SECTION 2A

Hospital inpatient and outpatient services

RECOMMENDATIONS

2A-1 The Congress should increase payment rates for the acute inpatient and outpatient prospective payment systems in 2010 by the projected rate of increase in the hospital market basket index, concurrent with implementation of a quality incentive payment program.

COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

2A-2 The Congress should reduce the indirect medical education adjustment in 2010 by 1 percentage point to 4.5 percent per 10 percent increment in the resident-to-bed ratio. The funds obtained by reducing the indirect medical education adjustment should be used to fund a quality incentive payment program.

COMMISSIONER VOTES: YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

SECTION 2A

Hospital inpatient and outpatient services

Section summary

Most indicators of payment adequacy for hospital services are positive. Access to hospital services continues to be good, with more hospitals opening than closing. In fact, the overall level of hospital construction was at a record high in 2007. Looking across service lines, many hospitals are expanding both the low-technology (e.g., palliative care) and high-technology (e.g., imaging) services they offer their communities. Despite increasing competition from independent diagnostic testing facilities and ambulatory surgical centers, the volume of hospital outpatient services per Medicare beneficiary has grown, indicating that access is strong. Another positive indicator is that quality-of-care measures are generally improving.

While most payment adequacy indicators are positive, Medicare margins remain low. The average Medicare margin, which was –5.9 percent in 2007, is projected to fall to –6.9 percent in 2009 (after accounting for payment policy changes scheduled to be in effect in 2010). While the average margin is negative, some hospitals are able to generate profits treating Medicare patients. Hospitals that break even or

In this section

- Are Medicare payments adequate in 2009?
- How should Medicare payments change in 2010?
- Indirect medical education adjustment

generate profits from Medicare patients tend to fall into two categories. First, teaching hospitals often generate profits on Medicare patients due to indirect medical education (IME) payments that exceed the indirect costs associated with teaching residents. Second, relatively efficient hospitals are able to cover the costs of caring for Medicare patients by keeping their costs lower than their peers' costs.

Access to capital was erratic in 2008. Bond offerings and construction started off at a record pace in January but froze in September 2008 due to an economy-wide freeze of the credit markets. The difficulties in accessing capital resulted from a sudden breakdown of the credit markets rather than a change in the level of Medicare payments. Recently, hospitals with robust fundamentals have been able to issue debt, but even financially sound hospitals face higher interest rates.

Despite appearances, record-breaking hospital construction in 2007 and negative Medicare margins in 2007 are not at odds. We note that a third factor—unusually high private-payer profit margins—can lead to more construction, higher hospital costs, and lower Medicare margins. In 2007, hospitals' non-Medicare profits and total (all payer) profits were at the highest levels in a decade. The data suggest that, when non-Medicare margins are high, hospitals face less pressure to constrain costs, costs rise, and Medicare margins tend to be low. Of course, not all hospitals had high private-payer profits; those with low levels of profit on their non-Medicare business face pressure to keep their costs down. We found that hospitals facing significant financial challenges in recent years (2004 through 2006) tended to have lower costs and hence higher Medicare margins in 2007.

A key question is whether Medicare payments are adequate to cover the costs of efficient providers. To explore this question, we have examined financial outcomes for a set of hospitals that consistently perform well on cost, mortality, and readmission measures. For these relatively efficient hospitals, we found that Medicare payments, on average, roughly equaled their Medicare costs.

Balancing the findings among different payment adequacy indicators, we conclude that an update equal to the projected increase in the market basket is appropriate for inpatient and outpatient services, with this update implemented concurrently with a quality improvement program. Given the mixed payment adequacy indicators, we believe a hospital's quality performance should determine whether its payments increase more or less than the market basket increase. Hospitals that perform well on quality measures could get a payment rate increase greater than the market basket, while those that perform poorly could get less than the market basket.

Recommendation 2A-1

The Congress should increase payment rates for the acute inpatient and outpatient prospective payment systems in 2010 by the projected rate of increase in the hospital market basket index, concurrent with implementation of a quality incentive payment program.

COMMISSIONER VOTES:
YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

In 2007, IME payments to teaching hospitals totaled $6 billion. These payments exceed the estimated indirect costs associated with teaching residents. Therefore, we recommend a reduction in the IME adjustment equivalent to 1 percentage point to 4.5 percent per 10 percent increment in the resident-to-bed ratio; this adjustment would reduce the gap between Medicare IME payments and IME costs by roughly 30 percent. The dollars would be used to help fund a quality improvement program. ■

Recommendation 2A-2

The Congress should reduce the indirect medical education adjustment in 2010 by 1 percentage point to 4.5 percent per 10 percent increment in the resident-to-bed ratio. The funds obtained by reducing the indirect medical education adjustment should be used to fund a quality incentive payment program.

COMMISSIONER VOTES:
YES 16 • NO 0 • NOT VOTING 0 • ABSENT 1

Background

Hospitals provide Medicare beneficiaries with inpatient care for the diagnosis and treatment of acute conditions and manifestations of chronic conditions. They also provide ambulatory care through outpatient departments and emergency rooms. In addition, many hospitals provide home health, skilled nursing facility, psychiatric, and rehabilitation services. To be eligible for Medicare payment, short-term general and specialty hospitals must meet the program's conditions of participation and agree to accept Medicare rates as payment in full.

Medicare spending on hospitals

In 2007, Medicare spent $107 billion on fee-for-service (FFS) inpatient care and $29 billion on FFS outpatient care at general acute care hospitals (Table 2A-1). Acute inpatient and outpatient services represented more than 90 percent of Medicare spending on general acute care hospitals. Aggregate FFS spending growth slowed from 2002 to 2007 due to Medicare beneficiaries shifting from FFS Medicare to Medicare Advantage plans. However, the level of spending per FFS beneficiary continued to grow. From 2002 to 2007 Medicare inpatient spending per capita grew 18 percent, while outpatient spending per capita grew 47 percent. The higher growth in outpatient services reflects an ongoing shift of services from an inpatient to an outpatient setting and changes in available technology.

Medicare's payment systems for inpatient and outpatient services

This section provides a brief overview of the acute inpatient and outpatient prospective payment systems (PPSs), which have a similar basic construct. Each has a base rate modified for differences in type of case or service as well as geographic differences in wages. However, each has a somewhat different set of payment adjustments.

Acute inpatient payment system

Medicare's acute inpatient PPS (IPPS) pays hospitals a predetermined amount for most discharges. The payment rate is the product of a base payment rate and a relative weight that reflects the expected costliness of cases in a particular clinical category compared with the average of all cases. The labor-related portion of the payment rate is further adjusted by the hospital wage index to account for differences in area wages. Payment rates are updated annually.

Until 2008, patient classification was based on the diagnosis related group (DRG) system. In 2008, CMS replaced the DRG system and its 538 groups with Medicare severity DRGs (MS–DRGs) with 745 groups. In the MS–DRG system, patients are assigned to 335 base DRGs that reflect similar principal diagnoses and procedures. Most base DRGs are further subdivided into groups representing patients with no complication or comorbidity (CC), patients with one or more nonmajor CCs, or patients with one or more major CCs.

TABLE 2A–1

Growth in Medicare inpatient and outpatient spending

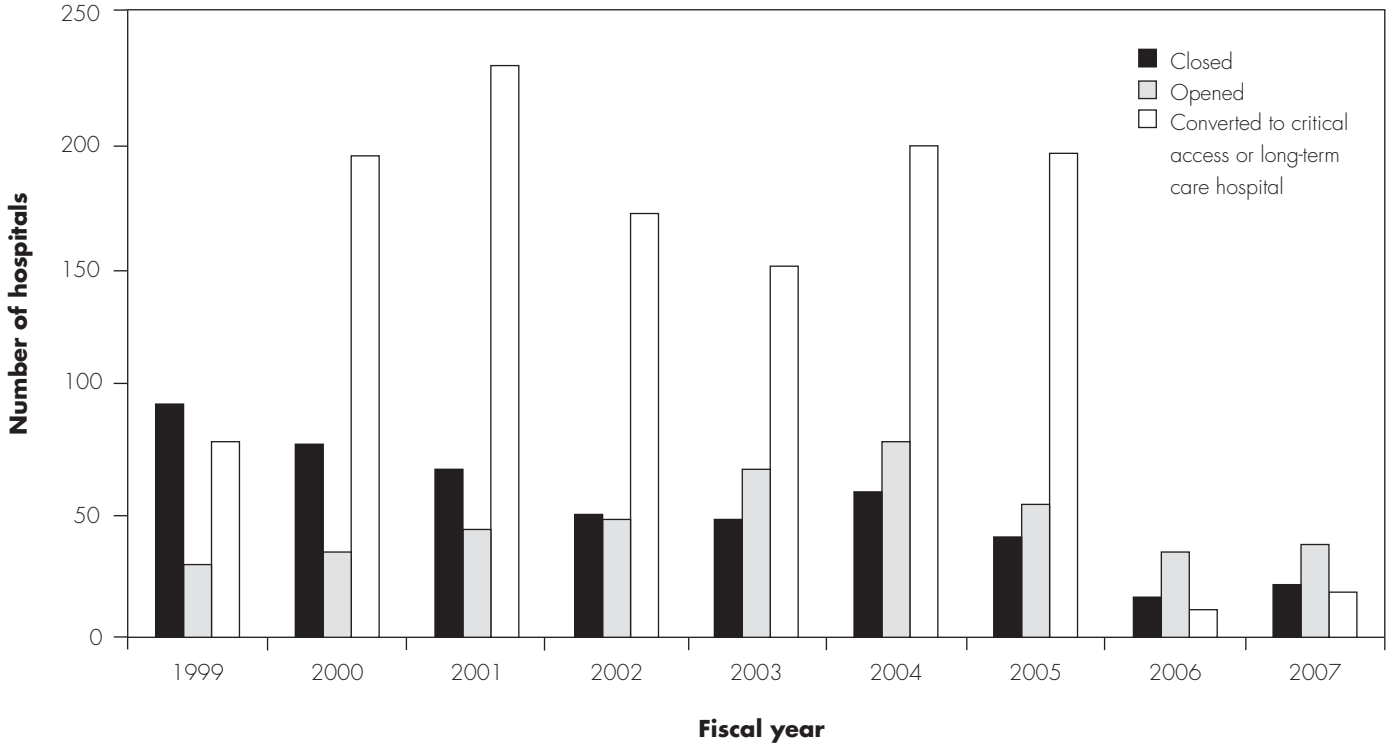
Type of spending	2002	2004	2006	2007	Percentage change 2002–2007
Hospital inpatient spending					
Total FFS payments (in billions)	$90	$100	$107	$107	19%
Payments per FFS enrollee	2,610	2,780	3,010	3,080	18
Hospital outpatient spending					
Total FFS payments (in billions)	19	24	28	29	50
Payments per FFS enrollee	600	710	840	880	47

Note: FFS (fee-for-service). Hospital spending includes all hospitals covered by Medicare's inpatient and outpatient prospective payment systems (PPSs) and critical access hospitals. Maryland hospitals are excluded. The number of overall Medicare enrollees grew from 2002 to 2007, but the number of FFS enrollees was relatively flat over that time due to the expansion of the Medicare Advantage program. For the purposes of calculating payments per enrollee we identified populations of enrollees eligible for inpatient (Part A) and outpatient (Part B) coverage.

