

CHAPTER 5

---

**Financial performance and  
payment update for hospitals  
covered by prospective payment**

---

## R E C O M M E N D A T I O N

**5A** For fiscal year 2001, the Congress should increase the operating and capital payment rates for prospective payment system inpatient services by the rate of increase in the combined market basket plus 0.6 to 1.1 percentage points. If the current operating and capital market basket estimates hold, that level would result in an update of between 3.5 percent and 4.0 percent.

## Financial performance and payment update for hospitals covered by prospective payment

### In this chapter

---

- Overview of the payment system and policy changes
  - Financial performance and modeling of payment changes
  - Updating operating and capital payments
- 

**H**ospitals' financial status has deteriorated significantly over the past two years. The aggregate total margin for hospitals covered by Medicare's inpatient prospective payment system is estimated at 2.7 percent for 1999, less than half of its 1997 level. Although shrinking payments in the private sector (relative to the cost of care) were responsible for the majority of the drop in total margin, reduced Medicare payments also played a role. MedPAC's new Medicare margin, covering hospitals' five largest lines of Medicare service, dropped from 9.8 percent in 1997 to 6.5 percent in 1998, reflecting hospitals' first year of operation under the provisions of the Balanced Budget Act of 1997. The inpatient margin fell the least and remains high by historical standards, but margins declined substantially for the outpatient, inpatient rehabilitation and psychiatric, home health, and skilled nursing services that hospitals covered by the inpatient prospective payment system provide. The Commission recommends a range for the update to inpatient payments in fiscal year 2001 that extends about two percentage points beyond the current law increase. Our recommendation reflects the cost-increasing effects of new drugs and other technological advances, as well as a documented decline in hospitals' overcoding of diagnosis related groups. We believe that payments should still be reduced to account for shifts of care from the latter days of inpatient stays to post-acute settings; however, to avoid exacerbating the current level of financial stress in the industry, we are recommending a one-year hiatus in phasing in this reduction.

---

## Overview of the payment system and policy changes

---

Under the inpatient prospective payment system (PPS), a hospital receives prospectively determined operating and capital payments for each Medicare discharge.<sup>1</sup> Operating payments, including those for graduate medical education programs for physicians and approved training programs for other health professionals, totaled \$66.0 billion in 1999. They are intended to cover all costs that hospitals incur in furnishing acute inpatient services for Medicare beneficiaries, except those for capital. Capital payments, which account for another \$6.8 billion, cover building and equipment costs (principally interest and depreciation) allocated to Medicare's inpatient services (CBO 2000).

### Operating and capital payment policies

For inpatient care under the PPS, hospitals' operating and capital payments are determined in similar ways. Each payment system consists of three main components:

- the per-case base payment rate
- the case weight
- special adjustments

The base payment rate reflects the average costliness of Medicare cases nationwide, adjusted for the relative level of input prices in the hospital's local area. The labor-related portion of the base operating payment rate is adjusted by a wage index that reflects the relative level of wages and salaries of hospital workers in each metropolitan or statewide rural area.

A similar index, called the geographic adjustment factor, is used to adjust the base capital payment rate.<sup>2</sup> Medicare capital PPS is being phased in over 10 years, from 1992–2001. In fiscal year 2001, all hospitals will be paid on the basis of national prospective rates and in 2002 special policies in place during the transition will no longer be in effect.

The second component of PPS payment is a weight that accounts for the relative costliness of each case compared with the national average Medicare case. A separate weight is defined for each of 499 diagnosis related groups (DRGs), and the same DRG definitions and weights are used for both operating and capital payments. The product of the hospital's base payment rate and the relative weight for the DRG to which the patient is assigned is the provider's DRG payment rate for the case. Consequently, a facility's DRG operating and capital payments under PPS automatically reflect its mix of Medicare patients among DRGs, reflected by the average weight of the DRGs used to pay for their care. This average weight is the facility's PPS case-mix index.

The third PPS payment component includes additional amounts that may be paid for unusual cases or to hospitals with certain characteristics. These factors were included in the payment system to account for certain differences in the costs of treating patients or to accomplish broader policy objectives. Extremely costly cases can qualify for outlier payments, which are added to the DRG payment rate. An indirect medical education (IME) adjustment accounts for the higher patient-care costs of teaching facilities, and hospitals that treat a disproportionate share of low-income patients receive the disproportionate share (DSH) adjustment. Finally, special payment provisions apply

to rural hospitals designated as sole community providers, referral centers, or small Medicare-dependent hospitals.<sup>3</sup>

### Changes resulting from recent legislation

The Balanced Budget Act of 1997 (BBA) included several provisions that affected inpatient and outpatient payments to PPS hospitals. The Balanced Budget Refinement Act of 1999 (BBRA) slowed or reversed some of these changes, eliminating some of the cost savings resulting from the BBA.

### Inpatient hospital services

Under previous law, the update to PPS operating payments for fiscal year (FY) 1998 and beyond was equal to the forecasted increase in the PPS hospital market basket. However, since the inpatient PPS was introduced, the actual update generally has been below the increase in the hospital market basket. Action by the Secretary of Health and Human Services or the Congress led to updates averaging 2.1 percent below market basket from the third year of the PPS (1986) through 1996. The BBA continued this pattern by freezing rates in 1998, followed by updates 1.9 percent and 1.8 percent below market basket in 1999 and 2000, respectively, 1.1 percent below market basket in 2001 and 2002, and equal to market basket thereafter. The update for capital payments is established by the Secretary of Health and Human Services through regulation before the beginning of each fiscal year, rather than being set by statute.

The BBA sharply cut PPS capital payments for FY 1998 such that these payments would better reflect Medicare-allowable capital costs. The Health Care Financing Administration (HCFA)

---

1 For Medicare beneficiaries enrolled in Medicare+Choice, services covered by the inpatient PPS usually will be paid under terms negotiated between the hospital and health plan.

2 Hospitals in Alaska and Hawaii also receive cost-of-living adjustments for the nonlabor portion of the base operating rate and for the federal capital payment rate.

3 A sole community provider is designated by Medicare as the only provider of hospital care in a market area. A rural referral center is generally a large rural hospital designated by Medicare as serving patients referred by other hospitals or by physicians who are not members of its medical staff. A small rural Medicare-dependent hospital is located in a rural area, has 100 or fewer beds, is not classified as a sole community provider, and has at least 60 percent of its inpatient days or discharges attributable to Medicare.

---

overestimated capital cost growth in the early 1990s, and therefore set high annual updates to capital payment rates. Because actual payments were held equal to 90 percent of estimated capital costs in FY 1992–1995, the updated payment rates did not result in increased payments. When budget neutrality expired in 1996, actual payments increased to equal updated rates, resulting in a 22.6 percent increase in rates. The BBA permanently reduced capital payment rates by 15.7 percent and, for FY 1998–2002, by an additional 2.1 percent. This largely reversed the increase caused by the end of budget neutrality.

Effective in FY 1999, the BBA defines certain cases as transfers and pays for these cases using a modified payment formula. The cases must be in 10 DRGs selected by the Secretary and be discharged to PPS-excluded hospitals or units, skilled nursing facilities or, in some cases, home health care. Hospitals transferring patients are paid an average per diem amount for the days before transfer (twice the per diem rate for the first day) up to the full DRG rate. The Secretary identified the applicable DRGs based on high volume and above-average use of post-acute care, and estimated that the provision would reduce PPS payments by 0.6 percent.

The BBA cut DSH payments during FY 1998–2002, with reductions implemented in one-percentage-point increments that reached 5 percent in 2002. In addition, the BBA required that HCFA recommend a new payment formula for DSH adjustment, that the new formula treat all hospitals equally, and that the low-income share measure continue to reflect both Medicaid patients and Medicare patients eligible for Supplemental Security Income.

The BBRA increased IME and DSH payments, relative to the BBA provisions, and made other changes to reduce geographic disparity in graduate medical education payments. In addition, the Secretary was directed to collect the uncompensated care data needed to reform the distribution of DSH payments.

## **Outpatient hospital services**

The BBA enacted major changes in Medicare’s payments for services provided in hospital outpatient departments. It eliminated the so-called formula-driven overpayment—under which Medicare’s payments did not correctly account for beneficiaries’s cost sharing—for certain services and extended the reduction in payments for outpatient capital and for services paid on a cost basis. The law also directed the Secretary to establish a PPS for services paid at least partially on the basis of incurred costs. The BBRA eased the transition to a PPS by setting payment floors effective through 2003, adding an outlier policy to compensate for extremely high-cost cases, and allowing cost reimbursement for certain drugs and supplies for three years. It also clarified how HCFA should calculate aggregate payments to hospitals in the first year of the PPS to mitigate the effect on hospitals. The legislation also limited beneficiary cost sharing for an outpatient service to the Part A deductible after the PPS is implemented.

---

## **Financial performance and modeling of payment changes**

---

The nation’s health care system has undergone major changes affecting the mix and scope of services in the last decade. Nonetheless, the hospital sector is still the largest single category of spending, accounting for more than \$382 billion in 1998 and about 33 percent of personal health care spending (Levit et al. 2000). The financial performance and general productivity of the hospital industry are important for the nation’s well being.

The financial status of the hospital industry depends on the volume of care provided, the per unit costs of providing that care, and the payments that private and public purchasers agree to make. Hospitals have been under financial pressure from purchasers for most of the past decade, first from public and later

from private purchasers. In recent years pressure has developed from both sides. As a result, hospitals have taken successful action to constrain cost growth, which initially improved financial performance. Increased pressure from Medicare, however, has led to significant deterioration recently, which is of concern if it limits access to and quality of hospital care available to Medicare beneficiaries.

This section reviews hospital financial performance under Medicare, and then addresses all payers for hospital care, patient and non-patient revenue, and total hospital margins.

## **Financial performance under Medicare**

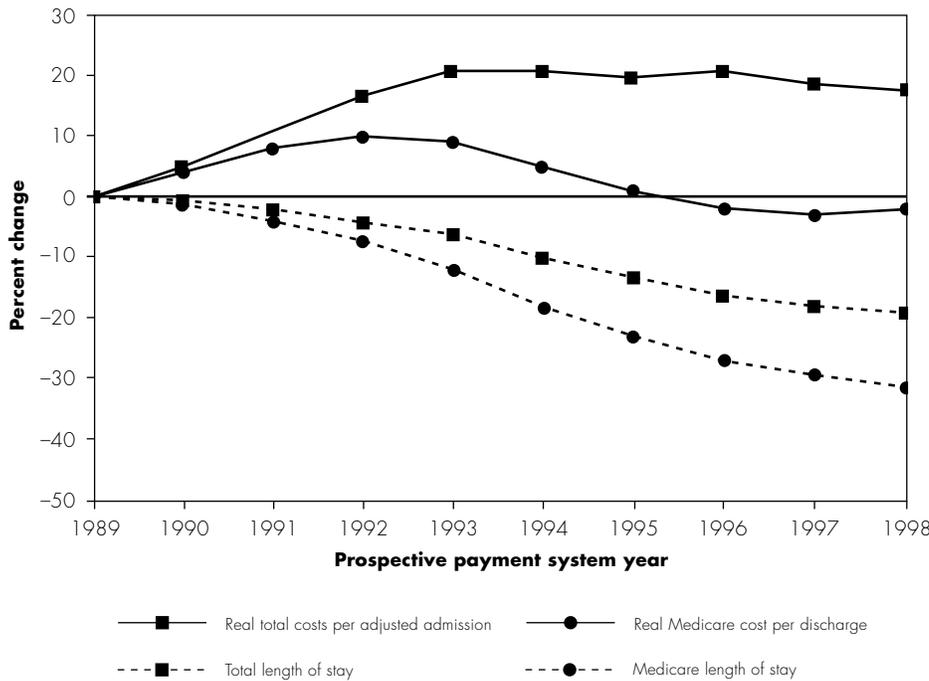
Medicare accounts for about 39 percent of spending on hospital care; private payers account for 42 percent. Our discussion of hospitals’ Medicare financial performance begins with the trend in cost per case—a direct measure of the resources used in producing inpatient care—and the trend in length of stay, a key determinant of inpatient cost growth. We then compare the trends in inpatient costs and payments to understand how changes in Medicare payment policies, as well as those of other public and private payers, affect hospital financial performance. We present the Commission’s PPS inpatient margin through 1998, but have also gone beyond the inpatient sector to develop margins for Medicare outpatient services and for hospitals’ five largest lines of Medicare business. In addition, we have modeled the impact of BBA and BBRA provisions on the PPS inpatient margin through 2002.

## **Length of stay and cost per case**

MedPAC examined length of stay and cost per case for both Medicare beneficiaries and patients of all payers. Since 1989, reductions in length of stay have been associated with slower growth or actual decline in real cost per case for patients of Medicare and those of other payers (Figure 5-1). The Medicare Cost Report provides information on inpatient care for Medicare beneficiaries, while American Hospital Association (AHA) data give information on care to all

**FIGURE 5-1**

**Cumulative changes in Medicare and all-payer real costs per case and length of stay, 1989-1998**



Note: Total costs per adjusted admission and total length of stay data (from the American Hospital Association) are based on community hospitals (which include some facilities excluded from prospective payment) and federal fiscal years. The Medicare inpatient costs per discharge and Medicare length of stay data (from HCFA) are based only on hospitals paid under prospective payment and on prospective payment system years. Real costs are calculated using the GDP implicit price deflator.

