaries might resist return visits. Physicians might avoid the more costly patients. Alternatively, physicians might see patients for a shorter time per visit in order to see more patients per day.

Including multiple physician charges in an ambulatory-visit package might discourage the primary physician from requesting specialist services (94). If these additional specialist visits had been needed in the past, concerns about the quality of care would be raised. On the other hand, if consultant services had been overused, then little effect on quality of care would be noted.

(continued from previous page)

age fee schedule increases as physicians began billing for an increasing number of higher priced complete examinations as opposed to the lower priced simpler examinations (28). To address some of these issues, in 1976 a new fee schedule was negotiated with higher rates, but with collapsed visit codes and some ancillaries, such as certain clinical laboratory tests, included in the exam fee. (28).

If payment for physician services provided to inpatients was perceived to be less restrictive than payment for ambulatory care, physicians might hospitalize some patients for tests that could otherwise be performed on an ambulatory basis. Physicians' ability to hospitalize patients unnecessarily would be limited by Medicare's prospective payment system for hospitals and the monitoring responsibilities of utilization and quality control peer review organizations (PROs).¹⁷

Access to Care

Access concerns outlined at the beginning of this section would apply to ambulatory-visit packages.

Costs and Efficiency

Within ambulatory-visit packages, but not across packages, program expenditures would be controlled. The control of total Medicare expenditures with ambulatory-visit packages would depend on the degree to which physicians encouraged revisits or billed for a higher level of service.

Some increase in beneficiary cost-sharing could occur if revisit rates increased. To prevent an increase in their liability, however, beneficiaries might avoid revisits. In addition, beneficiaries who were "below average" for the number of ancillaries received for a visit in the past might have a higher cost-sharing liability. The "above average" ancillary users might have a lower cost-sharing liability than they did in the past.

Technological Change

In order to conserve on the costs of ancillary services included in an ambulatory-visit package, physicians might be motivated to adopt new low-cost laboratory devices (332). Physicians might also be motivated to reduce the amount of laboratory testing within a visit package (332).

¹⁷PROS must identify and meet objectives in five areas: 1) reducing unnecessary readmission due to previously substandard care; 2) assuring provision of medical services, which if not given, would have significant potential for causing serious patient complications; 3) reducing the risk of mortality associated with selected procedures or conditions requiring hospitalization; 4) lowering unnecessary surgery; and 5) reducing avoidable postoperative complications (489).

Use of new, expensive technologies such as MRI would be greatly discouraged within an ambulatory visit (234). Physicians wishing to control costs within ambulatory visits would be likely to suggest another visit and to avoid using expensive technologies.

Special-Procedure Package

For some physicians, special-procedure packages would represent only a slight change from the current payment system. Surgeons, for instance, have performed surgery as part of what amounts to a package for years, since their pre- and post-hospitalization visits and the actual procedure are included in their fees. Some special procedure packages could address the problem of multiple physicians' (e.g., a surgeon and an anesthesiologist) billing for one procedure. Other special-procedure packages could address the problem of physicians' billing for both a visit and a procedure (e.g., when an MRI scan is administered to a patient, the patient is charged for the scan itself as well as the visit).

The attending or primary physician might resist the special-procedure package alternative because the primary physician would have to negotiate fees with other physicians and would bear the financial risk of services included in the package, such as payments to other physicians (319). Certain procedures can be performed either in a hospital setting or an ambulatory surgery center. Payment for special-procedure packages might encourage fee bargaining among physicians and might result in less hospital use. For instance, if a surgical procedure package were created, the surgeon might negotiate with an anesthesiologist or a nurse anesthetist to obtain a favorable fee. In addition, should the facility fee be included in the package, physicians might seek the least costly facility to perform a procedure. Because special-procedure packages would change the way in which hospital-based physicians are reimbursed, such physicians might resist this approach.

The potential effects of special-procedure packages on quality of care, access to care, costs and efficiency, technological change, and administrative feasibility are discussed below.

Quality of Care

In order to keep costs down within special-procedure packages, physicians might seek to use the least costly services. Surgeons, for instance, might choose the least costly anesthesiologist. There is no evidence of a relationship between quality of care and high-charging physicians; therefore, if the coordinating physician sought lower cost providers, there might be minimal effects on quality. Use of assistant surgeons might also be reduced as a means of controlling the costs of resources used within the package. In some cases, the use of assistant surgeons might be unnecessary, and, no quality problems would ensue.

As has been mentioned with other packages, to the extent that laboratory tests have been over-used, a reduction in the number of tests would improve quality of care (332). The exact volume of services and choice of testing location would depend on the relative marginal costs and benefits of various tests (332).