Source: MedPAC analysis of CMS hospital cost reports, MedPAR files, and PPS impact files.

FIGURE 2A–1

More hospitals opened than closed since 2002



Source: MedPAC analysis of Provider of Services file from CMS.

The acute IPPS includes adjustments to payments for certain cases and for hospitals with specific characteristics. The indirect medical education (IME) adjustment is made to account for the higher costs of patient care in teaching hospitals. Hospitals that treat an unusually large share of low-income patients receive disproportionate share hospital payments. Payments are reduced for certain cases with unusually short stays that are transferred to another hospital or a post-acute care setting and for hospitals that do not report specified quality data. Outlier payments are made for cases with unusually high costs, and temporary add-on payments are made for cases using specified new technologies. Special payments are also made to certain rural hospitals (sole community and Medicare-dependent hospitals). Hospitals with up to 25 beds may qualify for cost-based payment as critical access hospitals (CAHs); these hospitals are excluded from the IPPS.

A more detailed description of the acute IPPS can be found at http://www.medpac.gov/documents/MedPAC_Payment_Basics_08_hospital.pdf.

Hospital outpatient payment system

The outpatient PPS pays hospitals a predetermined amount per service. CMS assigns each outpatient service to 1 of approximately 800 ambulatory payment classification (APC) groups. Most APCs have a relative weight based on their median cost of service compared with the median cost of a midlevel clinic visit. A conversion factor translates relative weights into dollar payment amounts. A more detailed description of the outpatient PPS can be found at www.medpac.gov/documents/MedPAC_Payment_Basics_08_OPD.pdf.

Are Medicare payments adequate in 2009?

Each year, the Commission makes payment update recommendations for hospital inpatient and outpatient services for the coming year. In our update framework, we examine whether payments for the current year (2009)

TABLE 2A–2

The share of hospitals offering specialized care often grew

Type of specialized care	2000	2004	2005	2006	Percentage point change 2000–2006
Palliative care program	14%	25%	29%	31%	17%
Magnetic resonance imaging	54	60	63	65	11
Hemodialysis	22	30	31	31	9
Positron emission tomography	8	18	16	16	8
Orthopedic	N/A	67	69	72	5*
CT scanner	87	88	88	90	3
Trauma center (level 1 to 3)	32	33	34	35	3
Open heart surgery	22	23	25	25	3
Bariatric surgery/weight control	N/A	20	21	22	2*
Cardiac catheterization	38	36	39	40	2
Psychiatric services	34	32	32	32	–2
Urgent care center	27	26	25	24	–3

Note: N/A (not available), CT (computed tomography). Data are for services provided directly by community hospitals, which include critical access hospitals in addition to those covered by the acute inpatient and outpatient prospective payment systems.
* Percentage point change calculated from 2004 to 2006, because data were not available for 2000.

Source: American Hospital Association annual survey of hospitals.

are adequate to cover the costs efficient hospitals incur to provide high-quality care and then how much providers' costs will change in the coming year (2010). To make these judgments, we consider beneficiaries' access to care, changes in the volume of services, changes in the quality of care, hospitals' access to capital, and the relationship of Medicare's payments and hospitals' costs. In addition, the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA) requires that we consider the efficient provision of services in recommending updates. To fulfill this mandate, we explore identifying a set of relatively efficient (high quality and low cost) hospitals and compare cost and quality metrics of this set of hospitals with those for other general acute care hospitals.

Beneficiaries' access to care remains positive, as hospital capacity has generally grown

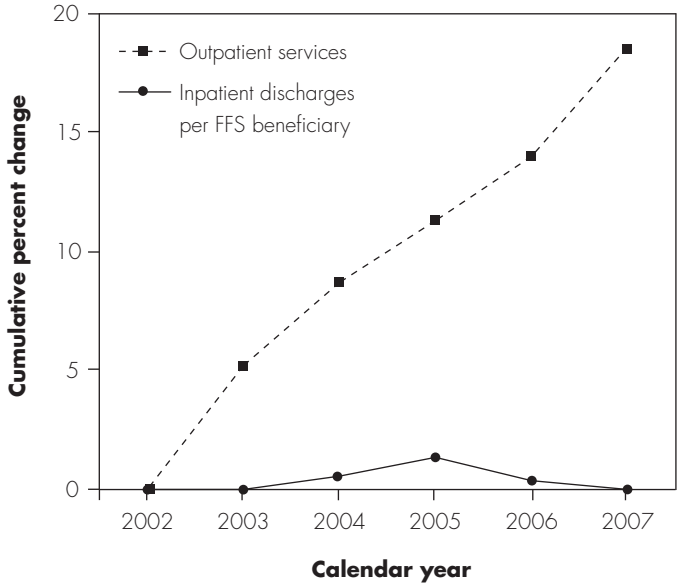
We assess beneficiaries' access to care through measures of the number of hospitals participating in the Medicare program and the proportion of hospitals offering certain specialty and outpatient services. In general, we find that hospitals' capacity to provide most services is improving.

In each year from 2003 through 2006, more Medicare-participating hospitals opened than closed (Figure 2A-1). More than 1,100 hospitals converted to CAH status between 1998 and 2007 (of 1,296 converting since the beginning of the CAH program). But the conversion rate has slowed to less than 10 per year since 2006 because of new legislation that required all new CAHs to be at least 35 miles by primary road or 15 miles by secondary road from another hospital; the distance requirement does not affect existing CAHs. Another 125 hospitals have converted to long-term care hospitals since 1999, including 12 in the past year. These facilities are no longer paid under the acute IPPS.[1]

Not only has the number of hospitals grown in recent years, so have hospital service offerings. Our analysis of 12 specialized hospital services from 2000 to 2006 found that the share of hospitals providing each service increased in 10 of the 12 categories and decreased for psychiatric services and urgent care services from 2000 to 2006 (Table 2A-2). The proportion of hospitals offering trauma center services (level 1, 2, or 3) grew from 32 percent to 35 percent, even though trauma services are often considered unprofitable for hospitals. Other data sources indicate that roughly 90 percent of all hospitals offered outpatient and emergency services from 2000 through 2006 (CMS 2008a). The decline in psychiatric services is of concern and is an issue we will pursue in future research.

FIGURE 2A–2

Medicare outpatient services grew while hospital inpatient discharges per FFS enrollee were fairly constant from 2002 to 2007



Note: FFS (fee-for-service). Data are for short-term general and surgical hospitals, including critical access and children's hospitals.

Source: MedPAC analysis of MedPAR and hospital outpatient claims data from CMS.

Changes in volume of services

We use the number of discharges per FFS beneficiary as an indicator of inpatient volume, while we measure outpatient volume by the number of services per FFS beneficiary, as the outpatient PPS generally pays for individual services.[2] Under these measures, Medicare inpatient volume has remained flat, in part due to the shift of patients to outpatient settings in recent years. In contrast, outpatient services per beneficiary have grown, even as hospital competitors, such as independent diagnostic testing facilities and ambulatory surgical centers, increasingly provide these services.

Inpatient volume

Medicare FFS discharges per beneficiary showed little change from 2002 through 2007 (Figure 2A-2). Hospitals have been able to maintain their inpatient volumes despite a shift of many types of surgical procedures to outpatient settings. For example, services such as pacemaker implantation that once were performed only as an inpatient service are now often delivered in outpatient settings, which suggests that hospitals have been able to replace inpatient cases lost to outpatient settings with additional inpatient discharges per beneficiary. While Medicare admissions per beneficiary have remained flat, the number of inpatient days has declined due to a steady decline in Medicare patients' length of stay.

Outpatient volume

From 2002 through 2007, the volume of outpatient services per FFS beneficiary increased steadily, averaging 3.5 percent per year during that period (Figure 2A-2).[3] Our analysis of claims data shows that much of the overall growth in service volume from 2002 to 2007 was due to increases in the number of services per beneficiary receiving outpatient care rather than to increases in the number of beneficiaries served.

Changes in quality of care

Most quality-of-care measures continue to show improvement. According to the Commission's analysis, in-hospital and 30-day mortality rates continued to decline from 2004 through 2007. In addition, most patient safety and process metrics are improving.

To assess quality in hospitals, we examined in-hospital mortality and mortality within 30 days after admission to the hospital as well as the incidence of potentially preventable adverse events resulting from inpatient care (referred to as patient safety indicators, or PSIs). The Agency for Healthcare Research and Quality (AHRQ) developed the measures of mortality and adverse events we use in our analysis. AHRQ chose these indicators after discussions with clinical and measurement experts and after empirical testing to explore the frequency and variation of the indicators and their potential biases. We calculated the mortality rates and PSIs based on all Medicare inpatient claims with specified conditions or procedures in CMS's Medicare Provider Analysis and Review (MedPAR) claims data files. We used an AHRQ methodology to risk-adjust the MedPAR data when calculating the mortality and PSI rates.

From 2004 through 2007, risk-adjusted in-hospital and 30-day mortality declined for each of the eight conditions or procedures we measured: pneumonia, stroke, acute myocardial infarction, heart failure, gastrointestinal hemorrhage, coronary artery bypass graft, craniotomy, and abdominal aortic aneurysm repair. In-hospital mortality rates provide a measure of hospital performance on inpatient care. The 30-day rate is somewhat more difficult to interpret strictly as inpatient quality, because it may also reflect outpatient and post-acute care experienced

after hospital discharge. However, risk-adjusted 30-day mortality has the advantage of reflecting how well a hospital works with post-acute providers to ensure a smooth and safe transition from the hospital.

The rates of adverse events improved for five of the eight conditions we monitor (Table 2A-3). The most common adverse event was decubitus ulcer (bed sores), for which the risk-adjusted rate for Medicare patients in our sample improved slightly from 2004 to 2007. The second most common event was postoperative pulmonary embolism or deep vein thrombosis, which are rare but life-threatening complications of surgery that can often be prevented with appropriate clinical care. Their risk-adjusted rate did not change significantly between 2004 and 2007. The changes in patient safety measures should be viewed with caution given that changes in coding practices and not just changes in the underlying quality of care could affect the reported rate (AHRQ 2006).

The Joint Commission's 2008 annual report on quality and safety indicates that hospitals on average have improved scores on all reported process measures in recent years (Joint Commission 2008). For example, the Joint Commission found improving rates of beta blocker use and smoking cessation advice for heart attack patients. While process metrics show progress, the Joint Commission notes there is room for further improvement.

CMS has made significant progress over the past four years in gathering and publishing a broadening array of hospital quality measures on the Medicare Hospital Compare website (CMS 2008b). The measures that have been in use the longest evaluate hospitals' performance of specific processes of care in selected clinical areas, such as treatment of heart attack (acute myocardial infarction), heart failure, and control of surgical infections. In the past year, CMS for the first time published 30-day mortality rates for certain conditions as well as overall patient satisfaction scores for care provided by hospitals. As more data accumulate on these and other measures CMS regularly collects—including rates of hospital-acquired conditions—we will seek to incorporate them into our annual assessment of hospital performance.

