

D E C E M B E R 2 0 0 6

REPORT TO THE CONGRESS

Rural Payment Provisions
in the Medicare Prescription
Drug, Improvement, and
Modernization Act of 2003

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MEDPAC Medicare
Payment Advisory
Commission

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Executive summary

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In the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA), the Congress mandated that MedPAC study the effect of certain MMA provisions on hospital payments, capital expenditures, and overall costs. The provisions focus on rural hospitals, but the effect is not limited to them; in fiscal year 2006, the MMA provisions are estimated to result in \$377 million in additional prospective payment system (PPS) payments to rural hospitals (2.3 percent increase) and \$774 million in additional payments to urban hospitals (0.7 percent increase). In addition to increasing PPS payments, the MMA expanded opportunities for hospitals to convert to critical access hospital (CAH) status and receive cost-based reimbursement.

We examine the following provisions of the MMA in this report:

- ***Equalized standardized amount*** (MMA section 401). This provision increases the standardized amount paid to rural and small urban hospitals to the amount large urban providers receive. It increases Medicare spending by approximately \$571 million per year.
- ***Lowered labor share*** (section 403). This provision lowers the labor share (hospitals' labor costs as a share of total costs) for hospitals with a wage index less than 1.0, from 69.7 percent to 62 percent. It increases spending by about \$314 million per year.
- ***Increased cap on rural disproportionate share*** (section 402). This provision enhances disproportionate share (DSH) payments for rural hospitals and urban hospitals with fewer than 100 beds. The cap on DSH payments rises from 5.25 percent to 12 percent of inpatient payments for these hospitals. The provision increases spending by approximately \$223 million per year.
- ***Adjustment for low volume*** (section 406). This provision increases inpatient payments for isolated low-volume hospitals (affects fewer than five hospitals). It increases spending by less than \$1 million per year. Few low-volume hospitals qualify primarily because most small rural hospitals have converted to CAH status.
- ***Adjustment for out-commuting*** (section 505). For three years starting in fiscal year 2005, this provision increases the wage index for hospitals located in counties where a large number of employees commute to a higher wage county. It increases spending by \$44 million per year.
- ***Revised market basket weights*** (section 404). This provision revises the weights (including the labor share) used in the hospital market basket more frequently. It has no material effect on payments.

- ***Extended outpatient hold-harmless payments*** (section 411). This provision extends the outpatient hold-harmless provision for small rural and sole community hospitals (SCHs) for two years. The current extension increases spending by roughly \$50 million per year.
- ***Provided for cost-based laboratory payments*** (section 416). For cost report years starting between July 1, 2004, and June 30, 2006, hospitals with fewer than 50 beds that are located in qualified rural areas (those with population density in the lower 25 percent) received cost-based laboratory payments. This provision increases spending by roughly \$9 million in 2006.
- ***Changed CAH limitations*** (section 405). This provision increases CAH payment rates from 100 percent to 101 percent of costs, allows CAHs to use all 25 beds for acute care, and permits distinct part psychiatric and rehabilitation units. However, starting in 2006, all new CAH converters must be 15 miles by secondary road or 35 miles by primary road from the nearest hospital. Although the average CAH conversion increases Medicare payments by about \$1 million, we have not estimated a specific number of conversions caused by the MMA.

Estimating the effect of these provisions on Medicare payments is relatively straightforward. However, evaluating their effect on capital expenditures and overall costs is difficult. Past experience suggests that increases in hospital revenue will be followed by increases in hospital expenditures (MedPAC 2005). However, the time lag is such that it is too soon to determine the magnitude of any change given that most MMA provisions only took effect in late 2004. In addition, the magnitude of any change in costs is likely to be small for most hospitals.

When the provision extending hold-harmless payments expires at the end of 2008, it may be time to refine the outpatient payment system to account for factors leading to the poor outpatient financial performance of small hospitals. One possibility is to have a low-volume adjustment to offset the effect of low patient volumes on costs per unit of service. Currently, small rural hospitals benefit from hold-harmless payments and SCHs benefit from a 7.1 percent add-on to their outpatient payments; however, neither of these payment adjustments effectively targets isolated hospitals that have high costs because they lack economies of scale.

**Rural payment provisions in the
Medicare Prescription Drug,
Improvement, and Modernization
Act of 2003**

Legislative mandate and background

The Congress mandated that MedPAC study the effect of certain “rural hospital payment adjustments” in the Medicare Prescription Drug, Improvement, and Modernization Act of 2003 (MMA). We are required to “analyze the effect on total payments, growth in costs, capital spending, and such other payment effects” of eight MMA changes to the prospective payment system (PPS) by December 2006. We were also required to submit an interim report on the effect of changes to critical access hospital (CAH) payments in 2005. Our June 2005 Report to the Congress (MedPAC 2005) includes the interim report.

This report completes our mandated work. We first present the effect of eight MMA provisions on Medicare inpatient and outpatient payments to traditional (non-CAH) hospitals. Second, we summarize the MMA changes to CAH payment policies that were discussed in our interim report. Third, we examine the effects of higher payments on hospital costs.

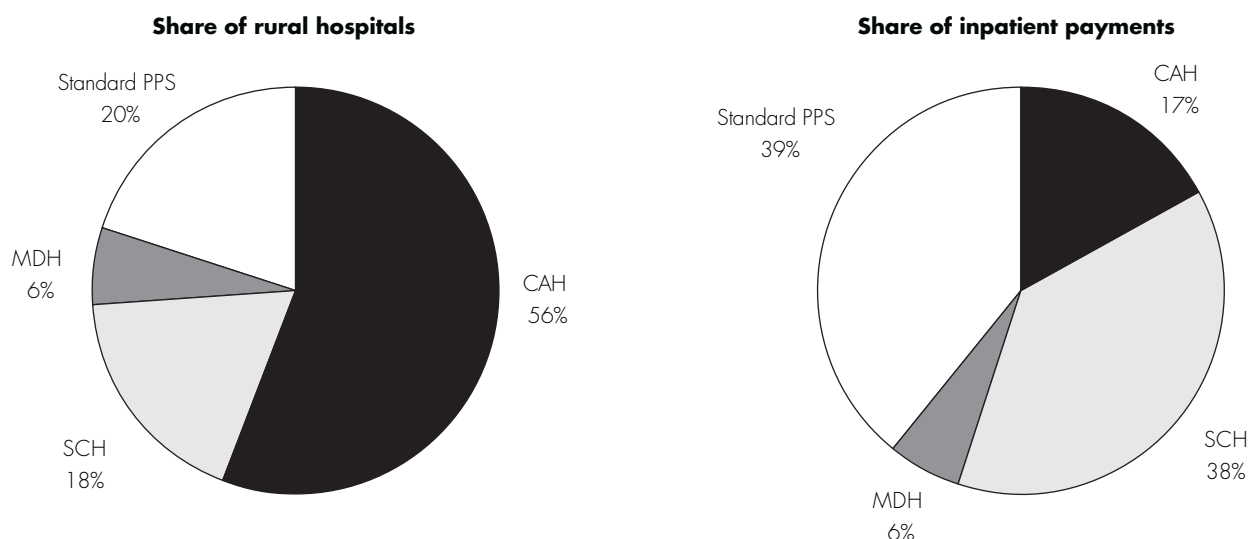
The provisions of the MMA continue two payment policy trends that have increased rural hospital payment rates in recent years. The first trend is an expansion of opportunities for rural hospitals to receive cost-based payments from Medicare. The second trend is an increase in rural PPS payment rates so that they are closer to urban payment rates. The Balanced Budget Act of 1997 (BBA); Balanced Budget Refinement Act of 1999 (BBRA); Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000; and the MMA have expanded opportunities for rural hospitals to receive cost-based payments for Medicare services.