Additional data are shown in Appendix Table C-1.

Source: American Hospital Association National Hospital Panel Survey and Medicare Cost Report data from HCFA.

nonteaching hospitals 2.3 percent.<sup>4</sup> The Health Indicators Survey indicates that in FY 1999, Medicare length of stay declined 4.5 percent, while length of stay for all payers declined 1.8 percent.

Medicare real cost per discharge increased 2.1 percent annually from 1990-1993, then decreased at an average rate of 3.2 percent a year through 1996. It was down 1.1 percent in 1997 and up 0.2 percent in 1998. Real total expenses per adjusted admission, which measures costs of both inpatient and outpatient care for Medicare and all other patients, decreased 0.2 percent from 1998 to 1999.

From 1989-1998, more rapid declines in length of stay have been accompanied by slower growth or reductions in cost per case. Medicare length of stay has fallen more (31 percent) than has length of stay for all payers (19 percent), contributing to a cumulative decline in Medicare real cost per discharge of 2 percent, while real total expenses per adjusted admission for all payers increased 18 percent.

**Medicare inpatient margin through 1998**

The Medicare inpatient margin is an important measure of the adequacy of Medicare payments to hospitals. This margin compares the payments hospitals receive from Medicare for inpatient services with their Medicare-allowable costs for these services, and is therefore determined by trends in both payments and costs.<sup>5</sup> The inpatient margin has fluctuated—in the early 1990s, the inpatient margin was low and often negative, but as hospitals contained their costs the inpatient margin grew steadily from 1992 through 1997. In 1998 the inpatient margin fell, due mostly to the impact of BBA provisions and possibly also to hospital concerns with fraud and abuse enforcement and investigations by the Inspector General. These margin reductions indicate that the effects of the

patients, including expenses per adjusted admission, a measure encompassing both inpatient and outpatient care.

We also examined data from a new survey of hospitals to understand length of stay and total expenses per adjusted admission for FY 1998 and 1999. The National Health Indicators Survey is being conducted by The Lewin Group under contract to the AHA, with financial support from MedPAC and HCFA. The Indicators Survey examines hospital utilization and finances based on data from a nationally representative panel of

about 500 hospitals (The Lewin Group 2000).

MedPAC's analysis of Medicare Cost Report data indicates that PPS length of stay declined over FY 1990-1997 at an average rate of 4.7 percent per year. The decline continued at 2.7 percent in FY 1998, affecting hospitals of all types and in all regions. Both urban and rural hospital length of stay declined by 2.7 percent. Major teaching hospitals experienced a 3.8 percent drop, other teaching hospitals 2.8 percent, and

4 Major teaching hospitals are defined by a ratio of interns and residents to beds of 0.25 or greater, while other teaching hospitals have a ratio of less than 0.25.

5 The inpatient margin is calculated (in percentage terms) as the difference between inpatient payments and Medicare allowable costs (as derived from costs reported on the cost report each hospital submits to HCFA) divided by inpatient payments. The same general approach is used for the other hospital Medicare margins discussed later in the chapter.

## Analysis of changes in hospital readmission rates

From 1991–1997, as inpatient length of stay (LOS) in prospective payment system (PPS) hospitals decreased by approximately 30 percent, the readmission rate increased.<sup>6</sup> Because there is a concern that shorter LOS and increases in readmission rates may be indicators of poorer quality of care, we investigated whether there has been an association between the rate of change in these two variables that might indicate the need for some payment response. We found none.

Table 5-1 shows the increase in the rate of readmission within 3, 7, and 30 days of discharge from the initial admission. Particularly interesting is the 0.5 percentage point change, or 30 percent increase, in the rate for three-day

readmissions, which might be linked to shorter LOS.

We related the decrease in LOS to the increase in readmission rates for the 195 DRGs (of 499) with the highest volumes of initial admissions in 1997. The data show a significant decrease in LOS from 1991–1997. The average decrease was three days (or 32 percent), and only one DRG showed an increase. These DRGs showed an average increase in the three-day readmission rate of 0.4 percent, with 80 percent of the DRGs increasing. We did not find a correlation, however, between the change in LOS and the change in readmission rate.

We also investigated possible associations between hospital

characteristics and changes in readmission rates. In general, all hospital types showed increases in readmission rates during 1991–1997, and the ordering of the hospital types remained substantially the same.

We compared the change in hospital LOS to change in readmission rate by dividing the hospitals into quintiles by change in LOS, from largest to smallest decrease. There was little change by quintile and it was not consistent in direction; the first and last showed larger increases in readmission rates than the middle three. We conclude, therefore, that there is no correlation between change in LOS and change in readmission rate at the hospital level.

Our analysis suggests that the increase in readmission rate and the decrease in LOS are independent phenomena. The increase in readmission rate may be caused by changes in patterns of scheduled admissions, increased severity of patients' conditions or some other factor. Other studies of readmissions show that the best predictor for readmission within a DRG is an unusually long LOS (D'Agostino et al. 1999, Lahey et al. 1998, Castells et al. 1996). The patients who initially stay the longest are the ones with complications and comorbidities, and tend to be the ones readmitted. This pattern could also be affecting our results. ■

**TABLE 5-1**

**Changes in readmission rates, 1991–1997**

Readmission within	Year		Percentage point change
	1991	1997	
3 days	2.0%	2.5%	0.5%
7 days	4.4	5.3	0.9
30 days	13.3	14.6	1.3
Initial admissions with live discharges	7.3 million	7.6 million	

Source: MedPAC analysis of 1991 and 1997 Medicare Provider Analysis and Review files data from HCFA.

<sup>6</sup> A readmission is an admission to a PPS hospital following a discharge from a PPS hospital within a specific time, such as 7 or 30 days. It does not include transfers from one PPS hospital to another. The readmission rate is the number of readmissions in a specific time period per 10,000 initial admissions with live discharges.

BBA and more stringent government oversight of payment policy have begun to reduce Medicare payment growth.

Payment growth for inpatient services is heavily influenced by Medicare payment

rates, which are updated each year. The update factor for PPS operating payment rates is generally set in relation to the forecast increase in the PPS hospital market basket, which measures the prices of inputs (goods and services) used by

hospitals. The update factor reflects the notion that, as the cost of providing inpatient care rises more slowly or more rapidly, payment rates should be adjusted correspondingly. The update factor is legislated as the market basket plus or

minus a percentage amount to account for other factors. In FY 1998–2000 (the first three years of the BBA), update factors for the PPS operating payment rates were the lowest since prospective payment

began (0 percent, 0.5 percent and 1.1 percent, respectively). Focusing solely on the update factor to gauge the adequacy of Medicare reimbursement, however, is misleading; hospitals have been

successful in containing cost growth during this period, as discussed in the previous section. Because hospital costs were largely reduced due to declines in length of stay, there was not a

## Treatment of non-allowable costs

**O**ur Medicare margins have always related payments to costs that Medicare defines as “allowable.” MedPAC and HCFA have been working together to develop a margin that encompasses as much as possible of the revenue that hospitals receive from Medicare. The goal is a single measure that all federal policymakers can use in assessing the adequacy of Medicare payments (for annual update decisions as well as a potential rebasing of payments) and in measuring the impact of changes in Medicare policy. As part of this larger effort, the two organizations are systematically reviewing the non-allowable cost elements to determine whether some should be added back in calculating margins. Table 5-2 lists examples of non-allowable costs.

### The role of allowable costs

In 1966, the decision was made that Medicare would pay its share of hospitals’ “reasonable costs.” Hospitals were immediately required to submit cost reports that presented full costs (per their own financial statements) and then display a series of subtractions to isolate allowable costs. An involved allocation process then determines Medicare’s share of the costs by category of service (inpatient, outpatient, hospital-based home health, and so forth). This basic structure of the cost report has never changed.

Under cost-based payment, the determination of allowable costs plays a direct role in assuring that Medicare’s payments are appropriate. This role also

extends to determining the base payment for a prospective payment system. Once prospective payment is in place, allowable costs play an important indirect role in determining the costs that go into the Medicare margins used for monitoring financial performance and supporting policy decisions.

### Identifying non-allowable cost elements to add back

Two categories of subtractions from providers’ full costs on the cost report clearly should not be added back. These are:

- costs of non-covered services (such as private-duty nursing, patient television and telephone use, and research), and
- otherwise allowable costs that are offset, partly or fully, by cash payments (such as employee cafeterias or parking, the sale of medical records, and nursing school tuition).

For items in these categories, funding is typically provided by entities other than insurers—often patients, but also students, employees, guests, and outside organizations. Some cost elements are categorically excluded (the non-covered services) while others are simply reduced. Excluding these costs generally has not been controversial.

The remaining non-allowable costs generally fall into two groups:

- costs in generally allowable categories considered unreasonable or excessive (such as costs in excess of compensation limits for contract therapists and physicians providing administrative services), and
- cost elements considered insufficiently related to the care of Medicare patients (such as direct advertising costs, lobbying expenses or political donations, and fundraising expenses).

Some costs in the first category—those exceeding the so-called standards of reasonableness—might be appropriate for a Medicare margin. Given the financial pressure on hospitals, it seems reasonable to believe that no hospital would spend more than necessary in areas such as contract therapy and medical administration services. The services in the second category—those HCFA considers unrelated to the care of Medicare patients—are more problematic. Allocating a share of such costs to Medicare in a margin calculation would strongly imply that Medicare’s payments should be high enough to cover them. However, many specific cost elements differ from one another in subtle ways, and there are also considerations of consistency in the treatment of costs between hospitals and other facility-based providers. Thus, there appears to be no shortcut to reviewing the appropriateness of each currently non-allowable cost element one by one, which HCFA and MedPAC will do in the coming months.

(Continued next page)

## Treatment of non-allowable costs (continued)

**TABLE  
5-2**

### Examples of non-allowable costs under Medicare payment policy

---

Direct advertising expenses (although normal “public relations” costs are allowed)

Interest expense on borrowing, to the extent offset by interest income\*

Excessive payments to physicians for services relating to administration (payment limited to “reasonable compensation equivalents” (RCEs) established by HCFA)

Payments to contract therapists beyond similar limits established by HCFA

Availability payments for physicians:

- Allowed for emergency rooms subject to the above RCE limits
- Not allowed for any other service

Charitable or political donations

Lobbying expenses, including the portion of dues to professional associations attributable to lobbying (although costs of contacts with government agencies for technical discussions of payment policy are allowed)

Fundraising expenses

Patient telephone expenses

Patient television expenses (other than in common areas, such as waiting rooms)

Certain entertainment costs (such as alcohol, musicians, and tickets to sporting events)

Employee travel costs unrelated to patient care

Excessive costs for management meals (such as costs of separate dining facilities or gourmet menus)

Research costs (other than certain patient care costs incurred as part of research projects)

Costs attributable to the failure to take advantage of available cash, trade or quantity discounts

Costs of fines or other penalties for violations of laws

Legal fees for defending alleged civil fraud or criminal indictment

Costs of educational benefits for anyone other than employees (spouses, dependents, and so forth)

Payments to reserve post-acute care beds

Dues to a social organization with no direct or indirect relationship to patient care

Expenses incurred to influence unionization votes (although normal “labor relations” costs are allowed)

Cost of private-duty nurses

Portion of the cost of employee meals covered by cash payments

Portion of the cost of parking for employees covered by cash payments

Portion of the cost of a nursing school covered by tuition

---

Note: \* All liquid resources beyond a reasonable level needed to meet operating cash needs are deemed to be available to the provider, such that additional borrowing would not be needed.

Source: MedPAC summary of information provided by HCFA.

### Profit margins from other data sources

Outside of analyses based on Medicare Cost Report data, attempts to calculate profit margins by payer or product line typically reflect an allocation of all costs to one service or another. Constructing payment-to-cost ratios by payer based on American Hospital Association data, for example (which a number of organizations, including MedPAC, have done) involves allocating hospitals’ total expenses among payers and non-patient care services. The two cost bases for calculating a Medicare margin—Medicare’s share of all costs or its share of Medicare-allowable costs only—produce different results and inevitable confusion.

Developing a Medicare margin that adds back all non-allowable costs (other than non-covered services and cash offsets) would reduce this confusion by adopting the same theoretical construct for the federal government’s margin measurements that is typically used in the private sector. However, that consideration must be played off against the policy relevance of a margin that matches payments to the best estimate possible of the costs for which Medicare should be paying. In that regard, continuing to exclude cost elements that policymakers believe are categorically inapplicable to Medicare patients must be a priority. Ultimately, our treatment of non-allowable costs may produce margins lower than those we currently publish, but the margins will remain above the levels that would result from allocating all costs proportionately among payers. ■

commensurate decline in the hospital market basket.