TABLE 2A–3

Patient safety indicators are mostly improving

Indicator	Change in rate 2004 to 2007	Events 2007
Decubitus ulcer	Better	137,362
Postoperative PE or DVT	No difference	44,724
Puncture/laceration	No difference	30,773
Infection due to medical care	Better	15,643
Postoperative respiratory failure	Better	22,568
Iatrogenic pneumothorax	Better	6,788
Postoperative hemorrhage	Better	8,257
Postoperative sepsis	No difference	6,980

Note: PE (pulmonary embolism), DVT (deep vein thrombosis). "Better" indicates that the risk-adjusted rate per 10,000 eligible discharges has decreased by a statistically significant amount using a p=0.01 criterion. "No difference" indicates that the difference is not statistically significant using a p=0.01 criterion. Reported events are not strictly comparable to earlier MedPAC analyses (MedPAC 2008) due to evolution of the risk adjuster and changes in which patients are excluded from the set of eligible cases.

Source: MedPAC analysis of CMS data using Agency for Healthcare Research and Quality risk-adjustment method.

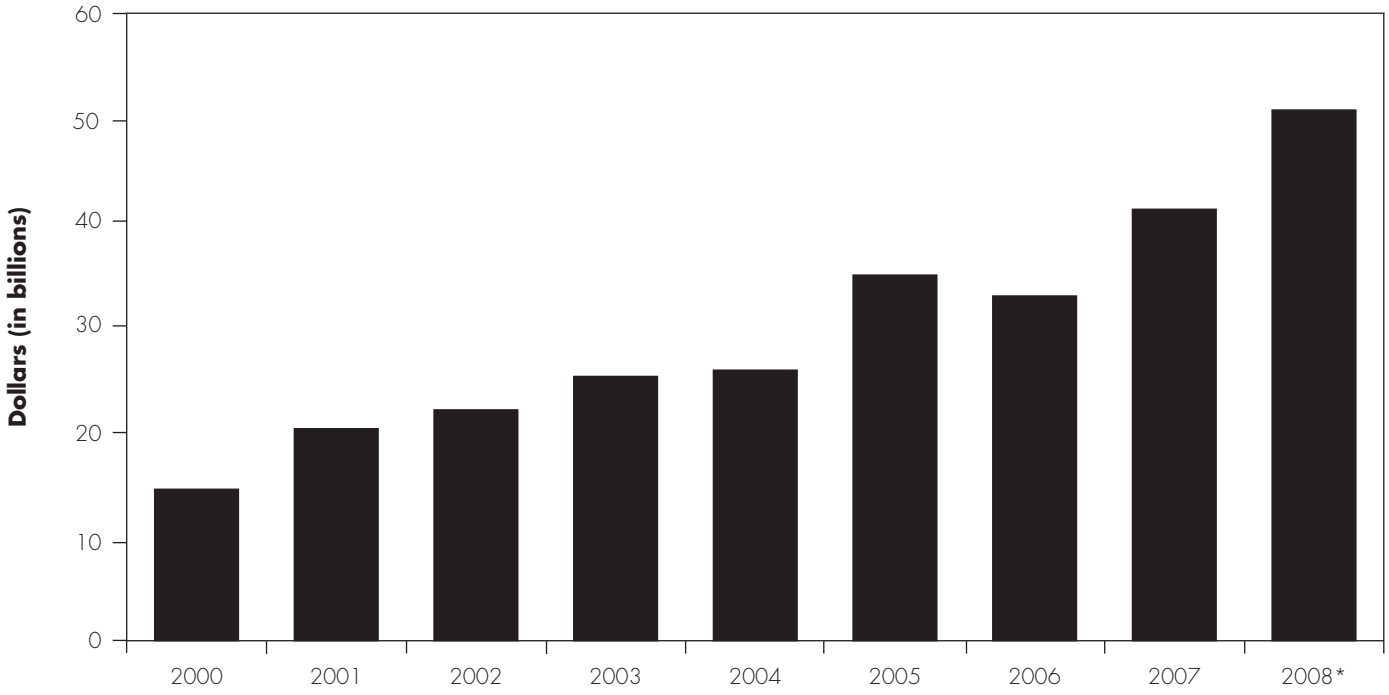
Hospitals' access to capital

Access to capital allows hospitals to maintain and modernize their facilities. If hospitals were unable to access capital, it might in part reflect problems with the adequacy of Medicare payments, as Medicare provides about 30 percent of hospital revenues. This year, because of the extraordinary conditions in the credit markets, access to capital may not be a particularly good indicator of Medicare payment adequacy. Recent difficulties in accessing capital result from a sudden economy-wide breakdown of the credit markets rather than from any change in the level of Medicare hospital payments. For example, health care municipal bond issuances reached $24.7 billion in the second quarter of 2008 (a level not seen since 1990), but then the market essentially froze in late September (*Modern Healthcare* 2008). Virtually no health care entities issued municipal bonds until late October. The lack of access to capital in late September through most of October was a result not of changes in Medicare payments but of conditions in the credit markets. By November 2008, hospital municipal bond offerings resumed, but the average interest rate had increased from 6.0 percent at the end of August 2008 to 8.5 percent by December 2008 for A-rated hospital municipal bonds (Cain Brothers 2008a, Cain Brothers 2008b).

Through most of 2008, municipal bond issuances were quite high. Figure 2A-3 (p. 54) shows that, through early November, issuances exceeded $50 billion. Hospitals used much of the funding to refinance auction rate debt (a type of variable rate debt) with longer term fixed-rate bonds. While hospitals with robust fundamentals are able to issue

FIGURE 2A–3

Hospital tax-exempt bond issuances grew into 2008



Note: *Data for 2008 are for January 1 through November 4.

Source: Thomson Financial 2008.

debt, even financially sound hospitals face higher interest rates than last year (Moody's 2008).

Hospitals still have access to lines of credit from banks, but some banks' creditworthiness and willingness to lend may be in question because of conditions in the larger credit markets. In addition, declines in the debt and equities markets will lower the value of hospitals' investment portfolios, which may affect capital expenditures. As a result of higher interest rates and economic uncertainty, some construction projects may be delayed. Therefore, we do not expect the record-breaking level of construction seen in 2007 to continue into 2009 (Figure 2A-4). In sum, access to capital in 2009 is difficult to predict, but it is generally agreed that the cost of capital will be higher in 2009 than in early 2008.

Payments and costs for 2009

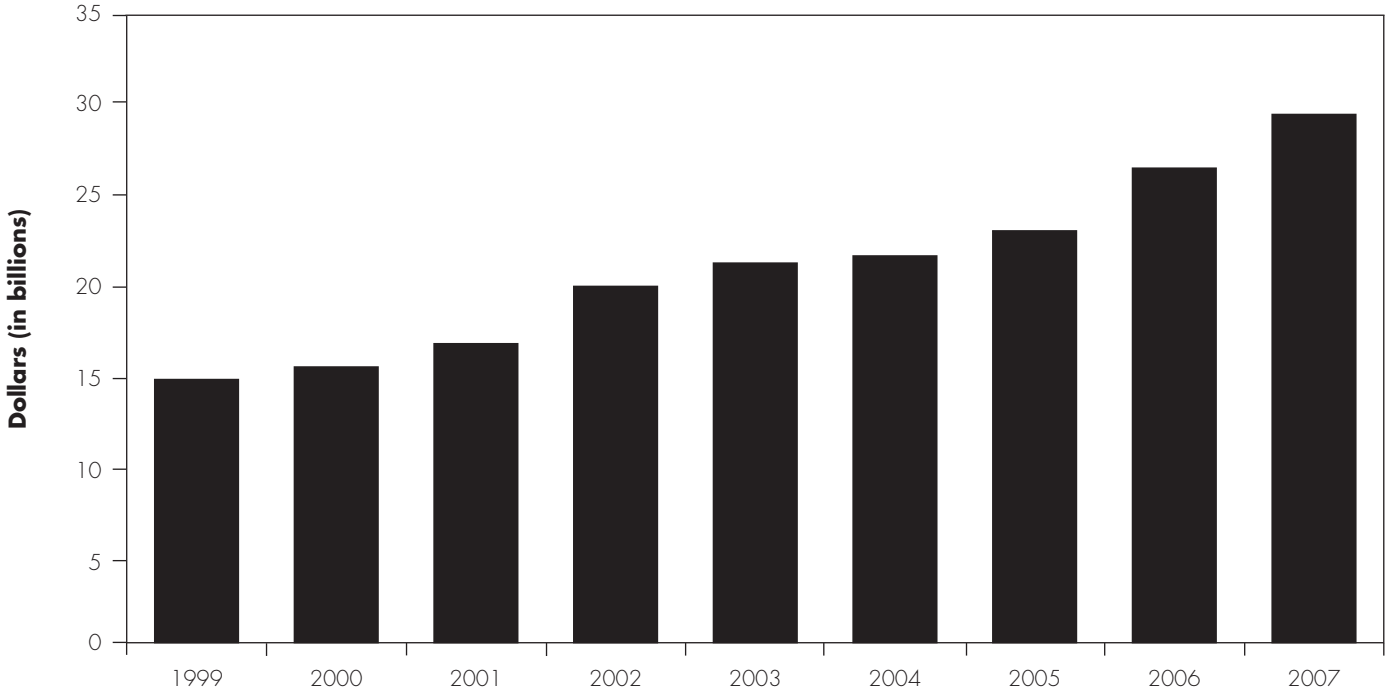
In assessing payment adequacy, the Commission also considers the estimated relationship between Medicare payments and hospitals' costs for furnishing care to Medicare patients in the current year, fiscal year 2009. We assess the adequacy of Medicare payments for the hospital as a whole, and thus our indicator of the relationship between payments and costs is the overall Medicare margin. This margin includes payments and costs for the six largest services that hospitals provide to Medicare patients plus graduate medical education. We take this approach because hospitals allocate large amounts of overhead across service lines, particularly between inpatient and outpatient care. Only by combining data for all major services can we estimate Medicare costs without the influence of how overhead costs are allocated.

Trend in the overall Medicare margin

The overall Medicare margin has trended downward since 1997 and has been negative since 2003 (Figure 2A-5, p. 56).[4] From 2006 to 2007, the margin fell from –4.7 percent to –5.9 percent, the lowest level we have recorded. The drop in the overall margin parallels that in the inpatient margin as inpatient services account for about three-quarters of hospitals' Medicare revenues. Overall Medicare margins have dropped as per case costs have grown faster than input prices and payment updates.

FIGURE 2A–4

Spending on hospital construction grew through 2007



Note: Spending is for nonfederal hospital construction, deflated to 2007 dollars using the McGraw–Hill construction cost index.

Source: Census Bureau. http://www.census.gov/const/www/c30index.html.

