

C H A P T E R

4

**Improving payment for
inpatient hospital care
in rural areas**

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

4A The Congress should require that rural referral centers' wages exceed the average wage in their area to qualify for geographic reclassification, but these facilities should retain their waiver from the proximity rule.

***YES: 13 • NO: 0 • NOT VOTING: 0 • ABSENT: 3**

.....

4B The Congress should require the Secretary to develop a graduated adjustment to the rates used in the inpatient prospective payment system for hospitals with low overall volumes of discharges. This adjustment should only apply to hospitals that are more than a specified number of miles from another facility providing inpatient care, with appropriate exceptions for topography or weather conditions.

YES: 13 • NO: 0 • NOT VOTING: 0 • ABSENT: 3

.....

4C In fiscal year 2002, the Secretary should implement fully the policy of excluding from the hospital wage index salaries and hours for teaching physicians, residents, and certified registered nurse anesthetists.

YES: 14 • NO: 0 • NOT VOTING: 0 • ABSENT: 2

.....

4D To ensure accurate input-price adjustments in Medicare's prospective payment systems, the Secretary should reevaluate current assumptions about the proportions of providers' costs that reflect resources purchased in local and national markets.

YES: 13 • NO: 0 • NOT VOTING: 1 • ABSENT: 2

.....

4E The Congress should raise the cap on the disproportionate share add-on a rural hospital can receive from 5.25 percent to 10 percent.

YES: 13 • NO: 0 • NOT VOTING: 0 • ABSENT: 3

.....

4F The Congress should revise the target cap for inpatient psychiatric facilities in a way that better addresses differences among them.

YES: 9 • NO: 0 • NOT VOTING: 0 • ABSENT: 7

***COMMISSIONERS' VOTING RESULTS**

Improving payment for inpatient hospital care in rural areas

Rural hospitals have had lower Medicare inpatient margins than urban hospitals throughout the 1990s, and the gap has been widening. Less than a percentage point separated the margins of the two groups in 1992, but the disparity grew to 10 percentage points by 1999. This pattern also applies across all major lines of Medicare business, with rural hospitals' overall Medicare margin dipping below zero. This growing imbalance in Medicare financial performance has occurred despite subsidies for rural hospitals that are almost as high as those for urban hospitals. Although some of the difference in performance may be within hospitals' control, the size of the gap suggests that the payment system does not recognize factors that have a greater effect on the costs of rural hospitals than they do on urban hospitals. In this chapter, we identify several problems in Medicare's payment systems for inpatient hospital care that tend to work against rural hospitals and recommend ways to match payments better to efficient provider costs while improving the financial condition of many rural hospitals.

In this chapter

- A framework for considering rural payment provisions
 - Financial performance of rural hospitals
 - Policy options that do not target payments to specific cost factors
 - Specific problems and solution options
 - Inpatient psychiatric care
-

In response to the deteriorating financial performance of many rural hospitals under Medicare, as well as the large losses on Medicare patients experienced by rural hospitals that operate psychiatric units, the Congress has asked the Medicare Payment Advisory Commission (MedPAC) to:

- review the adequacy and appropriateness of Medicare’s current payment policies for rural hospitals,
- analyze how the unit costs of rural hospitals with psychiatric units vary by the volume of services these hospitals provide, and
- analyze the effect of low patient volume on the financial status of isolated rural providers.

This chapter responds to these congressional mandates through a comprehensive review of Medicare payment policy for inpatient services in rural areas.¹ We begin by discussing a framework for analyzing payments for inpatient hospital services. Next, we examine the financial performance of rural and urban hospitals and compare the value of Medicare’s current special payment provisions for rural hospitals with that of provisions targeted primarily at urban hospitals. The remainder of the chapter addresses four payment system problems that rural hospitals face, options the Commission considered for solving each, and several recommendations.

A framework for considering rural payment provisions

A variety of factors contributes to the difference in Medicare financial performance between rural and urban

hospitals and to rural hospitals’ negative margins across all lines of Medicare business. We believe Medicare’s inpatient payment system has four problems that may inhibit the best possible distribution of payments and that together play a substantial role in rural hospitals’ lower margins. We also believe that improvements in the payment system to solve these problems are feasible—some immediately and some in the longer run. The four are:

- failure to account directly for small scale of operation,
- failure to account for longer lengths of stay, that may result from limited access to post-acute or follow-up ambulatory care services,
- limitations in the measurement of input prices (Medicare’s wage index system), and
- unequal disproportionate share (DSH) payments.

The first three issues concern systematic differences between urban and rural hospitals’ per unit costs arising from factors that generally are beyond their control. The fourth issue involves differences among hospitals in the volume of services they provide to low-income patients, with treating poor patients generally reducing hospitals’ revenue rather than raising their costs. In each case, Medicare’s payment system either does not address the underlying differences or appears to address them in a way that works against rural hospitals. We believe these four problems not only help explain the difference in financial status between rural and urban hospitals, but also explain why this difference has widened over the last decade.