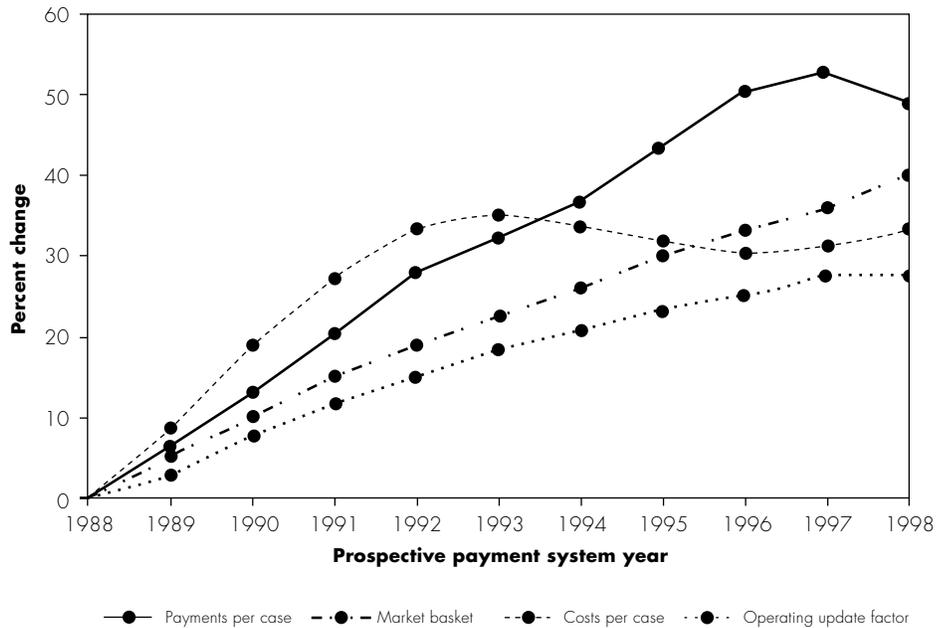
Through 1997, growth in Medicare payments per case has exceeded the update factor every year since prospective payment began (Figure 5-2). Based on Medicare Cost Report data, PPS payments per case have increased by a cumulative 49 percent between 1989 and 1998, while the cumulative payment updates during this period were 27 percent. Although much of this difference reflects a rise in the Medicare case-mix index (CMI) in the late 1980s through the mid-1990s, the CMI fell in 1998, which helped close the distance between growth in payments per case and the update factor.<sup>7</sup> There are early indications that the CMI declined again in 1999. The market basket, meanwhile, increased a cumulative 39 percent between 1989 and 1998.

Growth in Medicare costs per case relative to the update factor has also varied over time. Costs per case grew faster than the update factor in the early 1990s, but the relationship between them has changed in recent years. Between 1993 and 1997, the update factor exceeded the increase in costs per case, due mostly to decreased length of stay. Reduced length of stay has also influenced the relationship between payments per case and costs per case. During the late 1980s, hospital cost growth significantly exceeded payment per case growth, but in the early 1990s hospitals reduced cost growth, primarily through decreased length of stay, while payment growth continued apace.

The trend in the Medicare inpatient PPS margin reflects the pattern in cost growth over time, and the impact of the BBA in 1998 (Figure 5-3). The PPS inpatient margin was negative in the early 1990s, and reached a low of -2.4 percent in 1991,

**FIGURE 5-2**

**Cumulative changes in Medicare hospital inpatient payments, costs per case, operating update factor, and market basket, 1988-1998**



Note: Data for 1998 are preliminary, based on 56 percent of all hospitals covered by prospective payment. The operating update factor applies to operating payments, which account for approximately 92 percent of Medicare payments. Capital payments make up the remaining 8 percent.

Additional data are shown in Appendix Table C-1.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

primarily due to cost growth that far exceeded the update factor. Hospital cost containment through the mid- to late-1990s allowed the PPS margin to increase, reaching a high of 17.0 percent in 1997. Although the BBA went into effect mostly in 1998, certain policies (such as the capital update) began to affect hospitals in 1997, but did not slow the growth in inpatient margins.<sup>8</sup>

The inpatient margin fell to 14.4 percent in 1998, as the BBA was more fully

implemented.<sup>9</sup> The reduction in 1998 of approximately 2.5 percentage points is smaller than might be expected, considering the breadth of BBA cuts—in 1998, hospitals received a zero update to Medicare operating payments, while the market basket was 2.9 percent, and IME, DSH, and Medicare bad debt payments were all reduced. In addition, the CMI also fell in 1998 by approximately 0.5 percent, which would also contribute to low payment growth. The potential impact

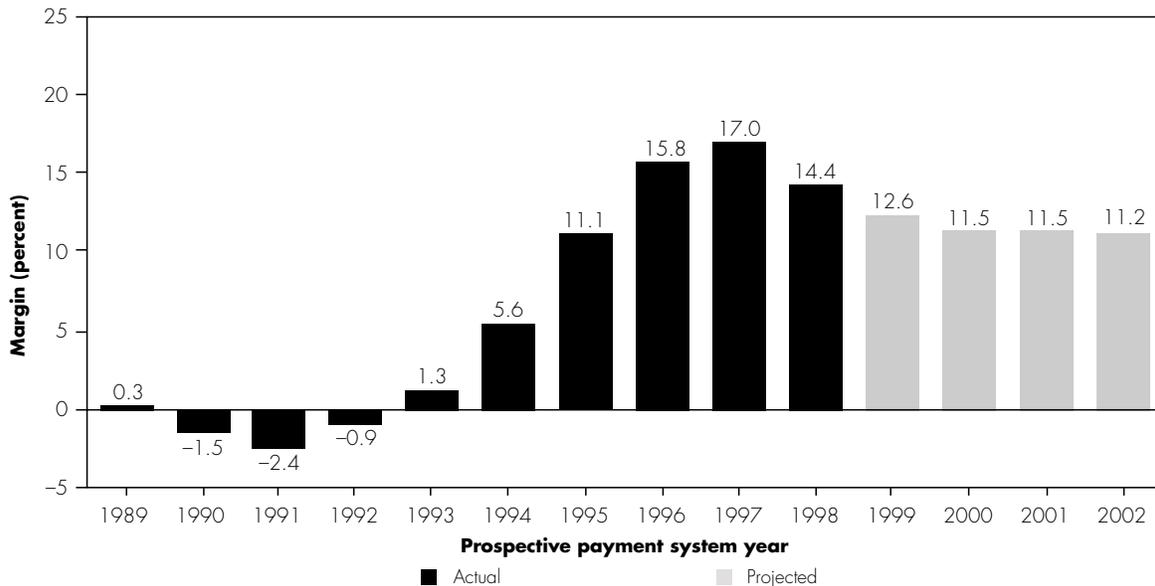
7 The CMI is the average payment weight; an increase in the CMI automatically raises payments by the same proportion.

8 The BBA reduced capital rates by 17.8 percent for discharges occurring after October 1, 1997, which allowed some of the impact of this provision to appear in 1997 cost reports.

9 The 1998 hospital data set used for this analysis includes 56 percent of PPS hospitals. The sample has been weighted to account for under-representation of teaching hospitals. Both costs and payments at the national level are weighted by the 1997 share of major teaching, other teaching and nonteaching Medicare inpatient hospital costs.

**FIGURE  
5-3**

**Trend in Medicare hospital inpatient margin, excluding graduate medical education, 1989-1998 and projected for 1999-2002**



Note: Data for 1998 are preliminary, based on 56 percent of all hospitals covered by prospective payment. Data for 1998 have been weighted by teaching status to improve predictive accuracy. Margins for all years are based on Medicare-allowable costs, excluding graduate medical education.

Additional data are shown in Appendix Tables C-3 and C-5.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

of the BBA, however, must be interpreted in light of continued modest cost growth for hospitals through 1998, and the prior trend of rapidly increasing inpatient margins. These factors probably offset a portion of the BBA's impact.

As PPS inpatient margins increased in the early 1990s, the number of hospitals with negative PPS margins decreased in each year from 1991 through 1996, and remained constant in 1997 (Figure 5-4). This trend reversed in 1998, when the proportion of hospitals with negative PPS margins jumped to 29 percent from a low of 23 percent in 1996 and 1997. The steep increase in the number of hospitals with negative inpatient margins does not bode well for hospitals, as inpatient payments generally offset hospital losses on other lines of Medicare services.

Inpatient margins for all hospitals were reduced in 1998, but the extent of the reduction varied among groups such as

teaching and non-teaching hospitals, or urban and rural hospitals. Medicare payments to hospitals are adjusted for a variety of factors, including degree of teaching intensity, location in a large urban area (relative to a smaller urban or rural area), and treatment of low-income patients. Teaching hospitals—those employing residents—receive increased Medicare payments in an effort to compensate for the added costs of providing training and education, and tend to have higher Medicare inpatient margins than do nonteaching hospitals. Academic medical centers and other major teaching hospitals had consistently higher Medicare inpatient margins over the last 10 years (Figure 5-5).

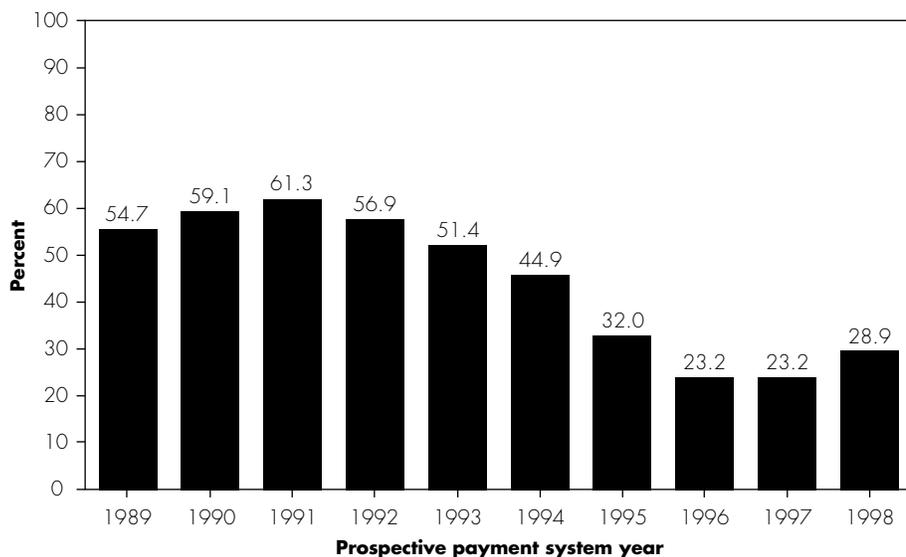
Major teaching hospitals' Medicare inpatient margins fell in 1998 to a greater extent than those of other teaching and nonteaching hospitals. Major teaching hospitals fall into two groups: academic

medical centers (AMCs) and non-AMC major teaching hospitals. AMCs' inpatient margins fell 4 percentage points (from 28.6 percent in 1997 to 24.6 percent in 1998), while non-AMC major teaching hospitals' Medicare inpatient margins declined 2 percentage points (from 28.2 percent to 26.2 percent). Other teaching and nonteaching hospital inpatient margins fell 2.4 and 3.0 percentage points, respectively. Despite the large reduction for AMCs, both major teaching hospital groups had 1998 inpatient margins near their highest levels since the PPS was enacted.

Rural hospitals tend to have lower Medicare inpatient margins than urban hospitals because of several factors, including a lesser concentration of teaching and DSH payments. From 1992-1997, the gap widened between urban and rural hospital Medicare inpatient margins, although both hospital

**FIGURE 5-4**

**Percent of hospitals with negative Medicare inpatient margins, excluding graduate medical education, 1989-1998**



Note: Data for 1998 are preliminary, based on 56 percent of all hospitals covered by prospective payment. Data for 1998 have been weighted by teaching status to improve predictive accuracy.

Additional data are shown in Appendix Table C-4.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

groups had increased margins in each year through 1996 (Figure 5-6). In 1997, before the BBA, rural hospital margins fell slightly, while urban margins continued to increase. Rural hospitals were also disproportionately affected by the BBA. In 1998, rural hospital inpatient margins dropped more than 4 percentage points to 5.2 percent, compared with a 2.3 percentage-point drop to 15.8 percent for urban hospitals.

Although BBA provisions (such as IME and DSH reductions) were targeted to urban hospitals, cost trends also played a role in the difference between urban and rural inpatient margins. In 1997 and 1998, rural hospital costs increased at a greater

rate than did those of urban hospitals. In 1997, cost growth was more than four times greater for rural hospitals than for urban hospitals. In 1998, rural hospital cost growth was approximately 50 percent greater than was urban hospital cost growth.<sup>10</sup>

In contrast, major teaching hospital costs grew at a lesser rate than costs for nonteaching and other teaching hospitals. Major teaching hospitals were the only hospital group with negative cost per case growth in 1997 (-0.1 percent), compared with a 0.7 percent increase for other teaching hospitals and 0.8 percent increase for nonteaching hospitals. In 1998, the cost increase for nonteaching and other teaching hospitals was more than a

percentage point higher than the cost increase for major teaching hospitals.<sup>11</sup> These trends for teaching hospitals and urban versus rural hospitals are not unrelated; major teaching hospitals are located predominantly in large urban areas, while rural areas have predominantly nonteaching hospitals.

**The impact of inpatient policy changes beyond 1998**

The inpatient Medicare margin, as well as the comprehensive Medicare margin discussed later in this chapter, provide a contextual understanding of hospital viability through 1998, the first year of the BBA. However, these margin measures do not incorporate some of the major components of the BBA that will affect Medicare payments to hospitals from 1999 through 2002. MedPAC has constructed a model to estimate the combined impact of the BBA and the BBRA on hospital Medicare inpatient margins during these years. The BBRA offsets some of the impact of the BBA, but was not in effect in 1998.<sup>12</sup> In terms of inpatient payments, the significant changes in the BBRA apply to DSH and IME payments.