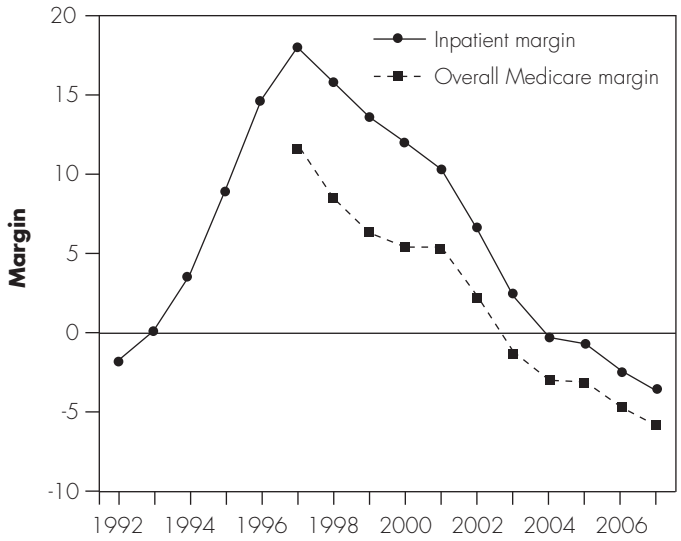
The gap between the overall Medicare margin and the Medicare inpatient margin has narrowed over time. In part this is due to a narrowing in the difference between the Medicare inpatient margin and the outpatient margin (Table 2A-4, p. 56). The inpatient margin has fallen, while the outpatient margin has held relatively steady since 2003. Outpatient volume growth on average has been greater than inpatient volume growth, resulting in increased economies of scale for outpatient services and lower cost growth.

The margins in Table 2A-4 include only hospitals in the prospective payment system and exclude CAHs. Conversions to CAH status from 2003 to 2006 have resulted in some hospitals with relatively low margins moving out of the PPS (to cost-based reimbursement). CAH conversions coupled with certain provisions of the Deficit Reduction Act of 2005 (DRA) have helped to push rural hospitals' overall Medicare margins above those of urban hospitals (Table 2A-5, p. 57). The DRA provisions raised rural hospitals' payments by allowing small rural Medicare-dependent hospitals (MDHs) to use a more recent and higher base year (2002) for calculating their hospital-specific rate and by increasing the cap on disproportionate share payments to all small rural hospitals. Medicare inpatient payments per case increased an average of 9 percent for MDHs in 2007 compared with an average increase of 2.9 percent for all PPS hospitals.

The Medicare margin for major teaching hospitals went down a little more in 2007 than margins for other hospitals in part due to a small reduction in the IME adjustment. Teaching hospitals, however, continue to have much higher overall Medicare margins than the average PPS hospital. In large part, this is due to the extra payments they receive through the IME and disproportionate share adjustments. Commission analysis has shown that both these adjustments provide payments substantially larger than the estimated effects that teaching intensity and service to low-income patients have on hospitals' average costs per discharge (MedPAC 2006). Nonteaching hospitals, most of which are in urban areas, had the lowest Medicare margins of any hospital group.

FIGURE 2A–5

Overall Medicare and Medicare inpatient margins



Note: A margin is calculated as payments minus costs, divided by payments; margins are based on Medicare-allowable costs. Analysis excludes critical access hospitals. Medicare inpatient margins include services covered by the acute inpatient prospective payment system. Overall Medicare margin covers acute inpatient, outpatient, hospital-based home health and skilled nursing facility (including swing bed), and inpatient psychiatric and rehabilitation services, plus graduate medical education.

Source: MedPAC analysis of Medicare Cost Report file from CMS.

CAHs, which are not included in our margin calculations, receive under their cost-based reimbursement system 1 percentage point more than costs for inpatient, outpatient, and swing bed post-acute services. These hospitals account for about one-quarter of all Medicare revenue rural hospitals receive. If we include CAHs in our overall margin calculation, the overall Medicare margin for rural hospitals in 2007 would be 1.4 percentage points higher, or –4.2 percent. For all acute care hospitals, the margin would be 0.2 percentage point higher, or –5.7 percent.

Projected margins under current 2010 payment policies

We estimate that the overall Medicare margin in 2009 (given 2010 policies) would be –6.9 percent, 1 percentage point lower than in 2007.[5] Our projection reflects the effects of policy changes occurring between 2007 and 2010. These policy changes are summarized in the text box (pp. 58–59). Some policy changes will increase payments—full market basket updates hospitals received in both 2008 and 2009, for example—while others will reduce payments—for instance, elimination of the 3 percent add-on to urban hospitals' capital payment rates in 2008. The principal factor contributing to lower projected margins in 2009 than in 2007 is our expectation that hospital costs will continue to rise faster than payments and input price inflation. In 2008 and 2009, we expect costs per case will increase on average slightly more than 4 percent per year. The next section on cost growth discusses some of the reasons why we believe costs will continue to rise faster than payments.

Hospital cost growth has moderated but remains above input price inflation

Cost growth has varied substantially over the past 10 years. After relatively low rates of cost growth in the 1990s, the period from 2001 through 2003 saw rapid cost growth due to rising hospital profitability and fierce competition for nurses and other employees. Growth in costs per discharge peaked at 8.1 percent in 2002. In recent years, cost growth per unit of service has stabilized to between 4 percent and 5 percent per year (Table 2A-6). The 4.6 percent increase in costs per unit of service in 2007 was above the rate of increase in Medicare payments.

Looking to 2008, we expect that the rate of growth in hospital costs per unit will have remained slightly above 4 percent. While 2008 Medicare cost report data are not available, we have partial year data from the Census Bureau through June 2008 and from certain hospital systems with publicly traded stock or bonds for the nine months ending in September 2008.[6] These data sources suggest that 2008 cost growth remained slightly above 4 percent.

TABLE 2A–4

Hospital Medicare margins

Measure	2003	2004	2005	2006	2007
Inpatient	2.3%	–0.3%	–0.7%	–2.4%	–3.7%
Outpatient	–11.4	–10.7	–9.0	–10.9	–11.8
Overall Medicare	–1.2	–3.0	–3.1	–4.7	–5.9

Note: Data are for all hospitals covered by Medicare acute inpatient prospective payment system in 2007. A margin is calculated as payments minus costs, divided by payments; margins are based on Medicare-allowable costs. Overall Medicare margin covers acute inpatient, outpatient, hospital-based skilled nursing facility (including swing bed) and home health, and inpatient psychiatric and rehabilitation services, plus graduate medical education.

Source: MedPAC analysis of Medicare Cost Report file from CMS.

TABLE 2A–5

Overall Medicare margins by hospital group

Hospital group	2003	2004	2005	2006	2007
All hospitals	–1.2 %	–3.0%	–3.1%	–4.7%	–5.9%
Urban	–0.8	–3.0	–3.1	–4.7	–6.0
Rural	–3.9	–3.3	–2.8	–4.8	–5.6
Major teaching	7.1	4.9	4.9	2.9	1.1
Other teaching	–1.9	–3.4	–3.8	–5.4	–6.4
Nonteaching	–5.2	–7.0	–6.8	–8.4	–9.3

Note: Data are for all hospitals covered by the Medicare acute inpatient prospective payment system in 2007. A margin is calculated as payments minus costs, divided by payments; margins are based on Medicare-allowable costs. Overall Medicare margin covers acute inpatient, outpatient, hospital-based skilled nursing facility (including swing bed) and home health, and inpatient psychiatric and rehabilitation services, plus graduate medical education.

Source: MedPAC analysis of Medicare Cost Report file, MedPAR, and prospective payment system impact file from CMS.

Looking forward to 2009, there is a significant amount of uncertainty regarding the economy. Hospitals have faced losses on their investment portfolios and may face some reduction in demand for services as the economy contracts. There are anecdotal reports that this situation has already resulted in increased hospital cost control efforts, which may slow cost growth (Abelson 2008, AHA 2008). On the other hand, costs may increase more rapidly because of other factors, such as the need to replenish hospital employees' defined benefit pension plans that have declined in value due to stock market losses, declines in the volumes of discretionary surgeries as the economy contracts, and higher debt service costs caused by higher interest rates. Given that some forces push costs downward and others push costs upward, there is no clear reason to assume current cost trends will change substantially. Therefore, in our projections we assume that hospitals will report unadjusted cost growth slightly above 4 percent in 2008 and 2009.

Factors influencing cost growth and financial performance

For the past several years, Medicare margins have declined at the same time as hospitals' total (all payer) profitability has risen. The result is that through 2007 some payment adequacy indicators such as capital spending and service volume strengthened while Medicare margins declined. This inverse relationship appears to result from the effect of hospitals' revenues on their costs—that is, more revenue leads to more spending and higher costs. When hospital profits from private payers rise, hospital spending also rises, and Medicare margins fall.

To examine the effect of hospitals' revenue on costs, we explored the relationship between non-Medicare profits and costs for the industry as a whole over the past 20 years. Then we contrasted the costs and Medicare margins of hospitals facing the most financial pressure (low non-Medicare profits) with the costs of hospitals facing the least financial pressure (high non-Medicare profits) in recent years.

The past 20 years: financial pressure and cost growth

The level of private-payer profits has been cyclical. During the first period (1986 through 1992), most insurers still paid hospitals on the basis of their charges, with little price negotiation or selective contracting. With limited pressure

TABLE 2A–6

Cost growth remains in the 4 percent to 5 percent range

	Unadjusted cost growth			Case-mix–adjusted cost growth		
Type of cost	2005	2006	2007	2005	2006	2007
Inpatient costs per discharge	5.1%	5.3%	4.3%	4.2%	4.5%	4.7%
Outpatient costs per service	4.6	2.6	5.6	2.6	3.1	4.1
Weighted average	5.0	4.7	4.6	3.9	4.3	4.6

Note: The results are adjusted to account for changes in hospitals' case mix (complexity of services provided) as measured by diagnosis related groups for inpatient services and ambulatory patient classifications for outpatient services. Analysis excludes critical access hospitals. The weighted average is based on hospitals' inpatient and outpatient Medicare costs.

Source: MedPAC analysis of Medicare Cost Report and claims files from CMS.

Policy changes between 2007 and 2010 increase some payments and decrease others

A number of payment policy changes, including some scheduled to be implemented in 2010, affect our projection of the 2009 margin under 2010 policy. These changes affect Medicare's payments for acute inpatient and outpatient services as well as hospital-based post-acute care services, including home health, skilled nursing facility, and inpatient rehabilitation services. The provisions affecting inpatient and outpatient payments are summarized below; provisions affecting the post-acute services are described in other sections of this report.

