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 2011 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 To restore budget neutrality, the Congress should require the Secretary to fully offset increases in inpatient payments due to hospitals' documentation and coding improvements. To accomplish this goal, the Secretary must reduce payment rates in the inpatient prospective payment system by the same percentage (not to exceed 2 percentage points) each year in 2011, 2012, and 2013. The lower rates would remain in place until overpayments are fully recovered.

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

SECTION 2A

Hospital inpatient and outpatient services

Section summary

The 3,500 hospitals participating in the inpatient prospective payment system had more than 10 million fee-for-service (FFS) Medicare admissions in 2008. Payments to these hospitals for Medicare inpatient and outpatient FFS services per beneficiary grew by 3.7 percent from 2007 to 2008, resulting in hospitals receiving approximately $139 billion for inpatient and outpatient services.

Assessment of payment adequacy

Most indicators of payment adequacy are positive, but profit margins on Medicare patients remain negative for most hospitals. Considering all indicators, the Commission recommends that payment rates for the acute inpatient and outpatient prospective payment systems in 2011 be increased by the projected rate of increase in the hospital market basket index, concurrent with implementation of a budget-neutral quality incentive payment program. The resulting increase in payments a hospital receives would be a function of the update and its performance on quality measures. On net, a well-performing hospital would receive more than the update and a poor performer would receive less than the full update.

Beneficiaries' access to care—Access measures include the capacity of providers and changes in the volume of services over time.

- ***Capacity and supply of providers***—The supply of hospitals, range of services offered, and the number of hospital employees all continue to grow.

In this section

- ***Volume of services***—The volume of hospital outpatient services per Medicare beneficiary from 2003 to 2008 grew more than 4 percent per year. While this growth was partly due to a shift of services from the inpatient to the outpatient setting, inpatient services declined by only 0.1 percent annually.

Quality of care—Quality continues to improve on most measures. Hospitals reduced 30-day mortality rates across all 6 conditions monitored, process-of-care measures improved, and patient satisfaction improved. However, readmission rates remained unchanged, and indicators of patient safety showed mixed results.

Providers' access to capital—Access to capital has been volatile over the past year. Credit markets froze in late 2008, but by late 2009 interest rates paid by hospitals had fallen and the monthly volume of bond offerings in 2009 was roughly the same as in 2007.

Medicare payments and providers' costs—In 2008, Medicare payments per discharge rose by 4.5 percent, compared with 5.5 percent growth in costs per discharge. Roughly 3 percentage points of the payment growth was due to updates of Medicare payment rates; the rest was due to more detailed documentation and coding of diagnoses that accompanied payment system refinements. The overall Medicare margin declined from –6 percent to –7.2 percent from 2007 to 2008.

Efficient providers—To assess whether current Medicare payments are adequate to cover the costs of efficient providers, we examined financial outcomes for a set of hospitals that consistently perform relatively well on cost, mortality, and readmission measures. We find that Medicare payments cover the fully allocated costs of the median efficient hospital; however, we also find that most of these hospitals do not generate significant profits from serving Medicare beneficiaries.

Documentation and coding adjustment

To ensure that the aggregate level of hospital payments is correct, the update recommendation is coupled with a recommendation to correct for the effect of improved documentation and coding on Medicare payments. As expected, implementation of Medicare severity–diagnosis related groups (MS–DRGs) in 2008 gave hospitals a financial incentive to improve medical record documentation and diagnosis coding to more fully account for each patient's severity of illness. While documentation and coding improvements appropriately improve measurement of patient severity, they also increase reported case mix under MS–DRGs without a real increase in patient severity or the resources hospitals must use to furnish inpatient care. To ensure that the transition to MS–DRGs is budget neutral, an offsetting adjustment must be applied to the Medicare base payment amounts. We recommend spreading this budget-neutrality adjustment out over several years. ■

TABLE 2A–1

Growth in Medicare inpatient and outpatient spending

Type of spending	2003	2006	2007	2008	Annual rate of change 2003–2008
Hospital inpatient services					
Total FFS payments (in billions)	$95	$107	$107	$109	2.7%
Payments per FFS enrollee	2,740	3,060	3,120	3,210	3.2
Hospital outpatient services					
Total FFS payments (in billions)	21	28	29	30	7.4
Payments per FFS enrollee	650	860	930	990	8.8

Note: FFS (fee-for-service). Reported hospital spending includes all hospitals covered by Medicare's inpatient and outpatient prospective payment systems and critical access hospitals. Maryland hospitals are excluded. Fiscal year 2008 payments include partial imputation to account for hospitals that typically do not submit their cost reports to CMS before CMS makes the most recent year available to the public. Although the number of Medicare beneficiaries grew significantly from 2003 to 2008, the number of FFS beneficiaries declined over that time due to the shift of beneficiaries to the Medicare Advantage program. For the purposes of calculating payments per beneficiary, we identified populations of beneficiaries eligible for inpatient (Part A) and outpatient (Part B) coverage and excluded enrollees in Maryland.

Source: MedPAC analysis of CMS hospital cost reports and Medicare Provider Analysis and Review files.

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, or 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 2008, Medicare spent $109 billion on fee-for-service (FFS) inpatient care and $30 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 FFS spending on general acute care hospitals. Aggregate FFS spending growth was slow in recent years due to Medicare beneficiaries shifting from FFS Medicare to Medicare Advantage plans. But on a per capita basis (including spending at critical access hospitals (CAHs)), Medicare inpatient spending per FFS enrollee grew from 2003 to 2008 by 3.2 percent per year. During the same five-year period, outpatient spending per FFS enrollee grew by 8.8 percent per year. The higher growth in outpatient services reflects an ongoing shift of services from an inpatient to an outpatient setting, changes in available technology, and increases in outpatient payments to small rural hospitals as they shift to CAH status.

Medicare's payment systems for inpatient and outpatient services

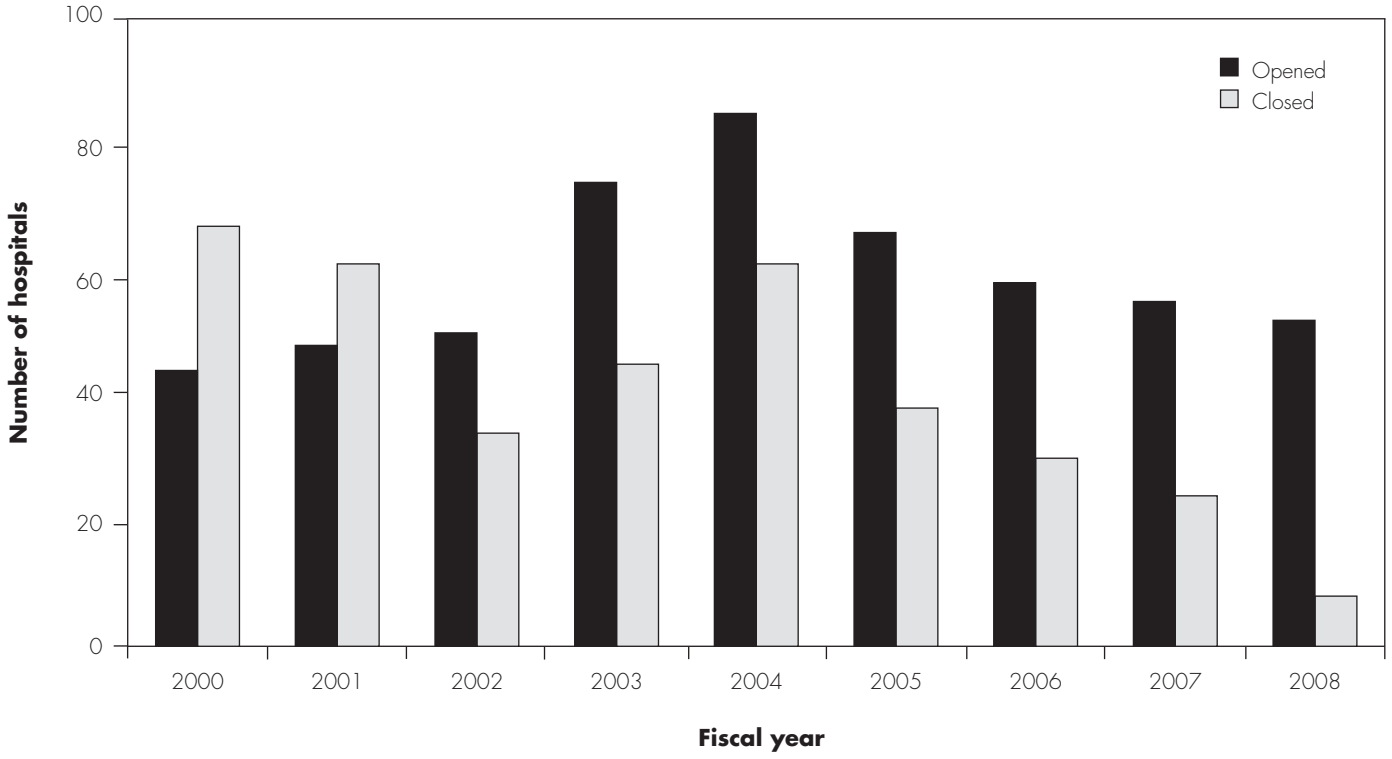
Medicare's inpatient and outpatient prospective payment systems (PPS) have a similar basic construct. Each has a base rate modified for differences in type of case or service as well as geographic differences in wages. However, in addition to different units of service (bundled services within a hospital stay vs. individual or smaller bundles of outpatient services), 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.

FIGURE 2A–1

More hospitals opened than closed each year from 2002 to 2008



Source: MedPAC analysis of CMS Provider of Services file, CMS Hospital Cost Reports, and CMS FY2010 Impact File.