Although the BBA affected Medicare payments for all five service components of our Medicare margin (discussed in a later section), MedPAC modeled the impact of the BBA and BBRA only on inpatient payments. We chose to use inpatient margins to gauge the overall impact of the BBA and BBRA for two reasons. First, Medicare inpatient payments represent by far the largest component of hospital Medicare margins, and although they are the only positive component of the Medicare margin in 1998 (the first year of the BBA), they keep the overall margin well above zero. Second, the most significant future provisions of the BBA affect inpatient

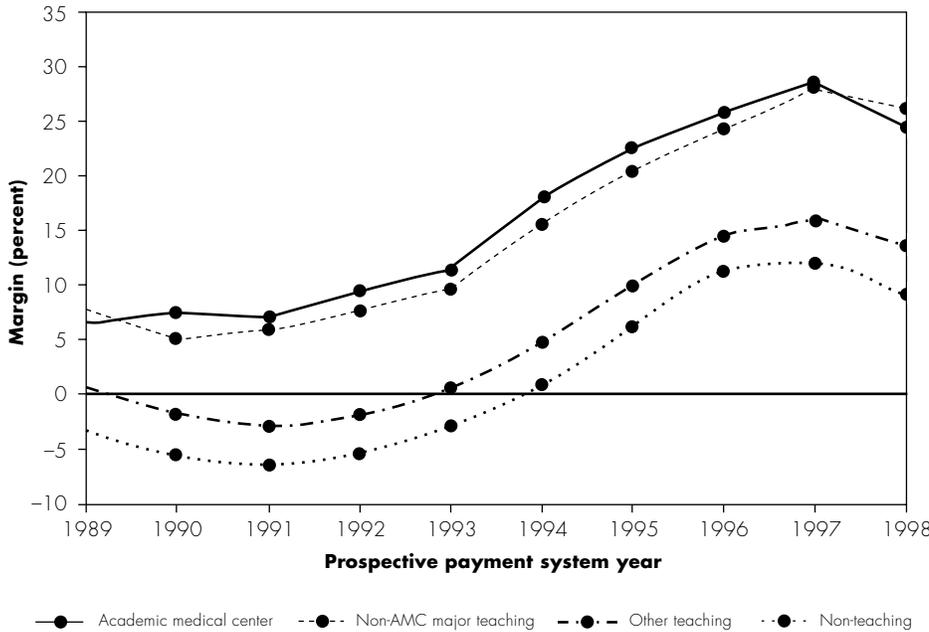
10 In 1997, the percent change in cost per case was 0.4 percent for urban hospitals and 1.9 percent for rural hospitals; in 1998, the percent changes were 1.5 percent and 2.2 percent, respectively.

11 In 1998, the percent change in cost per case was 0.6 percent for major teaching hospitals and 1.7 percent for nonteaching and other teaching hospitals.

12 The BBRA reduced or delayed several provisions of the BBA designed to reduce Medicare payments to hospitals and served to offset some of the negative impact of the BBA. Some of the provisions of the BBRA benefited certain groups of hospitals; others helped most hospitals.

**FIGURE 5-5**

**Trend in Medicare hospital inpatient margin, excluding graduate medical education, by teaching status, 1989–1998**



Note: AMC (academic medical center). Data for 1998 are preliminary, based on 56 percent of all hospitals covered by prospective payment.

Additional data can be found in Appendix Table C-3.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

payments, while the negative effects of the BBA on outpatient, home health, and skilled nursing facility services occur largely in 1998. Although these decreases continue through 2002, there are no additional reductions, except a possible cut in the home health base rate in 2002; the essential effect of the BBA on the other components of the Medicare margin is revealed in the 1998 Medicare Cost Report data. In fact, the outpatient PPS (discussed later in this chapter) is projected to increase the aggregate outpatient margin slightly, as will provisions in the BBRA that increase skilled nursing facility PPS payments. A PPS for home health services will be implemented that could affect home health margins, but the interim payment system in place in 1998 has already had a significant negative impact, and the intent of the PPS is to be distributive.

The estimate of Medicare inpatient margins for 1999–2002 is based on Medicare inpatient payments and costs from the 1998 Medicare Cost Report database. The 1998 cost report data reveal the impacts of many inpatient provisions of the BBA, such as the entire capital payment reduction, the zero update, and the largest of several incremental cuts in IME and bad debt payments. Data for 1998 provide the advantage of building on a base that incorporates many of the provisions and transitions scheduled to occur under the BBA.

The inpatient margin projection requires estimating both payments and costs for Medicare inpatient services. Payments for 1999–2002 are calculated with the aid of MedPAC’s case-level PPS payment model. MedPAC staff maintain and update the PPS payment model to aid in

simulating the effects of various payment policy changes that have been implemented or are under consideration. The model calculates standard operating and capital payments and all adjustments (geographic reclassification, teaching status, sole community hospitals, DSH payments, outlier adjustments, and so forth) for each hospital subject to the inpatient PPS. The model was adjusted to incorporate the key inpatient policy provisions of the BBA and BBRA. In addition, early indications from HCFA show that the CMI will drop again in 1999 by approximately 0.5 percent. This reduction in the CMI was incorporated for the 1999 payment estimate; we then assumed a stable CMI for the remaining years.

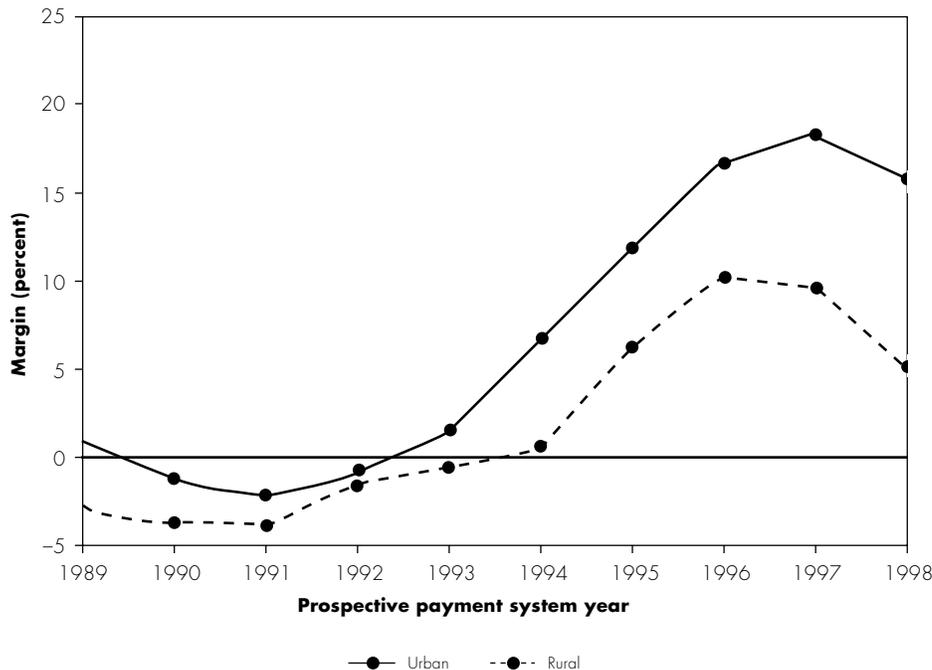
The 1998 base costs for inpatient services are adjusted each year for anticipated cost growth. Cost growth in 1999 is estimated by the National Hospital Indicators Survey as the market basket minus 1.1 percentage points; for 2000–2002, we estimate that costs for all hospitals will grow at a rate of market basket minus 1.0 percentage point. Because our analyses have shown that cost growth is heavily influenced by length of stay, we were prepared to assume gradually higher annual increases in costs per case if evidence indicated that the reduction in length of stay was leveling off. The 1999 Health Indicators Survey suggested, however, that length of stay may not yet be stabilizing.

A number of other assumptions underlie the BBA/BBRA impact analysis. For a comprehensive discussion of the methodology for this model and these assumptions, see Appendix D.

The combined effect of the BBA and BBRA will continue to reduce hospital Medicare inpatient margins, due to reductions in the update factor, DSH payments, bad debt payments, and other provisions such as the expanded transfer policy. We estimate that the inpatient margin for all hospitals will decline from 14.4 percent to 12.6 percent in 1999, due mostly to the introduction of the expanded

**FIGURE  
5-6**

**Trend in Medicare inpatient hospital margin, excluding graduate medical education, by urban and rural location, 1989-1998**



Note: Data for 1998 are preliminary, based on 56 percent of all hospitals covered by prospective payment. Data for 1998 have been weighted by teaching status to improve predictive accuracy.

Additional data are shown in Appendix Table C-3.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

transfer policy (part of the BBA), and the case-mix reduction (not part of the BBA). The inpatient margin will then decline more than 1 percentage point to 11.5 percent in 2000 before essentially leveling off through 2002, reaching a low of 11.2 percent. The reductions in 1999 and 2000 are moderate, relative to the 2.6 percentage point reduction in 1998, and in 2001 and 2002, the impact of the BBA on Medicare inpatient margins will be negligible.

The BBA and BBRA will tend to affect urban and rural hospitals differently, but have relatively equal impacts on teaching and nonteaching hospitals (Table C-5, Appendix C). In 1999, our model suggests that urban hospital inpatient margins will fall 2.5 percentage points, while rural

hospital inpatient margins will fall only 0.5 percentage points. In 2001, urban hospital margins will fall more than 1 percentage point, while rural hospital inpatient margins will fall less than 0.5 percentage points. Teaching and nonteaching hospitals will each have reductions of approximately 3 percentage points in 1999, and 2 percentage points in 2000.

These estimates assume modest cost growth; if cost growth is higher than anticipated (which most likely would occur if length of stay stabilized), margins would be lower. As noted, our model assumed equal cost growth rates for all hospital groups, whether urban or rural and teaching or nonteaching, but cost trends could differ among these groups in

the future as they have in the past. The margins produced for the BBA and BBRA analysis do not include graduate medical education (GME), which would tend to reduce the inpatient margin because GME costs exceed GME payments. In 1998, GME reduced the inpatient margin from 14.4 percent to 13.7 percent. A proportional effect in 2002 would reduce the margin from 11.2 percent to approximately 10.7 percent.

**Medicare outpatient margin through 1998**

Although Medicare payments for inpatient services have tended in recent years to exceed associated costs, payments for outpatient services have not. MedPAC has calculated the hospital Medicare outpatient margin based on Medicare Cost Report data. This margin compares the payments hospitals receive from Medicare for outpatient services with their Medicare-allowable costs for these services. Although many outpatient services under Medicare are currently paid on a cost basis, Medicare outpatient payments do not cover costs due to payment discounts—Medicare currently pays 94.2 percent of operating costs and 90 percent of capital costs.

Though not an explicit policy of the Medicare program, excess payments for inpatient services under Medicare have implicitly subsidized the shortfall from outpatient services and other lines of service. However, in preparing their Medicare Cost Reports, providers have had a strong incentive to disproportionately allocate overhead and ancillary costs to services for which payments were made on a cost basis (primarily outpatient, home health care, and skilled nursing facility services), rather than by a PPS. A 1993 study by the Prospective Payment Assessment Commission found that outpatient costs were overstated by at least 8 percent, and a 1994 study for HCFA suggested that these costs may be overstated by more than 15 percent (ProPAC 1993, CHPS Consulting 1994).<sup>13</sup> Thus, the disparity in

13 The final report of HCFA's study contains a series of DRG-specific values, rather than an aggregate national figure for outpatient cost overstatement. However, the study's principal investigator has estimated that the national figure is between 15 percent and 20 percent.

margin between inpatient and outpatient services is not nearly as great as nominal values would suggest.

One reason to support the subsidy system, to the extent that it exists, is comparability of payment rates among settings. Because ambulatory surgical centers and physician practices can often provide comparable services at lower cost (lower, at least, than the cost estimates reflecting overallocation of overhead and ancillary costs), increased outpatient payments could create an incentive for the place of service to be determined by economic rather than clinical reasons.

The outpatient margin for 1996–1998 suggests two distinct trends: first, discounted cost-based payments produced negative margins in 1996 and 1997, and second, the effect of the BBA caused outpatient margins to fall dramatically, from –7.4 in 1997 to –15.9 percent in 1998 (Table 5-3). The outpatient margin reduction in 1998 was due primarily to the formula-driven overpayment (FDO) provision of the BBA, intended to reduce overpayments for certain outpatient services. The FDO provision had at least a small effect in 1997 as well, but outpatient margins actually improved slightly in that year, perhaps due to improved cost control.

The proportion of hospitals with negative outpatient margins approached 99 percent in 1998, increasing from 92 percent in 1997 and 96 percent in 1996. In contrast to Medicare inpatient margins, there is a high degree of consistency in outpatient margins between urban and rural hospitals—each group had comparable negative margins in 1996 and 1997, and the implementation of the BBA in 1998 essentially doubled the gap from full cost payment.

From 1996–1998, academic medical centers and non-AMC major teaching hospitals had outpatient margins 3 to 4 percentage points lower than those of nonteaching and other teaching hospitals. This relationship held after the implementation of the BBA; the

outpatient margins of large teaching hospitals fell below –19 percent in 1998, while other teaching and nonteaching hospitals' margins fell to approximately –15 percent. Although the cuts in IME and DSH payments hit teaching hospitals harder than nonteaching institutions, teaching hospitals responded with lower cost growth in 1998.