As the patchwork of policies designed to increase opportunities for cost-based reimbursement has expanded, the number of hospitals receiving payments based on current or historical costs has increased. Hospitals can increase inpatient payments by becoming a CAH (roughly 1,280 hospitals), sole community hospital (SCH) (414 hospitals), or small rural Medicare-dependent hospital (MDH) (133 hospitals).¹ CAHs receive 101 percent of costs, whereas SCHs receive a prospective payment rate based on the greater of their historical costs trended forward or current PPS rates. MDHs receive a prospective payment rate based on a blend of current PPS rates and their historical costs. Of the approximately 2,273 rural hospitals operating in 2006, only 446 were not eligible for payments based on their current or historical costs. These 446 hospitals represent only 20 percent of rural hospitals, but they tend to be larger than CAHs and MDHs and received roughly 39 percent of rural inpatient payments (Figure 1, p. 4).

In addition to special inpatient payments, some rural hospitals also receive special outpatient payments. CAHs receive 101 percent of costs for outpatient services, SCHs receive a 7.1 percent add-on to outpatient PPS payments (funded by a reduction in payments to all other hospitals), and rural hospitals with no more than 100 beds (other than SCHs) still receive a form of cost-based reimbursement (hold-harmless payments) for outpatient services. Under the hold-harmless policy, which is set to expire in 2008, hospitals receive the greater of payments under the outpatient PPS or an estimate of the cost-based payments under the system that preceded the outpatient PPS.

Figure 1

Share of hospitals and inpatient payments by rural hospital type



Note: CAH (critical access hospital), SCH (sole community hospital), MDH (Medicare-dependent hospital), PPS (prospective payment system). Payments are simulated using 2004 Medicare claims and 2006 Medicare payment policies. Post-acute swing-bed payments are excluded. Standard PPS refers to hospitals paid under the traditional PPS payment rates and includes rural referral centers.

Source: MedPAC analysis of cost report and impact files from CMS.

Rural and urban impacts of MMA PPS changes

Before the MMA was passed, many rural hospitals received inpatient payments based on current or historical costs instead of traditional PPS payments. Thus, the MMA changes in inpatient prospective payment rates affected only a minority of rural hospitals. Because almost all urban providers are paid PPS rates and tend to have more admissions, the “rural hospital payment adjustments” actually directed more new dollars to urban than to rural hospitals (Table 1). However, rural hospitals’ payments increased by a larger percentage (2.3 percent) than urban hospital payments (0.7 percent). The effects of each change to inpatient payment rates are described below.

Equalized standardized amount

Differences in cost experiences led the Congress to enact separate rates for hospitals in large urban, other urban, and rural areas from 1988 through 1994. Legislation equalized the rural and other urban standardized amounts for fiscal year 1995.² However, hospitals in large urban areas still received a standardized operating amount 1.6 percent higher than that provided to hospitals in rural and small urban areas through 2003. The MMA permanently equalized the standardized amount for Medicare inpatient prospective payment services. The equalization increased overall

Table 1**Estimated increase in 2006 payments due to MMA provisions**

MMA provision	Rural effect		Urban effect	
	Increase in payments (in millions)	Percent change in payments	Increase in payments (in millions)	Percent change in payments
Inpatient changes				
Equalized standardized amount	\$87	0.7%	\$484	0.5%
Lowered labor share	64	0.5	250	0.3
Increased rural DSH cap	177	1.4	46	0.1
Adjusted for low volume	<1	0.0	0	0.0
Adjusted for out-commuting	10	0.1	34	0.0
Market-basket weights	0	0.0	0	0.0
Outpatient changes				
Extended hold harmless*	50	1.5	0	0.0
Provided cost-based lab	9	0.2	0	0.0
Total increase in inpatient and outpatient payments	377	2.3	774	0.7

Note: MMA (Medicare Prescription Drug, Improvement, and Modernization Act of 2003), DSH (disproportionate share).

*The hold-harmless provision does not apply to sole community hospitals (SCHs); they receive a 7.1 percent increase in outpatient payments via a separate provision in the MMA. The result is roughly a \$90 million increase in payments to SCHs. The SCH provision is budget neutral, so outpatient payment rates to other hospitals are reduced by roughly 0.4 percent. Note that the total is not additive due to the interaction of different policies.

Source: MedPAC analysis of Medicare cost report data and the Provider Statistical and Reimbursement System (PS&R) reports from fiscal intermediaries.

rural hospital payments by less than 1 percent (on average) because SCHs and MDHs have the option of being paid based on their historical cost of providing services. A large share of increased payments went to hospitals in small urban areas because they are more likely to receive traditional PPS rates (as opposed to a cost-based rate) and tend to be larger.