In the broadest terms, our options for improving Medicare’s payments to rural hospitals are:

- expand cost-based (or even cost-plus) payment to more hospitals, or
- make the prospective payment system (PPS) more responsive to the circumstances of rural hospitals.

Cost-based payment would make up for any inaccuracies in the payment system, but it would offer no incentive for providers to operate efficiently—a key goal of Medicare’s payment policy.² In addition, cost-based payment would not allow hospitals to earn a margin to help fund capital development or offset uncompensated care.³ A cost-plus policy would limit that problem, but would exacerbate the lack of cost control.

In contrast, prospective payment gives hospitals an incentive to control costs, but the need to group patients in a PPS means that a tolerable amount of variation in costs among cases within each group can be achieved only with a significant volume of patients.⁴

In considering refinements to the PPS, we again have two broad options:

- rely on programs that provide extra payments to groups of rural hospitals without targeting payments to specific cost-influencing factors, or
- develop payment adjustments that attempt to target payments more accurately at the hospital-specific level.

For hospitals covered by the inpatient PPS, this chapter addresses 20 different policy options (Table 4-1). Some are mutually exclusive, but many could be

1 The Congress did not restrict the last of these studies—analysis of the effects of low volume on financial status—to hospital inpatient services. Chapter 5 discusses the relationship of volume and per unit costs for hospital outpatient services.

2 We do not have a reliable way to quantify the efficient costs of providing services to Medicare patients, but the concept is still useful in guiding our assessment of payment policy. Measuring the average costs of broad groups of hospitals while standardizing for differences in case mix and other cost-influencing factors can provide useful input, however, and we use this approach throughout the chapter.

3 Although cost-based payment reimburses a hospital over time for its past capital expenditures, such payment does not adequately cover the effects of inflation or technological advancement on the costs of plant and equipment. The only uncompensated care expenses a cost-based payment system would cover are Medicare co-payments and deductibles that beneficiaries fail to pay.

4 Variation in costs among patients in a fixed-price system increases hospitals’ financial risk.

employed simultaneously. We considered each option because it relies on an existing Medicare program, has been proposed by a leading industry group, or showed promise in addressing one of the four problem areas identified above. For psychiatric facilities, we have considered several options for reforming Medicare's per discharge payment limits, which currently treat facilities in either urban or rural areas and facilities that are either free-standing or hospital-based as if they provided the same types of care and faced the same operating constraints.

Medicare has six payment provisions designed to protect access to inpatient care for Medicare beneficiaries in rural communities by providing extra payments to their hospitals. Some of these policies have been extended on a limited basis to urban hospitals as well (see box, page 58). Four programs—rural referral, sole community, small rural Medicare-dependent, and critical access—can be characterized as offering favorable payment methods to defined groups of rural hospitals based on criteria that do not relate to specific cost factors that are beyond hospitals' control. The sole community hospital program, for example, requires only that hospitals be isolated as evidence of their critical role in maintaining access to care. Although isolated hospitals are perhaps more likely than others to suffer from problems such as small scale of operation, isolation itself does not have a systematic effect on unit costs.

Medicare's goal of matching payments to efficient providers' unit costs is best met by accounting directly in the payment system for factors that are generally outside management control and that have substantial and systematic cost effects. In assessing rural hospitals' needs, therefore, we will first attempt to develop targeted payment adjustments that reflect the most important cost-determining factors, or, where feasible, to improve the accuracy of existing payment adjustments. Often this will affect payments to all hospitals, not just rural ones.

If successful, this approach may reduce or even eliminate the need for some of our current special payment provisions, and we will review these existing programs to determine whether and under what conditions they might be phased out. If the approach ultimately proves infeasible, however, it may be necessary to consider options, including cost-based or cost-plus payment for select facilities, a blend of cost-based and prospective payment, or various types of subsidies or grant programs. At this point, we still believe

that the Congress and the Health Care Financing Administration (HCFA) can modify the inpatient PPS to meet the needs of most rural hospitals, and we are not likely to know whether additional alternatives are needed until a number of system changes are implemented and their impacts evaluated.

We must consider all of these policy options in a broader context. Acute inpatient care is only one of numerous services a hospital may provide. Inpatient

TABLE 4-1 Policy options for inpatient hospital care covered by the Medicare prospective payment system in rural areas

Options that do not target payments to specific cost factors

- Maintain rural referral center program
- Maintain sole community hospital program
- Maintain small rural Medicare-dependent hospital program
- Maintain critical access hospital program
- Raise the rural base payment rate

Options that address specific problems in the payment system

Problem: Small scale of operation

- Implement a low-volume adjustment
- Add an access-related eligibility standard to the low-volume adjustment

Problem: Longer lengths of stay, possibly resulting from limited access to postacute care services

- Extend expanded transfer policy to all diagnosis related groups and return savings to base payments
- Apply the skilled nursing facility prospective payment system to swing beds
- Extend the expanded transfer policy to swing beds

Problem: Limitations in input price adjustment—relating to occupational mix in the wage index

- Adjust for occupational mix (future)
- Implement a wage index floor
- Compress wage index values toward the mean
- Speed up the phase-out of teaching physician data

relating to labor markets used for the index wage

- Redefine labor markets (future)
- Continue to rely on geographic reclassification

relating to the labor share to which the wage index is applied

- Reduce the labor share
- Use hospital-specific labor shares

Problem: Unequal disproportionate share payments

- Use a broader definition of low-income share and consistent distribution formula (future)
- Raise the cap on disproportionate share payments

Source: MedPAC.