### The impact of outpatient policy changes beyond 1998

Hospitals face implementation of the new outpatient PPS on July 1, 2000.<sup>14</sup> After that date, payments for outpatient services will no longer be made on a mixture of reasonable cost, fee schedule, and blended methods, but will be consolidated into a single fee schedule. The new payment system was designed to provide total payments to hospitals at least equal to payments under the previous system, assuming a similar volume and mix of services. In addition, transitional policies and special treatment for cancer and small rural hospitals will increase total payments to hospitals for outpatient

services. HCFA estimates that outpatient payments to hospitals as a whole will be 4.6 percent higher in 2001 than they would have been if the PPS were not implemented.

Collectively, then, hospitals should not see decreased payments under the outpatient PPS, but the impact of implementing a new payment system on individual hospitals, and classes of hospitals, depends on the variation in cost and charge structures among hospitals. Hospitals' abilities to adapt to the new payment system—for example, by increasing efficiency and improving coding—will also influence the impact of the outpatient PPS.

Some hospitals can be expected to fare better under the PPS than under previous payment policy. Those that do worse will benefit from transitional corridors that limit hospitals' financial losses through 2003. Including the transitional corridor payments, HCFA estimates that all hospital types will do better under the PPS than under previous payment policy.

**TABLE 5-3**

**Trend in Medicare hospital outpatient margin, excluding graduate medical education, by location and teaching status, 1996–1998**

Hospital group	1996	1997	1998
All hospitals	–8.0%	–7.4%	–15.9%
Urban	–8.1	–7.4	–15.9
Rural	–7.3	–7.1	–15.7
Academic medical centers	–10.4	–10.4	–19.4
Non-AMC major teaching	–10.8	–9.7	–19.4
Other teaching	–7.3	–7.1	–14.6
Nonteaching	–7.4	–6.7	–15.5
Percent of hospitals with negative outpatient margins	96.2	91.8	98.8

Note: AMC (academic medical center). Data for 1998 are preliminary, based on 56 percent of all hospitals covered by prospective payment. The “all hospitals” group, as well as the urban and rural groups, have been weighted by teaching status for 1998 to improve predictive accuracy.

Additional data are shown in Appendix Tables C-6 and C-7.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

14 See Chapter 2 for a discussion of the outpatient PPS.

However, major teaching hospitals are expected to fare less well than nonteaching or other teaching hospitals, experiencing a 2.6 percent increase in payments, compared with 5.0 percent for the others. Small rural hospitals are held harmless from financial losses under the outpatient PPS through 2003. A similar hold-harmless provision permanently protects cancer hospitals. These hospitals will operate under the PPS, but receive additional payments if the PPS amounts are less than they would have been under prior payment policy.<sup>15</sup>

### Medicare margin

The Medicare margin provides a comprehensive analysis of Medicare payments to hospitals, and associated costs, for the five largest lines of Medicare service. This margin was created by MedPAC, in conjunction with HCFA, to provide a more representative analysis of hospital Medicare payments and costs. Although the inpatient and outpatient margins are useful tools for analyzing Medicare payment policy, they do not provide a comprehensive picture of Medicare's impact on hospitals. A significant proportion of Medicare payments to hospitals fall outside these categories; some hospitals operate units that are exempt from the PPS system, and many PPS hospitals furnish other lines of service paid by Medicare, such as home health and skilled nursing. Recent policy changes, such as the introduction of new payment systems for post-acute care, have increased the policy relevance of these other Medicare services that hospitals provide.

The Medicare margin includes payments and costs to hospitals covered by the inpatient PPS. These payments and costs include PPS inpatient, outpatient, home health, skilled nursing, PPS-exempt units and GME, and incorporate more than 90 percent of Medicare payments to these

hospitals. The measure also reflects reimbursement for Medicare bad debts.

The Medicare margin is calculated using Medicare-allowable costs reported on the Medicare Cost Report each hospital submits to HCFA. In future iterations of this margin, HCFA and MedPAC hope to include other elements of the Medicare program that affect hospitals, including payments and costs for care in comprehensive outpatient rehabilitation facilities, fee-based outpatient services (such as durable medical equipment and laboratory services), and hospice and ambulance services.

The Medicare margin allows policymakers to compare Medicare margins among service lines (including the previously unreported home health and skilled nursing facility components), and to gauge the contributions of each component to the Medicare margin and the hospital's overall financial condition.

In 1998, the Medicare margin was 6.5 percent, down from 9.8 percent in 1997

and 9.0 percent in 1996 (Table 5-4).<sup>16</sup> The 1998 reduction of almost 3 percentage points is evidence that the BBA effectively reduced Medicare payments to hospitals. Hospital-based home health and skilled nursing margins fell to extremely low levels in 1998, though the proportion of hospital Medicare payments for each of these service components is relatively small. Reductions in home health margins were the most dramatic: they fell more than 21 percentage points, from -4.6 percent in 1997 to -25.9 percent in 1998. This drop is due mostly to the interim payment system put in place under the BBA, but could also be due to enforcement of fraud and abuse rules by the Inspector General. The impact of the BBA on skilled nursing units, though less severe, was also large. Skilled nursing facility (SNF) unit margins fell more than 6 percentage points, from -16.0 percent in 1997 to -22.4 percent in 1998, due primarily to implementation of the SNF PPS that began under the BBA. PPS-exempt units fell more than 4 percentage points, to -1.7 percent in 1998.<sup>17</sup> The

**TABLE 5-4**

**Trends in hospital Medicare margins, including graduate medical education, 1996-1998**

Component	1996	1997	1998	1998 cost share	1998 payment share
Inpatient	14.5%	15.9%	13.7%	68.4%	74.7%
Outpatient	-8.0	-7.8	-15.2	17.3	13.8
Home health	-4.6	-4.6	-25.9	4.7	3.4
Skilled nursing	-12.8	-16.0	-22.4	4.0	3.0
PPS-exempt	2.4	2.4	-1.7	5.5	5.0
Total	9.0	9.8	6.5	100.0*	100.0*

Note: PPS (prospective payment system). Data are based on Medicare-allowable costs from the Medicare Cost Report. Data for 1998 are preliminary, based on 56 percent of all hospitals covered by prospective payment, and have been weighted by teaching status to improve predictive accuracy.

\* Totals may not sum to 100 due to rounding.

Source: HCFA Office of the Actuary and MedPAC analysis of Medicare Cost Report data.

15 Table 2-2 shows the impact of the PPS by hospital group. Additional payments are based on a comparison of PPS payments actually received to current-year reasonable costs, multiplied by a payment-to-cost ratio derived for 1996. The 1996 payment-to-cost ratio is calculated to exclude formula-driven overpayments. A similar approach is used to calculate payments under the transitional corridors. See Chapter 2 for more detail.

16 The inclusion of GME in the Medicare margin tends to drive down the measured margin because GME costs are generally higher than payments; therefore, the margins for inpatient and outpatient Medicare are lower in this analysis than the margins presented in earlier sections. GME affects inpatient services to the greatest extent and all other services to a lesser extent. The relationship of GME payments and costs does not change to any extent under the BBA.

margins for home health agencies and SNFs in the Medicare margin are calculated for hospital-based units and may not be comparable to freestanding facilities.

Similar to the outpatient margin, negative margins for cost-based reimbursed services such as home health, SNF, and PPS-exempt units are at least somewhat due to the over-allocation of costs to these services by providers. The incentive to allocate overhead and ancillary costs to areas other than the inpatient services covered by PPS is as strong for these other services as it is for outpatient services, although no information is available on the extent of the reporting bias.

Despite the fairly large reduction in each component of Medicare payments besides inpatient services, and the fact that all components besides inpatient (including GME) had negative margins in 1998, the overall Medicare margin remained well above zero. This is because the relative payment and cost shares of the components of the Medicare margin are dominated by inpatient services. The PPS inpatient cost share was 68.4 percent in 1998; the outpatient cost share was 17.3 percent and the other three components sum to less than 15 percent (Table 5-4). The payment share is also dominated by inpatient services. In 1998, nearly 75 percent of the payments were for inpatient, less than 14 percent were for outpatient, and approximately 11 percent were for home health, skilled nursing and PPS-exempt units combined. The higher payment share relative to cost share for inpatient services underscores the large inpatient margin, while margins for all other service lines were negative in 1998.

The BBA could continue to reduce margins on all hospital service components, especially if costs begin to rise at a faster rate than in recent years (for instance, if length of stay leveled off or began to increase). MedPAC has estimated that the BBA will reduce inpatient margins to 11.2 percent in 2002. Whether the inpatient surplus will be

sufficient to offset continued losses in other service lines, and potential behavioral responses of hospitals, remains to be seen. However, it is not clear whether hospitals will actually suffer under the new PPS systems for outpatient, skilled nursing and home health services. HCFA estimates that the outpatient PPS will increase payments by almost 5 percent, and the BBRA increases SNF payments by 4 percent, in addition to the legislated updates that apply to these sectors.

### Financial performance of Medicare and other payers

MedPAC monitors the overall financial health of hospitals because we are concerned that hospitals remain able to provide care to Medicare beneficiaries and other patients. A significant decline in financial health could impair this ability and create problems of access.

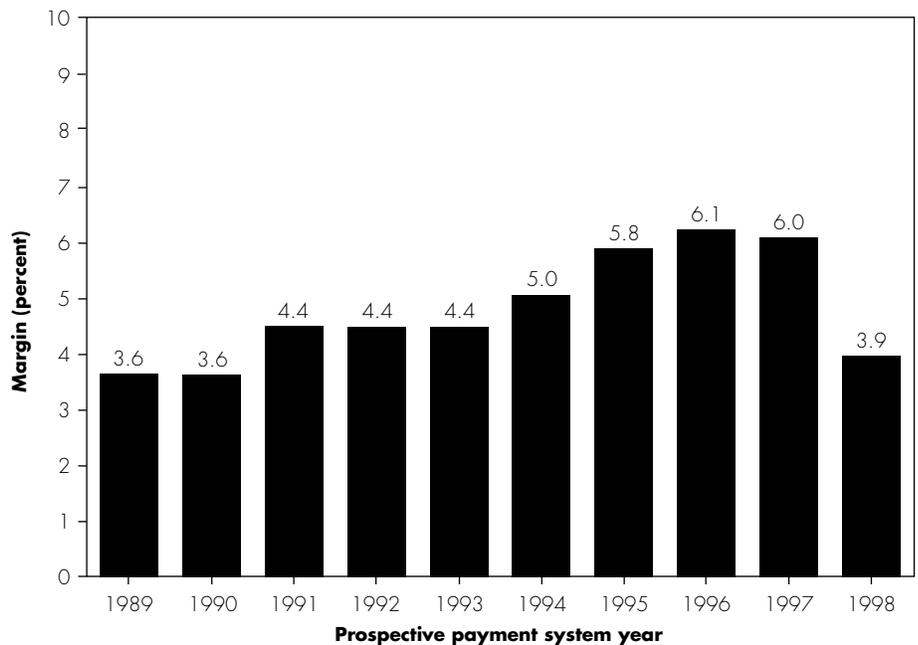
### Total margin

The most comprehensive measure of hospital financial performance is the total margin, calculated as net income from all sources (including payments for patient care from all payers and non-patient revenue) divided by total hospital revenues. The total margin for PPS hospitals in FY 1998 was 3.9 percent, down substantially from 6.0 percent in 1997 (Figure 5-7). However, the total margin averaged 5.2 percent from 1991–1996 and 4.6 percent in the early years of the PPS (1984–1990). For historical perspective, the AHA reported total margins of less than 1 percent or negative in seven years during 1971–1980.

In 1999, data from the Health Indicators Survey suggest that total margins again declined significantly (Table 5-5). The 1999 estimate from this source is 2.7

**FIGURE 5-7**

**Trend in hospital total margin, 1989–1998**



Note: Additional data are shown in Appendix Table C-8.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

17 For a discussion of BBA provisions that effect exempt units and facilities, please see Chapter 6.

**TABLE  
5-5**

**Trend in hospital total margin, 1997-1999**

Year	Data source		
	Medicare Cost Report	AHA Annual Survey	Health Indicators Survey
1997	6.0%	6.7%	NA
1998	3.9	5.8	4.3%
1999	NA	NA	2.7

Note: AHA (American Hospital Association), NA (not available).

Source: MedPAC analysis of data from HCFA and the American Hospital Association.

percent, less than half the cost report value for 1997 of 6.0 percent.

Total margins from the AHA Annual Survey have tended to run slightly higher than those from the Medicare Cost Reports. In 1998, the AHA figure was 5.8 percent, compared with 3.9 percent from the cost report data. We believe the greater-than-usual discrepancy between the two is largely explained by timing. Both data sources reflect hospital reporting periods, which vary among hospitals. The distribution of the Annual Survey file most closely aligns with the federal fiscal year, while the distribution of the cost report file bridges two federal fiscal years. Thus, the 1998 total margin based on cost report data actually reflects considerable 1999 influence, when margin values were known to be lower.

The decline in total margins was accompanied by an increase in the proportion of hospitals with negative margins. These hospitals had higher expenses for all purposes than revenue from all sources. In 1989, 31.9 percent of hospitals had negative total margins (Figure 5-8). As total margins increased, the proportion fell to 20.7 percent in 1995. The share with negative margins increased slightly in 1996, more in 1997, and then to 34.2 percent in 1998.