Lowered labor share

Hospital operating payments are adjusted for regional differences in reported wage rates. Since the start of the inpatient PPS, CMS has used cost accounting data to set the “labor share,” which is the share of hospital costs that CMS estimates is related to local wage rates. CMS recently analyzed data on hospital purchases of labor, supplies, and other inputs and concluded that 69.7 percent of hospital costs can be directly or indirectly attributed to labor costs.³ In computing payments to hospitals, the labor share is multiplied by the wage index, which reflects the relative wage rates in different markets. In a move that increases payments to hospitals in low-wage

areas, the MMA allows hospitals with a wage index less than 1.0 to use a 62 percent labor share. Therefore, in areas with a wage index less than 1.0, 62 percent of operating payments are adjusted (decreased) to reflect lower-than-average labor costs. In areas with a wage index greater than 1.0, 69.7 percent of operating payments are adjusted (increased) to reflect higher-than-average labor costs. Empirical estimates of the average labor share across the nation vary somewhat depending on the methodology used. However, no empirical studies support the assumption that hospitals in low-wage areas tend to use less labor than those in areas where labor is more expensive. The net effect of allowing a 62 percent labor share for hospitals in low-wage areas is to increase payments to hospitals in low-wage index areas (both rural and urban) by \$314 million per year.

Rural payments increased by roughly 0.5 percent and urban payments increased by roughly 0.3 percent due to the labor share provision. The increase is not budget neutral. However, in dollar terms, most of the \$314 million in increased payments goes to urban areas. The urban benefit is large relative to the rural benefit for several reasons. First, urban hospitals tend to be larger. Second, many urban areas have a wage index below 1.0. Third, many rural hospitals do not receive traditional prospective payment rates and this change affects only inpatient PPS payments.

Increased cap on rural disproportionate share

The rural disproportionate share (DSH) adjustment was enacted in 1986 because of the belief that poor patients are more costly to care for than middle- and upper-income patients (CBO 1990). In recent years, some have viewed DSH payments as a subsidy for uncompensated care for the uninsured and underinsured rather than the differential in the cost of treating low-income and other Medicare beneficiaries.

Prior to the MMA, rural hospitals with 500 or more beds and urban hospitals with more than 100 beds did not have a DSH payment cap, but smaller hospitals had DSH payments capped at 5.25 percent of operating payments. The MMA increased the cap on DSH payments to smaller hospitals from 5.25 percent to 12 percent of inpatient operating payments. In 2006, we estimate that raising the cap to 12 percent will increase annual payments to rural hospitals by \$177 million dollars. The benefits are concentrated in hospitals with large shares of Medicaid patients and low-income Medicare patients.

Adjustment for inpatient low volume

In our June 2001 Report to the Congress, MedPAC recommended a graduated increase in inpatient payments per case for isolated rural hospitals. The objective was to help hospitals that inevitably lacked economies of scale because they serve an area with low population density. The MMA enacted a low-volume adjustment for hospitals with fewer than 800 discharges per year that are more than 25 miles from the nearest hospital. However, the MMA let the Secretary determine the amount of that adjustment. Based on its analysis of hospital costs, CMS concluded that the adjustment should only be above zero for hospitals with 200 or fewer discharges. As

a result, CMS estimates that only two hospitals will benefit from the adjustment in 2007. The impact of the provision on payments is less than \$1 million.

Even if the Congress had relaxed the distance requirement and allowed the low-volume adjustment to reach 800 discharges (as MedPAC recommended), very few hospitals would benefit. Thirty-five rural hospitals had fewer than 800 discharges and were more than 15 miles from a competitor in 2004. The reason so few would benefit from an inpatient low-volume adjustment is that most small rural hospitals with low volumes of inpatients have converted to CAH status. Even among the 35 rural hospitals that could qualify for a revised inpatient low-volume adjustment, many are SCHs and may choose a hospital-specific rate (that is, a cost-based rate) over a PPS rate with a low-volume adjustment.

Adjustment for out-commuting

Starting in fiscal year 2005, hospitals located in counties where a large number of hospital workers commute to a higher wage county receive an increased wage index. In fiscal year 2006, CMS expected 251 hospitals to receive this out-commuting payment adjustment. The adjustment is proportional to the share of employees who commute from the hospital's county to a hospital in a county with a higher wage index. It has a small effect on inpatient payments.

Revised market basket weights

The MMA requires more frequent revisions in the market basket weight computations (including estimation of the labor share) used in the hospital market basket. The market basket is a weighted sum of the different inputs used by hospitals. Over time, the effect of price changes for a specific hospital input can carry more or less weight in the market basket. For example, if hospitals increase pharmaceutical use, the market basket may change so that price changes to prescription drugs represent 6 percent rather than 5 percent of the market basket. To account for these variances over time, CMS has historically revised market basket weights about every five years. The MMA requires CMS to revise the market basket computations more frequently. In response, CMS proposed revising them every four years. The payment rates are still updated every year, but the weights that go into estimating input cost inflation are revised every four years rather than every five years. The changes in the weights are expected to be small and have no material effect on payments.

Individual outpatient changes

The BBA provided for the implementation of prospective payments for hospital outpatient services starting in August 2000. The BBRA implemented transitional corridor payments that helped soften the effects on hospitals that would experience payment reductions. For most hospitals, transitional corridor payments made up part of the difference between the payments they would have received under the previous, partially cost-based system and the payments under the outpatient PPS. However, some hospitals—cancer hospitals, children's hospitals, and rural

hospitals with 100 or fewer beds—were held harmless by the transitional corridor payments. They received the greater of their outpatient PPS payments or an estimate of the payments they would have received under the partially cost-based system (which were often less than full costs).

Extended hold-harmless payments

Although cancer and children’s hospitals have permanent hold-harmless status, the BBRA slated the eligibility for hold-harmless payments for rural hospitals to expire on December 31, 2003. However, in 2003 the MMA extended hold-harmless eligibility for small rural hospitals for calendar years 2004 and 2005. In addition, the MMA provided hold-harmless eligibility for 2004 and 2005 to all SCHs in rural areas. The Deficit Reduction Act of 2005 provides for small, rural hospitals (that are not SCHs) to receive nearly full hold-harmless payments from 2006 through 2008. These hospitals will receive 95 percent of full hold-harmless payments in 2006, 90 percent in 2007, and 85 percent in 2008.

The partial hold-harmless payments provided small rural hospitals with about \$50 million in additional revenue in 2006. It is not clear whether these hold-harmless payments in 2007 and 2008 will be higher or lower than they were in 2006. On the one hand, eligible hospitals will receive a smaller percentage of the full hold-harmless payments in 2007 and 2008, which would decrease the payments. On the other hand, more hospitals may be eligible for hold-harmless payments in 2007 and 2008 if their costs increase faster than Medicare payments, which would increase total hold-harmless payments.⁴

Provided for cost-based laboratory payments

Medicare pays for most clinical diagnostic laboratory tests performed by hospitals—excluding those for inpatients—under a fee schedule. Section 416 of the MMA provides a temporary exemption from the clinical laboratory fee schedule (CLFS) for “qualified rural hospitals” to have their clinical laboratory services paid on the basis of costs, rather than the CLFS, from July 1, 2004, through June 30, 2006. A qualified rural hospital has fewer than 50 beds and is located in a qualified rural area—that is, one of those areas with the lowest population densities that comprise 25 percent of the rural population.