In 2008, CMS implemented a new clinical categorization system called Medicare severity–diagnosis related groups (MS–DRGs). The MS–DRG system classifies patient cases in one of 746 groups, which reflect similar principal diagnoses, procedures, and severity levels. The new severity levels are determined on the basis of whether patients have a complication or comorbidity (CC) associated with the base DRG (no CC, a nonmajor CC, or a major CC).

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. Disproportionate share hospital payments are made to hospitals that treat a large share of low-income patients. Outlier payments are made to hospitals that treat patients with unusually high costs. Extra payments are also made to hospitals classified as sole community and Medicare-dependent hospitals. Finally, certain groups of hospitals, such as CAHs, are exempted from the IPPS and receive cost-based payments.

A more detailed description of the acute IPPS can be found at: http://www.medpac.gov/documents/MedPAC_Payment_Basics_09_hospital.pdf.

Hospital outpatient payment system

The outpatient PPS (OPPS) pays hospitals a predetermined amount per service. CMS assigns each outpatient service to 1 of approximately 800 ambulatory payment classification (APC) groups. Each APC has a relative weight based on its 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 OPPS can be found at: http://www.medpac.gov/documents/MedPAC_Payment_Basics_09_OPD.pdf.

Are Medicare payments adequate in 2010?

To address whether payments for the current year (2010) are adequate to cover the costs efficient hospitals incur, we examine several indicators of payment adequacy. 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 to hospitals' costs for both average and relatively efficient hospitals. Most of our payment adequacy indicators for hospitals are positive, but profit margins on Medicare patients remain negative for most hospitals.

Beneficiaries' access to care: Access remained positive, as hospital capacity generally grew over period reviewed

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

Capacity and supply of providers: Expanding number of hospitals

To examine supply and capacity, we tracked the number of hospitals participating in the Medicare program and the proportion of hospitals offering certain specialty and outpatient services. In general, we found that between 2002 and 2008, hospitals' capacity to provide most services is expanding.

For seven consecutive years, more Medicare-participating acute care hospitals opened than closed (Figure 2A-1). In 2008, 52 hospitals opened and 8 closed. Since 2001, the number of short-term acute care hospitals participating in the Medicare program grew by 200, to roughly 4,800 in 2008. In that year, more than 1,300 of the 4,800 hospitals were CAHs.[1]

Hospitals entering the Medicare program in 2008 were on average smaller than those that left the program. Among the 52 hospitals that opened in 2008, the average size was 73 beds. Ninety percent of these hospitals were in urban areas, and 50 percent were for profit. Approximately 15 of the new participants appeared to be specialty hospitals. In contrast, the 8 hospitals that closed had an average size of 172 beds, and all were urban hospitals with more than 50 beds. Because of hospital openings and some expansions, the number of staffed acute care hospital beds across the nation rose by 1 percent to roughly 754,000 in 2008 (American Hospital Association 2009).

Breadth of services: Specialized services growing

In recent years, short-term general acute care hospitals have continued to expand the scope of services they offer. Our analysis of 12 specialized hospital services from 2004 to 2007 found that the share of hospitals and their affiliates providing each service increased for all but two services (Table 2A-2, p. 46).[2] Over this period, only the share of hospitals offering urgent care services declined, falling by 2 percentage points to 33 percent of hospitals in 2007.

Volume of services: Outpatient grew, inpatient was fairly constant

To examine changes in volume of services, we used the number of discharges per FFS beneficiary as an indicator of inpatient volume and measured outpatient volume by the number of services per FFS beneficiary. The measurement units differ because the IPPS generally pays for a bundle of services, while the OPPS generally pays for individual services.[3] Although volume of services is not an ideal measure of access, increases in the volume of services provided per beneficiary suggest that access did not decline.

Outpatient and inpatient volume

From 2003 through 2008, the volume of outpatient services per FFS beneficiary increased at roughly a 4.5 percent annual rate (Figure 2A-2). Part of the increase was due to a shift in services from inpatient to outpatient settings. For example, services such as pacemaker implantation that once were performed only as an inpatient service are now often done in an outpatient setting.

Another part of the growth is explained by an increase in the volume of observation units (hours of care), which are considered outpatient services. For example, from 2007 to 2008 the growth in the number of observation units per FFS beneficiary increased at a robust rate of 17 percent.[4]

Given the shift of services to the outpatient setting and growth in observation services, we might expect inpatient volumes to decline significantly, but hospitals have been able to maintain a relatively steady volume of Medicare inpatient stays per FFS beneficiary. This finding suggests that hospitals have been able to replace the volume of services lost to the outpatient setting with other inpatient services. Another indicator that at least some hospitals

TABLE 2A–2 **The share of hospitals offering specialized services grew from 2004 to 2007**

Type of specialized service	2004	2005	2006	2007	Percentage point change
Palliative care program	35%	39%	42%	42%	7%
Orthopedic	73	75	78	78	5
Cardiac catheterization	43	47	48	48	5
Magnetic resonance imaging	85	86	89	89	4
Open heart surgery	31	34	34	35	4
Positron emission tomography (PET) scanner	N/A	41	43	45	4*
Bariatric/weight control	27	28	30	30	3
CT scanner	94	94	96	96	2
Hemodialysis	52	53	54	54	2
Emergency department	94	94	96	95	1
Trauma center (level 1 to 3)	42	42	42	42	0
Urgent care center	35	34	34	33	–2

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 in PET scanners is calculated from 2005 to 2007.

Source: American Hospital Association annual survey of hospitals.

want to increase their volumes of Medicare patients is that some hospitals are willing to discount patient deductibles in exchange for being included in medigap plans' preferred provider networks (see online Appendix B to this chapter, available at http://www.medpac.gov).

While Medicare discharges per beneficiary remained relatively flat in 2008, Medicare patients' average length of stay continued its slow decline, and overall occupancy rates remained constant as population growth roughly offset declines in length of stay. From 2003 to 2008, across all hospitals, the average length of stay for Medicare patients declined slightly from 5.1 days to 4.9 days. In addition, the aggregate supply of hospital beds and occupancy rates remained steady at 65 percent to 66 percent across all hospitals from 2006 to 2008. In 2008, average occupancy rates were 69 percent for urban hospitals and 51 percent for rural hospitals, though individual occupancy rates varied widely (American Hospital Association 2009).

Quality of care: Most measures showed improvement

Most inpatient hospital quality-of-care measures continued to show improvement. From 2005 through 2008, in-hospital and 30-day mortality rates declined and both process-of-care measures and patient satisfaction improved. However, patient safety indicators showed mixed results and readmission rates remained fairly constant in recent years.

To assess quality in hospitals, we examined rates of in-hospital mortality and mortality within 30 days after discharge from the hospital as well as the incidence of potentially preventable adverse events resulting from inpatient care. These measures were developed and are maintained by the Agency for Healthcare Research and Quality (AHRQ). Our mortality measures are from AHRQ's inpatient quality indicators (IQIs), and the adverse events measures are from its patient safety indicators (PSIs) (Agency for Healthcare Research and Quality 2007a, Agency for Healthcare Research and Quality 2007b). We used only the IQIs and PSIs that AHRQ concluded—after reviewing its indicators for variation and potential bias—had the strongest evidence base. We calculated the IQIs and PSIs based on all Medicare inpatient claims with specified conditions or procedures in CMS's Medicare Provider Analysis and Review claims data files and risk adjusted these data by using a modified version of the methodology AHRQ uses.

From 2005 through 2008, risk-adjusted in-hospital and 30-day mortality rates declined by a statistically significant amount for each of five conditions we measured: acute

myocardial infarction, congestive heart failure, stroke, hip fracture, and pneumonia. For three procedures we measured—esophageal resection, pancreatic resection, and repair of abdominal aortic aneurysm (AAA)—in-hospital and 30-day mortality rates declined, but in only one instance (in-hospital mortality rate for AAA repair) was the decrease statistically significant.

The rates of adverse events improved from 2005 to 2008 for one of the six conditions we monitored and worsened for two others, with another three showing no statistically significant changes (Table 2A-3). The rates for most of these indicators are extremely small, making it difficult to detect statistically significant changes or trends. All reported trends in patient safety indicators should be viewed with caution, given that changes in coding practices and not just changes in the underlying quality of care could have affected the reported rate (Agency for Healthcare Research and Quality 2007a, Agency for Healthcare Research and Quality 2007b, Agency for Healthcare Research and Quality 2009). The rates and frequency of these events are nevertheless important, as they represent injuries to patients or complications from clinical procedures that often can be avoided with appropriate medical care. The most common adverse events we measured between 2005 and 2008 were postoperative pulmonary embolism and deep vein thrombosis—rare but life-threatening complications of surgery—for which the risk-adjusted rate in our sample of Medicare patients worsened slightly. The second most common event was accidental puncture or laceration, for which the rate did not change significantly over the period reviewed.