Inpatient payments

CMS made major changes to the acute inpatient prospective payment system (PPS) in 2008 and 2009. In response to a Commission recommendation, CMS introduced a new patient classification system that better captures severity-of-illness differences among patients and hospitals. Beginning in 2008, CMS phased in Medicare severity diagnosis related groups (MS–DRGs), replacing DRGs as the method for grouping patients in determining per discharge payments. Payments are based entirely on MS–DRGs in 2009. CMS and the Commission anticipate that hospitals will respond to the incentives of the MS–DRG system by improving medical records' documentation and diagnosis coding, which will result in assignment of cases to higher weighted MS–DRGs. Because this assignment will increase payments without an accompanying increase in resources used, it will result in an unintended increase in payments. CMS planned to reduce the PPS payment rates in 2008 and 2009 by 1.2 percent and 1.8 percent, respectively, to offset the effects of coding improvements that were projected by the CMS Office of the Actuary. However, the TMA, Abstinence Education, and QI Programs Extension Act of 2007 (TMA) mandated a schedule for these reductions of 0.6 percent in 2008 and an additional 0.9 percent in 2009. To the extent that the TMA did not fully account for coding improvements, the Secretary of Health and Human Services (HHS) is required by law to reduce hospital payments in 2010, 2011, and 2012 to ensure that adoption of the MS–DRGs is budget neutral. Likewise, if the effect of coding improvement is less than the adjustment mandated by the TMA, the Secretary of HHS is required to increase hospital payments in 2010, 2011, and 2012 to ensure that the transition to MS–DRGs did not increase or decrease Medicare expenditures.

Hospitals may qualify for reclassification to a different labor market for purposes of the wage index. Section 508 of the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 gave eligible hospitals an opportunity for a one-time reclassification to a different labor market and allowed this change to increase their payments. The provision was scheduled to expire at the end of fiscal year (FY) 2007; however, the Medicare, Medicaid, and SCHIP Extension Act of 2007 extended Section 508 through the end of FY 2008 and the Medicare Improvements for Patients and Providers Act of 2008 (MIPPA) extended it through the end of FY 2009.

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from private payers, hospital margins on private-payer business increased rapidly. In the mid-1990s, HMOs and other private insurers began to negotiate much harder with hospitals, and most insurers switched to paying for inpatient services on the basis of DRGs or flat per diem amounts for broad types of services. In the second period (1993 through 1999) the payment-to-cost ratio for private payers declined by 16 percentage points (Figure 2A-6, p. 60). However, by 2000, hospitals had regained the upper hand in price negotiations due to hospital consolidations and consumer backlash against managed care. In the third period (2000 to 2007), private-payer rates rose rapidly and hospitals' payment-to-cost ratio consequently increased more than 16 percentage points. In 2007, private payers on average paid hospitals more than 132 percent of their costs (Figure 2A-6).

Due to strong private-payer payments, all-payer margins for hospitals reached 6.0 percent in 2007, the highest level recorded since 1997. In 1997, Medicare was a major contributor to hospitals' record profits. In 2007, private

Policy changes between 2007 and 2010 increase some payments and decrease others (cont.)

CMS implemented two Deficit Reduction Act of 2005 (DRA) provisions intended to improve hospital quality of care that affected payments in 2008 and 2009. The DRA mandated that failure to submit valid quality data from 2007 would result in a 2.0 percent reduction in payment for 2008. However, virtually all hospitals paid under the inpatient PPS submitted the required data and thus avoided any penalty. CMS also implemented a mandate to identify reasonably preventable hospital-acquired conditions with high cost or volume that, as secondary diagnoses, would result in assignment to a higher paying DRG. In 2009, cases with any one of five designated conditions do not receive the extra payment of the higher weighted DRG if the condition is acquired after admission and no other qualifying secondary diagnosis is present. However, because in the vast majority of cases another secondary diagnosis is present, we expect this provision to have little impact on payments.

Under the inpatient PPS, separate payments are made for operating and capital costs. For 2008, CMS eliminated a 3 percent add-on to capital payments for hospitals in large urban areas. It also began a phaseout of the indirect medical education adjustment to capital payments, with a 50 percent reduction in 2009 and elimination in 2010.

Outpatient payments

Currently, rural hospitals with 100 or fewer beds receive hold-harmless outpatient payments. Payment rates for these hospitals are based on the higher of current PPS rates or the hospital's historical payment-to-cost ratio. MIPPA extended hold-harmless payments through 2009 to small rural and sole community hospitals, but aggregate outpatient payments are still expected to decline in 2010 after the hold-harmless provision expires.

Rural hospitals

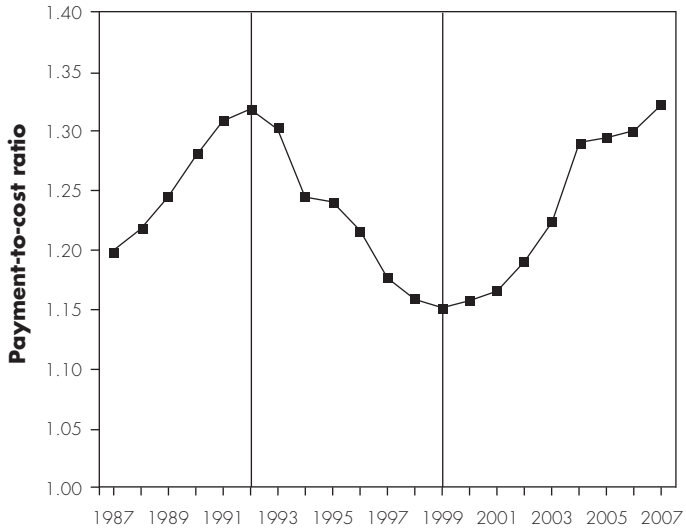
The Congress has established several special payments for rural hospitals that continue to evolve and affect Medicare spending. In 2007, CMS implemented provisions of the DRA affecting payment to Medicare-dependent hospitals (MDHs). These provisions increased the adjustment to MDH payments from 50 percent to 75 percent of the difference between their hospital-specific rate and the federal rate and allowed a 2002 base year for calculating payments. The DRA also increased the cap on disproportionate share payments made to MDHs. At the time of enactment, CMS estimated these policies would increase payments to MDHs in fiscal year 2007 by 14 percent. Effective January 1, 2009, MIPPA rebased payments to sole community hospitals (SCHs) to allow use of the FY 2006 base year for calculating the hospital-specific rate.[7] CMS actuaries estimated that this policy will add $140 million in spending for the portion of FY 2009 it will be in effect, and $550 million for all of FY 2010 (CMS 2008c). The MDH and SCH provisions will significantly increase rural profit margins given that 48 percent of rural inpatient PPS hospitals are SCHs and another 16 percent are MDHs. ■

payers and other revenue sources contributed to hospitals' record profit margins despite the relatively poor showing on Medicare business. As we noted earlier, hospitals' private-payer payment-to-cost ratios increased more than 16 percentage points in the last seven years, contributing to more robust all-payer margins. While insurers appear to be unable or unwilling to "push back" and restrain payments to providers, they have been able to pass costs on to the purchasers of insurance and maintain their profit margins (*Boston Globe* 2008, McKinsey 2008, Sellers 2008).

Hospital cost growth has moved in parallel with margins on private-payer patients. From 1987 through 1992 profits from private payers grew, and then from 1987 through 1993 hospitals' rate of cost growth was above the rate of input price inflation (Figure 2A-7, p. 60). Because of managed care restraining private-payer payment rates, hospitals' rate of cost growth was below input price inflation from 1994 through 2000. However, from 2001 through 2007, after private-payer profits increased, hospitals' rate of cost growth was higher than the rate

FIGURE 2A–6

Three distinct periods in the private payer payment-to-cost ratio



Note: Private payer payment-to-cost ratios do not include Medicare Advantage patients.

Source: MedPAC analysis of data from the American Hospital Association annual survey of hospitals.

of increase in the market basket of input prices (Figure 2A-7). Thus, Medicare margins have declined.

Hospital-level financial pressure and hospital costs The effect of financial pressure on hospitals' costs is not only evident over time, it is also evident when comparing hospitals facing differing levels of financial pressure to constrain costs. Some hospitals have strong profits on non-Medicare services and investments and are under little pressure to constrain their costs. Other hospitals, with thin profits on non-Medicare services, face losses (and possibly closure) if they do not constrain costs and generate profits on Medicare patients. To determine whether financial pressure leads to lower costs, we grouped hospitals into three levels of financial pressure: high, medium, and low. We then tested whether hospitals under high levels of financial pressure from 2002 to 2006 ended up with lower standardized inpatient costs per discharge in 2007 than hospitals under medium and low levels of financial pressure.

We defined high-pressure hospitals as those that met two criteria:

- Median non-Medicare profit margins from 2002 to 2006 of 1 percent or less. Non-Medicare margins reflect the sum of net profit (or loss) on private-payer, Medicaid, self-pay, and charity cases as well as nonpatient revenues and costs.
- Net worth would have grown by less than 1 percent per year from 2002 to 2006 if the hospital's Medicare profits had been zero. This situation would indicate that the hospital depended on Medicare profits to grow its net worth.

We defined low-pressure hospitals as those that could grow their net worth even if they suffer Medicare losses. Low-pressure hospitals met the following two criteria:

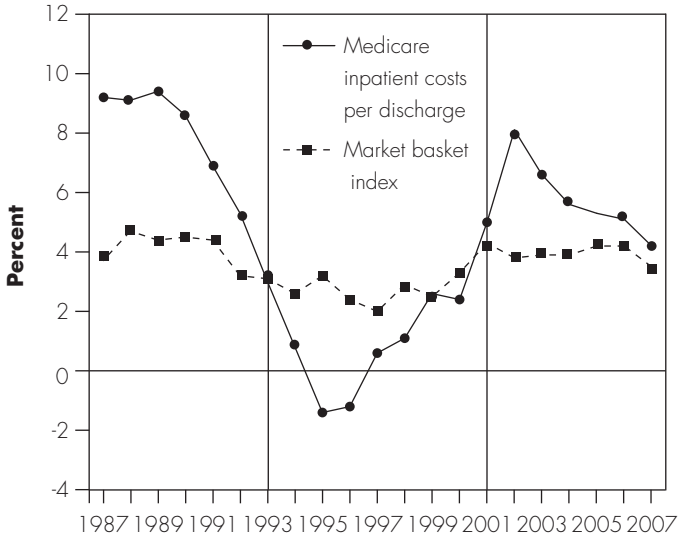
- Median non-Medicare margins from 2002 to 2006 were greater than 5 percent.
- A net worth that would have grown by more than 1 percent per year if its Medicare profits were zero. This situation would indicate that the hospital did not depend on Medicare profits to grow its net worth.

We defined medium-pressure hospitals as all other hospitals.

In general, we found that hospitals under low financial pressure had higher standardized costs per discharge ($6,400) than hospitals under high financial pressure ($5,800) in 2007 (Table 2A-7). However, the difference was

FIGURE 2A–7

Costs have risen faster than the market basket in recent years



Note: The market basket index measures changes in the prices of the goods and services hospitals use to deliver patient care.

Source: Medicare analysis of Medicare Cost Report file and annual final rules for the inpatient prospective payment system from CMS.