Qualified rural hospitals are relatively small and few in number (about 130). We estimate that this provision increased Medicare program spending by roughly \$70,000 per hospital or \$9 million per year for all qualifying hospitals. We estimated the difference between fee-schedule laboratory payments and cost-based laboratory payments with data from the fiscal intermediaries’ Provider Statistical and Reimbursement System (PS&R). We examined PS&R reports from a sample of 33 of the 130 qualified rural hospitals. The 33 hospitals in our sample make up about 25 percent of the qualifying rural hospitals. Therefore, we estimated total payments under the Medicare laboratory fee schedule and under a cost-based system for all qualifying rural hospitals by multiplying by 4 the estimates for the 33 hospitals in our sample. Although the sample was selected based on availability of data and was not randomly drawn, we believe it is a large enough share of the population to reasonably represent the population of 130 hospitals.

Changed SCH outpatient payments

The MMA required CMS to investigate whether rural hospitals incur a greater cost per service under the outpatient PPS than their urban counterparts. If CMS found a discrepancy in costs between rural and urban hospitals, the MMA required it to adjust payments to rural hospitals to offset their higher costs.

CMS's analysis revealed that SCHs located in rural areas have higher unit costs than other hospitals. Beginning in 2006, CMS is adjusting upward by 7.1 percent payments to rural SCHs for all outpatient PPS services, excluding drugs and devices that are paid under the pass-through policy.

The 7.1 percent SCH add-on payment is budget neutral; therefore, the approximately \$90 million in special payments that rural SCHs receive are offset by a \$90 million reduction in Medicare payments to all hospitals, equivalent to a 0.4 percent reduction in the base rate for Medicare outpatient payments.

Addressing higher costs at lower volume hospitals

We analyzed the factors that affect hospitals' costs per outpatient service and found that the volume of outpatient services is a strong driver of cost per service; cost per unit of outpatient service declines as the volume of outpatient services increases. Moreover, the rate of decrease is greatest at the lowest volumes (Appendix B of this report presents regression results and MedPAC's March 2006 Report to the Congress provides a general discussion of low-volume adjustments). Currently, SCHs benefit from a 7.1 percent add-on to their outpatient payments and small (non-SCH) hospitals benefit from hold-harmless payments; however, neither of these adjustments effectively targets isolated hospitals with high costs because they lack economies of scale. An outpatient low-volume adjustment could be instituted to replace the current hold-harmless payments and the SCH add-on. The low-volume adjustment could be part of a broader effort to more completely refine the outpatient payment system, which is seven years old. The regression results shown in Appendix B of this report suggest that further analysis is needed to evaluate whether outpatient services with a higher payment weight are more profitable than less complex outpatient services. A more complete refinement of outpatient payments may be needed if changes in payment weights have not appropriately matched changes in the costs of delivering different outpatient services.

To implement an outpatient low-volume adjustment, policymakers would have to set the threshold where low-volume payments would begin (e.g., at the mean volume). In addition, to avoid paying a low-volume adjustment to hospitals in close proximity to each other, the adjustment could be limited to hospitals that are a minimum distance from all other hospitals (e.g., 15 road miles).

A low-volume adjustment would narrow the range of financial performance among rural hospitals. This adjustment (for illustration, using a threshold of 125,000 services and a 15-mile distance requirement) could be implemented when the hold-harmless provisions expire in 2009 and when funds from the SCH provision are redirected to the base payment rate. Assuming these

changes in policy, 2004 margins for rural hospitals would range from a high of –2.4 for overall margins (–13.8 percent outpatient/2.0 percent inpatient) for small rural (non-SCH) hospitals with low outpatient volume to a low of –7.6 percent overall margins (–16.3 percent outpatient/–3.2 percent inpatient) for small rural (non-SCH) hospitals without low outpatient volume. SCH hospitals' margins would fall within this range.

MMA changes to CAH limitations

The MMA increased CAH payments from 100 percent of costs to 101 percent of costs and instituted four key changes to the CAH program:

- allowing up to 25 CAH beds to be used for acute inpatient care;
- allowing 10-bed distinct part inpatient psychiatric units;
- allowing 10-bed distinct part inpatient rehabilitation units; and
- starting in 2006, requiring that all new CAHs be 35 miles by primary road or 15 miles by secondary road from the nearest hospital (before the MMA, states could waive the distance requirement).⁵

We provide a more complete background discussion of CAHs in our June 2005 Report to the Congress.

Allowing 25 acute-care patients

Prior to the MMA, CAHs were limited to 25 beds but could only have 15 acute-care patients. The MMA allowed the hospitals to use all 25 beds for acute care. As we discussed in our June 2005 report, this provision may have resulted in some rural hospitals with a census regularly between 15 and 25 beds converting to CAH status that otherwise would not have converted. The provision may have resulted in roughly 100 additional CAH conversions. In our June 2005 report, we estimated that CAH payments would be roughly \$1 million more than PPS rates for the average CAH, primarily due to increased post-acute swing-bed, outpatient, and laboratory payments. Additional conversions result in increased Medicare payments to these hospitals.

Allowing existing CAHs to expand their acute inpatient census from a maximum of 15 to 25 should not materially affect Medicare payments to hospitals that had converted to CAH status before passage of the MMA. Whereas cost-based payments to CAHs for outpatient and post-acute swing-bed care tend to be substantially higher than PPS rates, cost-based payments for acute inpatient care are often close to PPS rates. In addition, adding volume to existing CAHs is likely to reduce costs per discharge because of economies of scale. Therefore, allowing CAHs to increase the number of acute inpatients should not significantly affect Medicare costs other than through an indirect effect on the number of converting hospitals.

Allowing distinct part psychiatric and rehabilitation units

Prior to the MMA, CAHs could not have distinct part units in addition to their 15 acute-care beds. The MMA allows CAHs to have rehabilitation and psychiatric units with up to 10 beds each in addition to 25 acute-care beds. The distinct part units are paid prospective rates. As of June 2006, only 6 of the 1,283 CAHs had distinct part rehabilitation units, whereas 67 had distinct part psychiatric units. Most of the 67 hospitals had distinct part psychiatric units when they converted to CAH status. Only 10 added psychiatric units after they converted to CAH status, and 57 converted to CAH status while operating a distinct part psychiatric facility (CMS 2006).