Other sources of information on changes in hospital quality generally corroborate our findings. The Commonwealth Fund's 2009 report entitled "State Scorecard of Health System Performance" analyzed state-level data on process indicators that hospitals reported to CMS as a requirement to receive a full hospital market basket index update (CMS publishes hospital-specific measures on the Hospital Compare website—www.hospitalcompare.hhs.gov). This analysis found that, at the state level, "the quality of hospital care for heart

TABLE 2A–3

Patient safety indicators are mixed, 2005–2008

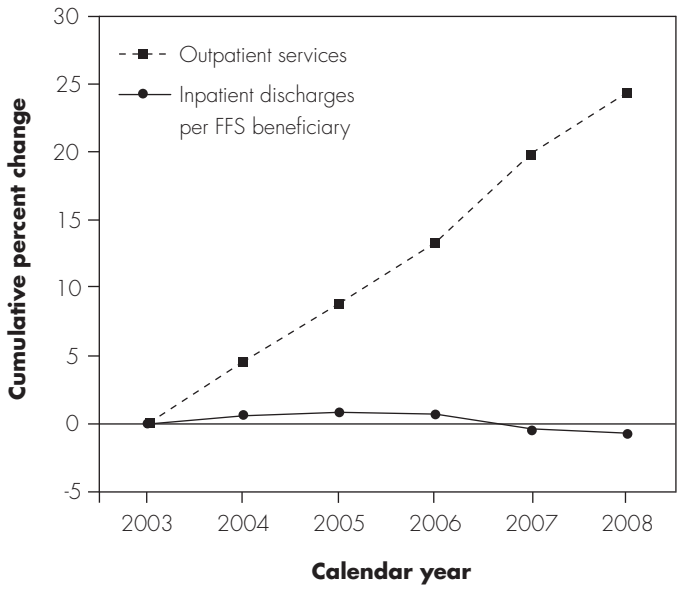
Patient safety indicator	Change in rate 2005 to 2008	Number of events 2008
Postoperative PE or DVT	Worse	46,144
Accidental puncture or laceration	No difference	29,157
Postoperative respiratory failure	Worse	23,073
Iatrogenic pneumothorax	No difference	8,178
Death among surgical inpatients with treatable serious complications	Better	6,345
Postoperative wound dehiscence	No difference	1,365

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 (Medicare Payment Advisory Commission 2008) due to changes over time in the Agency for Healthcare Research (AHRQ) risk-adjustment methodology and changes in measure specifications (e.g., which patients are excluded from the set of eligible cases).

Source: MedPAC analysis of CMS Medicare Provider Analysis and Review data using AHRQ Patient Safety Indicators Version 3.2.

FIGURE 2A–2

Medicare outpatient services grew while hospital inpatient discharges per FFS enrollee were fairly constant from 2003 to 2008

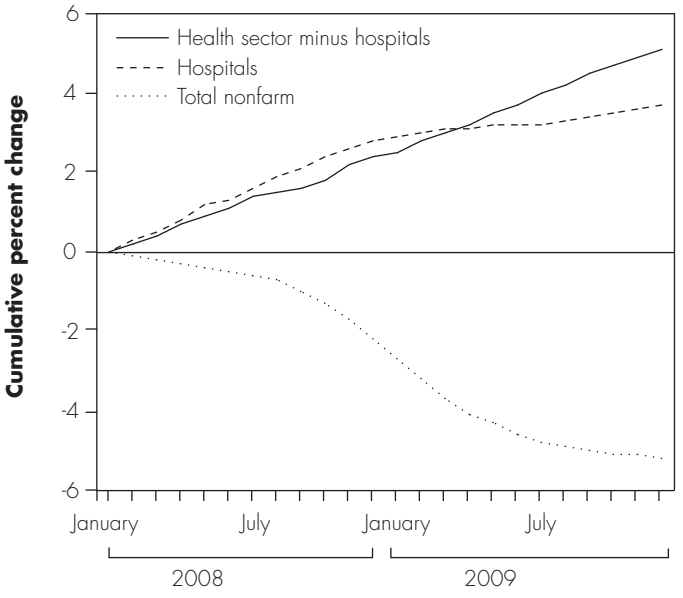


Note: FFS (fee-for-service). Data are for short-term general and surgical hospitals, including critical access and children's hospitals.

Source: MedPAC analysis of Medicare Provider Analysis and Review and hospital outpatient claims data from CMS.

FIGURE 2A–3

Hospital employment growth over the last 24 months



Note: Data are seasonally adjusted, and employment data for November and December 2009 are preliminary.

Source: Bureau of Labor Statistics, Current Employment Statistics data set.

attack, heart failure, pneumonia, and the prevention of surgical complications improved dramatically, as all states gained ground and the variation across states narrowed" (Commonwealth Fund 2009). The report also noted that substantial room for improvement remained in providing basic care for people hospitalized with these conditions. In addition, a separate report found that patients' satisfaction with hospitals continued to improve (Press Ganey 2009).

On readmission rates, the Commonwealth Fund found that "30-day hospital readmission rate among all Medicare beneficiaries either failed to improve or increased across most states from 2003–04 to 2006–07." Our analysis of readmission rates found similar results. The Commission has previously discussed the potential effects that hospitals' discharge planning and care transition processes can have on readmission rates, which also are affected by the cohesion or fragmentation of care beneficiaries receive in the community (Medicare Payment Advisory Commission 2007, Medicare Payment Advisory Commission 2008).

Hospitals' access to capital is normalizing

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. While access to capital froze in 2008, it has recovered to a normal level.

Our March 2009 report noted that economy wide disruptions in the credit markets had caused hospitals to experience difficulties in accessing capital in the fall of 2008. However, credit markets began recovering in 2009 and are now operating in a more normal manner (Evans 2009). In November 2009, the average interest rate for A-rated hospital municipal bonds (30 year) was 6.13 percent, well below the 7.25 percent rate reported in November 2008 (Cain Brothers 2009). The volume of bond offerings has returned to relatively high levels. Through October 2009, the average rate of bond offerings was $3.4 billion per month, only slightly lower than the record set in 2008 and on par with the 2007 levels.[5]

Moody's recently reported that nonprofit hospitals' median capital spending in 2008 was equal to approximately 1.6 times their depreciation expenses, compared with 1.4 times and 1.5 times in 2006 and 2007, respectively (Moody's 2009). This trend signifies that most nonprofit hospitals were going beyond replacing worn-out plants and equipment. The two other major rating agencies, Standard & Poor's and Fitch, reported similar increasing trends in hospitals' capital expenditures through most of 2008 (Fitch Ratings 2009, Standard & Poor's 2009).

Recent trends in spending on hospital construction suggest that access to capital remained adequate. The Census Bureau reported that hospital construction increased each year from 1999 to 2008 and that spending on hospital construction doubled from 2000 to 2008, even after adjusting for inflation.[6] Construction spending totaled nearly $33 billion in 2008, and the Census Bureau projected that the 2009 level will be similar. Modern Healthcare's 2009 Construction & Design survey found anecdotal evidence that, while cancelation of ongoing hospital construction projects "remained somewhat rare, more projects are being delayed or reduced in scope" (Robeznieks 2009). This finding may explain why spending leveled off in 2009 after increasing for several years. Looking forward, other surveys of health care construction firms suggest that spending on hospital construction will remain at current levels (Haughey 2009).

While declining interest rates, stable bond issuances, and stable construction are positive indicators of access to capital, it appears that the financial crises of 2008 and

associated decline in credit ratings caused construction spending to level off, ending several years of rapid growth. In 2009, bond rating agencies' evaluations of nonprofit hospitals downgraded more hospital debt than they upgraded. For example, Standard & Poor's downgrades in 2008 represented a 10-year peak, and in 2009 downgrades far outnumbered upgrades through June 1, 2009. Rating agencies attribute 2008 and 2009 downgrades in part to hospitals' recent losses in investment income (Standard & Poor's 2009).

Hospital employment grew in the last two years

Changes in hospital employment levels broadly reflect the capacity of the hospital sector to furnish care and may be a proxy for the sector's overall financial health (Figure 2A-3). Over the past two years (January 2008 to December 2009), the Bureau of Labor Statistics reports that hospitals' employment increased 3.7 percent to more than 4.7 million employees, with all but one state showing increased hospital employment during the period. Over two years, employment grew in patient care and non-patient care occupations (registered nurses (RNs) 6 percent (equal to 85,000 more RNs), pharmacists 6 percent, diagnostic sonographers 11 percent, nuclear medicine technicians 8 percent, and business and financial operations 10 percent). Employment of licensed practical nurses (LPNs) declined by 4.7 percent (8,000 fewer LPNs) as hospitals continued to move toward nurses with higher levels of education. While hospital employment has grown over the past two years on average, the employment trend has not been consistent during this period. From roughly December 2008 to August 2009, hospital employment levels stagnated. Employment levels began to grow again in aggregate in September through December of 2009, but there are reports of individual hospitals reducing the number of employees.

Medicare payments and providers' costs: 2008 margins declined as cost growth outpaced growth in payments

In assessing payment adequacy, the Commission also considers the estimated relationship between Medicare payments and hospitals' costs for furnishing care to Medicare patients. We assess the adequacy of Medicare payments for the hospital as a whole, and thus our primary indicator of the relationship between payments and costs is the overall Medicare margin. This margin includes all payments and Medicare-allowable costs attributable to Medicare patients for the six largest services that hospitals provide plus graduate medical education.

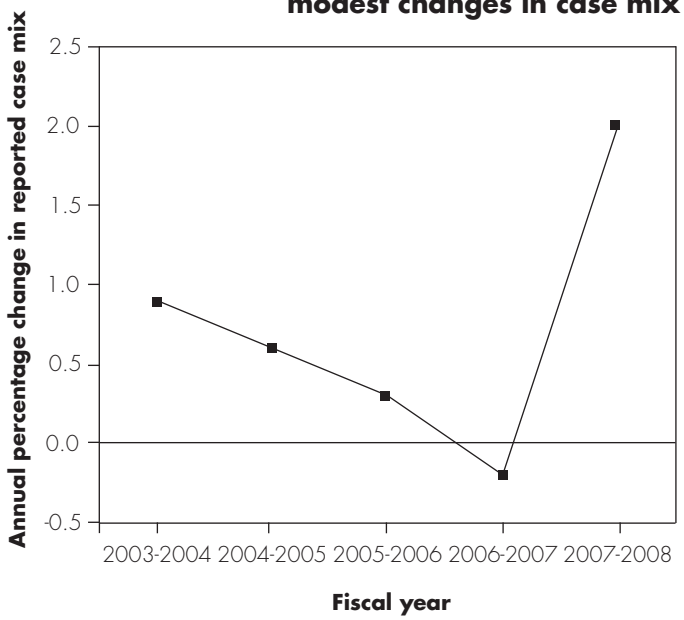
We report the overall margin on services to Medicare patients across service lines because no hospital service is a purely independent business. For example, operating a skilled nursing facility (SNF) can improve the profitability of acute care services when an in-hospital SNF allows hospitals to safely discharge patients sooner from their acute care beds. In addition, there are cost allocation issues, such as allocating a portion of a hospital's administrative costs to a home health subsidiary, which may distort the profit margins of both the home health agency and the hospital. Only by combining data for all major services can we estimate Medicare margins without the influence of how overhead costs are allocated. The hospital update recommendation in this chapter will apply to hospital inpatient and outpatient payments; payments for the other distinct units of the hospital such as a SNF are governed by payment rates for those payment systems.