TABLE 2A–7

High financial pressure leads hospitals to constrain costs

	Level of financial pressure, 2002 to 2005		
	High pressure (non-Medicare margin <1%)	**Medium pressure**	**Low pressure (non-Medicare margin >5%)**
Financial characteristics, 2007 (medians)			
Non-Medicare margin (private, Medicaid, uninsured)	–2.4%*	4.5%	13.5%
Standardized cost per discharge			
All hospitals	$5,800*	$6,000	$6,400
Nonprofit hospitals	5,700*	6,000	6,500
For-profit hospitals	5,900	6,000	6,000
Annual growth in cost per discharge 2004 to 2007	4.8%	4.9%	5.0%
Overall 2007 Medicare margin	4.2*	–3.8	–11.7
Patient characteristics, 2007 (medians)			
Total hospital discharges	5,424*	7,478	7,312
Medicare FFS share of inpatient days	45%	44%	46%
Medicaid share of inpatient days	13*	12	10
Medicare case-mix index	1.27*	1.33	1.38
Hospital characteristics			
Number of:			
All hospitals	837	413	1,700
Rural hospitals	260	120	502
For-profit hospitals	199	62	356
Major teaching hospitals	135	47	73
Share of:			
All hospitals	28%	14%	58%
Rural hospitals	29	14	57
For-profit hospitals	32	10	58
Major teaching hospitals	53	18	29

Note: (FFS) fee-for-service. Standardized costs are adjusted for hospital case mix, wage index, outliers, transfer cases, interest expense, and the effect of teaching and low-income Medicare patients on hospital costs. The sample includes all hospitals that had complete cost reports on file with CMS by August 31, 2007.
* Indicates significantly different from low-pressure hospitals using p=0.01 and a Wilcoxon rank test. A Wilcoxon rank test is used to limit the influence of the few hospitals that report very low or very large costs per discharge.

Source: MedPAC analysis of Medicare Cost Report and claims files from CMS available as of August 2008.

much less pronounced among for-profit hospitals. For-profit hospitals under low pressure had median standardized costs of $6,000 and for-profit hospitals under high pressure had costs of $5,900 per discharge, a relatively small differential. This finding suggests that for-profit hospitals constrain costs—and nearly maximize profits—even when they are under little financial pressure. Put differently, in a situation where both nonprofit and for-profit hospitals receive high rates from private payers (discussed in the text box, pp. 62–64), the high non-Medicare revenues will be reflected more readily as higher costs in nonprofit hospitals than in for-profit hospitals where the revenues may be retained as profits (and not be reflected in hospital costs).

Comparing this year's findings on hospitals under financial pressure with last year's work, we find consistent results (MedPAC 2008). A difference worth highlighting is that the number of hospitals under financial pressure declined from 2006 to 2007 (from 32 percent to 28 percent) due to a steady increase in non-Medicare margins over the past five years. Given hospitals' recent investment losses,

Private-payer profits and Medicare

Why are profit margins on privately insured patients so high? Is it because hospitals under financial stress tend to have significant Medicare losses, which force them to have relatively high private-payer prices? The answer is no. We find instead that hospitals under financial pressure tend to control their costs, which makes it more likely that they profit from Medicare patients. In fact, we find that Medicare margins are lowest in the hospitals with abundant resources (i.e., low financial pressure). Therefore, it appears that hospitals are raising prices when they have the market power to do so. As revenue rises, costs rise, and Medicare margins fall. Our key findings are:

- Costs vary widely from hospital to hospital.
- An abundance of financial resources is associated with higher costs.
- Higher costs cause losses on Medicare patients.
- As a result, hospitals with abundant financial resources tend to have Medicare losses.
- In contrast, hospitals with limited financial resources constrain their costs. Medicare payments are usually adequate to cover the costs of these financially pressured hospitals.

The Commission has argued that high profits from non-Medicare sources permit hospitals to spend more, and nonprofit hospitals tend to do so (for-profit hospitals may retain a larger share of their revenues as profits). The causal chain is as follows: A hospital's market power relative to insurers, payer mix, and donations determines its level of financial resources. When financial resources are abundant, nonprofit hospitals spend more, add employees, and increase their costs per unit of service. High costs by definition lead to lower Medicare margins because costs do not affect Medicare revenues (which are based on predetermined payment rates). Therefore, when costs increase, Medicare margins ((revenue – costs)/revenue) decrease (Figure 2A-8, MedPAC hypothesis). In other words, income affects spending and costs per unit of service. Hence, if Medicare were to increase its payment rates, hospitals might spend some or all of that revenue rather than use it to lower the prices charged to private insurers.

An alternative "cost shift" argument suggests an opposite flow of causation. It starts with the assumption that costs are largely outside hospitals' control. Nursing wages, construction, and technology costs are created by forces unrelated to the industry's financial health. When external forces cause costs to be higher than Medicare prices, hospitals ask private insurers to increase their payment rates to cover the losses on Medicare patients. Hospitals argue that cost shifting is needed to maintain financial viability (Figure 2A-8, Alternative hypothesis). Recently, some have implied that if Medicare paid hospitals more, hospitals would obtain less from private insurers, and insurers would lower premiums for employers and consumers (Fox and Pickering 2008). While hospitals plead to insurers that they are under financial stress due to "cost shifting" and need payment increases from private insurers, the degree to which private insurer rates are driven by this plea from hospitals is an empirical question.

The debate boils down to this: Do high private-payer profits primarily cause high costs and low Medicare margins, or do low Medicare margins primarily cause high private-payer margins? There is some empirical evidence on the question. If our hypothesis is correct, we should see two things: First, costs should vary depending on each hospital's available resources. Hospitals could have different levels of costs per discharge, even within the same market. Second, hospitals with the lowest Medicare margins should tend to be those with ample financial resources (i.e., hospitals that can afford high costs). Under the alternative hypothesis, we should find that hospitals' costs per unit are not related to financial resources (costs are externally determined). Further, we should find that hospitals with large negative Medicare margins are just barely staying afloat. Insurers would be paying them just enough to keep them solvent and preserve access for the insurer's patients.

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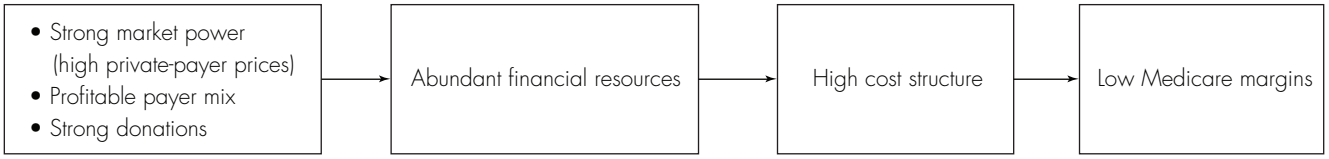
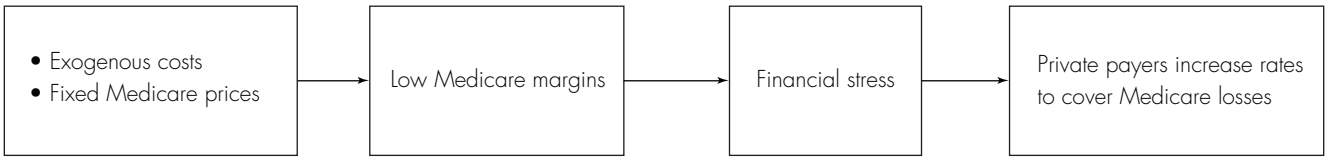
Private-payer profits and Medicare (cont.)

FIGURE 2A–8 **Hypotheses on the relationship between private-payer prices and Medicare costs**

MedPAC hypothesis: Financial resources drive costs



Alternative hypothesis: Costs drive private-payer rates



The academic literature on "cost shifting" is mixed (CBO 2008). Some argue that cost shifting is minimal because of competition (Dranove and White 1998). Others argue that past reductions in Medicare and Medicaid payments have been partially offset by increases in private-payer rates (cost shifting) and partially offset by reduced cost growth (Zwanziger and Bamezai 2006). The findings of cost shifting often rest on the assumption that hospitals minimize costs (they are not affected by revenue) but do not maximize prices they receive from insurers. In contrast, we find that revenues do affect costs.

First, we showed in Table 2A-7 (p. 61) that costs are affected by a hospital's financial condition. Nonprofit hospitals under financial pressure choose to control their costs. In contrast, nonprofit hospitals with strong non-Medicare profits have higher costs. We also showed in Figure 2A-6 (p. 60) and Figure 2A-7 (p. 60) that the overall industry's level of cost growth is correlated with the industry-wide level of private-payer profits. Medicare margins rose in the 1990s when the industry was under pressure to control costs. Commenting on the reduction in "cost shifting" in the 1990s, one actuary recently stated, "what happened there in the '90s was not that Medicare and Medicaid increased their payments to reduce the losses on Medicare and Medicaid. It was that the commercial private payers reduced their payments. There was a lot of competition. And the hospitals and physicians managed to lower their costs" (Fox 2008). In sum, costs are at least partially under hospitals' control. Therefore, increases in Medicare payments may lead to increases in hospital costs rather than to decreases in the rates they charge private insurers.

The second empirical question is whether the hospitals with high Medicare losses tend to have financial resources that allow high costs or if they tend to be financially troubled facilities that require higher private rates to keep them afloat. To test whether hospitals with significant Medicare losses tend to be wealthy or

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Private-payer profits and Medicare (cont.)

poor hospitals, we divide them into three groups (Table 2A-8). The group using private-payer profits to fund the largest share of Medicare costs includes hospitals with Medicare margins less than –10 percent; the middle group has moderate Medicare losses; and the third group makes money on Medicare.

The data indicate that the hospitals with the largest Medicare losses tend to be in better financial shape than other hospitals. From 2002 to 2006, hospitals with low Medicare margins had median total (all payer) margins of 4.6 percent compared with 3.4 percent for hospitals with high Medicare margins. In addition, net worth for the high-cost hospitals rose by 17 percent from 2004 to 2006 compared with a 14 percent rise for low-cost hospitals. While causation may flow in both directions to a degree, the data suggest that the primary reason Medicare margins are inversely related to private-payer profits is that high non-Medicare profits are followed by high hospital costs.

It may appear odd that hospitals with high costs have high total profit margins. In a typical industry, high profits are not associated with high unit costs. The hospital industry is different, however, because of the dominance of nonprofit providers, the influence of payer mix, hospital and insurer market power, and the effect of investments and donations on hospital finances.

Increasing Medicare payments is not a long-term solution to the problem of rising private insurance premiums and rising health care costs. In the end, affordable health care will require incentives for health care providers to reduce their rates of cost growth and volume growth. ■

TABLE 2A–8

Hospital revenue drives hospital costs

	Overall Medicare profit margin in 2007		
Financial characteristics (medians)	**< –10%**	**–10% to 0%**	**> 0%**
Standardized costs, 2007	$6,900	$6,100	$5,500
Number of hospitals	1,138	789	964
Medicare margin, 2007	–20.0%	–5.1%	7.6%
Median total margin, 2004–2006*	4.6	3.8	3.4
Percent change in net worth, 2004–2006	17	15	14

Note: *Total margin refers to the total revenue from all sources less total expenses, divided by total revenue.

Source: MedPAC analysis of Medicare cost report data.

however, these trends could reverse with more hospitals facing high financial pressure starting in fall 2008.

Hospitals under financial pressure tend to be those with smaller operations, a moderately low case-mix index, and a larger share of patients covered by Medicaid. This mix of characteristics can lead to financial pressure, which can force hospitals to constrain costs. As we found last year, the set of hospitals under financial pressure includes hospitals in different locations (rural and urban) and teaching hospitals as well as nonteaching hospitals. Although the need to constrain costs can be a positive effect of financial pressure, a concern is whether hospitals can constrain costs and still deliver high-quality care.