Allowing CAHs to add distinct part units appears to have resulted in at least 10 additional distinct part units in rural areas—a potential benefit for areas that often have a shortage of mental health services (IOM 2005). It is not known whether adding and retaining inpatient capacity in these small communities helps recruit mental health professionals to these areas. The cost of the provision depends on how many of the 57 CAHs that had psychiatric units when they converted would not have converted if the provision had not been enacted. As stated earlier, CAH conversions are estimated to cost Medicare \$1 million per conversion per year.

Firming the 15/35-mile rule

The most significant change to the CAH program is the removal of a state's ability to waive the requirement that CAHs be at least 35 miles from another hospital by primary road or 15 miles by secondary road. Existing CAHs will be grandfathered into the program. Most current CAHs are 10 to 25 miles from the nearest hospital and do not meet the distance requirement; they were allowed CAH status under state authority to waive the distance requirement.

Because most hospitals that qualify for CAH status converted by January 1, 2006, the number of CAH conversions slowed to a handful in 2006. It is difficult to predict what savings will result from requiring rural hospitals to be more than 35 miles from the nearest competitor; however, a considerable number of conversions that otherwise would have occurred may be prevented. The provision not only will prevent new CAHs from being built close to existing hospitals but also will prevent suburban hospitals from converting to CAH status as they age and lose market share to competitors.⁶

Post-acute stays in swing beds

Medicare created the swing-bed program to allow hospitals with excess capacity to use beds for post-acute care when other sources of post-acute care are not available.⁷ CAHs receive higher Medicare payments for post-acute care in swing beds than other hospitals receive under prospective payment rates, and they have a financial incentive to increase the use of empty swing beds for post-acute care. Increasing occupancy reduces average costs per day at the hospital, resulting in higher profits on private-payer acute-care patients. Although the financial incentives exist for swing-bed use, and financial consultants have been explaining these benefits to hospital executives, the rate of increase in swing-bed use through 2004 has been fairly modest. Among our sample of 574 CAHs that converted by 2002, swing-bed days increased by 5 percent, a mean

increase of 32 days per year from 2003 to 2004. Other analyses show that the increase in swing-bed use through 2003 was modest (Dalton 2006). A survey of CAHs in 2004 indicated that 4 percent added swing-bed services and 11 percent significantly expanded swing-bed use, but more than 80 percent stated they had not changed their level of swing-bed services through 2004 (Flex Monitoring Team 2004).

One area of swing-bed use that should be monitored is the transfer of post-acute patients from larger PPS hospitals to CAH swing beds. For certain diagnosis related groups discharged to skilled nursing facilities (SNFs), the transfer policy reduces PPS payments when a transfer patient's PPS length of stay is more than one day shorter than the geometric mean length of stay. Although PPS payments are reduced for short-stay patients discharged to SNFs, they are not reduced for short-stay patients discharged to swing beds. Larger hospitals have a financial incentive to discharge their short-stay patients to CAH swing beds because the transfer policy does not apply. Because of the large hospitals' financial incentive to discharge patients as soon as possible and the CAHs' financial incentive to take post-acute patients, it is important to monitor transfers to confirm that patients are being transferred to CAH swing beds no earlier than is in the best interest of the patient. The text box describes how swing-bed costs for post-acute patients are calculated.

Swing-bed cost accounting rules result in higher post-acute payments

Since 2001, CMS has used a new method to calculate payments for routine services provided to post-acute swing-bed patients (HCFA 2001). Before the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000, Medicare paid critical access hospitals (CAHs) a fixed payment for the costs associated with routine care for post-acute patients in swing beds. This fixed payment equaled the average cost of routine care for post-acute patients in freestanding skilled nursing facilities (SNFs). Under the new method, CMS pays for routine care based on hospitals' reported costs, averaged over acute and skilled nursing patients. To calculate the cost of a post-acute patient's routine care, CMS divides the hospitals' total inpatient routine costs (after carving out nursing-facility-type Medicaid days) by the sum of acute and post-acute days to obtain an estimated routine cost per day. Because hospitals' routine costs per day exceed freestanding SNFs' routine costs per day, this change in payment method significantly increases payments for post-acute swing-bed patients.

Compared with the old payment method, the new one decreases payments for acute care. The changes reflect a shift in cost allocation from acute to post-acute care. To compute the routine costs allocated to acute patients, CMS starts with total inpatient routine costs and then "carves out" nursing-facility-type Medicaid payments. CMS then evenly allocates the remaining routine costs to acute and post-acute patients. Because costs allocated to post-acute payments increase under the new method, the costs remaining to be allocated to acute patients decrease. Although CAHs receive roughly \$1,000 in Medicare payments for every post-acute day, the reduction in costs allocated to acute patients offsets some of that gain. For the marginal post-acute day, the net increase in Medicare payments may be only \$400 or \$500 instead of the full \$1,000. Net revenue per post-acute day of \$400 or \$500 is \$100 to \$200 more than SNF payment rates of roughly \$300 per day. ■

How do increased payments affect capital expenditures and overall costs?

Both the method (e.g., cost-based reimbursement) and the level of payment can affect cost growth. In the early 1990s, hospital costs declined because of incentives associated with the introduction of the PPS and because of financial pressure managed care companies placed on hospitals (Chalkley and Malcomson 2000, Gaskin and Hadley 1997). Complementing the academic literature, the trade press is replete with case studies of hospitals that reduced costs when faced with financial pressure (Guyon 2003, McGinnis et al. 2005).

In recent years, rural hospitals have tended to receive larger increases in Medicare inpatient payments per case than urban hospitals, averaging an additional 2 percent per year from 2000 through 2004. The largest increase, 6.7 percent from 2003 to 2004, was partially due to the MMA provisions discussed in this report. Although costs have increased rapidly at rural hospitals, they have increased just as rapidly at urban hospitals that received smaller increases in Medicare payment rates (Table 2). Cost growth in urban hospitals may be influenced by increasing consolidation of hospitals in urban areas, which may have led to higher private-payer profit margins that could be used to fund cost growth.