Documentation and coding improvements contributed to a rise in payments per discharge in 2008

Growth in Medicare hospital payments per discharge depends primarily on the annual payment updates and changes in reported case mix. In 2008, the weighted average of the operating and capital payment updates was roughly 3 percent. However, inpatient payments per discharge increased by 4.5 percent. The difference between the update and payment growth was primarily due to reported increases in case mix. An analysis by CMS and a separate analysis by the Commission have concluded that the reported jump in case mix was due to hospitals' documentation and coding improvements (DCI) in response to the financial incentives associated with CMS's adoption of MS–DRGs in 2008 (Centers for Medicare & Medicaid Services 2009, Medicare Payment Advisory Commission 2009b). That is, the change in reported case mix reflected improvements in coding and not an actual shift toward patients whose care required greater resources. Under MS–DRGs, hospitals receive higher relative weights and payments if they report more detailed information on patients' complications and comorbidities. Once hospitals were given an incentive to report more detailed information, they did so. The result was a sharp increase in reported case mix (Figure 2A-4, p. 50). Reported case mix grew by 2 percent and we found DCI of 2.5 percent, suggesting a net decline in real case mix of roughly 0.5 percent. The net effect of the improved coding was an overpayment of 1.9 percent for inpatient services in 2008 (Medicare Payment Advisory Commission 2009a). Under current law, these overpayments will have to be

FIGURE 2A–4

Until fiscal year 2008, recent changes in Medicare inpatient hospital payments reflected modest changes in case mix



Note: IPPS (inpatient prospective payment system). Changes in case mix are based on national aggregate case-mix indexes calculated for the cohorts of hospitals included in the IPPS in each pair of years.

Source: MedPAC analysis of annual Medicare Provider Analysis and Review claims for IPPS hospitals for fiscal years 2004–2008 from CMS.

repaid through reduced payments in the future. For more details on DCI see online Appendix A to this chapter.

Hospital cost growth increased in 2008 as underlying input prices also rose

Medicare inpatient costs per discharge increased at a faster rate (5.5 percent) in 2008 than in 2007 (Table 2A-4). The jump in cost growth in 2008 was partly due to higher underlying input price inflation, which climbed 4.3 percent in 2008, up from 3.4 percent in 2007. Outpatient cost growth was slightly lower than inpatient cost growth, resulting in a 5.4 percent weighted average increase per unit for inpatient and outpatient services in 2008.

TABLE 2A–4

Cost growth increases in 2008

	Annual cost growth		
Type of cost	**2006**	**2007**	**2008**
Inpatient costs per discharge	5.1%	4.2%	5.5%
Outpatient costs per service	2.6	5.6	5.1
Weighted average	4.6	4.5	5.4

Note: The cost growth numbers are not adjusted for reported changes in case mix. Analysis excludes critical access hospitals and Maryland hospitals. The weighted average is based on hospitals' inpatient and outpatient Medicare costs.

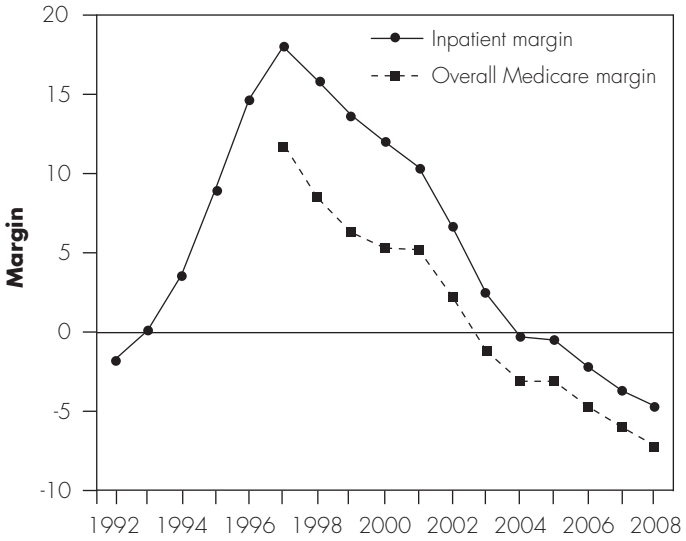
Source: MedPAC analysis of Medicare Cost Report and claims files from CMS.

Trend in the overall Medicare margin

We define Medicare profit margins as Medicare payments minus the allowable costs of treating Medicare patients, all divided by Medicare payments. The overall Medicare margin has trended downward since 1997 and has been negative since 2003 (Figure 2A-5).[7] From 2007 to 2008, the overall Medicare margin fell from –6.0 percent to –7.2 percent. The overall margin is dominated by inpatient and outpatient services, which represent 92 percent of hospitals' Medicare revenues. The margin on Medicare inpatient services fell from –3.7 percent to –4.7 percent, and outpatient margins fell from –11.6 percent to –12.9 percent (Table 2A-5). The drop in margins is primarily due to high cost growth in 2008. Inpatient cost growth

FIGURE 2A–5

Medicare inpatient and overall Medicare margins



Note: A margin is calculated as payments minus costs, divided by payments; margins are based on Medicare-allowable costs. Analysis excludes critical access and Maryland 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.

TABLE 2A–5 **Hospital Medicare margins**

Measure	2004	2005	2006	2007	2008
Inpatient	–0.3%	–0.5%	–2.2%	–3.7%	–4.7%
Outpatient	–10.7	–9.1	–10.9	–11.6	–12.9
Overall Medicare	–3.1	–3.1	–4.7	–6.0	–7.2

Note: Data are for all hospitals covered by Medicare acute inpatient prospective payment system in 2008. 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.

(5.5 percent) was almost 3 percentage points higher than the payment update in 2008, and this 3 percentage point differential more than offset the almost 2 percent increase in inpatient payments that occurred due to documentation and coding improvements. The net result was approximately a 1 percentage point decline in inpatient and outpatient margins. While inpatient and outpatient revenues represent 92 percent of all Medicare revenues, declines in rehabilitation and psychiatric unit margins also contributed slightly to the drop in 2008 overall Medicare margins.

2008 Medicare margins by hospital type

We examined further breakouts of the overall Medicare margin by hospital type. In 2008, the overall Medicare margin for rural hospitals was about 1 percentage point higher than the margin for urban hospitals (Table 2A-6). The slower decline in rural margins is due to two factors: the conversion of many small, low-margin rural hospitals to CAH status and provisions in the Deficit Reduction Act that allowed small rural Medicare-dependent hospitals to use higher costs per discharge from a more recent base year (2002) to calculate their hospital-specific rates and also increased the cap on their disproportionate share payments. We expect this differential will have grown in 2009, as many sole community hospitals received higher payments through a recent policy change that allowed the use of higher costs per discharge from a more recent base year (2006) to calculate their hospital-specific rates (see text box on pp. 52–53).

CAHs, which are not included in our margin calculations, are under a cost-based reimbursement system that pays 1 percentage point more than costs for inpatient, outpatient, and swing bed post-acute care services. These 1,300 hospitals account for about 30 percent of all Medicare payments to rural hospitals. If we include CAHs in our overall margin calculation, the overall Medicare margin for rural hospitals in 2008 would be 1.9 percentage points higher, or –4.5 percent.

Profit margins at for-profit hospitals continued to remain above those for nonprofit hospitals. In 2008, for-profit hospitals' Medicare margins improved relative to nonprofit hospitals' margins primarily because for-profit hospitals had much lower growth in costs per discharge (3.3 percent per discharge) than nonprofit hospitals (5.8 percent per discharge).

The overall Medicare margin for major teaching hospitals fell below zero (–1.5 percent) for the first time in 2008. The drop in margin for major teaching hospitals was due in large part to per case costs increasing much faster (6.7 percent) than payments (4.5 percent). Major teaching hospitals saw both inpatient and outpatient Medicare margins fall by 2 percentage points in 2008. Major

TABLE 2A–6 **Overall Medicare margins by hospital group**

Hospital group	2004	2005	2006	2007	2008
All hospitals	–3.1 %	–3.1%	–4.7%	–6.0%	–7.2%
Urban	–3.0	–3.1	–4.7	–6.1	–7.3
Rural (non-MSA)	–3.3	–2.8	–4.5	–5.4	–6.4
Nonprofit	–3.6	–3.7	–5.4	–6.7	–8.2
For profit	–1.6	–1.3	–2.4	–3.6	–2.9
Government	–1.9	–1.2	–3.1	–4.7	–6.0
Major teaching	4.6	4.6	2.8	0.6	–1.5
Other teaching	–3.4	–3.8	–5.3	–6.5	–7.4
Nonteaching	–7.0	–6.7	–8.2	–9.2	–10.0

Note: MSA (metropolitan statistical area). Data are for all hospitals covered by the Medicare acute inpatient prospective payment system in 2008. 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. Margins for government hospitals should be interpreted with caution given the unique financing circumstances of some government providers. The margins do not include critical access hospitals, which are not part of the inpatient prospective payment system; if they were included, rural margins would have been –4.5 percent in 2008.