Medicare's current special payment provisions

Over the years, the Congress has enacted a variety of policies that provide special payments to certain types of rural hospitals. These policies are intended to support rural hospitals that are important or solitary sources of medical services for Medicare beneficiaries. Medicare has designated four groups of hospitals to receive special Medicare payments—rural referral, sole community, small rural Medicare-dependent, and critical access hospitals. The program also has developed two other focused payment policies for rural hospitals: geographic reclassification and swing beds (though reclassification is not limited to rural hospitals). This section describes each program, the criteria to qualify, and the special payments provided to qualified hospitals. More information about each program is available in Appendix B.

Geographically reclassified hospitals

Geographic reclassification allows a hospital to be paid under the wage index, base rate, or both of another area. Both urban and rural hospitals may be reclassified. Hospitals apply separately to receive another area's wage index or to receive the base rate for large urban areas, which is 1.6 percent higher than the rate for other urban and rural areas.^a

To qualify, a hospital must demonstrate that its area wage index and/or base payment rate does not adequately address the input costs it faces, and it must prove proximity and similarity to the area of reclassification. Proximity may be based on distance or employment patterns. Separate similarity tests apply to reclassification for wage index and base payment rate, but the hospital must seek reclassification to the same area for

both. For wage index reclassification, a rural hospital's wages must be more than 106 percent of the average for its own area and at least 82 percent of the average in the area to which it seeks reassignment. For base rate reclassification, a hospital must demonstrate that its costs are closer to the amount it would be paid if it were reclassified than to the amount under its current classification.

Rural referral centers

The rural referral center (RRC) program was established to support high-volume rural hospitals that treat a large number of complicated cases and function as regional or national referral centers. In the first year of the program, only rural hospitals with 500 or more beds received special treatment as referral centers. Congress subsequently liberalized the definition, requiring that rural hospitals either have 275 or more beds available for use, or meet other criteria relating to discharge volume, case mix, specialty composition of medical staff, source of inpatients, and referral volume.

When the inpatient prospective payment system (PPS) maintained separate rates for urban and rural areas, RRCs were paid the urban base payment rate. Today, rural areas and urban areas of fewer than 1 million people have the same base payment rate, so RRCs generally receive the same base payment as any other rural facility. However, they still receive preferential treatment in two ways. First, RRCs must meet less stringent standards for geographic reclassification to another wage index area; they do not have to meet the proximity criteria, nor must they show that their average wage exceeds 106 percent of their actual area's average. Second, RRCs may receive higher disproportionate share (DSH) payments than small urban and

most other rural hospitals receive (although their formula is still less advantageous than that available to large urban hospitals). Before the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA), RRCs also could qualify more easily for DSH payments than other rural hospitals because of a marginally lower eligibility requirement.

Sole community hospitals

The sole community hospital (SCH) program was created to maintain access to needed health services for beneficiaries in isolated communities. The SCH program provides higher payments to hospitals that are geographically isolated—and thus are believed to play a critical role in providing access to acute care—and that had above-average costs in a base year for the mix of patients they served. To qualify as an SCH, a hospital must be 35 road miles from the nearest similar hospital, or meet other criteria designed to establish that it is a community's sole source of care.

SCHs receive the higher of a per-case payment based on their inpatient costs per discharge updated from 1982, 1987, or 1996 or PPS payment with more liberal access to DSH payments.^b A hospital's base year costs per discharge are updated to the current year by the PPS operating update factor and adjusted to reflect its current case-mix index (CMI). If the SCH receives the PPS rate and qualifies for a DSH adjustment, the adjustment is up to 10 percent rather than the maximum of 5.25 percent received by most other rural hospitals. Further, SCHs are not required to meet the proximity requirement of geographic reclassification.

(continued next page)

^a A large urban area has a population of more than 1 million.

^b The option for a 1996 base year was added by the Balanced Budget Refinement Act of 1999 and went into effect for fiscal year 2001.

Medicare's current special payment provisions

(continued from prior page)

Small rural Medicare-dependent hospitals

The small rural Medicare-dependent hospital (MDH) program was created to provide financial protection to hospitals for which Medicare revenue makes up a large share of total revenues. These hospitals were believed to be more vulnerable to inadequate payments under the PPS than otherwise similar rural facilities.

To qualify for MDH designation, a facility must be located in a rural area, have no more than 100 beds, not be classified as a sole community hospital, and have at least 60 percent of inpatient days or discharges attributable to Medicare patients.