Overall, rural and urban hospitals appear to have faced roughly equal pressure to constrain costs through 2004. Although Medicare payments increased faster among rural than among urban hospitals, non-Medicare margins increased faster among urban hospitals. The net result is that

Table 2

Medicare PPS inpatient payment growth and cost growth

	2000–2001	2001–2002	2002–2003	2003–2004	Mean change
Medicare payment growth per discharge					
Rural hospitals	4.4%	4.5%	3.1%	6.7%	4.7%
Urban hospitals	2.8	3.3	1.5	3.0	2.7
Medicare cost growth per discharge					
Rural hospitals	4.7	8.0	5.5	6.5	6.2
Urban hospitals	5.0	8.1	6.3	5.8	6.3
Total (all payer) margin growth					
Rural hospitals	–0.5	–0.6	0.4	0.7	0.0
Urban hospitals	–0.2	0.1	0.8	–0.2	0.1

Note: PPS (prospective payment system). Changes in payments can be lower or higher than the annual update due to changes in Medicare payment rules, coding, and case mix.

Source: MedPAC analysis of cost report data from CMS.

total margins (all payers) among rural and urban hospitals have almost equal cumulative changes over the four years ending in fiscal year 2004. Given equal changes in total margins over those four years and a 5 percent total margin among rural hospitals versus a 4.2 percent total margin among urban hospitals in 2004, it is not surprising that we do not see a material difference in the rates of cost growth.

The question for this study is whether increased Medicare payment rates will affect capital expenditures and overall costs. Most MMA payment increases did not start affecting hospitals until partway through 2004 and may not affect capital expenditures until 2006 if it takes a hospital a year to change its capital expenditure plans. Once 2006 data become available, we could test whether the hospitals that received the largest increases in payments (10 percent or more) increased their capital expenditures and overall costs faster than other hospitals. However, for hospitals that received a 1 or 2 percent increase in payments because of the PPS provisions, the effect on capital expenditures and overall costs probably will be too small to detect.

Effect of CAH conversions on capital expenditures and overall costs

When CAHs shift from fixed prospective payment rates to cost-based payments, their incentive to constrain costs is reduced and capital expenditures become financially more attractive. The inpatient PPS was implemented in the early 1980s to provide a greater incentive for hospitals to control costs than they had under cost-based reimbursement. The literature from the 1980s generally indicates that the introduction of PPS eventually reduced cost growth among acute-care hospitals (Long et al. 1987, Feder et al. 1987). Now that CAHs have moved back to cost-based reimbursement 20 years later, there is a concern about increased costs. In our June 2005 CAH chapter, we reported modestly higher growth in cost after conversion for CAHs than for comparable hospitals through 2003.

Although CAHs still have some incentive to control costs, it is easier for CAHs than for PPS hospitals to fund increases in the cost of care, all else being equal. When a PPS hospital purchases additional labor or equipment, the hospital must pay for it with cash flow from existing sources or through increased patient volume. In contrast, when a CAH purchases additional labor or equipment, its Medicare payment per unit of service increases, assuming volume does not change. For example, one hospital administrator informed us that his patient mix is roughly 50 percent Medicare, so when he considered remodeling his outpatient department the analysis assumed that increased Medicare payments would pay 50 percent of the cost—even without a change in patient volume.

CAHs tend to operate in older facilities with significant needs for capital improvements. In a 2004 survey of 474 CAHs conducted by a team from the University of Minnesota, University of North Carolina, and University of Southern Maine, 42 percent of the respondents reported they had pursued a capital loan at some point between 2001 and 2004 (Flex Monitoring Team 2005). Roughly 9 in 10 loan applicants were successful. Although some CAHs still have weak financial performance, most have access to capital, and we should expect increases in capital expenditures as CAHs replace and update their aging facilities.

Some observers may view increased capital spending at aging CAHs as a positive development but may also be concerned that capital spending is not targeted to hospitals that are critical for patients' access to care. There is significant diversity among the locations of CAHs with aging facilities. Some CAHs are isolated rural hospitals and others have competitors within 15 miles. Given that cost-based reimbursement is available to all types of CAHs, we should expect increases in capital spending at all types of CAHs.

The increased capital expenditures have started to be reflected in Medicare cost report data. In MedPAC's sample of 574 CAHs that had converted to CAH status by 2002, aggregate capital expenditures for the group increased by 8 percent from 2003 to 2004, compared with an aggregate increase of 5 percent for a group of hospitals that had not converted to CAH status by 2004.⁸ The 3 percent difference in the rate of capital expenditure growth is statistically significant but is modest in magnitude, representing less than \$50,000 in additional capital costs (e.g., depreciation and interest expense) per CAH per year. Given that the Flex Monitoring Team estimated that CAHs needed to make more than \$2 million in additional capital expenditures on average, we should expect increasing capital expenditures to drive further increases in reported interest and depreciation expenses.

Do CAHs have a competitive advantage over their neighbors?

Some non-CAH hospitals that compete with CAHs have expressed concern that they cannot afford to pay the same wages as CAHs because they receive lower payment rates. As time goes on, they may also think they are at a disadvantage when it comes to capital improvement projects.

As with any cost-based reimbursement system, the risk exists that the provider may purchase services from related entities, which can lead to increased Medicare payments for CAHs and enhanced competitive advantages over their neighbors. Therefore, it will be important for CMS to monitor CAHs to ensure that reported costs are reasonable and that transactions with related entities have negotiated rates that reflect the best price available to the CAH, as required by current cost-reporting regulations.

Can networking solve economy-of-scale problems?

The CAH program requires CAHs to network with at least one larger support hospital. In some cases, the relationship with the support hospital primarily consists of an agreement whereby the larger facility accepts transfers from the CAH. In other cases, the CAH and the support hospital share common ownership and are highly integrated. Many CAHs also network with other small hospitals. To encourage networks, the federal Office of Rural Health Policy offers grant programs for small rural health care organizations to create networks or other partnerships with other health care organizations. Some networks have accomplished specific objectives such as providing joint credentialing or joint quality improvement programs, but that should not be seen as the solution for all the difficulties that accompany CAHs' lack of scale. The most extensive studies of rural hospitals' organizational strategies, such as joining systems and networks, did not find any "direct, easily observable linkages between network participation and the balance sheets

of participating hospitals” (Mick et al. 1995, Moscovice et al. 1995). There are some examples of financially successful hospitals in networks, but there are also examples of financially successful independent, small-town hospitals (Stensland and Millet 2002).

Encouraging innovation and efficiency

Rural patients may benefit from some hospital mergers. CAHs with fewer than 500 admissions tend to have small medical staffs and are less likely to have certain beneficial services such as an on-site pharmacist. In contrast, higher volume CAHs serving larger areas tend to have more resources. For example, MedPAC staff visited a 25-bed CAH with more than 1,000 admissions that serves a large area with seven satellite clinics in surrounding towns. By serving a wide area (more than 30 miles in all directions) the hospital has the economies of scale to support 2 full-time pharmacists, an electronic medical record that links all 7 clinics to the hospital, 2 full-time paramedics, a full-time radiologist, and more than 10 board-certified physicians who travel to the 7 clinics. The physician staff indicated that the ability to have local colleagues and to see a certain volume of patients in the hospital were both important factors in their ability to provide quality care. Mergers of smaller CAHs into larger CAHs may result in more resources for rural patients.