Source: MedPAC analysis of Medicare Cost Report file, Medicare Provider Analysis and Review, and impact file from CMS.

Policy changes between 2008 and 2010 increase some payments and decrease others

A number of payment policy changes in recent years affect our projection of 2010 hospital margins as well as our ability to project margins beyond 2010. We summarize the policy changes affecting inpatient and outpatient payments below.

Inpatient payments

CMS and the Congress made a variety of policy changes affecting the acute inpatient prospective payment system (IPPS) for fiscal year (FY) 2009 and FY 2010. In response to a Commission recommendation, CMS implemented Medicare severity–diagnosis related groups (MS–DRGs), a new patient classification system that better captures severity-of-illness differences among patients and hospitals. CMS phased in MS–DRGs beginning in 2008 and fully implemented the new system in 2009. CMS and the Commission found that hospitals responded to the financial incentives of the MS–DRG system by improving medical record documentation and diagnosis coding, which resulted in assignment of cases to higher weighted MS–DRGs. Because this change in assignments increased payments without an accompanying increase in resources used, it resulted in an unintended increase in payments. As a part of the TMA, Abstinence Education, and QI Programs Extension Act of 2007 (TMA), the Congress mandated payment reductions of 0.6 percent in 2008 and an additional 0.9 percent in 2009 to offset the effects of coding improvements projected by the CMS Office of the Actuary. To the extent that the reductions in the TMA differ from the actual effects of hospitals' coding improvements, the Secretary of the Department of Health and Human Services is required by law to adjust hospital payments in 2010, 2011, and 2012 to ensure that adoption of the MS–DRGs is budget neutral. In the 2010 IPPS final rule, CMS decided not to make an adjustment to FY 2010 payments to offset the effects of coding improvements in previous years or to offset effects of coding improvements in 2010 and future years. CMS opted to wait for FY 2009 claims data to become available to determine how to adjust payment rates to recoup excess spending for FY 2008 and FY 2009 and to prevent further overpayments in FY 2010 and beyond. As a result, current law requires the full adjustment for documentation and coding improvements to be made in 2011 and 2012. For more on the future policy impact of documentation and coding improvements, see online Appendix A to this chapter.

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. CMS estimated that the expiration of this provision at the end of FY 2009 will lower

(continued next page)

teaching hospitals, however, continue to have much higher overall Medicare margins than the average IPPS hospital. In large part, this difference is due to the extra inpatient payments they receive through the IME and disproportionate share adjustments. Commission analysis shows 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 (see the section on IME adjustment on p. 54). Nonteaching hospitals, most of which are in urban areas, had the lowest Medicare margins of any hospital group.

Projected margins under current 2010 payment policies

We estimate that the overall Medicare margin in 2010 (given 2010 policies) would be –5.9 percent, 1.3 percentage points higher than in 2008.[8] Our projection reflects the effects of policy changes occurring between 2008 and 2010 (as summarized in the text box) and other factors affecting hospital revenues and costs over that

Policy changes between 2008 and 2010 increase some payments and decrease others (cont.)

overall hospital payments in FY 2010 by $200 million compared with payments that would have been made.

Rural hospitals

The Congress has established several special payments for rural hospitals that continue to evolve and affect Medicare spending. Effective January 1, 2009, the Medicare Improvements for Patients and Providers Act of 2008 (MIPPA) rebased payments to sole community hospitals (SCHs) to allow use of the FY 2006 base year for calculating the hospital-specific rate.[9] CMS actuaries estimated that this policy will add $140 million in spending for the portion of FY 2009 when it will be in effect and $550 million for all of FY 2010 (Centers for Medicare & Medicaid Services 2008). The SCH provisions will significantly increase rural hospital margins given that 48 percent of rural IPPS hospitals are SCHs.

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 outpatient prospective payment system rates or the hospital's historic payment-to-cost ratio. MIPPA extended hold-harmless payments through 2009 to small rural hospitals and SCHs, but aggregate outpatient payments are expected to decline in 2010 after the hold-harmless provision expires.

Health information technology

The American Recovery and Reinvestment Act of 2009 provided payment incentives to encourage hospitals and other providers to adopt electronic health record (EHR) technology. These health information technology (HIT) payments are scheduled to begin in 2011 and to occur each year until 2017. Under the law, a hospital will receive a HIT payment for each year it is deemed a meaningful user of HIT—presumably based on meeting certain criteria concerning the capabilities of its EHR system. The payment will be equal to an initial payment amount per hospital ($2 million base amount) plus a discharge-related amount of $200 per patient discharge for all discharges between the 1,150th and 23,000th discharge, both multiplied by the hospital's share of Medicare patients. The Congressional Budget Office (CBO) roughly estimated that the Medicare HIT provision will result in $1.5 billion in payments to hospitals in FY 2011 and a total of $8.7 billion from 2011 to 2019.[10] The law also stipulates that, after a period of years, hospitals that fail to meet the meaningful use criteria will be penalized through the IPPS. CBO roughly estimates that these penalties will begin in FY 2015, totaling $200 million in 2015 and $2.6 billion through the end of FY 2019 (Congressional Budget Office 2009). Until we know what the requirements will be for hospitals to meet the "meaningful use" criteria and receive HIT payments, there will be significant uncertainty about the timing and level of HIT payments. ■

two-year period. We expect margins to rise for two key reasons:

- Projected 2009 cost growth is lower than the payment update in 2009, although it is unlikely that cost growth will remain below the update in 2010.
- Gains from documentation and coding improvements will continue, without equivalent budget-neutrality adjustments to offset the increased payments in 2009 and 2010.

The next section, on cost growth, discusses some of the reasons why we believe cost growth fell in 2009 and why it may rise again in 2010. The effects of documentation and coding improvement are discussed in online Appendix A to this chapter.

Looking forward: Hospital cost growth appears to have slowed in 2009

We expect that the growth rate in hospital costs slowed in 2009. While 2009 Medicare cost report data are not available, we have partial year data from the Census

Bureau through June 2009 and from certain hospital systems with publicly traded stocks or bonds for the nine months ending in September 2009.[11] These data sources suggest that cost growth per discharge slowed in 2009 to between 1 percent and 3 percent, compared with 5.5 percent growth in 2008. One factor contributing to the slower growth in 2009 was lower input price inflation, estimated at 2.2 percent. Another factor was increasing fiscal pressure from the recession and declining investment portfolios, which appears to have led to better cost control in 2009. Looking forward to 2010, there is considerable uncertainty, but data from the census and for-profit systems indicate that hospital profitability has rebounded in 2009 (Census Bureau 2009). If profits return close to trend in 2009, cost growth may return to trend in 2010.

Indirect medical education adjustment

Medicare makes two types of special payments to teaching hospitals: direct medical education and IME payments. Direct graduate medical education payments, which totaled about $3 billion in 2008, are designated to pay for Medicare's share of the direct costs of teaching, such as residents stipends, salaries for faculty, and related programs' overhead expenses. The IME adjustment provides teaching hospitals with higher per case payment rates to pay for the indirect effects of teaching (e.g., residents learning by doing, unmeasured patient severity) on hospitals' costs. Medicare IME payments totaled $6.5 billion in 2008. The IME adjustment currently increases per case operating payments about 5.5 percent per 10 percent increment in the ratio of residents to hospital beds. The IME adjustment, however, has been set considerably above the estimated cost relationship between residents and inpatient costs per case—analysis of 2008 cost reports shows that teaching hospitals costs per case (operating and capital combined) increase about 2 percent for every 10 percent increment in the ratio of residents to beds, a result consistent with our prior analysis based on 2004 data (Medicare Payment Advisory Commission 2007). In other words, the current IME adjustment is set at more than twice the level that can be empirically justified.

Over the past year, the Commission has had extensive discussions on how physicians are trained and whether changes are needed in how Medicare supports teaching hospitals and graduate medical education programs. In addition to further analysis of how and how much Medicare should pay for the direct and indirect costs of medical education, the Commission will continue to discuss potential reforms that may encourage teaching hospitals to prepare a balanced mix of health professionals ready to meet society's need for coordinated, efficient, high-quality health care. We anticipate addressing these issues in a future Commission report.

Private-payer profits, cost growth, and Medicare margins

The level of hospitals' private-payer profits has been cyclical. During the first cycle (1986–1992), most insurers still paid hospitals on the basis of their charges, with little price negotiation or selective contracting. With limited pressure from private payers, hospital margins on private-payer business increased rapidly. In the second cycle (1993–1999), health maintenance organizations (HMOs) and other private insurers began to negotiate more assertively 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. As a result, hospitals' payment-to-cost ratio for private payers declined by 16 percentage points. However, by 2000, hospitals had regained the upper hand in price negotiations because of hospital consolidations and consumer backlash against managed care. In the third cycle (2000–2007), private-payer payment rates rose rapidly and hospitals' payment-to-cost ratio for private payers increased more than 16 percentage points. In 2007, private payers on average paid hospitals more than 132 percent of their costs. As we have discussed in the past, when profits on privately insured patients are high, hospitals face less pressure to constrain costs (Medicare Payment Advisory Commission 2009b).

Over the past 20 years, hospital cost growth has moved in parallel with margins on private-payer patients. Because managed care restrained private-payer payment rates, hospitals' rate of cost growth was below input price inflation from 1994 through 2000 (Figure 2A-6). However, from 2001 through 2008, after private-payer profits increased, hospitals' rate of cost growth was higher than the rate of increase in the market basket index. Thus, Medicare margins have declined.