Medicare-dependent hospitals are paid similarly to sole community hospitals, receiving the greater of the PPS rate or base year costs from 1982 or 1987 trended forward. MDHs, however, receive half of the difference between PPS and cost-based payments when their trended per case cost is higher, and they do not receive the option of 1996 base-year costs. Also, MDHs do not receive preferential treatment for DSH payments or geographic reclassification.

The MDH designation was originally restricted to hospitals that qualified in 1987, but the BIPA added the option for hospitals to qualify based on an average of two of the last three years of data. However, a Health Care

Financing Administration (HCFA) analysis found that all hospitals eligible under the new qualification rules were already designated as MDHs.

Critical access hospitals

The critical access hospital (CAH) program was established by the Balanced Budget Act of 1997 to ensure that beneficiaries in isolated rural communities had access to emergency room and limited inpatient services, including the capacity to stabilize patients and arrange transport to an appropriate larger hospital for complex cases. The program is intended to provide an adequate financial base for facilities in rural areas that cannot support a full-service hospital.^c

To qualify for CAH designation, a hospital must be located more than 35 miles from the nearest similar hospital and have an average length of stay not exceeding 4 days. A state governor may also designate as a CAH a hospital that does not meet the distance requirement, subject to the Secretary's approval. A CAH must provide 24-hour emergency care services and have no more than 15 acute-care beds and 10 swing beds.

CAHs are paid their current Medicare-allowable costs for inpatient and outpatient services, and the BIPA exempted their swing beds from the skilled nursing facility (SNF) PPS. CAHs that operate distinct-part SNFs or home health agencies, however, are subject to the PPSs for those services.

Full cost-based payment provides more protection than the payment approach of the SCH and MDH programs, which limit the rate of growth in per-case payments from a base year. Under the SCH and MDH programs, a facility could receive Medicare payments that do not cover its costs of inpatient services.

Swing beds

A swing bed is a hospital bed that can be used to provide either inpatient or post-acute care. The swing bed program is intended to enhance access to post-acute care in rural communities. It allows rural hospitals to provide SNF services to Medicare patients and other long-term care services to Medicaid patients.

To qualify as a swing-bed provider, a rural hospital must have fewer than 100 beds. If required by the state, the hospital must have been granted a certificate of need for the provision of long-term care services.

Hospitals with swing beds are paid the average Medicare rate per patient day for routine services provided in freestanding SNFs in their census region. Ancillary services are reimbursed on a reasonable cost basis, with costs determined in a manner comparable to that of all other ancillary services provided by the hospital. HCFA has proposed applying the SNF PPS to swing beds in October 2001—three years after the system's implementation. ■

^c The CAH program replaced the essential access community hospital, rural primary care hospital, and Montana medical assistance facilities programs, which had similar features.

care commands a smaller share of resources in rural than in urban hospitals, and coordination of inpatient services with ambulatory, post-acute, and long-term care is critically important. In addition, many of the problems we discuss for

inpatient services (small scale of operation in particular) may also apply to the other services that rural hospitals typically furnish; consequently, some of the potential solutions may have wider applicability.

We must also recognize that isolated rural communities face travel and resource constraints. Health care must be delivered locally, and some rural markets cannot realistically generate the demand or attract the human and capital resources needed to

operate a hospital—particularly one that furnishes acute medical and surgical services. This problem is no different for a hospital than it would be for a community college or shopping center, and Medicare should not be the vehicle for funding community development. Rather, Medicare should pay for the efficient costs of providing services to Medicare beneficiaries, recognizing that such costs may be higher (measured either per capita or per unit of service) in communities that are small but still capable of supporting facility-based health services.

Financial performance of rural hospitals

Medicare is the largest purchaser of health services from hospitals and plays a larger role for rural hospitals than for those in urban areas. Although rural hospitals tend to fare poorly under Medicare relative to their urban counterparts, their total margins—which incorporate all sources of revenue—have been consistently higher. To provide context for the policy options explored in the chapter, this section compares cost trends, Medicare margins and total margins of rural hospitals with those of urban facilities. The section also examines the special payments provided under Medicare to certain rural hospitals and compares their value with that of the special payments that tend to benefit urban hospitals.⁵

Financial performance under Medicare

The Medicare inpatient margin is lower for rural hospitals than urban hospitals due to lower payments and relatively higher cost growth.⁶ Differences in payment levels have been relatively constant over time; most DSH and indirect medical

education (IME) payments go to urban hospitals and contribute substantially to their higher margins. But the cumulative change in costs per case between 1990 and 1999 was over 15 percentage points higher for rural hospitals than for urban ones; this has caused the gap in the inpatient margin to grow steadily, to nearly 10 percentage points (Table 4-2). The current difference in inpatient margins between rural and urban hospitals appears to be due as much to higher rates of cost growth for rural hospitals as to inherent differences in payment policy.