Should cataract surgery, for example, be paid as a special-procedure package, low-cost intraocular lenses would be most acceptable to physicians. On the other hand, new, better quality, high-cost intraocular lenses might not be adopted by physicians even if their costs would fall over time, because the initial costs of lenses would be high and would take funds from the package price (161).

Access to Care

Special-procedure packages might encourage physicians to refuse care for patients with multiple medical problems out of concern that the financial risk would be too great. Appropriate case-mix measures to adjust for severity of illness would be needed to protect access to care for the more complicated patients. Access problems might also be avoided by a well-defined policy for unusually resource-intensive patients (an outlier policy).¹⁸ If codes were collapsed to create special-procedure packages, it might be advisable to maintain specialty differential payment in or-

der to protect access, because specialty-specific billing has served as a proxy for case-mix adjustment, in some circumstances paying physicians for more complex cases at a higher rate (319).

If only some procedures were packaged, physicians or facilities might specialize either in well-paid packages or in procedures that were not packaged. Specialization might lead to regionalization of facilities, which might reduce geographical access. MRI, for instance, might be regionalized because of high initial costs.

Costs and Efficiency

The effects of averaging prices noted with other packages would also be apparent with special-procedure packages. Mitchell and colleagues analyzed South Carolina 1981 Medicare Part B claims data and found that the average package price for upper gastrointestinal endoscopy by surgeons would be \$226.30 versus \$190.75 when performed by internists. An average price for all physicians would be \$203.94, \$13 more than the average for internists and \$23 less than the average for surgeons. A diagnostic cystourethroscopy package done in a hospital was priced at \$154 and in an office at \$81. An average package price for either inpatient or ambulatory care would be \$131, thus giving the physician an incentive to do the procedure in the office if it was less costly (319).

If Medicare were to price special-procedure packages low, there might be a tendency for physicians to shift costs to other payers. For instance, ESWL involves high initial capital costs. If individuals or facilities knew that a large market existed among other payers, then they might be willing to take a loss on Medicare patients, because costs would be borne by other patients or third-party payers.

Technological Change

Special-procedure packages would give physicians an incentive to adopt new cost-saving and potentially beneficial technologies such as ESWL. A package for ESWL might encourage the development of less expensive machines or the use of the least expensive alternative to hold costs down within a package. If packages included the average cost for an operative procedure, there would

¹⁸An Outlier would be a case with unusually high or low resource use. An outlier policy could adjust a physician's payment for patients with very high or very low resource use.

be an incentive to use ESWL in place of surgery and still receive a higher fee (431).

For an emerging, expensive technology such as MRI, physicians might compete to be the “package” physician. To keep the entire fee, neurologists might choose to do the MRI scan on their own instead of requesting the additional help of a radiologist (234). Physicians would also have an incentive to use more cost-effective clinical laboratory services within packages.

Ambulatory- Episode-of-Care Package

Packaged payment for ambulatory episodes of care would give physicians an incentive to control use of and expenditures for services that may have minimal benefit, including ancillaries and consultant physicians. The effects of ambulatory-episode-of-care packages on quality of care, access to care, costs, technological change, and administrative feasibility are discussed below.

Quality of Care

The effects of ambulatory-episode-of-care packages on the *use* of ancillary services would be comparable to the effects with other packages. Incentives might also exist for physicians to cut back on the use of consultant services (if these services were included within the package), and to perform procedures or to evaluate test results without the assistance of consultants when they might normally be used (194). In many cases, physicians do evaluate their own test results.

Within an ambulatory episode of care, some incentive would exist for physicians to reduce the average number of visits. In addition, physicians might choose to reduce the time spent with individual patients and to see more patients in a day.

Access to Care

If assignment were required and payment rates for ambulatory-episode packages seemed equitable to physicians, access might be similar to that under the current system. One investigator classified assignment patterns of physicians treating hypertension patients into three categories: always takes assignment, sometimes takes assignment, and never takes assignment (319). Packages for

ambulatory episodes were created by using claims and survey data. Physicians who had always taken assignment had average package prices 62 percent higher than physicians who never had taken assignment (\$152 vs. \$94) because of greater use of ancillary tests (319).

Physicians who had sometimes taken assignment within the same package averaged package prices 50 percent higher than physicians who had always taken assignment (\$229 vs. \$152) and 1.5 times higher than physicians who had never taken assignment (\$229 vs. \$94) (319). Physicians who never took assignment accounted for 63 percent of total charges, and 24 percent of total charges were taken on assignment by other physicians, leaving only 13 percent of other physicians' charges unassigned (319). If assignment were mandatory, close to half of the physicians in Michigan would have to reevaluate their decisions to never accept assignment (319).