The decline in total margins affected all hospitals. Major teaching hospital total margins fell from 5.1 percent in 1997 to 2.3 percent in 1998 (Figure 5-9). This

group's total margin has long been lower than those of other teaching and nonteaching facilities, despite relatively high PPS margins (see previous section). The low total margins for major teaching hospitals reflect, in part, the high burden of uncompensated care provided by these

hospitals and may also reflect mission-related costs not covered by Medicare or research funding.

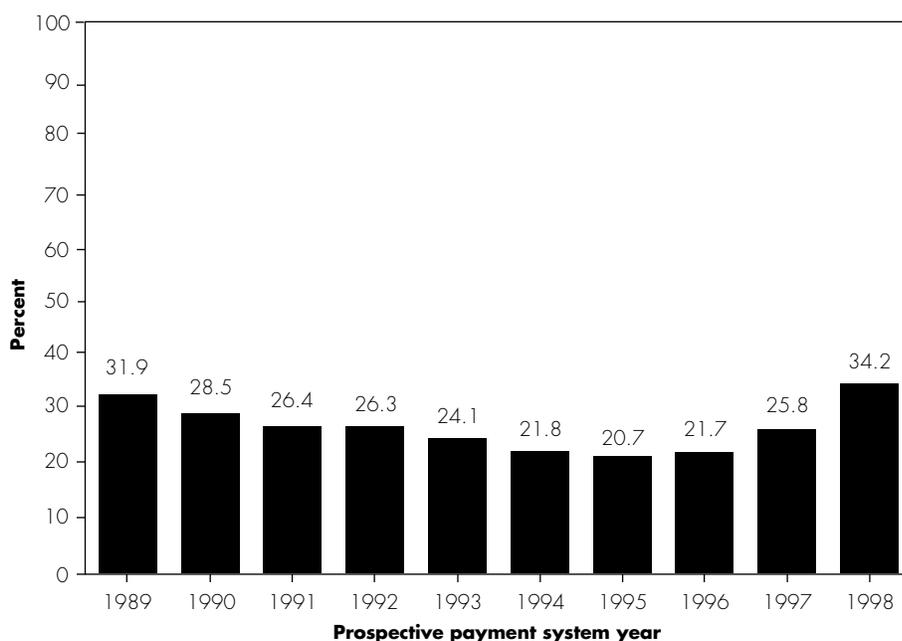
Since 1989, urban hospitals have consistently had lower total margins than rural hospitals, despite generally higher PPS margins (Figure 5-10). Both urban and rural facilities experienced significant drops in total margins in 1998.

### Comparison of payers

The adequacy of Medicare's payments can be compared with that of other payer groups, both public and private, by calculating each payer's payments as a percentage of the costs of treating its patient load. In 1998, the payments of both Medicare and private payers fell relative to costs, but the drop in private payer payments contributed much more than did the drop in Medicare payments to hospitals' deteriorating financial performance.

**FIGURE  
5-8**

**Percent of hospitals with negative total margins, 1989-1998**

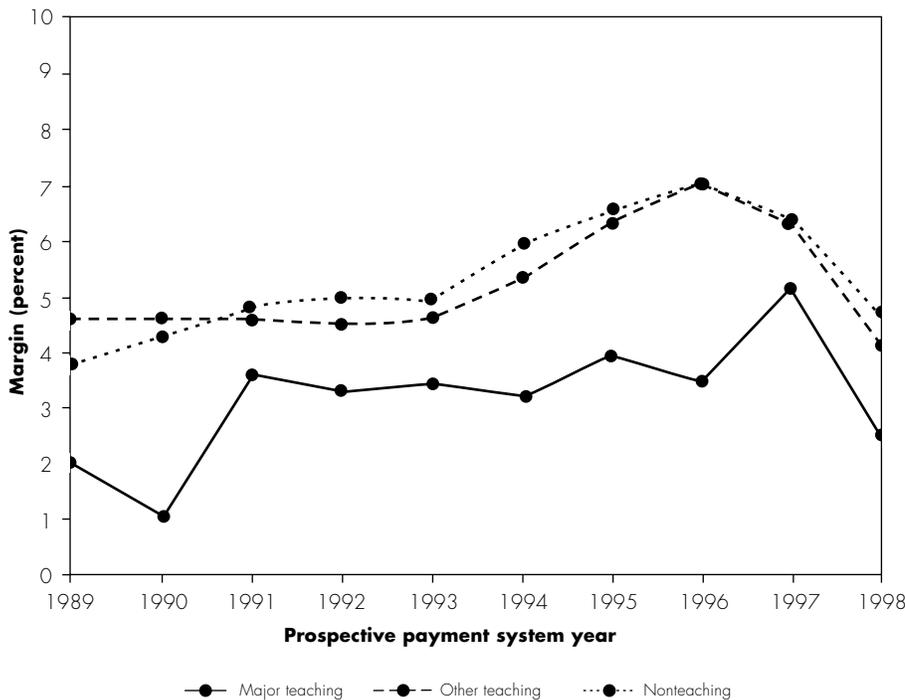


Note: Additional data are shown in Appendix Table C-8.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

**FIGURE 5-9**

**Trend in hospital total margin, by teaching status, 1989-1998**



Note: Additional data are shown in Appendix Table C-8.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

Through the late 1980s and into the 1990s, hospital cost increases were far higher than Medicare's payment increases, such that Medicare's payment-to-cost ratio fell significantly, to 88 percent in 1991 (Figure 5-11). Hospitals recouped the lost revenue by raising prices to private payers in what became known as "cost shifting." The private payer payment-to-cost ratio consequently rose to a peak of 131 percent in 1992.

About that time, health maintenance organizations (HMOs) and other private payers began to demand lower prices. Hospitals responded by slowing their cost growth, but private payer payments fell

sharply relative to costs, reaching 118 percent in 1997. Meanwhile, Medicare's annual payment increases were not much different in the early 1990s than they had been in the 1980s. Steady payment growth coupled with hospitals' markedly lower cost increases resulted in the Medicare payment-to-cost ratio rising from its low of 88 percent to 104 percent in 1997.<sup>18</sup>

As discussed earlier in the chapter, key BBA provisions (most notably the zero update for PPS payments) reduced Medicare's payment-to-cost ratio from 104 percent to about 103 percent in 1998. Private payer payments continued their steep decline, however, from 118 percent

to 114 percent. This marks the first time in the history of the program that Medicare and private payers have exerted substantial downward pressure on hospital revenues simultaneously.

Medicare and private payers are nearly equal in size (responsible for 39 and 42 percent of hospital costs, respectively). Using these cost shares to weight the decrease in payment-to-cost ratios reveals that gains from private payers fell by 1.2 percentage points, while gains from Medicare dropped only 0.4 percentage points (Figure 5-12).<sup>19</sup> Thus, private payers contributed roughly three times as much as Medicare did to the 1998 drop in total margin.

In the American Hospital Association data used for this analysis, however, most revenue from Medicare and Medicaid managed care is booked as private payer revenue. Medicare has no direct control over the level of payments that Medicare HMOs negotiate with hospitals, but shrinking payments made on behalf of Medicare beneficiaries enrolled in managed care has likely contributed to the steep drop in private payer payments relative to costs.

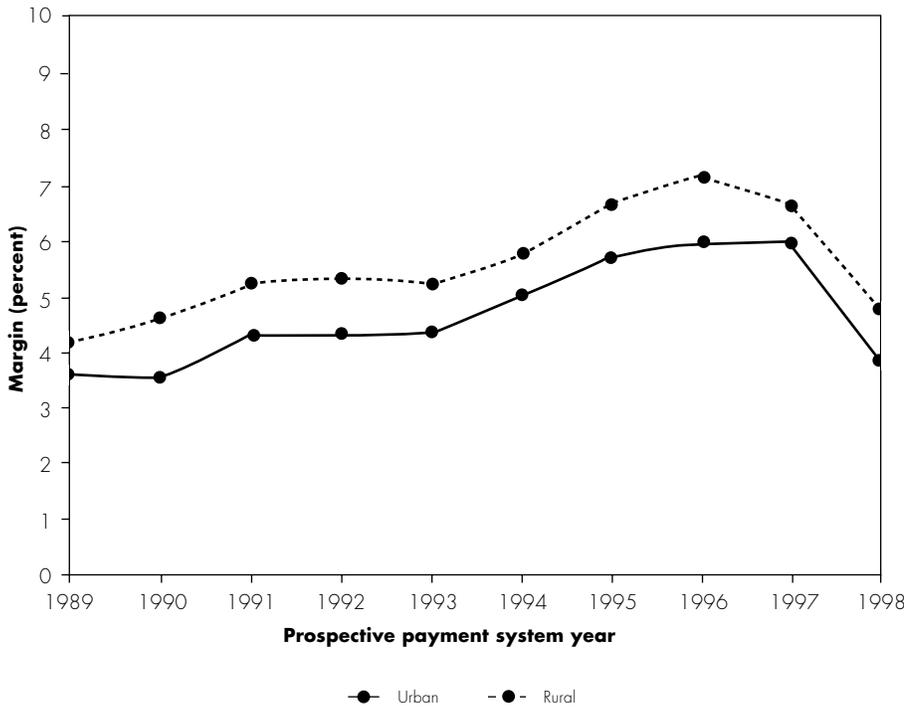
Although this data set is not available beyond 1998, we can deduce from the available data on total margin and our projection of the Medicare inpatient margin (discussed earlier) that the private payer payment-to-cost ratio probably continued to fall in 1999. In late 1999 and into 2000, however, industry analysts suggest that hospitals have been successful in negotiating higher rates in the private sector (Moody's Investors Service, Inc. 2000, Jaklevic 2000, Legg Mason 1999). It is too early to tell, however, whether this will raise the private payer payment-to-cost ratio (the first increase since 1992) or stanch the downward trend in hospital total margin.

18 Medicare's 1997 payment-to-cost ratio of 103.6 percent is equivalent to a margin of 3.5 percent. This margin differs from the 1997 most-of-Medicare margin, 9.8 percent, in three ways: (1) it encompasses all costs rather than Medicare-allowable costs, (2) it reflects all Medicare services that hospitals provide, rather than the five largest services (which comprise more than 90 percent of the total), and (3) it is based on a crude allocation of costs between Medicare and other payers, in contrast to the involved cost allocation process of the Medicare Cost Report.

19 "Gains" in this context are revenues from a payer minus the costs of treating its patients, divided by total (all-payer) expenses.

**FIGURE 5-10**

**Trend in hospital total margin, by urban and rural location, 1989-1998**



Note: Additional data are shown in Appendix Table C-8.

Source: MedPAC analysis of Medicare Cost Report data from HCFA.

## Updating operating and capital payments

The Commission develops recommendations each year for updates to operating and capital payment rates for PPS inpatient services. We present a recommendation for a *combined* operating and capital payment update for 2001. With the end of the transition to fully prospective capital payment, both operating and capital prospective payments will be made using standard federal rates adjusted for individual hospital circumstances. Separate operating and capital payments are a relic of the era of cost reimbursement of health care. MedPAC has recommended that Congress implement a single, combined payment rate (MedPAC 2000).

We evaluate our update recommendation in light of its probable impact on beneficiary access to quality care and in light of the financial performance of the hospital industry. However, financial performance is never our primary consideration in setting the update.

## The Commission's update recommendation

In developing the update recommendation, MedPAC (like ProPAC before it) uses a framework to consider individual factors that affect costs or payments (Table 5-6). The framework begins with a weighted average of HCFA's forecasts of the operating and capital market baskets. We then adjust for any error in the market basket forecast on a two-year lagged basis. We identify new technologies that are expected to increase costs but are not reflected in the market

baskets, and we require a modest improvement in hospital productivity to generate savings to offset some of these costs. We therefore calculate the scientific and technological advances adjustment by subtracting a standard for productivity growth from the estimated cost impact of new technologies. When applicable, we include adjustments to reflect one-time factors increasing costs and reductions of costs due to shifting of care to other settings. A case-mix index adjustment increases or decreases the update to the extent that changes in DRG coding have decreased or increased payments with no real change in patient care costs.