Much of rural hospitals' higher growth in costs per case appears to have been caused by smaller reductions in length of stay. Since 1989, urban hospitals' length of stay declined 34 percent, compared with 25 percent for rural facilities. Although additional analysis is needed, the larger drop for urban hospitals may be due largely to better access to providers of post-acute and follow-up ambulatory care in their service areas. Higher cost growth in rural areas may also reflect a lack of hospital competition and low levels of managed care penetration.

The aggregate percent increase in payments resulting from additional payments to hospitals in Medicare's special rural programs, as well as from geographic reclassification, DSH payments, and IME payments, is fairly close for urban and rural hospitals (Table 4-3). This has occurred despite the vast disparity in terms of actual dollar outlays through these payment provisions to urban and rural hospitals. Changes in DSH payment policy under the Medicare, Medicaid and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA) will bring the total impact of special payment provisions for rural hospitals (9.7 percent) close to that for urban hospitals (11.5 percent).

TABLE 4-2 Hospital financial performance, by urban and rural location, 1999

Hospital group	Medicare inpatient margin	Overall Medicare margin	Total margin
Urban	13.5%	6.9%	2.9%
Rural	4.1	-2.9	4.7

Note: 1999 data are preliminary; the inpatient and total (all sources of revenue) margins are based on two-thirds of hospitals covered by prospective payment, while the overall Medicare margin is based on one-half of hospitals covered by prospective payment.

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

Similar to the inpatient margin, the overall Medicare margin is lower for rural hospitals than urban hospitals, and the gap has widened each year from 1996 through 1999.⁷ In 1998 and 1999 this margin was negative for rural hospitals and the disparity between urban and rural hospitals reached 10 percentage points. This is due to lower inpatient margins as well as relatively higher shares of outpatient and post-acute care, which have the lowest payments relative to costs.

Financial performance for all sources of revenue

Total margins for the hospital industry as a whole fell substantially in the late 1990s, but rural hospitals' total margins have not declined as much as those of urban hospitals.⁸ Reduced margins were due to slower growth in Medicare payments, continued pressure from managed care organizations and other private payers, losses from alternate lines of service and divestiture of these ventures, and a return in 1998 and 1999 to cost increases after an

5 For a more detailed comparative analysis of financial performance, see Appendix C, which includes financial analyses for groups of rural hospitals over the last decade as well as a full accounting of the value of Medicare's special payments for rural and urban hospitals.

6 The inpatient margin is calculated (in percentage terms) as the difference between inpatient payments and Medicare-allowable inpatient costs (as derived from the cost report each hospital submits to HCFA) divided by inpatient payments. The same general approach is used for the overall Medicare margin and the total margin.

7 The overall Medicare margin measures Medicare's payments and associated costs for graduate medical education activities plus Medicare's five largest hospital services—inpatient care covered by the PPS, inpatient rehabilitation and psychiatric units, outpatient departments, hospital-based home health agencies, and hospital-based skilled nursing facilities.

8 The total margin reflects all patient care services—those covered by all payers and uncompensated care—plus non-patient sources of revenue.

**TABLE
4-3**

Total value of Medicare special payment provisions for urban and rural hospitals, 2000

	Additional payments	
	Amount (billions)	Percent
Under previous policy		
Urban hospitals	\$7.2	11.4%
Rural hospitals	0.8	8.0
With legislated increase in disproportionate share payments under the BIPA		
Urban hospitals		11.5
Rural hospitals		9.7

Note: BIPA (Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000). Additional payments refers to the difference between what hospitals received under prospective payment and what they would have received without special payment provisions. The BIPA lowered the disproportionate share (DSH) eligibility threshold and raised the DSH adjustment rate for rural hospitals and urban hospitals with fewer than 100 beds.

Source: MedPAC analysis of data from HCFA.

era of very low or negative cost growth. Private-sector pressure and business losses occurred most frequently for urban hospitals, allowing rural hospitals to fare relatively better during this period.

Rural hospitals' total margins are higher because their payments from private payers exceed associated costs by far more than those of urban hospitals. These above-cost payments—more than 34 percent higher than costs throughout the 1990s—continue to offset lower Medicare and Medicaid margins despite rural hospitals having a smaller proportion of private-sector business and higher cost growth in recent years. Private-payer payments to urban hospitals, in contrast, have fallen from 132 percent of costs in 1995 to 114 percent in 1999.⁹ Private-

payer payments are higher in many rural areas primarily because of limited hospital competition and low levels of managed care penetration.

A hospital survey jointly sponsored by HCFA and MedPAC has found that the total margin for all hospitals improved to 4.7 percent in fiscal year 2000, from 3.2 percent for 1999. A key factor in this improvement appears to be better negotiation with managed care organizations and fewer one-time losses from leaving alternate lines of business—neither of which are applicable to most rural hospitals. Thus, the increase in 2000—along with the drop in 1999—appear to be primarily urban hospital phenomena, and we expect that in 2000 the gap in total margin between urban and rural hospitals will close somewhat.¹⁰

Financial performance by degree of ruralness

Hospitals located in the most isolated rural areas tend to have substantially higher Medicare inpatient margins than other

rural hospitals, and fewer have negative margins (Table 4-4). This suggests that the special payment programs that target isolated hospitals have—on average—had a positive effect. The overall Medicare margin is also higher for the most isolated rural hospitals relative to other rural hospitals.