If a physician were responsible for a significant amount of chronic care, accessibility might be reduced for the more complicated patients. The physician might also wish to avoid a significant loss on patients with multiple conditions. Some access problems might be avoided if case-mix adjustment was adequate and a well-articulated outlier policy was created.

Costs and Efficiency

The effects that ambulatory-episode-of-care packages would have on costs to beneficiaries, the Medicare program, and society are similar to those with other packages.

Studies by Mitchell and colleagues and by Walden found substantial variation in resource use and costs in potential episode packages, particularly for chronic diseases (319,562), and Mitchell, et al., recommended that packages be defined by a fixed-interval of time (319). The packages that these investigators created for hypertension (including ancillaries but excluding hospital services) were similar in price, although the data they used were from different years (see table 6-4). Using Michigan 1981 claims data, Mitchell, et al., created packages for two chronic conditions commonly found in the Medicare population: essential benign hypertension and diabetes mellitus.

Table 6=4.—Ambulatory Episodes of Care: Package Prices for Essential Benign Hypertension

Source	Package	Package price
Mitchell, et al ^a	Total ambulatory-episode package ^b	\$133.67
Walden ^c	Total ambulatory package ^d	\$ 74.39
	Total ambulatory-episode package ^e	\$124.83

^aBased on Michigan 1981 Medicare Part B data.

Total package price is a weighted average of all physician charges for the 3-month period.

^cBased on household data from the National Medical Care Expenditure Survey, 1977.

^dThis ambulatory package includes visits to the package physician, other physicians, and nonphysicians. It differs from Mitchell and colleagues' ambulatory-visit packages and ambulatory-episode packages.

^eThis ambulatory-episode package includes visits to the package physician, other physicians, nonphysicians; and prescribed medicines and sundries.

SOURCES: J.B. Mitchell, K.A. Calore, J. Cromwell, et al., "Alternative Methods for Describing Physician Services Performed and Billed," final report prepared for the Health Care Financing Administration, U.S. Department of Health and Human Services, Baltimore, MD, November 1983; and D.C. Walden, "Paying Several Physicians for Treating an Episode of Illness," presented at the Annual Meeting of the American Public Health Association, Anaheim, CA, Nov. 13, 1984.

Physicians' services and ancillaries were included in the package. The time interval of the disease-specific episode was 3 months. Visits to the primary physician accounted for 27 percent of total costs, and ancillary services (mostly laboratory tests) accounted for the remainder. Almost two-thirds of the care provided during the 3-month period for both the hypertension and diabetes packages was for care unrelated to diabetes or hypertension. Therefore, the potential for package fragmentation exists. Although the average physician charges over a 3-month period for diabetes and hypertension were \$134 to \$140 respectively, the charges ranged from a low of \$7 to a high of \$3,400.

With an ambulatory-episode package, physicians assigned to packages by the researchers were likely to be underpaid or overpaid significantly, and specialty did not necessarily explain the variation. Because significant out-of-package care existed, either a method for handling out-of-package care could be developed or a time-interval ambulatory-care package would need to be established (319).

Using 1977 National Medical Care Expenditure Survey data,¹⁹ Walden described similar results

¹⁹This data set has many advantages because it includes patients of all ages, represents care in all 50 States and the District of Columbia, and allows construction of episode-of-illness files. The disadvantages include the fact that questionnaire respondents defined the content of packages. In addition, the data did not permit determination of the primary physician responsible for the patient's care.

(562). He examined four different packages for diabetes, the common cold, pneumonia, and hypertension. Most cases involved one physician. In the case of chronic disease, visits for care unrelated to the chronic disease were fairly common. In many cases, the primary physician handled much of the care unrelated to the specific condition. Much of the variation associated with a patient's care related to the number of visits to the package physician and to nonphysician providers and to the use of laboratory tests and X-rays. Volume of service was found to be the most important variable associated with expenditure variation. Whether a patient had more than one condition was also found to be a significant factor in services used for a chronic disease, such as hypertension.

With the package price set at the mean, only 5 to 7 percent of the packages would be paid at current fee-for-service prices: 70 percent would be set higher than the average and about 25 percent would be set lower. On the whole, physicians with a large proportion of chronic disease patients would have to absorb costs of care above the mean payment. Physicians treating a disproportionate share of elderly patients with chronic conditions might question the equity of their payment, because they would more likely have to absorb losses. Access to care would then become an issue, as physicians might refuse to treat elderly chronically ill patients (562).