CMS limits CAHs’ ability to build facilities in new locations. To maintain its CAH status, a CAH must remain in its current location or at least continue to serve the same patient base if it changes location. Before merging, CAHs may want assurances from CMS that the merged facility will be able to keep the CAH designation. Therefore, CMS may want to clarify that two hospitals can move or merge and build a hospital in a new location as long as the new hospital acts as a replacement facility for the two merging facilities. In addition, we will also be monitoring rural providers to determine whether any CAHs are choosing not to merge because of concern that the merged facility could not meet the region’s needs, given the 25-bed limit for CAHs. Because of the potential benefits of consolidation, allowing merging CAHs to exceed the 25-bed limit for a number of years after the merger of two neighboring CAHs may be beneficial. The mergers of CAHs are just one way for rural health care delivery systems to change in response to changes in medical technology and in rural demographics. We should be willing to shift the location of where care is delivered as well as how it is delivered if those changes will improve the quality of care rural patients receive. ■

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Endnotes

1. On average, CAH inpatient payments have increased because of conversion to CAH status. However, there are a significant number of CAHs that faced a decline in inpatient payments after conversion. These hospitals usually converted to CAH status to obtain increased payments for outpatient services and for post-acute care in swing beds. Counts of special classifications for hospitals are from the final inpatient payment rule issued August 1, 2006, and correspondence with CMS during the summer of 2006.
2. Medicare sets per-discharge base rates (standard operating amounts) for the operating costs an efficient facility is expected to incur in furnishing covered inpatient services. The payment rate is adjusted for the complexity of the diagnosis related groups and area wage rates. Operating payments pay for labor and supply costs; a separate capital payment is designed to pay for the cost of depreciation, interest, rent, and property-related insurance and taxes. For fiscal year 2006, the operating base rate was \$4,731.
3. Others have used regression analysis to estimate the share of hospital costs that are related to the wage index, but those estimates often vary depending on the functional form of regression. CMS concluded that the regression results were too unstable to use and chose to use the cost accounting approach.
4. CMS determines hold-harmless payments as the greater of hospital payments under the outpatient PPS or the cost-based system that preceded it. The cost-based payments are calculated as the product of current costs and a historical payment-to-cost ratio. Therefore, the growth in hospital costs can affect whether a hospital will receive hold-harmless payments in the future.
5. Technically, a state had to replace the distance requirement with its own “necessary provider” criteria. However, the states used very broad criteria so that most (and often all) of the states’ small rural hospitals qualified for necessary provider status. The criteria did not have to be closely related to access to care. For example, some states gave necessary provider status to all rural hospitals in counties with an above-average percentage of people over the age of 65. One state declared hospitals “necessary providers” based on several considerations, such as having low occupancy because they were in an area with local competition. CMS believed the Congress intended to give states almost complete control over this issue and therefore did not challenge “necessary provider” criteria even in the few cases in which those criteria allowed CAHs to exist in the same town as another hospital.
6. Technically, a hospital must be in a rural area to be a CAH. However, a hospital that the state designated as rural for any purpose would be considered rural when determining CAH eligibility. Therefore, although CAHs are not located in the core of large urban areas, some are located in suburban areas within metropolitan statistical areas.

7. Swing beds can be used for acute or post-acute care. Most CAH beds are swing beds.
8. When hospitals convert to CAH status they often start to expense purchases of lower cost items (costing less than \$5,000) rather than record the items as assets on their books and depreciate them. For example, a hospital could expense 10 beds that cost \$4,000 each rather than capitalize those items and depreciate them. Hospitals expense the items rather than depreciate them so that Medicare will reimburse them in the current year rather than over the life of the item. The net effect is that our estimates of increases in converting hospitals' depreciation expense and capital expenses may be understated because of this change in hospitals' policies about what assets are capitalized and what assets are expensed.

A P P E N D I X

A

Mandate for report

Mandate for report

Medicare Prescription Drug, Improvement, and Modernization Act of 2003, Section 433

(a) **IN GENERAL**—The Medicare Payment Advisory Commission shall conduct a study of the impact of sections 401 through 406, 411, 416, and 505. The Commission shall analyze the effect on total payments, growth in costs, capital spending, and such other payment effects under those sections.

(b) **REPORTS**—

(1) **INTERIM REPORT**—Not later than 18 months after the date of the enactment of this Act, the Commission shall submit to Congress an interim report on the matters studied under subsection (a) with respect only to changes to the critical access hospital provisions under section 405.

(2) **FINAL REPORT**—Not later than 3 years after the date of the enactment of this Act, the Commission shall submit to Congress a final report on all matters studied under subsection (a).

A P P E N D I X

B

Regression analysis

Regression analysis

We used regression analysis to estimate the relationship between hospital cost per service under the outpatient prospective payment system (PPS) and total volume of outpatient services. In theory, cost per service should decline as the number of services increases.

The unit of observation in our regression is the hospital. The dependent variable is hospital cost per outpatient PPS service, adjusted for geographic differences in the price of inputs. We measured input prices with the hospital wage indexes that CMS uses to adjust outpatient PPS payments for geographic differences. The explanatory variables include the number of outpatient services furnished to all patients (not just Medicare beneficiaries), a service-mix index that measures the complexity of services hospitals provide, and a number of 0/1 variables that reflect hospital characteristics that could affect costs in the outpatient department. We used natural logs of the dependent variable, volume of outpatient services, and the service-mix index. All variables used in our analysis are from 2004 claims, Cost Report, or Provider of Service files.