Due to high private-payer payments, all-payer margins for hospitals reached 6.1 percent in 2007, the highest level recorded since 1997. However, the picture changed rapidly in September 2008 with the collapse of the bond and stock markets. Total all-payer margins in 2008 fell to 1.9 percent, the lowest level in more than a decade. Even operating margins for all payers, which exclude investment income, fell from 4.4 percent to 1.6 percent, reflecting

the strong cost growth in 2008 without a compensating increase in average payment rates from hospitals' mix of insured and uninsured patients.

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 different 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 overall 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 from private payers: high, medium, and low. We then tested whether hospitals under high levels of financial pressure from 2003 to 2007 ended up with lower standardized inpatient costs per discharge in 2008 than hospitals under medium and low levels of financial pressure during the same five-year period.

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

- Median non-Medicare profit margin was 1 percent or less from 2003 to 2007. 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 2003 to 2007 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 suffered Medicare losses. Low-pressure hospitals met the following two criteria:

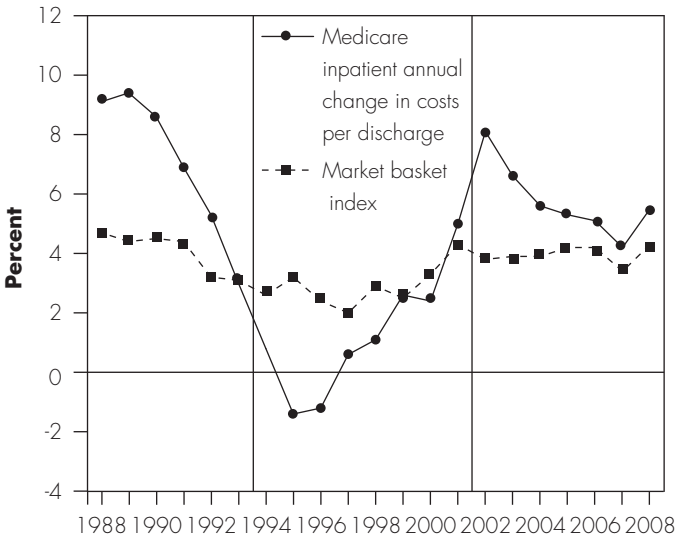
- Median non-Medicare margin was greater than 5 percent from 2003 to 2007.
- Net worth would have grown by more than 1 percent per year if the hospital's Medicare profits were zero. This condition would indicate that the hospital did not depend on Medicare profits to grow its net worth.

Findings on financial pressure We found that hospitals under high financial pressure from 2003 to 2007 restrained their Medicare standardized costs per discharge in 2008 to 91 percent of the national median, while hospitals under low financial pressure had 2008 median standardized costs equal to 104 percent of the national median (Table 2A-7, p. 56). However, the difference was less pronounced among for-profit hospitals. For-profit hospitals under high pressure had median Medicare standardized costs at 92 percent of the national median, while for-profit hospitals under low financial pressure had standardized costs equal to 99 percent of the national median. This finding suggests that for-profit hospitals constrain costs even when they are under little financial pressure. Put differently, if both types of hospitals receive high rates from private payers, the higher revenues will tend to be reflected as higher costs in nonprofit hospitals, but in for-profit hospitals a larger share of the revenue is retained as profits for shareholders.

Comparing this year's findings about hospitals under financial pressure with the last two years' work, we find consistent results. A difference worth highlighting is that the share of hospitals under financial pressure declined from 2005 to 2007 (from 32 percent to 26 percent of all hospitals) due to a steady increase in non-Medicare margins through 2007. However, this trend halted in 2008 when many hospitals had significant losses on

FIGURE 2A–6

Costs have risen faster than the market basket since 2001



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

Source: Medicare analysis of Medicare Cost Report files from CMS 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 2003 to 2007		
	High pressure	**Medium pressure**	**Low pressure**
2008 financial characteristics (medians)			
Non-Medicare margin (private, Medicaid, uninsured)	–5.1%*	1.9%	9.1%
Standardized cost per Medicare discharge (as a share of the national median), 2008			
All (for-profit and nonprofit) hospitals	91*	96	104
Nonprofit hospital	90*	95	105
For-profit hospital	92	98	99
Growth in cost per discharge 2005 to 2008	5.2	4.9	5.5
Overall 2008 Medicare margin	3.7*	–2.5	–12.1
Patient characteristics (2008 medians)			
Total hospital discharges	4,812*	8,236	7,318
Medicare FFS share of inpatient days	44%	43%	45%
Medicaid share of inpatient days	12.5*	10.9	10.5
Medicare case-mix index	1.28*	1.41	1.41
Hospital characteristics, 2008			
Number of:			
All hospitals	740	391	1,742
Rural hospitals	243	103	503
For-profit hospitals	187	52	348
Major teaching hospitals	125	42	88
Share of:			
All hospitals	26%	14%	61%
Rural hospitals	29	12	59
For-profit hospitals	32	9	59
Major teaching hospitals	49	16	35

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 costs per discharge.
* 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 2009.

their investment portfolios and experienced low overall profitability. Due to the decline in profits in 2008, financial pressure should have been higher when 2009 budgets were set and we expect to see a decline in the average hospital's rate of cost growth from 2008 to 2009.

Hospitals under high financial pressure tend to be those with smaller operations, a lower case-mix index, and a higher 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 a high level of 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. We explore this issue next.

Exploring hospital efficiency

The goal of our analysis of relatively efficient hospitals is to examine the group of hospitals that perform relatively well on both cost and quality metrics while serving a broad spectrum of patients. We examine hospital-level mortality, readmission, and inpatient cost metrics; providers' payer mix; and the annual level of total FFS Medicare service use per capita in the county where the hospital is located. As data and risk-adjustment methodologies improve, our measures of efficiency will continue to evolve.

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 help their patients transition to good post-acute outcomes and restrain the overall costs to the Medicare system during the year. While there is a promising data source that computes average annual Medicare service use for patients associated with specific hospitals, the risk adjustment and standardization of those data still need refinement before we can use them to make cross-sectional comparisons of efficiency.[12] Therefore, we are limited to using county-level annual Medicare service use as a second-best proxy for annual resource use. To avoid having hospitals from high-use areas in our analysis, we removed hospitals from the population studied if they were located in counties in the top 10 percent of annual Medicare service use.[13] As a result, the chance of a hospital appearing to have low unit costs of service simply due to being in an area with a high volume of service use per beneficiary is reduced.

There has also been some concern that hospitals may achieve low unit costs and relatively good outcomes if they are in a market with relatively wealthy patients. Wealthy patients may have more resources available to them outside of the hospital and fewer unmeasured comorbidities. Others have raised this concern, and to be conservative we further restricted our population of hospitals that we evaluate for efficiency by removing the 10 percent of hospitals with the lowest share of Medicaid patients. This process reduces the likelihood that hospitals in our efficient group got there by patient selection.

Our goal in this screening process is to improve our ability to identify hospitals that can provide good outcomes at a reasonable cost while serving a broad spectrum of patients (including Medicaid) without driving up the overall volume of hospital and nonhospital services provided.

Categorizing hospitals as relatively efficient We categorized hospitals into 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 2005–2007. We then examined the performance of the two hospital groups during fiscal year 2008.

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 Medicare mortality rates for six conditions adjusted for the patient's age, sex, and severity of condition based on a risk-adjustment methodology developed by AHRQ.[14] All six measures are endorsed by the National Quality Forum for use in a composite index of mortality.

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 Health Information Systems 2008, Goldfield et al. 2008) . We measured readmissions from 2005 through 2007; hospitals with risk-adjusted readmission rates in the top one-third in any year were removed from our efficient provider list.

When comparing costs, we adjusted Medicare 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 Medicare costs by adjusting for MS–DRG case mix, area wage index, prevalence of outliers and transfer cases, and the empirically estimated 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 based on performance, we divided the distributions among hospitals of risk-adjusted mortality, readmissions, and standardized Medicare costs per discharge into thirds (low, medium, and high) for each year 2005–2007. We placed a hospital in the relatively efficient group if it met the following four criteria:

- risk-adjusted mortality levels are in the best two-thirds every year (2005–2007),
- risk-adjusted readmission rates are in the best two-thirds every year (2005–2007),
- standardized costs per discharge are in the best two-thirds every year (2005–2007), and
- either risk-adjusted mortality rates or standardized costs are in the best one-third every year (2005–2007).

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

To limit our set of relatively efficient hospitals to those that have consistently delivered high-quality care at a reasonable cost, we identify hospitals that performed well on quality and cost metrics every year from 2005 through 2007. We do not categorize hospitals' costs or quality 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 with three years (2005–2007) of data, we compare the performance of these two groups with the most recent data available (2008). We compare performance by 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.[15]

Comparing 2005 and 2007 performance of relatively efficient and other hospitals Before comparing 2008 data, we first identify the set of providers that historically had strong performance on our efficiency measures during 2005–2007. Our population of hospitals with complete data consisted of 2,718 hospitals. After screening out the 10 percent of hospitals in counties with the highest annual service use per Medicare patient and the 10 percent of hospitals with the lowest Medicaid shares, there are 2,209 hospitals in our sample that were evaluated on their cost and quality of care. Of the 2,209 hospitals, 218 were found to be relatively efficient during 2005–2007. The set of relatively efficient providers includes a diverse array of hospitals, including large teaching hospitals and smaller rural hospitals. Some hospitals are in relatively prosperous communities; other hospitals have Medicaid shares in excess of 30 percent. Sixty-one percent of the relatively efficient hospitals report being part of a system that owns or manages at least one physician practice (American Hospital Association 2009). In contrast, 42 percent of the control group report owning or managing at least one physician practice. 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). CAHs were excluded from the analysis because they are not 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 2,209 hospitals on all three performance measures. For example, the efficient hospitals' relative risk-adjusted 30-day mortality rate from 2005 to 2007 is 81 percent of the national median (Table 2A-8), meaning that the typical hospital in the efficient group had a risk-adjusted 30-day mortality rate that was 19 percent below the national median. Likewise, the efficient group had a median standardized cost per discharge equal to 91 percent of the national median during 2005–2007. Median readmission rates for the efficient group were 95 percent of the national median during 2005–2007.