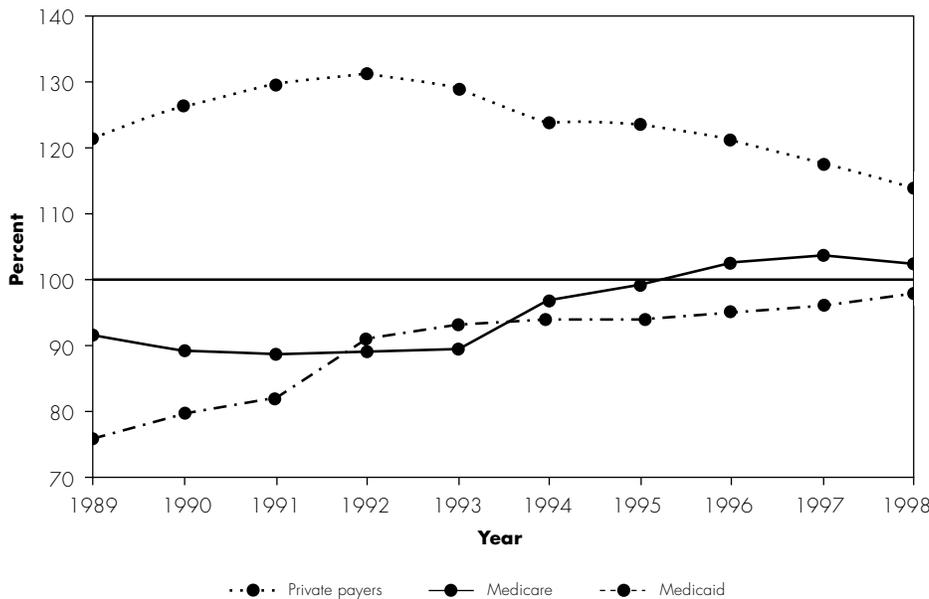
The PPS operating update is set in law and the PPS capital update is set at the discretion of the Secretary of Health and Human Services. Policymakers need to know the combination of operating and capital updates to be consistent with an analytically informed judgement about how much rates should be increased each year to ensure beneficiaries' access to safe and effective inpatient hospital care. For FY 2001, the BBA set the operating update at 1.1 percent below the rate of increase of the market basket, which would result in a 2.0 percent increase in rates if the current market basket forecast holds. If the capital update were set by the Secretary at the rate of increase of the HCFA capital market basket, it would equal 0.9 percent. This would suggest an increase to the combined rate of 1.9 percent in 2001.

MedPAC recommends an update for inpatient hospital payments of 3.5 percent to 4.0 percent for FY 2001. This is 0.6 percent to 1.1 percent greater than the increase in a combined operating and capital market basket. It is attributable to a positive adjustment of 0.1 percent for market basket forecast error in FY 1999, an adjustment of 0.0 percent to 0.5 percent for the costs of new drugs and other scientific and technological advances (net of productivity improvement), and a positive adjustment for DRG coding change of 0.5 percent.

## RECOMMENDATION 5A

**FIGURE 5-11**

**Hospital payment-to-cost ratios by payer, 1989-1998**



Note: Payment-to-cost ratios cannot be used to compare payment levels because the mix of services and cost per unit of service vary across payers. They do, however, indicate the relative degree to which payments from each payer cover the costs of treating that payer's patients. Data are for community hospitals and reflect both inpatient and outpatient services. Imputed values were used for missing data (about 35 percent of observations). Most Medicare and Medicaid managed care patients are included in the private payers category.

Additional data are shown in Appendix Table C-12.

Source: MedPAC analysis of data from the American Hospital Association Annual Survey of Hospitals.

**For fiscal year 2001, the Congress should increase the operating and capital payment rates for prospective payment system inpatient services by the rate of increase in the combined market basket plus 0.6 to 1.1 percentage points. If the current operating and capital market basket estimates hold, that level would result in an update of between 3.5 percent and 4.0 percent.**

**Changes in input prices**

The Commission develops estimates of annual increases in hospital input prices using HCFA's market baskets for operating costs and capital costs. The operating market basket estimates changes

in the prices of hospital operating inputs such as staff, medical supplies, and pharmaceuticals. The capital market basket estimates changes in hospital capital costs, including depreciation, interest, and insurance. We combine the market baskets to develop an estimate of change in overall operating and capital prices. Operating costs represent about 92 percent of total hospital costs and capital costs the remaining 8 percent.<sup>20</sup> We therefore calculate a combined market basket forecast by weighting the operating forecast by 0.92 and the capital forecast by 0.08.

For FY 2001, the HCFA operating market

basket is forecast to increase by 3.1 percent and the HCFA capital market basket by 0.9 percent. The combined market basket is therefore estimated to increase by 2.9 percent.

The increase is then adjusted for any error in the market basket forecasts used to set payment in 1999. This adjustment is determined by comparing the forecasts of the HCFA operating market basket (the PPS input price index) and capital market basket (the capital input price index) with actual increases. A forecast of 2.4 percent was used for the operating update implemented in FY 1999; the actual increase was 2.5 percent. In 1998, the HCFA capital market basket was forecast to increase by 0.7 percent in 1999; it actually increased by 0.7 percent. This implies a combined HCFA forecast for 1999 of 2.2 percent and an actual value of 2.3 percent. Thus, the FY 2001 update is increased by 0.1 percent for forecast error.

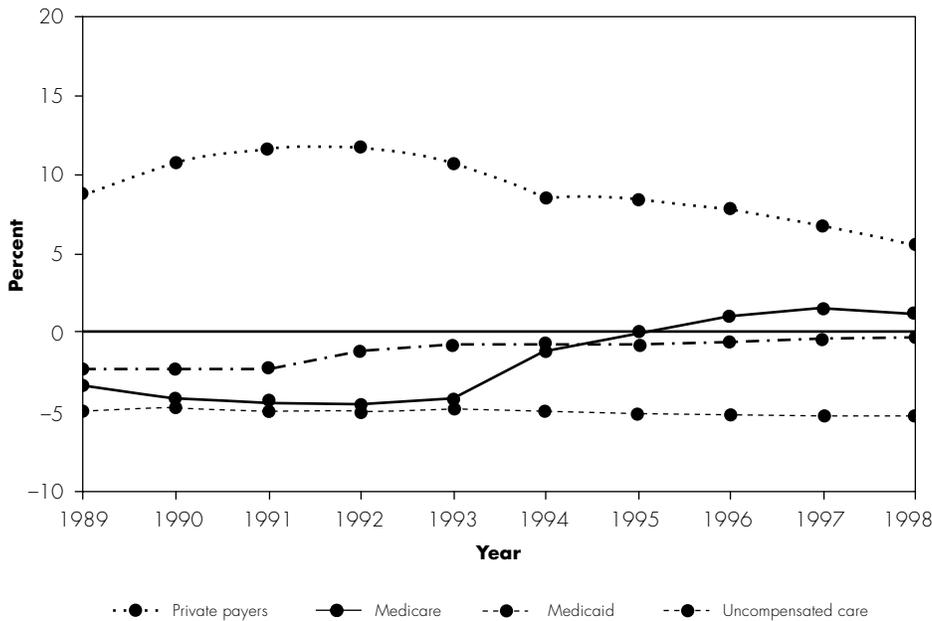
**Scientific and technological advances net of productivity growth**

MedPAC believes that the costs associated with scientific and technological advances should be financed at least in part through improvements in hospital productivity. This tends to occur in other sectors of the economy as well. However, the Commission has not been able to develop a single measure of productivity that we believe captures all aspects of input usage, measures a constant output over time, and is not contaminated by unrelated factors. For this reason, we offset our scientific and technological advances allowance with a fixed standard for expected productivity growth. For the 2001 update the Commission set a standard of 0.5 percent. We annually review anticipated changes in hospital technology to determine whether they include cost-increasing, quality-enhancing technological developments with aggregate costs that will exceed expected productivity improvements.

<sup>20</sup> These figures were reached through an analysis of National Hospital Panel Survey data on total depreciation, total interest, and total expenses, FY 1994-1998.

**FIGURE 5-12**

**Gains or losses as a percent of total hospital costs, by payer, 1989–1998**



Note: Gains or losses are the difference between the cost of providing care and the payment received. Operating subsidies from state and local governments are considered payments for uncompensated care, up to the level of each hospital's uncompensated care costs. Data are for community hospitals and reflect both inpatient and outpatient services. Imputed values were used for missing data (about 35 percent of observations). Most Medicare and Medicaid managed care patients are included in the private payers category.

Additional data are shown in Appendix Table C-13.

Source: MedPAC analysis of data from the American Hospital Association Annual Survey of Hospitals.

The Commission has sought to continuously improve our information about hospital productivity growth. The Bureau of Labor Statistics has not developed productivity measures for the hospital industry or for any other medical care service industry. It has produced estimates of labor productivity for 14 finance and service industries, but the results range from -1.8 percent to 4.4 percent for 1987–1997 (Duke and Usher 1998, BLS 1999b). No individual industry studied is a good proxy for the hospital industry.

The Commission believes that a combined measure of labor and capital productivity growth in the general economy is an

appropriate standard for the hospital industry. Multifactor productivity measures output per unit of combined labor and capital input. Growth in multifactor productivity in the private nonfarm business sector of the economy is the most comprehensive measure of productivity growth for that sector. The Bureau of Labor Statistics reports that this measure increased at an annual rate of 0.4 percent during 1990–1996 and 1996–1997 (BLS 1999a).<sup>21</sup>

The allowance for scientific and technological advances is a future-oriented policy statement designed to account for uses of emerging technologies that enhance quality but increase costs. It

represents MedPAC's best estimate of the incremental increase in costs for a given fiscal year resulting from the adoption of new technologies or new applications of existing technologies (beyond that automatically reflected in the payments hospitals receive). This allowance is intended to encourage facilities to appropriately adopt such new technologies.

The allowance for scientific and technological advances considers only new technologies that have progressed beyond the initial stage of use but are not yet fully diffused into the inpatient hospital setting. The allowance does not include the costs of investigational technologies (because Medicare does not generally cover them) or fully diffused technologies (because these costs are reflected in the annual recalibration of the DRGs). The allowance does not attempt to identify all cost-increasing technologies, but focuses on the most significant ones from the perspective of cost and diffusion. An overview of the technologies that staff have identified is provided in Appendix E.

MedPAC is concerned that advances in pharmaceutical technology offer improved treatment options for Medicare beneficiaries but impose considerable costs on hospitals. Spending on drugs has increased rapidly in recent years, in large part due to the introduction of new drugs (see Chapter 1). In combination with information system costs, the appearance and diffusion of new drugs will significantly increase hospital costs in FY 2001. The Commission recommends an allowance for scientific and technological advances of 0.5 percent to 1.0 percent. With a productivity offset of 0.5 percent, this implies a net allowance for scientific and technological advances of 0.0 percent to 0.5 percent for FY 2001.

**Adjustment for one-time factors**

In addition to incurring costs by adopting technological innovations, hospitals also incur significant costs for unusual,

21 Data on multifactor productivity were not available from the Bureau of Labor Statistics for 1998, 1999, or 2000 at the time of writing. Labor productivity growth for the nonfarm business sector in 1998 and 1999 was greater than the 1990–1997 average, suggesting that multifactor productivity growth in those years was higher than the 1990–1997 average.

**TABLE  
5-6**

**Update framework for combined inpatient hospital payment rates, fiscal year 2001**

Component	Percent
FY 2001 combined market basket forecast	2.9%
Correction for FY 1999 market basket forecast error	0.1
Net allowance for scientific and technological advances	0.0 to 0.5
Adjustment for one-time factors	0.0
Adjustment for unbundling of payment unit	0.0
Adjustment for case mix change:	
DRG coding change	0.5
Within-DRG case complexity change	0.0
Sum of components	3.5 to 4.0 (combined MB+0.6 to combined MB+1.1)

Note: FY (fiscal year), DRG (diagnosis related group), MB (market basket index). FY 2001 combined market basket forecast is based on HCFA operating market basket forecast (weight 92 percent) and capital market basket forecast (weight 8 percent). Applies only to services covered by Medicare's inpatient PPS.

Source: HCFA Office of the Actuary and MedPAC analysis.

nonrecurring events. In FY 1999 and 2000, hospitals faced the costs of year 2000 ("Y2K") computer problems. In FY 2001, they may face costs of major new regulatory requirements. MedPAC's update framework has not explicitly considered such costs in the past, but the Commission believes Medicare should help hospitals deal with one-time costs when they are systematic and substantial and when incurring them will improve care for Medicare beneficiaries. Consequently, we have decided to include an allowance in our hospital update framework that explicitly addresses the costs of one-time events. We will exercise discretion in making this allowance.

In its FY 2000 update, MedPAC did not include an adjustment for one-time factors in our update framework. We considered the costs of year 2000 improvements by explicitly increasing the allowance for scientific and technological advances by 0.5 percent. Since the first of the year, the Commission has monitored events related to year 2000 improvements and concludes that hospitals will not incur any additional significant costs to address these problems. Therefore, the Commission is not recommending any additional

allowance for year 2000 improvements for the FY 2001 update.

Several current regulatory developments could significantly affect hospital costs. However, reliable information on the costs associated with them is not yet available. Some of the key regulations have not been issued and their effective dates are unknown. Therefore, for the FY 2001 update we have decided against making an adjustment for regulatory impact.

The costs incurred in complying with new laws and regulations differ from the costs of adopting new patient care technologies in two important respects. First, hospitals may only need to revise existing management practices to comply with new laws and regulations. The allowance for scientific and technological advances, in contrast, is specifically designed to consider the costs of adopting new technologies or new uses of existing technologies. Second, the portion of the hospital budget devoted to addressing one-time events may approach zero once the necessary changes are made. The adoption of new technological

advancements typically results in a sustained increase in hospitals' operating and capital budgets.