Technological Change

Ambulatory-episode-of-care packages might provide an incentive for development of cost-effective laboratory devices for the office. In order to conserve on the number of visits within episodes, physicians might choose to provide laboratory tests within the office if the machines could be purchased at lower prices. This might encourage the development of lower cost analyzers for in-office use (332).

Physicians might be financially neutral about adoption and use of preventive technologies, such as pneumococcal vaccination, traditionally provided in ambulatory settings. The payoff—better health for beneficiaries—might not occur in any one particular ambulatory episode of care.

Adoption of new, potentially efficacious technologies such as MRI might be slowed if such a

diagnostic procedure were to be included in the ambulatory-episode package (234). Although MRI's usefulness for patient care and diagnosis has not been entirely determined (234), if the procedure were more expensive than alternatives, and if it were included in the package rate, incentives to avoid its use would exist. To the extent that MRI would have helped in patient care, quality of care would suffer (234).

Inpatient-Episode-of-Care Package

Global payment for all physicians' services associated with a single episode of inpatient care is sometimes termed payment by "inpatient physician DRGs." ²⁰ DRGs were originally created as a means of monitoring hospital utilization and are the basis of payment under Medicare's prospective payment system for inpatient hospital services (141,489).

Payment for packages of physicians' services for inpatient episodes of care could take various forms:

- Payment for all physicians' inpatient services based on physician DRGs.
- Payment for surgical inpatient services based on physician DRGs.—All physicians' services for surgical care would be paid by physician DRG. Medical services would be paid by fee schedule or CPR.
- Payment for the services of hospital-based physicians (e.g., anesthesiologists, radiologists, and pathologists) as part of a hospital DRG.—Hospital DRG rates would be recalibrated to reflect the services provided by hospital-based physicians.

Two studies have created inpatient physician DRGs using claims data. In one study, Mitchell, et al., expressly examined the feasibility of using physician DRGs as a means of paying for inpatient physician care (321). Hospital episodes were constructed with 1982 data from four States (Michigan, New Jersey, North Carolina, and Washing-

ton). The episodes included all physician services provided during a hospital stay and physician services provided the week before and the week after the hospitalization (313,321). In a second study, West, et al., explored methods that might be employed in merging Part A and Part B data (571).

Some investigators have suggested that physicians could be paid by DRG for inpatient surgical care and by either the current CPR system or by a fee schedule for medical services. Mitchell, et al., for example, suggest that because physician charges in surgical DRGs are relatively homogeneous, physician surgical DRGs could be adopted (320). But West, et al., suggest caution in adopting any DRG type of payment because payments within DRGs are not sufficiently homogeneous (571). West, et al.'s findings indicated that "although payments within physician surgical DRGs may appear to be slightly less variable than medical DRGs with respect to their arithmetic averages, their absolute variability (standard deviation) in dollars is greater" (571). Among 67 high-volume medical DRGs in South Carolina during 1981, the highest average charge for a DRG was 2.2 times the lowest. On the other hand, for surgical DRGs, the highest average charge was 23 times than the lowest (571).

The option of paying for the services of hospital-based physicians as part of the hospital DRG payment has not been studied. Including the services of hospital-based physicians in the hospital DRG payments has certain advantages. Hospital-based physicians generally see patients or examine specimens at the request of other physicians. Because patients rely on referrals to these physicians, mechanisms intended to encourage greater competitive price-shopping by patients would not be effective. Since many hospital-based physicians earn some portion of their income from salary or contracts with hospitals, the change to more direct control from hospitals would not be drastic. Hospitals would then have greater incentives to negotiate lower rates with these physicians (469).

The history of payment arrangements for hospital-based physicians is different from that for other physicians, and payment arrangements have differed for radiologists, pathologists, and anesthesiologists. In 1982, the Medicare program in-

²⁰Patient Classification systems other than DRGs may be more appropriate for describing a patient's severity of illness, but they have not yet been analyzed for the purposes of physician payment. Possible alternatives include patient management categories, staging, severity of illness, medical illness severity grouping system, and the acute physiology and chronic health evaluation instrument.

roduced new complexities into hospital-based physicians' relationships with hospitals by eliminating combined billing and requiring that all medical professional services be billed and paid for under Part B of Medicare.²¹ In reaction to the original Medicare legislation and subsequent amendments, hospital-based physicians began a gradual transition to fee-for-service compensation. The American College of Radiology explicitly encouraged its members to move in that direction (268). Since the implementation in October 1983 of the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) (Public Law 97-248) and Medicare's prospective payment system for inpatient hospital services, the trend to fee-for-service among radiologists has accelerated (123).