Historically strong performers have lower mortality and readmissions in 2008 Because no method of risk adjustment is perfect, we examined the performance of the relatively efficient hospitals by using an array of different risk-adjusted mortality measures. The composite mortality levels remained 19 percent below the national median. In addition to the composite 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). The 2008 mortality levels for the specific conditions measured by CMS were more than 5 percent lower for the historically efficient group. For example, the median efficient provider's risk-adjusted heart failure mortality rate was 95 percent of the 2008 national median, compared with 102 percent of the national median for the median provider in the comparison group. Readmission rates for relatively efficient providers were between 1 percent and 5 percent lower than the national median. The relatively efficient group also performed similarly to other hospitals on patient satisfaction. The share of patients who gave the median hospital a top rating was 64 percent for the relatively efficient group and 63 percent for the comparison group.

TABLE 2A–8

Characteristics of traditionally high performing hospitals

	Type of hospital	
	Relatively efficient during 2005–2007	**Other hospitals**
Number of hospitals	218	1,991
Share of hospitals	10%	90%
Relative historical performance, 2005–2007		
Risk adjusted:		
Composite 30-day mortality, 2005–2007 (AHRQ)	81%	104%
Readmission rates, 2005–2007	95	100
Standardized cost per discharge, 2005–2007	91	102
Relative mortality metrics, 2008		
Risk adjusted:		
Composite 30-day mortality (AHRQ)	81	103
30-day AMI mortality (CMS)	95	101
30-day CHF mortality (CMS)	95	102
30-day pneumonia mortality (CMS)	95	102
Relative readmission metrics, 2008		
Risk adjusted:		
Composite 30-day readmission (3M)	95	103
30-day AMI readmissions (CMS)	98	100
30-day CHF readmissions	95	100
30-day pneumonia readmissions (CMS)	99	100
Relative percent of patients highly satisfied (H–CAHPS®), 2008	102%	100%
Relative standardized Medicare costs per discharge, 2008	91%	102%
Median Medicare margin, 2008	0.2%	–8.3%

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 2005–2007. 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, prevalence of outlier and transfer cases, interest expense, low-income shares, and teaching intensity. Composite mortality was computed using AHRQ methodology to compute risk-adjusted mortality for six conditions (AMI, CHF, pneumonia, gastrointestinal hemorrhage, stroke, hip fracture). The scores were then weighted for each type of discharge by the share of discharges in that particular hospital. We removed hospitals with low Medicaid patient loads (the bottom 10 percent of hospitals) and hospitals in markets with high service use (top 10 percent of hospitals) due to concerns that socioeconomic conditions and aggressive treatment patterns can influence unit costs and outcomes. The differences in scores between the two groups are all statistically significant using a p=0.01 criterion.

Source: MedPAC analysis of impact file, Medicare Provider Analysis and Review, and Medicare cost report data from CMS, and CMS hospital compare data.

Historically strong performers continue to have lower cost in 2008 Hospitals that were low-cost and low-mortality providers from 2005 through 2007 continued to have lower costs in 2008. The median standardized Medicare cost per discharge in the efficient group was 91 percent of the national median, while the median for the comparison group was 102 percent of the national median. Because of their lower costs, the efficient hospitals have median Medicare margins of 0.2 percent, more than 8 percentage points higher than the control group.

Continuing improvement in methods used to identify efficient providers Our current measures of hospital costs and outcomes focus on inpatient care. Some hospitals in our set could be efficiently delivering inpatient care but may not be efficiently running their outpatient clinics. This

possibility is a limitation of the current analysis. Because we expect to see continual improvement in risk-adjustment methodologies, the measures we use to identify "efficient" providers will evolve and may eventually include outpatient metrics. We may also break down our analysis to focus more narrowly on the lowest cost providers that can generate high-quality outcomes.

How should Medicare payments change in 2011?

Each year, we provide update recommendations for services covered by Medicare's inpatient operating and outpatient systems.[16] This recommendation applies only to inpatient and outpatient services; updates for hospital-owned rehabilitation, home health, and skilled nursing units are based on separate recommendations for those types of Medicare services. For both the acute IPPS and OPPS, the update in current law for fiscal year 2011 is the forecast increase in the hospital market basket index.

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 the change in this index for fiscal year 2011 is 2.4 percent, but it will update the forecast twice before using it to revise payments in 2011.

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 regarding the level of payment rates and 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 2011 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 mixed but generally improving. On the other hand, Medicare margins are low and are expected to remain negative through 2010. However, our analysis of high-performing hospitals finds that a set of hospitals has been able to maintain relatively low costs, while maintaining relatively high quality of care. Roughly half of these providers are generating a profit on their Medicare business.

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.[17] Under such a program, for example, if 1 percent of Medicare payments were withheld to fund quality bonuses, a hospital with poor quality metrics would expect a 1.4 percent increase in payments (2.4 – 1.0, without a quality bonus). Hospitals that perform well on quality metrics would receive more than a 2.4 percent increase in payments. The Commission's reasoning is that an individual hospital's quality performance should determine whether its net increase in payments is above or below the market basket increase.

The update recommendation does not factor in further adjustments to the payment rates that may be needed to offset unwarranted increases in payments due to improvements in coding as we discuss in Recommendation 2A-2.

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.

To ensure that the level of aggregate payments to hospitals for inpatient services is appropriate in 2011 and

later years, we are making our update recommendation in concert with a recommendation to correct for the effects on Medicare payments of hospitals' DCI. As expected, implementation of MS–DRGs in 2008 gave hospitals a financial incentive to improve medical record documentation and diagnosis coding to more fully account for each patient's severity of illness. Documentation and coding improvements strengthen measurement of patient severity and improve payment accuracy among patients, but they also increase reported case mix under MS–DRGs without a real increase in patient severity or the resources hospitals must use to furnish inpatient care. To ensure that the transition to MS–DRGs is budget neutral as required by law, an offsetting adjustment must be made to the Medicare inpatient base payment amounts. With the following recommendation, we propose to spread this budget neutrality adjustment out over several years—longer than is expected under current law—to provide a transition that is manageable for hospitals.

RECOMMENDATION 2A-2

To restore budget neutrality, the Congress should require the Secretary to fully offset increases in inpatient payments due to hospitals' documentation and coding improvements. To accomplish this goal, the Secretary must reduce payment rates in the inpatient prospective payment system by the same percentage (not to exceed 2 percentage points) each year in 2011, 2012, and 2013. The lower rates would remain in place until overpayments are fully recovered.

RATIONALE 2A-2

Before introduction of the MS–DRGs, CMS and the Commission predicted that hospitals would improve their medical record documentation and coding. CMS actuaries projected that hospitals would complete DCI by the end of fiscal year 2009 and the cumulative increase in measured inpatient case mix and payments would reach 4.8 percent. To preserve budget neutrality as required by law, CMS proposed to reduce the inpatient base payment rates by 4.8 percent—1.2 percent in 2008 and 1.8 percent each year in 2009 and 2010. In the TMA, the Congress limited these adjustments to 0.6 percent in 2008 and 0.9 percent in 2009, a total of 1.5 percent. The Congress also provided, however, that if actual data showed that 1.5 percent was too much or too little, CMS would be required to make up or recover the difference, with interest, in 2010, 2011, and 2012. CMS also would have to further adjust the inpatient base payment rates to prevent under- or overpayments from continuing.

CMS's and the Commission's separate analyses of hospitals' 2008 inpatient claims showed that hospitals' DCI led to significant increases in hospital payments in 2008. We do not know precisely how much DCI occurred in 2009 because claims data for that year are not available. In its final rule for fiscal year 2010, CMS decided not to make any adjustment in 2010 to prevent further overpayments or recover overpayments that occurred in 2008. Thus, under current law, CMS is required to make two adjustments to the inpatient base payment rates by 2012. One adjustment would reduce the base payment rates in the IPPS to prevent further overpayments from continuing. The second adjustment would temporarily reduce the base payment rates in 2011 or 2012, or both, to recover the overpayments that occurred in 2008 and 2009, with interest. If the CMS actuaries' estimate of 4.8 percent DCI is on target and CMS decides to split the recovery of overpayments equally over 2011 and 2012, then achieving budget neutrality in 2011 will result in two problems. First, to fully offset the effect of DCI in 2011, CMS would need to implement a 5.9 percent reduction in payments, which is likely to be financially disruptive to many hospitals.[18] Second, even this large reduction in payments would not be sufficient to fully restore budget neutrality because overpayments are continuing in 2010 and these overpayments would not be recovered by the budget-neutrality adjustments required in current law.

The objectives of Recommendation 2A-2 are to:

- treat providers and taxpayers fairly by making the transition to MS–DRGs fully budget neutral, and
- avoid the large financial shock that would occur if the necessary adjustments were made in a single year.

Therefore, under Recommendation 2A-2, the adjustments that are needed to restore budget neutrality are made in increments over a period of three years with a maximum adjustment of 2 percent per year. These adjustments would stay in effect until all overpayments and related interest charges are fully recovered. The key differences from current law are that the size of payment reductions in 2011 are expected to be smaller, the pace of recoveries would be slower, and 2010 overpayments would be recovered.

Assuming the actuaries' 4.8 percent projection of DCI is on target, further overpayments would be prevented by 2012 and all overpayments—including continuing overpayments in 2011 and 2012—would be fully recovered in 2015. If the actual effect of hospitals' DCI in 2009 turns out to be smaller or larger than the actuaries'

projection, the Secretary would have the flexibility to change the level of the annual adjustments—subject to the 2 percentage point upper limit—or the length of time the adjustments remain in place to achieve budget neutrality.