MedPAC is beginning to study the effects of new regulatory requirements on hospital costs, both within the hospital update analysis and in its upcoming BBRA-mandated study about the complexity of the Medicare program and the burdens placed on providers through federal regulations. As an initial step, MedPAC identified several recent regulations issued by the Food and Drug Administration (FDA), the Occupational Safety and Health Administration (OSHA), and the Department of Health and Human Services (HHS) that may potentially result in increasing hospital costs:

- Hepatitis C lookback: FDA released guidance in March 1998 on identifying and contacting individuals who received blood transfusions or blood products between 1988 and 1992.
- Patients' rights in hospitals: HCFA released an interim final rule in July 1999 that modifies hospitals' conditions of participation by setting forth six standards ensuring minimum protections of each patient's physical and emotional health and safety. These provisions became effective August 2, 1999, and HCFA's final rule is expected by the end of 2000.
- Reuse of single-use medical devices: FDA released draft guidance in February 2000, setting priorities for its enforcement of premarket requirements for reprocessed single-use devices. The comment period for this guidance closed April 11, 2000.
- Ergonomics: OSHA issued a proposed standard in November 1999 that addresses the risk of work-related musculoskeletal disorders. The comment period for this standard closed March 2, 2000.
- Occupational exposure to bloodborne pathogens: OSHA issued a directive in November 1999 that establishes

policies and provides clarification to ensure that uniform procedures are followed when conducting inspections to enforce the occupational exposure to bloodborne pathogens standard.

- Emergency Medical Treatment and Active Labor Act (EMTALA) of 1986: This statute requires hospitals to admit patients in dire medical condition and treat them at least until they are stabilized. In 1999, HHS issued advisories and regulations that greatly increased EMTALA's scope.
- Health Insurance Portability and Accountability Act of 1996: HHS published five proposed regulations in November 1999 establishing standards for the movement and uses of health care information. The expected final rule publication date for the first proposed regulation is June 2000. HHS has not yet announced final rule dates for the other four proposed regulations. Once each final regulation is issued, most health care entities have two years to implement the standards.

### Unbundling of the payment unit

It is likely that some of the reduction in Medicare length of stay discussed earlier reflects reduced costs of inpatient stays. This reduction in costs was accompanied by increased costs in other settings—such as SNFs, rehabilitation hospitals and units, hospital outpatient departments, physicians' offices, and home health agencies—as care was shifted to those settings. Medicare must pay for care in other settings (by reimbursement of costs or prospective payment), at least partially offsetting the savings resulting from reduced length of stay in the acute inpatient setting.

The decline in average length of stay of all hospital patients from 1989–1998 (discussed earlier), combined with early results of the Health Indicators Survey, indicate a total decline in length of stay of 20.3 percent from 1989–1999. The effect of this decline on costs is less, however, because some cost elements (such as those connected with surgery) are fixed, and

days of care at the end of the stay have lower-than-average costs (ProPAC 1990, MedPAC 1999). We estimate that this 20 percent drop in length of stay led to about a 14 percent drop in aggregate costs per case.

Other evidence supports the belief that care for Medicare beneficiaries has shifted out of the inpatient setting in the last 10 years. Medicare length of stay has consistently fallen more rapidly than has length of stay for other payers. Also, the use of post-acute care by Medicare beneficiaries has increased more rapidly than that of patients covered by other payers. These findings are consistent with the incentives facing hospitals under the PPS and under the payment systems used by other payers. Medicare pays hospitals a prospectively determined amount per discharge, which encourages hospitals to shift costs to other settings because the change will not reduce their payments. By contrast, other payers often pay on a discounted charge, or flat per diem, basis for hospital care. These payment methods reduce payments to match cost reductions, eliminating the incentive to shift costs. Although shifting costs may maintain—if not improve—quality of care for Medicare beneficiaries, it leads to inappropriately high payments, thus reducing resources available to pay for services to other Medicare beneficiaries.

MedPAC and ProPAC, one of our predecessor commissions, have identified other indirect evidence suggesting a shift of care out of the inpatient setting. First, the use of post-acute care services has expanded greatly since 1989, as Medicare length of stay declined. Second, ProPAC found that length of stay has fallen most in those DRGs where use of post-acute care is the greatest. Finally, hospitals that operate hospital-based, post-acute care services have seen the greatest drops in length of stay for inpatient acute care.

The Commission notes that not all of the length of stay decline is due to shifts of care out of the hospital setting. Some may be due to changes in technology and practice patterns that allow patients to undergo tests and procedures that require

less acute recovery time, permitting discharge to home with relatively little follow-up care. Such developments represent changes that benefit both beneficiaries and hospitals. Medicare should not leave the impression that its payment decisions penalize such actions.

These considerations lead us to conclude that cost reductions of 10 percent (of the total of 14 percent resulting from the length of stay decline) are due to site-of-care substitution, or unbundling of the payment unit. Of this, more than 6 percent has already been taken into account (Table 5-7).

ProPAC began to address the shift of care out of the inpatient setting in its FY 1998 update recommendation. MedPAC continued this with its 1999 and 2000 recommendations. Starting in FY 1998, we compare the actual update with that implied by all components of the update framework, other than the unbundling adjustment. The difference between the two is the implied adjustment for unbundling included in the actual updates. Total implied adjustments were more than 5 percent for FY 1998, 1999, and 2000.

The expanded transfer policy provides a partial payment for cases in which patients are discharged to select post-acute settings after a short length of stay (MedPAC 2000). As implemented, it has reduced total payments by an estimated 0.7 percent, thereby contributing to the response to unbundling. The implied adjustments for unbundling in the actual 1998, 1999, and 2000 updates, plus the reduction in payments due to the expanded transfer policy, sum to 6.2 percent. This is the total response to date.

With a 10 percent cost reduction due to unbundling and a 6 percent payment adjustment to date, 4 percent remains for future adjustments. The Commission believes that completing the cumulative adjustment to account for the shift of care out of the inpatient setting remains important. Furthermore, the 4 percent remaining amount for the future will be adjusted upward if the drop in length of stay continues.

**TABLE  
5-7**

**Implied adjustments to date for unbundling of the payment unit**

Provisions affecting unbundling	Commission update recommendation without unbundling adjustment	Actual update	Implied adjustment for unbundling
FY 1998 update	MB-0.4%	0.0%	-2.3%
FY 1999 update	MB-0.8	MB-1.9	-1.1
FY 2000 update	MB+0.2	MB-1.8	-2.0
Expanded transfer policy	NA	NA	-0.7
Total			-6.2

Note: FY (fiscal year), MB (operating market basket index), NA (not applicable). Components do not sum to total due to rounding.

Source: Balanced Budget Act of 1997 and MedPAC analysis.

Commission believes that hospital coding behavior is not increasing the CMI.

New MedPAC research indicates that hospitals became more conservative in coding in 1998. The Commission conducted an analysis of approximately 120,000 medical records of Medicare beneficiary hospital stays in FY 1996-1999. Each year had more than 27,000 records except for 1999, for which data were available through March of the year (on less than 7,000 stays). These records were reabstracted by a HCFA contractor that employed independent, impartial coders to assign DRG codes to cases, independent of codes assigned by hospitals.

In 1996 and 1997, hospitals on average assigned slightly higher-weighted DRGs than appropriate to Medicare cases. In 1998 they shifted to more cautious coding, which contributed to slower CMI growth in the sample of cases (Table 5-8). The decline in CMI begins in 1998 in HCFA data on all cases and in 1999 in this sample. Thus, the average change from 1996-1999 is identical in the sample reabstracted data and in actual and estimated HCFA data on all cases. MedPAC will continue studying case-mix change. As more data become available for 1999, the analysis should provide a fuller understanding of current patterns in coding and their implications for Medicare payment.

Our analysis indicates that coding change reduced CMI growth (a practice that could be described as downcoding) in 1998, possibly in response to federal scrutiny. MedPAC and ProPAC recommended negative adjustments when DRG coding change led to CMI increase; in fact, we recommended negative adjustments for 10 straight years through 1998, which summed to more than 6 percentage points. MedPAC believes that it is now appropriate to include a positive adjustment for DRG coding change in the FY 2001 update and recommends an increment of 0.5 percent.

In the past two years, we have recommended phasing in the negative adjustment for unbundling of the payment unit in annual increments between 1 and 3 percentage points. In light of the extreme financial pressures on the hospital industry during FY 1998-1999, however, we recommend a one-year hiatus in phasing in the adjustment. This pressure is seen in the two-year drop in total margins of more than 3 percentage points and the drop in the Medicare margin of more than 3 percentage points in the first year of the BBA alone. We anticipate continuing to phase in the remaining portion of the aggregate unbundling adjustment for the 2002 and later updates.

**Changes in case mix**

The case-mix adjustment is intended to ensure that payments reflect the real resource requirements of patients. The complexity of cases treated in acute hospitals generally increases at least a small amount from year to year. Under Medicare, case complexity is measured by the CMI: the average DRG weight for all cases paid under the PPS. The CMI reflects the distribution of cases among DRGs; increases in the CMI reflect shifts in the distribution of cases toward more highly weighted DRGs, producing proportionate increases in Medicare PPS capital and operating payments.

An increase in the CMI is appropriate if it reflects real changes in patient resource requirements. However, changes in coding practices can increase or decrease the CMI without real changes in resource use. At the same time, an increase in the complexity of cases within a DRG can increase resource use without a commensurate rise in payments. When such changes occur, payments should be adjusted for their effects. The Commission's case-mix adjustment modifies the next year's payment rates to account for the effects of this year's changes in coding practices and within-DRG case complexity.

CMI growth continues to be moderate. Growth has decelerated sharply in the last several years, with an actual decline of 0.5 percent for FY 1998. HCFA analysts expect that, when more complete data become available, FY 1999 will show a further decline of approximately 0.5 percent.

Past Commission analyses have found a relationship between hospital coding of cases and CMI growth. In 1988 and 1991, Medicare made major changes in the DRG system, and these changes were followed by increased CMI growth. There have been no major changes in the DRGs since 1991, however, and CMI growth appears to be much slower. The

**TABLE  
5-8****Case-mix index change, hospital coded data and  
reabstracted data, fiscal years 1997–1999**

Fiscal year	Case-mix index change		
	Hospital coded	Reabstracter coded	Upcoding/ downcoding
1997	0.0%	0.0%	0.0%
1998	0.6	1.1	-0.5
1999	-1.0	-1.0	0.0

Source: MedPAC analysis of data from HCFA's Clinical Data Abstraction Centers.

In past years, MedPAC has included an adjustment for increased case complexity not captured by the DRG classification system. In its first two years (updates for FY 1999 and FY 2000) MedPAC recommended adjustments for within-DRG case complexity change of 0.0 to 0.2 percent. In its update recommendations for FY 1996 and FY 1997, ProPAC recommended adjustments of 0.2 percent and 0.0 to 0.2 percent, respectively. The Commission recognizes that as the DRG classification system matures, it should account for more of the variation in costs by DRG assignment, leaving less within-DRG variation in case complexity and costliness. In light of this consideration and the low adjustments in four of the past five updates, MedPAC has decided on a zero adjustment for FY 2001. ■

## References

---

Bureau of Labor Statistics, U.S. Department of Labor. Multifactor productivity trends, 1997, USDL 99-36. February 11, 1999a. Available at <http://stats.bls.gov/mprover.htm>.

Bureau of Labor Statistics. U.S. Department of Labor. Productivity by industry: service sector and mining, 1997, USDL 99-119. May 4, 1999b. Available at <http://stats.bls.gov/iprhome.htm>.

Castells X, Riu M, Saez M. Relationship between average hospital stay and the rate of early admissions, *Medicina Clinica*, November 2, 1996, Vol. 107, No. 15, p. 566–571.

CHPS Consulting. Final report: outpatient resource costing study. Columbia (MD), CHPS. December 1994.

Congressional Budget Office. Staff communication with Tim Greene, MedPAC. April 2000.

D'Agostino RS, et al. Readmission after cardiac operations: prevalence, patterns, and predisposing factors, *Journal of Thoracic and Cardiovascular Surgery*. Nov. 1999, Vol. 118, No. 5, p. 823–832.

Duke J, Usher L. BLS completes major expansion of industry productivity series, *Monthly Labor Review*. September 1998, Vol. 121, No. 9, p. 35–51.

Jaklevic MC. What hospitals see, they get: private sector acquiesces to providers' price hikes, *Modern Health Care*. March 6, 2000, Vol. 30, No. 10, p. 60–62.

Lahey SJ, et al. Hospital readmission after cardiac surgery. Does “fast track” cardiac surgery result in cost saving or cost shifting? *Circulation*. Nov. 10, 1998, Vol. 98, No. 19 (supplement), p. II35–40.

Legg Mason Wood Walker, Inc. Health Care Research Group. Equity research: industry analysis. Baltimore (MD), Legg Mason. Fall 1999.

Levit K, et al. Health spending in 1998: signals of change, *Health Affairs*. January/February 2000, Vol. 19, No. 1, p. 124–132.

The Lewin Group. The national hospital indicators survey: results for fourth quarter 1997 through third quarter 1999. January 2000.

Medicare Payment Advisory Commission. Report to the Congress: Medicare payment policy. Washington (DC), MedPAC, March 2000.

Medicare Payment Advisory Commission. Report to the Congress: Medicare payment policy. Washington (DC), MedPAC, March 1999.

Moody's Investors Service, Inc. Municipal credit research: 2000 not-for-profit healthcare sector. New York (NY), Moody's. February 2000.

Prospective Payment Assessment Commission. The accuracy of cost measures derived from Medicare Cost Report data, Intramural Report I-93-01, Washington (DC), ProPAC. March 1993.

Prospective Payment Assessment Commission. How services and costs vary by day of stay for Medicare hospital stays, ProPAC Extramural Technical Report Series report E-90-07. Washington (DC), the Rand Corporation. 1990.