Graphic analysis showed that the relationship between outpatient cost per service and volume of service is nonlinear. As volume increases, outpatient cost per service decreases at a fast rate at low volumes and a slow rate at high volumes (Figure B-1, p. 28). Natural log transformations often create linear relationships when the relationship between untransformed variables is nonlinear. We examined natural log versions of cost per service and volume and found the relationship is still nonlinear. In response, we used a spline function on the log-transformed variables. The spline function groups hospitals by volume of services and estimates a distinct relationship between cost per service and volume for each group. We chose the spline function because it fits the data reasonably well and is easier to apply as a payment policy tool than alternatives such as a quadratic function. Our spline function collects hospitals into these three groups:

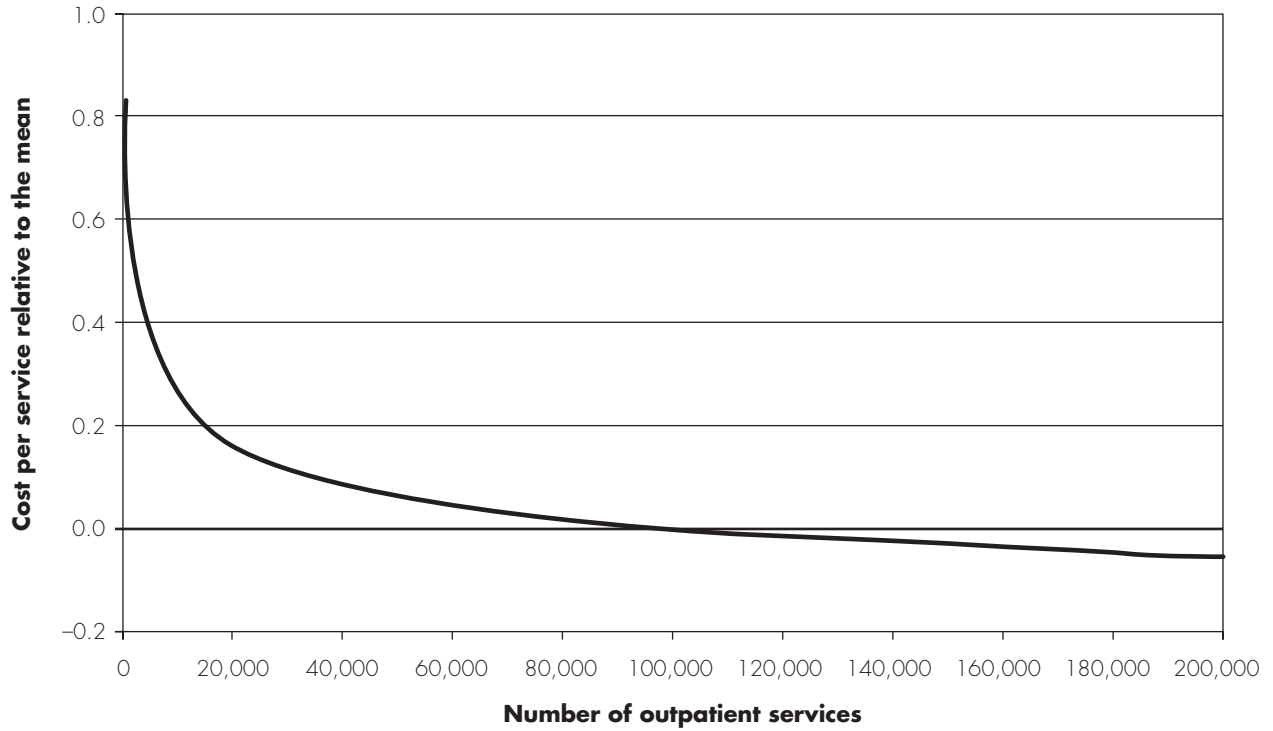
- fewer than 25,000 outpatient services,
- at least 25,000 services but fewer than 225,000 services, and
- at least 225,000 services.

For each group, we estimated the relationship between volume and cost per service.

Results from our regression analysis verify our graphic analysis: cost per service declines at a faster rate among low-volume than among high-volume hospitals (Table B-1, p. 29). Among hospitals that provide fewer than 25,000 services, a 10 percent increase in volume results in a 1.2 percent decrease in cost per service. Among hospitals that provide at least 25,000 but fewer than 225,000 services, a 10 percent increase in volume results in a 0.8 percent decrease in cost per service. Finally, among hospitals that provide at least 225,000 services, the decrease in cost per service caused by increases in volume is not statistically different from 0. Although hospitals benefit from economies of scale all the way up to roughly 225,000 units of service, we propose

Figure B-1

Outpatient cost per service decreases as volume increases



Note: Number of outpatient services reflects services provided to all patients, not just Medicare beneficiaries.

Source: MedPAC analysis of 2003 and 2004 outpatient claims files, 2004 Cost Report file, and 2004 Provider of Services file from CMS.

Table B-1**Cost per outpatient service declines as outpatient volume increases**

Variable	Coefficient	t-statistic
Constant	5.85	21.36
Volume of outpatient services		
<25k	-0.12*	-4.49
25k-225k	-0.08*	-8.59
>225k	-0.01	-0.56
Service complexity mix	0.77*	45.06
Outpatient surgery in hospital	0.01	1.02
Government hospital	0.00	-0.46
For-profit hospital	-0.08*	-5.75
Medical residents per discharge equivalent		
Second quintile	0.06*	2.06
Third quintile	0.04	1.49
Fourth quintile	0.09*	3.19
Fifth quintile	0.04	1.78
Occupancy rate		
Second quintile	-0.01	-0.59
Third quintile	0.01	0.36
Fourth quintile	-0.01	-0.55
Fifth quintile	0.04*	2.19
Percent of outpatient services in ER		
Second quintile	-0.04*	-3.28
Third quintile	-0.10*	-6.68
Fourth quintile	-0.13*	-8.89
Fifth quintile	-0.17*	-10.04
Market share		
Second quintile	-0.03*	-2.36
Third quintile	-0.01	-0.82
Fourth quintile	0.00	-0.04
Fifth quintile	0.01	0.41
Percent of inpatient days that are Medicaid		
Second quintile	-0.01	-0.87
Third quintile	0.01	0.49
Fourth quintile	0.00	-0.28
Fifth quintile	0.00	-0.13

Note: ER (emergency room). The dependent variable is costs per service under the outpatient prospective payment system, adjusted for geographic differences in cost of inputs. The dependent variable, volume, and service mix are natural logarithms. All other variables are 0/1 dummy variables. Discharge equivalent = Discharges + (outpatient charges)/((inpatient charges)/discharges)). For residents per discharge equivalent, occupancy rate, percent of outpatient services that are ER services, market share, and percent of inpatient days that are Medicaid beneficiaries, we divided hospitals into quintiles. For each of these variables, we used the first quintile as the point of comparison.

R-squared = 0.60. N = 2,808.

* Significant at 5 percent level

Source: MedPAC analysis of 2003 and 2004 outpatient claims files, 2004 Medicare Cost Report file, and 2004 Provider of Services file from CMS.

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