Exploring hospital efficiency

The MMA requires that the Commission consider the costs associated with the efficient provision of services when recommending updates. In recent years, we started our evolution toward examining efficiency by highlighting

the performance of hospitals with consistently low costs per discharge (MedPAC 2008). This year, we explored hospital efficiency by examining hospitals that perform well on quality as well as on cost metrics. Specifically, we identified a set of hospitals that historically have performed well on mortality, readmission, and inpatient cost metrics.

While we think that adding quality metrics helps to move us closer to identifying "efficient" providers, we recognize that further improvements in cost measurement may also be possible. Ideally, we would want to limit our set of efficient hospitals to those that not only have high in-hospital quality and low unit costs but also have patients with low risk-adjusted overall (across all services) annual Medicare costs. While there are two promising data sources that compute average annual Medicare spending for patients associated with specific hospitals, the risk adjustment and standardization of these cost data still need refinement before we would use them to compute cross-sectional comparisons of efficiency (Fisher and Gottlieb 2008).[8] Our preliminary analysis of available annual data on spending for all services per beneficiary assigned to a hospital (a longitudinal cost measure) suggests that adding this dimension to our criteria would not significantly change the average characteristics of our set of relatively efficient providers. Nonetheless, until these data are refined further, our process of categorizing hospitals as relatively efficient providers will focus on mortality, readmissions, and inpatient cost.

Categorizing hospitals as relatively efficient

We categorized hospitals into either the relatively efficient group or the control group based on each hospital's performance on a set of risk-adjusted cost and quality metrics during the period 2004 to 2006. We then examined the performance of the two hospital groups during fiscal year 2007.

We focused on mortality and readmission rates as indicators of quality. Though driven in part by data limitations, this decision was also grounded in the perspective that outcome measures such as mortality and readmission rates reflect elements of hospitals' quality of care not captured by individual process of care measures (Krumholz et al. 2007). We used a 30-day risk-adjusted mortality rate that is composed of mortality rates for eight conditions adjusted for the patient's age, sex, and severity of the condition based on the all patient refined diagnosis related groups (APR–DRG).[9] We also tested alternative mortality measures developed by CMS and 3M and found similar rankings of providers.

The readmission measure, developed by 3M, adjusts for the severity of the patient's illness and removes clearly unrelated readmissions such as certain malignancies and trauma (3M 2008, Goldfield et al. 2008). We examine only 2005 risk-adjusted readmissions because we did not have access to data for other years at the time we conducted the analysis.

When comparing costs, we adjusted inpatient costs per discharge for factors that were beyond the hospital's control and that reflected the hospital's financial structure rather than its efficiency. Specifically, we standardized costs by adjusting for APR–DRG case mix, area wage index, prevalence of outliers and transfer cases, and the effects of teaching activity and service to low-income Medicare patients on costs per discharge. We also adjusted for differences in interest expenses because such differences can reflect whether a hospital is financed with debt or equity rather than reflecting its operational efficiency.

To rank providers on the basis of performance, we divide the distribution of risk-adjusted mortality, readmissions, and costs among hospitals into thirds (low, medium, and high) for each year from 2004 to 2006. We place a hospital in the relatively efficient group if it meets the following four criteria:

- Risk-adjusted mortality levels are in the best two-thirds in every year (2004 to 2006).
- Risk-adjusted readmission rates are in the best two-thirds in 2005.
- Risk-adjusted costs per discharge are in the best two-thirds in every year (2004 to 2006).
- Either risk-adjusted mortality rates or risk-adjusted costs are in the best one-third during every year (2004 to 2006).

The objective is to identify hospitals that consistently performed above average on at least one measure (cost or quality) and always performed reasonably well on all three measures.

We do not categorize hospitals' costs or mortality based on a single year's performance because their quality or cost rankings for an individual year could be better than average due to random variation. After we categorize hospitals in the relatively efficient set or the control group

using three years (2004–2006) of data, we compare the performance of these two groups using the most recent data available (2007). We compare performance using a different year than the data used to categorize hospitals so that a single errant value will not affect both the categorization and the score of the efficient hospital group relative to the control group.[10] Nevertheless, we found similar results when we tested grouping providers by their performance during 2005 to 2007 and then comparing the groups based on their 2007 performance.

Comparing 2007 performance of relatively efficient hospitals and other hospitals

Our set of hospitals with complete data consisted of 338 hospitals in the efficient group and 2,535 hospitals in the comparison group for a total of 2,873 hospitals. The efficient set includes hospitals of all sizes and geographic locations. Among the 338 hospitals are rural hospitals with fewer than 50 beds, urban hospitals with more than 500 beds, and teaching and nonteaching hospitals. While we find that both low- and high-volume hospitals can meet the efficiency criteria, the data suggest that, on average, higher volume hospitals tend to have lower mortality rates; therefore, they are more likely to meet our efficient hospital criteria. This finding is consistent with the literature (Birkmeyer et al. 2002, Halm et al. 2002, Keeler et al. 1992). We excluded CAHs from the analysis because they are not currently paid under the PPS.

We examined the performance of the relatively efficient hospitals by reporting the group's median performance divided by the median for our whole set of 2,873 hospitals on all three performance measures. For example, Table 2A-9 shows that the efficient hospitals' relative risk-adjusted 30-day mortality rate from 2004 to 2006 is 87 percent of the national median, meaning that the typical hospital in the efficient group had a risk-adjusted 30-day mortality rate 13 percent below the national median. Likewise, the efficient group had a median cost per discharge equal to 90 percent of the national median, indicating that the typical hospital in the efficient group had costs 10 percent below the national median during 2004 to 2006. Relative levels of 30-day risk-adjusted mortality and standardized cost per discharge for the other (comparison) group were substantially higher. The relative readmission rates of the two groups, however, differed less.

Historically strong performers continue to have lower mortality in 2007 Because no method of risk adjustment is perfect, we examined the performance of the efficient hospitals using an array of different risk-adjusted mortality measures. In addition to the AHRQ 30-day mortality measure, we reported on three risk-adjusted 30-day mortality rates developed by CMS (for acute myocardial infarction, congestive heart failure, and pneumonia). Finally, we reported risk-adjusted in-hospital mortality rates aggregated across all conditions because they were not limited to the eight conditions included in AHRQ's measure (Table 2A-9). This third data source used a 3M methodology for risk adjustment.

In general, hospitals that appeared to be efficient from 2004 through 2006 were able to outperform the comparison group on quality-of-care measures in 2007. Hospitals in the historically efficient group had lower median mortality than other hospitals, regardless of the mortality measure. For example, using the AHRQ composite mortality measure, the relatively efficient hospitals' median mortality rate was 14 percent below the 2007 national median. The 2007 mortality levels for specific conditions measured by CMS were also lower for the historically efficient group, but only by 2 percent to 6 percent. For example, the median efficient provider's risk-adjusted heart failure mortality rate was 97 percent of the 2007 national median compared with 101 percent of the national median for the comparison group.

Only patient satisfaction failed to show a difference between the two groups. For both groups, the same share of patients (63 percent) gave their hospital top ratings in 2007, so both groups show performance equal to 100 percent of the national median.

Historically strong performers continue to have lower costs in 2007 Hospitals that were low-cost and low-mortality providers from 2004 through 2006 continued to have lower costs in 2007. The median standardized cost per discharge in the efficient group was 89 percent of the national median ($5,500 per discharge), while for the comparison group it was 103 percent of the national median ($6,300). Because of their lower costs, the efficient hospitals have Medicare margins of 0.5 percent, roughly 8 percentage points higher than the control group's margins.

Because we expect to see continual improvement in risk-adjustment methodologies, the measures we use to identify "efficient" providers will evolve to include outpatient metrics and improved inpatient metrics. On the basis of our initial experience, capturing multiple dimensions of quality appears to be desirable (e.g., using both readmissions and mortality), but within the mortality measurement category the choice of measure does not

TABLE 2A–9

Characteristics of traditionally high-performing hospitals

	Type of hospital	
	Relatively efficient during 2004–2006	**Other hospitals**
Number of hospitals	338	2,535
Share of hospitals	12%	88%
Relative historical performance, 2004–2006		
Risk-adjusted:		
Composite 30-day mortality, 2004–2006 (AHRQ)	87%	106%
Readmission rates, 2005	97	101
Standardized cost per discharge, 2004–2006	90	102
Relative quality metrics, 2007		
Risk-adjusted:		
Composite 30-day mortality (AHRQ)	86	103
30-day AMI mortality (CMS)	98	100
30-day CHF mortality (CMS)	97	101
30-day pneumonia mortality (CMS)	94	101
All-condition in-hospital mortality (3M)	83	102
Patient satisfaction (H–CAHPS® compared to national median)	100	100
Relative standardized costs	89	102
Median Medicare margin in 2007	0.5	–7.4

Note: AHRQ (Agency for Healthcare Research and Quality), AMI (acute myocardial infarction), CHF (congestive heart failure), H–CAHPS® (Hospital Consumer Assessment of Healthcare Providers and Systems). Hospitals were put in the relatively efficient group based on their performance on a set of risk-adjusted cost and quality metrics for 2004–2006. Relatives are the median for the group as a percentage of the median of all hospitals. Per case costs are standardized for area wage rates, case mix, severity, outlier cases, interest expense, low-income shares, and teaching intensity. Composite mortality was computed using AHRQ methodology to compute risk-adjusted mortality for eight conditions (AMI, CHF, pneumonia, gastrointestinal hemorrhage, stroke, craniotomy, coronary artery bypass graft, and abdominal aortic aneurysm repair. Scores were then weighted for each type of discharge by the share of discharges in that particular hospital.

Source: MedPAC analysis of prospective payment system impact file, MedPAR, and Medicare cost report data from CMS, and CMS hospital compare data.

materially affect the results. We plan to continue to refine our methodologies as the availability of data and new research methods permit.

How should Medicare payments change in 2010?

When we consider whether Medicare's aggregate hospital payments are adequate, we look at the six largest hospital service lines—acute inpatient, outpatient, rehabilitation, home health, psychiatric, and skilled nursing facility (including swing beds). In this section, we provide update recommendations for services covered by Medicare's inpatient operating and outpatient PPS systems. For both the acute inpatient and outpatient PPS, the update in current law for fiscal year 2010 is the forecast increase in the hospital market basket index.

Changes in input prices

CMS measures price inflation for the goods and services hospitals use in producing inpatient and outpatient services with the hospital operating market basket index. CMS's latest forecast of this index for fiscal year 2010 is 2.7 percent, but it will update the forecast twice before using it to revise payments in 2010.

Update recommendation

This section presents our update recommendation covering acute inpatient operating and outpatient payments along with a summary of our rationale and the implications of the recommendation. The Commission makes

recommendations on the level of payment rates and also often makes recommendations on how payments should be distributed. In recent years, the Commission has made recommendations not only to increase payment rates but also to create financial incentives for higher quality care. This year, our update recommendation is as follows:

RECOMMENDATION 2A-1

The Congress should increase payment rates for the acute inpatient and outpatient prospective payment systems in 2010 by the projected rate of increase in the hospital market basket index, concurrent with implementation of a quality incentive payment program.