Although large urban hospitals and the most isolated rural hospitals have the highest Medicare inpatient margins, they have the lowest total margins. Efforts to increase Medicare payments to hospitals in these areas may have had a favorable impact, but they may not be enough to make up for other market pressures. Large urban hospitals face the most financial pressure from uncompensated care and managed care, while isolated rural hospitals face pressures from low patient volume and difficulty in attracting skilled workers. These pressures underscore the conclusion that the problems of these hospitals extend to factors beyond Medicare.

**TABLE
4-4**

Hospital financial performance, by urban and rural location, 1999

Hospital location (UIC)	Medicare inpatient margin	Overall Medicare margin	Total margin
Urban, in an MSA (1,2)	13.5%	6.9%	2.9%
Rural			
Adjacent to an MSA and includes a town with at least 10,000 people (3,5)	3.1	-3.2	4.5
Adjacent to an MSA but does not include a town with at least 10,000 people (4,6)	6.0	-2.2	3.9
Not adjacent to an MSA but includes a town with at least 2,500 people (7,8)	4.5	-2.7	5.3
Not adjacent to an MSA and does not include a town with at least 2,500 people (9)	8.4	-0.1	-0.4

Note: UIC (urban influence code, as defined by the U.S. Department of Agriculture). MSA (metropolitan statistical area, as defined by the U.S. Office of Management and Budget). Data are preliminary; the inpatient and total (all sources of revenue) margins are based on two-thirds of hospitals covered by prospective payment, while the overall Medicare margin is based on one-half of hospitals covered by prospective payment.

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

⁹ Findings based on MedPAC analysis of data from the American Hospital Association Annual Survey of Hospitals.

¹⁰ The effect of stock market losses on non-operating revenue could mitigate these gains. However, the margins data cited reflect hospitals' experience through September 2000, a period in which substantial equity losses had already occurred.

Policy options that do not target payments to specific cost factors

Medicare's rural referral, sole community, small rural Medicare-dependent, and critical access hospital policies attempt to address perceived financial hardship of rural hospitals by providing financial assistance to a group of hospitals without targeting to a specific cost-increasing factor that is beyond hospitals' control. One proposal for providing further assistance to rural hospitals—raising the rural base payment rate—also uses this approach.

Current special payment policies

Rural hospitals in special payment groups tend to have relatively higher inpatient and overall Medicare margins, which suggests that these policies have been successful in raising payments for qualifying hospitals. However, this does not mean that the policies have targeted special payments to the correct hospitals; they may have included hospitals that do not merit special payments or missed hospitals that should receive them.

This section addresses the intent of the current policies and how well they address Medicare's overarching goals of preserving access to care for beneficiaries and paying the efficient costs of providing care. The critical access hospital (CAH) program appears to play an important role in preserving access to care and should definitely be maintained. Funds expended for the other three programs—rural referral, sole community and small rural Medicare-dependent—might in the long run be better spent on payment adjustments that target assistance to factors that systematically increase the costs or reduce the revenue of many rural hospitals, as well as some urban facilities. All existing programs must be maintained in the short run, however, until new payment policies have been implemented and their effects evaluated.

Rural referral centers

The rural referral center (RRC) program was intended to support high-volume rural hospitals that treat complicated cases and function as regional or national referral centers. Because RRCs treat more complex cases, it was presumed they would compete with urban hospitals for skilled staff, making their compensation costs more like those of urban than rural hospitals.

Many of the current RRCs do not reflect the original intent of the policy. Some are classified as RRCs when they no longer are located in a rural area, do not meet the bed size requirement, or no longer meet criteria relating to case mix, discharge volume, staffing, or referrals. Although RRCs might have higher costs attributable to treating more severely ill patients, these costs are accounted for by the payment system. The same holds true for costs associated with teaching activities and higher wages. After taking these factors into account, we found that these hospitals' costs are not above average.

RRCs follow more lenient geographic reclassification criteria than other hospitals. Although their wages must be at least 82 percent of those in the area to which they seek assignment, they need not be located within 35 miles of that area nor have wages at least 106 percent of those in their own area. Consequently, 80 percent of RRCs are reclassified, compared with 13 percent of other rural hospitals.

Geographic reclassification appears necessary in the short run to compensate for the large rural labor areas Medicare uses for application of the hospital wage index.¹¹ However, the exception from the wage rate criteria granted to RRCs appears overly broad. If these hospitals employ a more expensive staff mix and pay higher wages than other rural hospitals in their states, their average wage rate should exceed the 106 percent threshold required for reclassification. In such a case, a waiver from the rule would not be necessary; otherwise, this benefit may not be appropriate.