Among pathologists, there have been increases in both fee-for-service and salaried compensation but not in arrangements by which they receive a percent of their billings. Reimbursement per unit of service tends to be smaller in pathology than in radiology, so the per unit expenses of billing for fee-for-service practices are relatively higher for pathologists than for radiologists. Therefore, pathologists might be more logically inclined to salaried practice (450). TEFRA's most severe limitations are on the billing practices of pathologists, by defining almost all clinical laboratory tests as Part A services not reimbursable on a charge basis. Under TEFRA's regulations, clinical laboratory services meeting very specific criteria can be considered reimbursable under Part B; all other clinical laboratory services are reimbursed under Part A. All anatomical pathology services are considered professional services and must be paid for on a reasonable charge basis under Part B (see ch. 3).

Anesthesiologists are predominantly fee-for-service practitioners who provide services directly to patients. In this respect, they are more similar

to office-based physicians than other hospital-based physicians. A study in 1979 indicated that 77 percent of anesthesiologists were paid on the basis of fee-for-service, 19 percent were salaried, and 4 percent used the percentage of departmental revenue as their method of compensation (451). In former years, the American Society of Anesthesiologists required as a condition of membership that billing be on a fee-for-service basis unless the physician was a government employee. Following the intervention of the Federal Trade Commission, the Society amended its rule in 1980, but continues to advocate fee-for-service as the method of compensation (428).

Quality of Care

Packaged payment for an inpatient episode of care contains incentives for underuse of consultants. As has been noted previously, to the extent that specialists' consultations have been overused in the past, a reduction in the use of consultants would not adversely affect quality of care. Evidence is equivocal as to whether consultations improve quality of care, but a positive relationship seems to exist (275). Methodological problems of studies prevent clear-cut interpretation of many of the studies on consultation (275). Some States (e.g., New Jersey) use all physician resources for inpatients, including consultants, at a higher rate. Whether increased resource use at that level adds to quality of care is unclear (320,321).



Photo credit: American College of Physicians, HEALTHSCOPE film series

Payment for an inpatient-episode-of-care package would contain incentives to reduce the use of referral services, such as those of consultant physicians.

²¹ Although the congressional intent to separate physician administrative charges (Part A) and physician clinical charges (Part B) was in the initial Medicare legislation, carriers differed in their interpretations of how certain charges were handled. The Tax Equity and Fiscal Responsibility Act (TEFRA) (Public Law 97-248) (Section 112) mandated the separation. In addition, TEFRA eliminated a requirement that Medicare pay 100 percent of the reasonable charges for pathology and radiology services delivered to hospital inpatients. TEFRA also eliminated combined billing (48 FR 39740), which allowed hospitals to bill for the services of pathologists and radiologists.

If under packaged payment surgical cases were more highly paid than medical cases (as they are under Medicare's prospective payment system), some patients might have surgery earlier than in the past (before certain medical procedures are tried). This change might affect the quality of patient care if a medical treatment would have been successful.

If physician inpatient care were paid by DRG, a physician's decision to examine all avenues before deciding on a diagnosis might be influenced by the relative payment rates for different DRGs (233). In the case of a pneumonia patient, if the exact cause of a disease were found, the patient might then be assigned to a more lucrative DRG. The physician's marginal gain from an additional diagnostic test might therefore exceed the marginal cost (233). On the other hand, an anemic patient might be treated initially with iron supplements, because determining the exact cause of the anemia would not change the patient's assignment to a particular DRG. Only if that treatment failed would an exact etiology of the disease or another treatment be tried (233).

Patients might be discharged from the hospital, if their conditions allowed, and then readmitted at a later date for additional procedures. PROS currently review readmission to the same hospital for the same diagnosis within 7 days of patient discharge. But patients who entered another hospital, were admitted to the same hospital for related but not the same causes, or were readmitted after 7 days would not be detected.

If payment were more restrictive for inpatient services than for ambulatory services, physicians might change the setting of care to ambulatory, and patients who needed inpatient care would suffer. On the other hand, patients whose hospitalization was questionable could benefit.

Access to Care

If assignment was mandatory under payment for an inpatient episode of care, the decision to participate in the Medicare program might be made by physician groups, including medical staffs. Since the financial risk of paying an individual physician for an inpatient episode of care is great, investigators have suggested that a larger

entity, such as a single-specialty group or a multi-specialty medical staff (perhaps in the form of an IPA), could be the recipient of payment (320). The larger the size of the physician group, the greater the potential for loss of income if mandatory assignment was refused. If mandatory assignment was accepted, access might be improved. But in areas with few hospitals, if a medical staff chose not to accept assignment, significant access problems might occur.