IMPLICATIONS 2A-2

Spending

- Increases spending by more than $2 billion over one year, and reduces spending by $1 to $5 billion over 5 years.

Beneficiary and providers

- No major implications for beneficiaries; improves stability of payments for providers. ■

Endnotes

1 CAH conversions have slowed to fewer than 10 per year because of legislation that required new CAHs to be at least 35 miles by primary road or 15 miles by secondary road from another hospital. This requirement does not affect CAHs that converted before 2006. Roughly 10 hospitals convert to long-term care hospitals (LTCHs) each year because of administrative requirements. 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 The share of hospitals and their affiliates providing each service was calculated as the percentage of hospitals indicating availability of the services within the hospital, network, system, or joint venture.

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

4 In the fiscal year 2008 OPPS final rule, CMS amended the definition of observation bed days (which are paid for under the OPPS), effectively loosening the definition of these services for hospitals. This policy change was implemented on January 1, 2008. In addition, some reports allege that physicians are using observation days more often because of concern about audits of medical necessity for some admissions. Hospital volume data suggest that the 2008 policy change (possibly coupled with concerns about audits of admissions) may explain the growth in the number of observation bed days observed in 2008.

5 The Commission's analysis of Thomson Financial's monthly tax-free municipal bond issuance data from 2000 through the first 9 months of 2009.

6 The Commission's analysis of the Census Bureau's annual hospital construction spending data from 2000 through May 2009.

7 A margin is calculated as the difference between Medicare payments and Medicare costs divided by payments. The services included in the overall margin are Medicare acute inpatient, outpatient, graduate medical education, Medicare SNF (including swing beds), Medicare home health care, Medicare inpatient psychiatric, and Medicare inpatient rehabilitation.

8 Our forecast is for 2010 using 2010 policies. In prior years, we made projections using the update and costs from year t and payment policies from year t + 1. However, it is currently too difficult to project 2011 payment policies given uncertainty on how CMS will handle DCI and implementation of health information technology payments.

9 Each SCH will be paid based on the rate that results in the greatest aggregate payment using either the federal rate or the highest of its updated hospital-specific rates from FY 1982, FY 1987, FY 1996, or FY 2006. The FY 2006 hospital-specific rate is likely to be the highest amount for most SCHs.

10 The American Recovery and Reinvestment Act of 2009 mandates that HIT payments also be made to hospitals through the Medicaid program.

11 The most recent cost data available at the time of this analysis were for the nine months ending September 30, 2009, from certain for-profit systems that report quarterly results. We compared 2007, 2008, and 2009 costs for Hospital Corporation of America, Community Health Systems, Lifepoint, Health Management Associates, Tenet, and Universal Health Services.

12 The Dartmouth Center for the Evaluative Clinical Sciences is developing 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 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 risk-adjusted version of these data is still being refined and was not available at the time of this analysis.

13 Medicare spending varies in part because of the factors Medicare uses to account for differing wages, payment rates, and health status. We adjust for those factors to arrive at service use. A discussion of our methods to compute regional variation in service use is available at: http://www.medpac.gov/documents/Dec09_RegionalVariation_report.pdf.

14 Risk-adjusted mortality is computed for each of the six conditions by 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 risk-adjusted mortality for each hospital by weighting the risk-adjusted mortality rates for the six conditions based on their relative share of cases seen in that hospital.

15 For example, assume one hospital was unlucky in 2007 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 comparison group (i.e., not the "efficient" group). The comparison group would then have its 2007 mortality biased upward and would 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.

16 Our recommendations are with respect to operating payments. The Secretary of Health and Human Services separately evaluates updates to capital payments.

17 The inpatient update would apply to fiscal year 2011, and the outpatient update would apply to calendar year 2011.

18 While CMS has discussed the possibility of stretching adjustments to offset DCI over several years, the law appears to require that changes in classifications and weightings (e.g., the shift to MS–DRGs) be budget neutral. To obtain budget neutrality in 2011 under current law, payment rates would have to be permanently adjusted down by 3.3 percent if the actuaries' assumption of 4.8 percent DCI is accurate. If payment reductions to fully offset DCI were stretched out over time, CMS would have to collect remaining 2011 overpayments and interest to fully restore budget neutrality.

References

3M Health Information Systems. 2008. *Potentially preventable readmissions classification system***.** Murray, UT: 3M.

Agency for Healthcare Research and Quality, Department of Health and Human Services. 2007a. *AHRQ quality indicators. Guide to inpatient quality indicators: Quality of care in hospitals—Volume, mortality, and utilization, Version 3.1*. Rockville, MD: AHRQ. March 12. http://www.qualityindicators.ahrq.gov/iqi_download.htm.

Agency for Healthcare Research and Quality, Department of Health and Human Services. 2007b. *AHRQ quality indicators: Guide to patient safety indicators, Version 3.1.* Rockville, MD: AHRQ. March 12. http://www.qualityindicators.ahrq.gov/psi_download.htm.

Agency for Healthcare Research and Quality, Department of Health and Human Services. 2009. *Agency for Healthcare Research and Quality AHRQ Quality Indicators (AHRQ QI): Guidance on using the AHRQ QI for hospital-level comparative reporting*. Rockville, MD: AHRQ. June 30.

American Hospital Association. 2009. *2007 and 2008 AHA annual surveys*. Washington, DC: AHA.

Birkmeyer, J. D., A. E. Siewers, E. V. Finlayson, et al. 2002. Hospital volume and surgical mortality in the United States. *New England Journal of Medicine* 346, no. 15 (April 11): 1128–1137.

Cain Brothers. 2009. *Industry Insights* no. 646. November 16.

Census Bureau. 2009. Q3 2009 quarterly services survey data, table 9. Health care and social assistance (NAICS 62). http://www.census.gov/services/qss/qss_data.html.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2008. Medicare program; changes to the hospital inpatient prospective payment systems and fiscal year 2009 rates; payments for graduate medical education in certain emergency situations; changes to disclosure of physician ownership in hospitals and physician self-referral rules; updates to the long-term care prospective payment system; updates to certain IPPS-excluded hospitals; and collection of information regarding financial relationships between hospitals. Final rule. *Federal Register* 73, no. 161 (August 19): 48433–49084.

Centers for Medicare & Medicaid Services, Department of Health and Human Services. 2009. Medicare program; changes to the hospital inpatient prospective payment systems for acute care hospitals and fiscal year 2010 rates; and changes to the long term care hospital prospective payment system and rate years 2010 and 2009 rates. Final rule. *Federal Register* 74, no. 165 (August 27): 43754–44236.

Commonwealth Fund. 2009. *Aiming higher: Results from a state scorecard on health system performance.* New York: The Commonwealth Fund. October.

Congressional Budget Office. 2009. *Estimated effect on direct spending and revenues of Title IV of Division B or the American Recovery and Reinvestment Act of 2009 (Public Law 111–5): Health information technology.* Washington, DC: CBO.

Evans, M. 2009. Back into the pool. *Modern Healthcare* 39, no. 42 (October 19): 6–7, 16, 11.

Fisher, E. S., and D. J. Gottlieb. 2008. The extended hospital medical staff. Annotated briefing to MedPAC. Dartmouth Center for the Evaluative Clinical Sciences, contract no. E402478.

Fitch Ratings. 2009. *Public finance healthcare special report: 2009 median ratios for nonprofit hospitals and healthcare systems.* New York: Fitch Ratings. August 7.

Goldfield, N. I., E. C. McCullough, J. S. Hughes, et al. 2008. Identifying potentially preventable readmissions. *Health Care Financing Review* 30, no. 1 (Fall): 75–91.

Halm, E. A., C. Lee, and M. R. Chassin. 2002. Is volume related to outcome in health care? A systematic review and methodologic critique of the literature. *Annals of Internal Medicine* 137, no. 6 (September 17): 511–520.

Haughey, J. 2009. Decline expected as healthcare slows, but hospital work will remain steady. *Building Design+Construction*, August 1. http://www.bdcnetwork.com.

Keeler, E. B., L. V. Rubenstein, K. L. Kahn, et al. 1992. Hospital characteristics and quality of care. *Journal of the American Medical Association* 268, no. 13 (October 7): 1709–1714.

Krumholz, H. M., S. L. Normand, J. A. Spertus, et al. 2007. Measuring performance for treating heart attacks and heart failure: The case for outcomes measurement. *Health Affairs* 26, no. 1 (January–February): 75–85.

Medicare Payment Advisory Commission. 2007. *Report to the Congress: Promoting greater efficiency in Medicare*. Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2008. *Report to the Congress: Reforming the delivery system***.** Washington, DC: MedPAC.

Medicare Payment Advisory Commission. 2009a. Comment letter on CMS's proposed rule entitled: Medicare program; proposed changes to the hospital inpatient prospective payment systems for acute care hospitals and fiscal year 2010 rates and to the long-term care hospital prospective payment system and rate year 2010 rates (corrected version). June 29.

Medicare Payment Advisory Commission. 2009b. *Report to the Congress: Improving incentives in the Medicare program*. Washington, DC: MedPAC.

Moody's. 2009. U.S. public finance: Not-for-profit healthcare medians for fiscal year 2008 show weakening across all major ratios and all rating categories. August.

Press Ganey. 2009. *Hospital pulse report: Patient perspectives on American healthcare*. South Bend, IN: Press Ganey.

Robeznieks, A. 2009. The pressure builds. Annual Construction & Design Survey shows 2008 kept architects and builders busy, but respondents confirm the trend toward fewer and smaller projects. *Modern Healthcare* 39, no. 11 (March 16): 24–30.

Standard & Poor's. 2009. U.S. not-for-profit health care system fiscal 2008 ratios show vulnerability across the rating spectrum. July 20.