In fiscal year 2000, half of the 177 RRCs reclassified to a new area had wages that were not above 106 percent of the statewide rural average; therefore, these hospitals qualified for reclassification solely because of their RRC status. Of those reclassified, nearly one-quarter had wages below the statewide rural average, and thus were already receiving favorable payments relative to their labor costs.

RECOMMENDATION 4A

The Congress should require that rural referral centers' wages exceed the average wage in their area to qualify for geographic reclassification, but these facilities should retain their waiver from the proximity rule.

RRCs should maintain their waiver from the 35-mile proximity rule at least until labor markets are redefined and the wage index is adjusted for differences in occupational mix. RRCs are frequently located close enough (although not necessarily within 35 miles) to one or more urban areas that, given their specialized services, they might be expected to compete with hospitals in those areas for skilled personnel.

Sole community hospitals

The sole community hospital (SCH) program has probably helped to preserve access to care in isolated and sparsely populated communities by targeting hospitals that have higher-than-average costs given their circumstances. Our analysis documented these higher costs after accounting for other factors that could affect costs, such as low volume, case mix, and teaching activity. The higher costs of SCHs could be due to factors other than scale, such as longer lengths of stay linked to an inability to place patients into appropriate post-acute care.

The SCH program, however, has two distinct disadvantages. First, payments based on hospital-specific costs do not necessarily align payments to the efficient cost of production. A hospital's base-year costs may have been relatively high given its volume and case mix at the time,

¹¹ This issue is discussed in greater detail later in the chapter.

reflecting inefficiency. In addition, although adjusted for current-year case mix, base-year costs do not relate a hospital's payment rate to its current volume, which has a strong relationship with underlying costs. A hospital's base rate for SCH payment reflects its volume in the base year, but volume may have increased—or more likely dropped—significantly since then. In the Balanced Budget Refinement Act of 1999 (BBRA), the Congress allowed for more current base-year costs by adding a 1996 base-year option to the 1982 and 1987 options previously in law, but this will quickly become outdated as well.

Second, SCH policy is not linked to any specific cost-raising factor and therefore may not target the correct facilities. Some relatively isolated hospitals are not SCHs because the distance criterion (35 miles to the nearest similar facility) is rather strict. Conversely, not all isolated hospitals have low volume or other factors outside their control, and PPS payments may be appropriate for these facilities. Finally, not all SCHs are isolated; only 13 percent of SCHs would meet even a liberalized standard of 25 road miles from the nearest PPS hospital or CAH.¹²

A set of PPS payment adjustments might raise the payments of isolated rural hospitals enough that few would continue to benefit from a base payment trended forward. However, we believe it will be necessary to maintain the SCH program until a new set of more targeted payment adjustments is implemented and their impact is known. Then the Congress and HCFA could consider phasing out this program if it appears to have become redundant or only benefits facilities that do not merit special payments. At that point, continued extra payments to SCHs might result from cost inefficiencies implicitly supported by cost-based payments, but could also be due to other legitimate cost-raising factors. It will likely take several years for all the necessary policy changes to be fully implemented, so the program should at the

least be kept in place on an interim basis, and the need to maintain it permanently cannot be ruled out.

Small rural Medicare-dependent hospitals

The small rural Medicare-dependent hospital (MDH) program is intended to provide financial protection to hospitals whose relatively large share of Medicare patients may make them vulnerable to inadequate payments under the PPS. The MDH program probably has done less to preserve access to care than the SCH program has; we have found that MDHs have lower-than-average costs (after taking into account other factors reflected in the payment system) and the highest inpatient margins of all rural hospital groups.

Like the SCH program, the MDH program does not necessarily align payments with efficient costs and qualification is not linked to any specific cost-raising factor. It appears that the principal argument in favor of the MDH program concerns the extra vulnerability to Medicare payment policy of hospitals with a greater dependence on Medicare. This is not an insignificant consideration, but we would prefer to develop a system that recognizes the unique characteristics and problems of rural hospitals so that dependence on Medicare is not a factor.

As with the SCH program, the MDH program should be reviewed after targeted payment adjustments are implemented and their impact is known. If the MDH program becomes redundant or only benefits facilities that do not merit special payments, it could be phased out.

Critical access hospitals

The CAH program is designed to provide an adequate financial base for facilities located in isolated rural areas that cannot support a full-service hospital. The program has played a valuable role in maintaining access to care for Medicare beneficiaries, and appears to have actually

improved access to care. Some facilities that closed before the program was implemented have since reopened as CAHs. Further, the cost-based payment used for CAHs is probably appropriate given their very low volume. However, while cost-based payment may be justified in preserving access in resource-challenged communities, it does not promote the efficient production of services and thus should not be relied upon more than necessary.

Growth in the number of CAHs has been substantial over the last year. In April 2001, there were 375 CAHs, compared with 219 in the fall of 2000. CAHs now make up more than 17 percent of all rural hospitals, and this number will almost certainly increase. This rapid growth reflects a number of factors, including continued loss of volume and increased unit costs in many rural hospitals, a BIPA provision clarifying cost-based payment to laboratory services for CAHs, and hospitals' efforts to avoid the effects of the outpatient PPS.