Hospital-based physicians who could realign their market might choose to do so, if payment in those sites were not so constrained. Radiologists might engage in ambulatory work, and anesthesiologists might choose to work in ambulatory surgery centers. In addition to affecting quality of care, the change in sites might reduce access to these physicians for hospitalized patients.

Physicians might try to transfer patients to other hospitals, especially if the physician and hospital were paid one rate. This would be especially evident if the patient had multiple, expensive conditions. Paying for all inpatient care by DRGs or other methods places the hospital and physician in a situation with the same incentive plan for underuse of services.

Costs and Efficiency

Research based on claims data suggests that, given the wide range of physician payments for medical and surgical DRGs, the vast majority (82 percent) of Medicare beneficiaries would *experience* a change (increase or decrease) in their total cost-sharing of \$75 or less (321), assuming mandatory assignment. For 1.6 percent of beneficiaries, there would be an average increase in cost-sharing liability of more than \$150. Under a physician DRG system, patients might exercise less constraint in their requests for additional services as cost-sharing would be known in advance (469). The cost-sharing liability would be higher than at present for less complicated cases and lower for more complicated ones. In a sense, less costly cases would be subsidizing the more costly ones.

If surgical cases were more highly paid (as they are under Medicare's prospective payment system), some patients might have surgery earlier than in the past before certain medical procedures

are tried. This change might negatively affect the quality of patient care if a medical treatment might have been successful.

A Pennsylvania study of per case payment for physicians' inpatient services found that total hospital outlays were reduced in many hospitals. But total physicians' payments increased because physicians were reimbursed 100 percent of a negotiated schedule of fees instead of the 90th percentile of usual, customary, and reasonable charges (286). Physician participation in the program was voluntary, and not all physicians who originally volunteered for the program completed it. By reducing hospital lengths of stay, a number of the participating hospitals reduced combined total expenditures despite the increase in physician expenditures. The Pennsylvania study had a number of methodological problems that prevent generalizing the results. Since physicians volunteered to be in the program, there may have been selection bias. In addition, the sample was small as very few analyses from the control and experimental groups were usable.

As has been mentioned with other packages, there is no guarantee that payment for inpatient episodes of care would save money for the Medicare program, although expenditures per case might be more predictable. To the extent that physicians chose to readmit patients, program expenditures might rise. Physicians might also shift services to another setting. Shifting services from one setting to another would depend on the ability to substitute ambulatory or nursing home care for inpatient care. Research indicates that such substitution is possible (101,206). The effect of shifting services on program expenditures would depend on the cost of care in other settings and the extent of care used.

Efficiency of resource use would be encouraged within a package but not necessarily across packages. Multiple admissions might increase if physicians sought to maintain or increase income. Physicians might attempt to provide more packages of care or to see only less costly patients.

For a particular case, a physician might either profit or lose financially relative to the present

system.²² Because a physician would be likely to treat small numbers of cases within each DRG (2 to 2.5 patients on average), there is little opportunity for gains and losses to cancel each other out at the DRG level (320). Even at the medical staff level, payments to physicians under DRGs would be lower where the medical staff is highly specialized (320,321). Because medical subspecialists and generalists charge less on average than surgical specialists, their relative loss of funds would be greater than that of the surgical specialists. In fact, the DRG payment could be a lottery with large losses for some physicians and windfall gains for others (313).

In the four States that Mitchell, et al., studied, the standards of care varied (320,321). For example, for lens procedures, New Jersey's care was far more service-intensive than in the other three States. Physicians in New Jersey used an assistant surgeon in three-quarters of the operations, while those in Michigan and Washington did so only 28 and 36 percent of the time, respectively, and North Carolina physicians never used an assistant surgeon who billed Medicare. Physicians in New Jersey also kept their patients in the hospital far longer than physicians in the other three States. Because of interstate variations, creating payment rates acceptable to all physicians would be difficult. Specialty differences in terms of charges were not great within New Jersey, but were significantly different within North Carolina and Washington. Specialty, however, accounted for little of the variation in treatment costs (320,321). Similar variations in treatment patterns, including hospitalization, have been noted by other researchers (125,568).