RATIONALE 2A-1

Most of the Commission's indicators of payment adequacy are positive. Access to care remains strong, as indicated by more hospitals opening than closing as well as by the rising share of hospitals offering many services. Volume of outpatient services is growing and quality of care is generally improving. On the other hand, Medicare margins are low and are expected to fall between 2007 and 2009. Our analysis of hospital costs and financial pressure, however, showed that hospitals with low non-Medicare profit margins have below-average standardized costs. Most of these facilities have positive overall Medicare margins.

Balancing these considerations, we conclude that an update equal to the projected increase in the market basket index is appropriate for both inpatient and outpatient services, with this increase implemented concurrently with a quality incentive payment program.[11] For a hospital to obtain a payment increase equal to or exceeding the full market basket increase, it would have to perform well on quality metrics. For example, if 1 percent of Medicare payments were withheld to fund a pay-for-performance program, a hospital with poor quality metrics would expect a 1.7 percent increase in payments (2.7 percent projected market basket, less a 1 percent withhold, with no quality bonus). Hospitals that perform well on quality could receive a payment rate increase of significantly more than the projected market basket if the 1 percent pool is distributed to a small share of all hospitals.

The Commission's reasoning for the update recommendation is that, given the mixed picture of indicators, an individual hospital's quality performance should determine whether its net increase in payments is above or below the market basket increase. Our finding that hospitals' costs are strongly related to the financial pressure they are under from non-Medicare sources suggests that Medicare should put pressure on hospitals to control their costs rather than accommodate the current rate of cost growth.

CMS's current projection of the market basket increase for fiscal year 2010 is 2.7 percent. However, this estimate is revised on a quarterly basis, so the actual update percentage may be different. Also note that the update recommendation does not factor in further adjustments to the payment rates that may be needed to offset unwarranted changes in payment rates that occur due to improvements in coding.[12] CMS will make those adjustments separately in accordance with the law as outlined in the TMA, Abstinence Education, and QI Programs Extension Act of 2007.

IMPLICATIONS 2A-1

Spending

- This recommendation would have no effect on federal baseline program spending.

Beneficiary and provider

- This recommendation should have no negative impact on beneficiary access to care and is not expected to affect providers' willingness and ability to provide care to Medicare beneficiaries. There is a potential for improved quality of care for beneficiaries.

Indirect medical education adjustment

Medicare makes two types of special payments to teaching hospitals. To pay for Medicare's share of the direct costs of teaching such as stipends for residents, salaries for teaching physicians, and related overhead, CMS makes graduate medical education payments. Medicare also pays its share of the indirect costs associated with a teaching program. Being a teaching hospital may indirectly increase costs due to unmeasured differences in patients' severity of illness, residents learning by doing, and greater use of emerging technologies. To pay for the indirect effect of teaching on the cost of caring for Medicare patients, teaching hospitals receive IME payments. Medicare has historically adjusted both operating and capital IME payments. CMS has used its regulatory authority to eliminate 50 percent of capital IME payments in 2009 and plans to fully eliminate these payments in 2010. Capital IME payments were 6 percent of total IME payments in 2007. This discussion focuses on potential changes to the operating IME payments, which represented 94 percent of IME payments in 2007.

The IME adjustment is a percentage add-on to the IPPS rates that varies with the intensity of the hospital's residency training programs. In 2008, operating payments increased approximately 5.5 percent for each 10 percent increment in resident intensity, measured by the ratio of residents to hospital beds. Because IME payments are an adjustment to base payment rates, a hospital's IME payments are tied to its volume and mix of PPS cases as well as to the number of residents it trains.

In 2007, IME payments to hospitals totaled $6 billion. About 30 percent of hospitals covered by the acute IPPS received an IME payment. IME payments go to 41 percent of urban hospitals and 7 percent of rural hospitals. IME payments are highly concentrated, with major teaching hospitals (those with more than 25 residents per 100 hospital beds) accounting for a little more than a quarter of all teaching hospitals but receiving almost three-quarters of all IME payments, averaging roughly $14 million per hospital.

The current IME adjustment of 5.5 percent substantially exceeds the estimated relationship between teaching intensity and costs per case. Our analysis found that Medicare inpatient costs per case (operating and capital costs combined) increase about 2.2 percent for every 10 percent increase in the ratio of residents to hospital beds (MedPAC 2007). Therefore, the current adjustment is set at more than twice what can be empirically justified, directing more than $3 billion in extra payments to teaching hospitals above the effect that training residents and fellows has on the cost of caring for Medicare patients.

Having the adjustment set considerably above what is empirically justified contributes to the large difference in Medicare margins between teaching and nonteaching hospitals (Table 2A-5, p. 57). For example, overall Medicare margins for major teaching hospitals are 1.1 percent in 2007 compared with –9.3 percent for nonteaching hospitals, a difference of 10.4 percentage points.

Reducing the IME adjustment to 4.5 percent per 10 percent increment in teaching intensity would narrow the margin gap by about 2 percentage points. The difference in Medicare margins would be cut in half if the adjustment were reduced to the empirical level (2.2 percent per 10 percent increment in teaching intensity). The difference in margins would not be completely eliminated because of disproportionate share payments and other factors. To move payments toward the empirically justified amount, we repeat last year's recommendation to lower the IME adjustment to a rate closer to the empirically justified amount.

RECOMMENDATION 2A-2

The Congress should reduce the indirect medical education adjustment in 2010 by 1 percentage point to 4.5 percent per 10 percent increment in the resident-to-bed ratio. The funds obtained by reducing the indirect medical education adjustment should be used to fund a quality incentive payment program.

RATIONALE 2A-2

IME payments exceed the effect of teaching on Medicare costs. These funds are provided to teaching hospitals without any restriction on how they are used. To encourage quality improvement, some of these funds should be made available to all hospitals that provide high-quality care. The Commission therefore recommends that the IME adjustment be reduced from 5.5 percent to 4.5 percent per 10 percent increment in the resident-to-bed ratio. We also recommend that the funds obtained from reducing the IME adjustment be used to help finance quality-incentive payments.

IMPLICATIONS 2A-2

Spending

- This recommendation would have no impact on federal program spending because it is intended to be budget neutral.

Beneficiary and provider

- There is potential for improved quality of care for beneficiaries. The recommendation would reduce IME payments to teaching hospitals but would redistribute payments to all hospitals (including teaching hospitals) that perform well under a quality-incentive program. ■

Endnotes

1 Long-term care hospitals (LTCHs) are required to show that they have an average length of stay of at least 25 days before they can be certified as an LTCH. Many LTCHs first become acute care IPPS hospitals until they can demonstrate that they meet the 25-day average stay requirement. Therefore, some of the openings of new hospitals and conversions to LTCHs represent hospitals that never intended to remain an IPPS facility. Once a hospital becomes an LTCH, it is paid based on the separate LTCH payment system.

2 Outpatient service volume is measured using Healthcare Common Procedure Coding System (HCPCS) codes. HCPCS definitions can change over time, which can have some effect on annual changes in volume.

3 Each year, a number of drugs and implantable devices are paid separately from the services for which they are used. We do not include these items in our analysis of outpatient volume because the list of separately paid drugs and devices has changed widely from year to year throughout the history of the outpatient PPS. Including separately paid drugs and devices in our analysis would result in substantial changes in volume simply because of changes in the list of separately paid drugs and devices.

4 A margin is calculated as the difference between payments and costs divided by payments. The services included in the overall margin are acute inpatient, outpatient, skilled nursing facility (including swing beds), home health care, inpatient psychiatric, and inpatient rehabilitation.

5 Our forecast is for 2009, but we consider the policy environment that hospitals will face in 2010 under current law as we deliberate the appropriate update for that year. Therefore, the forecast estimates what payments would have been in 2009 if 2010 policy (other than the 2010 update) had been in effect at that time.

6 The most recent cost growth data available at the time of this mailing was for the nine months ending September 30, 2008, from certain for-profit systems that report quarterly results. We compared 2007 to 2008 costs for HCA, Community Health Systems, Lifepoint, Health Management Associates, and Tenet.

7 SCHs will be paid based on the rate that results in the greatest aggregate payment using either the federal rate or their hospital-specific rate (HSR) from FY 1982, FY 1987, FY 1996, or FY 2006. The FY 2006 HSR is likely to be the greatest amount for most SCHs.

8 The Dartmouth Center for the Evaluative Clinical Sciences provided the Commission with two promising methods of evaluating hospitals' longitudinal efficiency. One method provides data on standardized annual overall Medicare spending for the patients assigned to each general acute care hospital in the United States (Fisher and Gottlieb 2008). The data set assigns patients to physicians and then assigns physicians to hospitals (Fisher et al. 2006). The data set is promising and allows the Commission to examine whether patients assigned to a particular hospital's medical staff have a low annualized cost of care. However, the weakness of the data is that they are not risk adjusted. The second data set reports on resource use in the last two years of life. This data set is risk adjusted, but further refinements to standardizing costs may be necessary to allow for accurate cross-sectional comparisons of hospitals' Medicare costs. Commission staff will continue to work with Dartmouth staff as these measures are refined to provide more precise cost comparisons.

9 Risk-adjusted mortality is computed for each of the eight conditions using a risk adjustment methodology developed by AHRQ. The risk-adjusted mortality is then normalized by dividing each hospital's level of risk-adjusted mortality by the national level of risk-adjusted mortality for that condition. Finally, we create a weighted average of the risk-adjusted mortality for each hospital by weighting the eight conditions based on their relative share of cases seen in that hospital.

10 For example, assume one hospital was unlucky in 2006 and had high risk-adjusted mortality due to patient characteristics that were not in the risk adjuster. This odd, one-time patient mix would bias the mortality for this hospital up and force it into the control group (i.e., not the "efficient" group). The control group would then have its 2006 mortality biased upward and look poor compared with the "efficient" group. In other words, we do not want errors in categorizing hospitals as efficient to be correlated with errors in their reported cost or quality metrics.

11 The inpatient update would apply to fiscal year 2010, and the outpatient update would apply to calendar year 2010.

12 Under the TMA, Abstinence Education, and QI Programs Extension Act of 2007, if the Secretary determines that the transition to MS–DRGs resulted in "changes in coding and classification that did not reflect real changes in case mix … that are different from the prospective documentation and coding adjustments" required by the Act (0.6 percent in 2008 and 0.9 percent in 2009), then the Secretary shall make an appropriate adjustment to future payments and make an additional adjustment to payments in 2010, 2011,

and 2012 to offset the amount of increase or decrease in aggregate payments (including interest). Therefore, if coding improvements led to more than a 0.6 percent change in 2008 payments, the Secretary will reduce payment rates for 2010 to reflect the coding increase and make an additional adjustment to recoup any overpayments made to hospitals. If the Secretary finds that the 0.6 percent adjustment was too large, then the Secretary will increase payments. Any necessary adjustments for coding improvement should be made in addition to the Commission's update recommendation.

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