²²Ginsburg and Newhouse have suggested that a blended fee-for-service/DRG payment might be appropriate to alleviate some of the problems associated with the potential for certain physicians to gain or lose a great deal. The process would begin by examining each DRG to determine how homogeneous physician charges are within the DRG. Physicians would bill their regular charge, which would be screened by the CPR method and the DRG rate. The payment would be a weighted average of the CPR approved rate and the DRG rate. Since each bill would need to be screened the system would be more expensive than a DRG-only rate. With this blended method, incentives for cost containment would not be so great as with a simple DRG payment system, but incentives for underutilization would also be reduced (167).

In one instance, the prospective ratesetting system for hospitals in New York State, pressures to contain hospital costs under a prospective payment system contributed to reduced payment for hospital-based physicians. Including hospital-based physicians in the hospital DRG payment would provide similar incentives for hospitals to pay these physicians less (429). In fact, a 1983 survey by the American College of Radiology found that 80 percent of radiologists were on fee-for-service, compared with a previous finding of 63 percent in 1979 (9).

Technological Change

DRGs would encourage the development of cost-saving procedural technologies to save physician time. For example, physicians would have an incentive to develop surgical techniques that reduced operative time, such as an improved method of performing a coronary artery bypass graft or a hip replacement.

Whether an inpatient-episode package would encourage or discourage the use of ESWL would depend on whether ESWL was classified in a medical (generally, it is now treated as a medical procedure) or surgical DRG or in another classification. If ESWL were incorporated in the same package with a surgical treatment, use of the procedure that used less costly physician resources would be encouraged.

Total-Episode-of-Care Package

A total episode of care may be defined as beginning either when the patient formally requests an appointment for medical care (224) or when the patient has a face-to-face contact with a physician (224,250). Since making an appointment does not guarantee that a patient will actually follow through on medical care, the first face-to-face contact may serve as a better marker. For payment purposes, an episode would end when the last care for a particular illness was given.

Payment for a total episode of care has the potential for generating more consistent and appropriate incentives for efficiency than the current payment system (399). With the total episode approach, the provider would be given a fixed pay-

ment for an episode or a health problem. The recipient of payment could be held accountable for only those aspects of care that were physician-administered, or the facility cost could also be included.

Classification systems for total episodes of care have yet to be defined. Some investigators have defined fixed-interval episodes for purposes other than payment, such as tracking utilization (179), and other investigators have combined inpatient and ambulatory claims to form an episode of illness (249). Episodes of acute disease may be easier to define than episodes of chronic care, because acute episodes have more definite beginnings and endings. Therefore, as mentioned in the discussion of ambulatory episode of care, payment for chronic care might have to be defined according to a period of time. Payment for a total episode of care would encourage efficient use of resources across the entire array of diagnoses and treatments for that episode. Criteria would have to be established to define minimal times between contacts for the same problem in order to divide separate episodes (222).

It has been estimated that an episode classification system could be developed, tested, and refined so as to be usable for payment purposes in 5 years (222). Defining total episodes would be complicated by the fact that principal diagnosis is much more exact in the hospital setting than in ambulatory care.

The effects of a total-episode-of-care package on quality of care, access to care, costs and efficiency, technological change, and administrative feasibility are summarized below.

Quality of Care

As has been discussed with other packages, incentives to underuse consultants and ancillaries would exist under payment for a total episode. To the extent that these services add to the quality of care, problems might arise.

Access to Care

Access to care might or might not be of concern. As long as comorbid conditions were included in separate episodes, it is unlikely that there

would be access problems. Still, the oldest beneficiaries might be at risk for underprovision or denial of care because they are most likely to have multiple chronic diseases and to require expensive treatment. Classification systems that adjusted well for case-mix and severity would make physicians neutral about treating different patients. Otherwise, physicians might avoid more expensive patients.

Beneficiaries would have incentives to increase visits because their cost-sharing liability would not change. As with other packages, physicians would have an incentive to reduce visits as they would be paid no more for additional visits.

Costs and Efficiency

Costs to the beneficiary might be more controlled within an episode than under the current CPR system. Both the beneficiary and the program would know their costs per episode in advance.

As long as all care was packaged in some form, Medicare program costs might be controlled. Whether program costs would fall would depend on the extent of out-of-episode care allowed.

Payment to physicians for a total episode of care would encourage efficient use of resources across the entire array of diagnoses and treatments for that episode. Some inefficiency might occur across episodes. Physicians would have an incentive to increase the number of episodes by billing for different episodes of care, and Medicare would have an incentive to define episodes broadly so that more was included within episodes.

Technological Change

With payment for total episodes of care, innovation and research and development would be more likely to be directed toward cost-saving technologies in both the inpatient and ambulatory settings. This situation might produce a problem for expensive new technologies that increased quality or that might be cost saving in the long run.

Because incentives would exist to control costs within packages, adoption of new, untried technologies with unproven efficacy would be retarded. In situations where MRI could be substituted for

X-ray computed tomography (CT) scanning, for instance, physicians might choose not to use MRI.

The adoption of new lenses for cataract surgery would be encouraged if they were inexpensive, but discouraged if they were expensive even if costs would drop over time.

Administrative Feasibility

Overall, packaging might be simpler to administer than the current CPR system. Beneficiaries, the Medicare program, carriers, and physicians would probably have fewer forms to complete because of the reduced number of bills submitted. However, if procedure codes were collapsed at the carrier level and physicians could continue to bill as they do now, the number of forms submitted would be identical to the present system. Because claims volume might be smaller with packaged payment, there would be some potential saving for the Medicare program (319). Initially, some of the savings would be cancelled out by the expense of creating packages. Over time, expense would also be involved in updating packages and creating new ones. If only a portion of care were paid on a packaged basis, carriers might need to implement additional monitoring procedures to screen for services included in a package.

Implementation of most packages would involve major changes for the recipients of payments. First, the recipient (the coordinating physician, physician group, or medical staff) would have to negotiate with the physicians involved to determine how to allocate payment for physician services within the package. This negotiation might be done each time a service is performed or for a time interval. In many cases, negotiating with others would be a new and potentially bothersome responsibility. In addition, administrative responsibilities would increase for the recipient of payment. Once allocation decisions were made, the recipient of payment would need to monitor the provision of care and to determine which services were and were not included in the package.

Although establishing codes for visits or episodes might be difficult, once the codes were established, claims processing would be simplified as certain ancillaries would be included in the

bills. Physicians would still be likely to document within their own records actual tests performed for liability and clinical reasons.

Carriers would be faced with additional burdens in administering an episode-of-care approach. Theoretically, physicians would be able to streamline their administrative procedures in order to submit one bill including all services associated with one episode of inpatient or ambulatory care. In practice, it might be that the episode determination would be made at the carrier level, which might delay the actual payment to the physician. This would be especially true with the more complex forms of paying physicians, such as a total episode of care. In particular, carriers would need to screen bills to make sure that services within one episode were paid as part of that episode.

Should assignment be optional, some administrative confusion would result for beneficiaries

who would not know who was being paid in what manner for what services and what cost-sharing they would bear. Packaging incentives might then not apply. Effective methods of communicating with beneficiaries would need to be developed.

Monitoring for underuse of services within packages and overuse of services outside of packages would be necessary. Inpatient utilization review systems currently in place are more developed and easier to administer than ambulatory systems. Although Medicare requires utilization review for office-based physicians' services, the implementation of reviews varies among carriers (474). Given the lack of experience in evaluating utilization in ambulatory settings, systems might need to be refined or new ones developed. Once developed, the systems might be expensive to administer.

CONCLUSION

There has been little or no experience with payment for the majority of packages of services. Payment under collapsed procedure codes could be based on CPT-4 codes, but for most packages, the categories for payment have not yet been defined. In some cases, such as total-episode-of-care packages, rudimentary research would need to be conducted to develop payment categories. In other cases, such as ambulatory-visit packages, research to develop categories is currently being conducted. Some packages, such as those for inpatient episodes of care, might require demonstrations to evaluate the effects on Medicare program and beneficiaries' costs and on quality of care and access. Collapsed procedure codes could be implemented fairly quickly after decisions were made about which codes to collapse. Special-procedure packages could be implemented within a shorter time than other packages if the current coding system was used to create packages, but it would be necessary to define the package content and to delineate the tasks that the coordinating physician would have to perform.

Payment for most packages would entail major changes in financial risk for the payment re-

cipient, whether it was a coordinating physician, a physician group, or the medical staff of a facility. The recipient of payment would have to negotiate prices and availability for referral physicians, clinical laboratories, regionalized facilities, and other referred services. An effective means of addressing the financial risk, such as an outlier policy or a reinsurance scheme, could assist with some of the financial risks that the recipient of payment would bear.

Mandatory assignment would be necessary in order for the recipient of payment to bear the financial risk of packaging's fixed **payment**. In the absence of mandatory assignment, the Medicare program and the beneficiaries would continue to bear the financial risk. Furthermore, without mandatory assignment, selection bias would occur. Physicians would be likely to accept assignment only for less complex and less expensive cases and to bill beneficiaries with more expensive care for amounts in excess of Medicare's payment.