CAHs are heavily concentrated in a small number of states, especially in the Great Plains region. As of March 2001, five states—North Dakota, South Dakota, Nebraska, Kansas, and Oklahoma—had 119 CAHs total; Nebraska alone had 44. Conversely, California, Wyoming, and Mississippi had one each, while Utah, Arizona, and Alabama had none. Texas, with the largest rural land mass of any state besides Alaska and with among the most hospitals of any state, had only nine CAHs.

The rapid increase in the number of CAHs has included some facilities that may fall outside the intent of the program. For example, the liberalized length of stay requirement (from a maximum of four days per admission to an average of four days) may pave the way for some hospitals to qualify for cost-based payment without any change in organization. In addition, some hospitals that do not meet the 35-mile requirement

¹² Because CAHs are not considered full-service inpatient providers, HCFA does not count them as a similar facility in determining whether an applicant for the SCH program meets the 35-mile requirement. As such, one hospital becoming a CAH might result in another hospital in the community becoming eligible for the SCH program. This suggests that as the CAH program grows (at a rate of over 65 percent in the last year), so too could the number of SCHs. There are now more than 830 SCHs, 75 more than two years ago, and HCFA reports applications in 2001 that may raise that number further.

have been designated as CAHs by their state governors, although this is done in the context of a comprehensive state plan (required by HCFA) for the delivery of health care in each state's rural areas.

The advantages to a hospital of cost-based payments for inpatient, outpatient, and swing-bed services could be substantial. Very small rural hospitals—including CAHs—provide a relatively greater proportion of outpatient and post-acute services. However, approximately one in three CAHs operate rural health clinics in place of outpatient departments, to take advantage of full cost-based reimbursement over Medicare's former policy of paying discounted costs for outpatient services. These hospitals would still receive the preferential payment for their rural health clinics without CAH status.

Despite the potential benefits, the CAH program can limit a provider. Cost-based payments may not be viable in the long run because a CAH can never achieve a positive margin for Medicare services to help fund uncompensated care or capital development. In effect, the only way a CAH can generate above-cost revenues is by finding ways to allocate more of its overhead or ancillary costs to Medicare on its cost report, behavior that we would not want to encourage.

The requirements to qualify as a CAH can also limit a hospital's ability to offer a range of services. The average length of stay requirement may affect the ability to provide psychiatric and rehabilitation services, which tend to have longer-than-average lengths of stay and would be included in calculation of the facility's average length of stay for CAH qualification. The practical effect is to make such units unlikely for CAHs, possibly reflecting that these services were not viewed as "critical" in the same way that emergency room and basic inpatient services were when the CAH program was established.

By implementing PPS payment adjustments targeted to small and isolated rural hospitals—particularly a low-volume

adjustment, as discussed in the next section—we may be able to make PPS rates attractive enough to enable many small hospitals to conclude that they need not apply for CAH status. This would minimize Medicare's exposure to cost-based payment. Under current law, hospitals are not allowed to return to PPS status once they have been designated CAHs, but if targeted payment changes that would affect them are implemented, HCFA should consider (and Congress could require) allowing CAHs to return to PPS.¹³

An adjustment to inpatient payments based on low volume may not work well for many CAHs, in part because volume is inherently unstable at low levels; below a certain number of cases, the adjustment required to ensure an adequate revenue flow over time may be unappealing to Medicare as a purchaser of such services. In addition, the benefit to the hospital of avoiding lower payments from the outpatient PPS may be greater than the value of the inpatient adjustment. For these facilities, removal from the PPS through the CAH program may be the best option.

However, we believe the CAH program should be restricted to its intended purpose—ensuring that beneficiaries in small and isolated rural communities have access to emergency room services and basic inpatient care, including stabilization and transfer of complex cases. Cost-based payment is appropriate for that purpose, but should not be extended to mainstream inpatient services in larger communities. The higher payments afforded by a set of targeted PPS payment changes may be enough to prevent this through incentives, but the Congress and HCFA should also keep growth of the program in check by avoiding further liberalization of the qualification criteria. The bed size, length of stay and distance requirements, while restrictive, help to target facilities that play an important role in maintaining access to care and yet are unable to operate as full-service hospitals.

Raising the rural base payment rate

The inpatient PPS originally had separate base payment rates for urban and rural hospitals, but Congress began phasing out the "rural differential" in the early 1990s. Although the same base payment rate now applies in rural areas and most of the metropolitan statistical areas (MSAs) they share borders with, hospitals in large MSAs (those with more than 1 million people) still have a 1.6 percent higher base rate.

This differential, together with the IME and DSH payments made to teaching hospitals concentrated in large urban areas, has contributed to a sizable gap in Medicare inpatient margins by geographic area. The 1999 margin in large urban areas was 16.2 percent, compared with 9.0 percent in other urban areas and 4.1 percent in rural areas. The pattern for total margins, however, is just the opposite: 2.2 percent for large urban, 4.1 percent for other urban, and 4.7 percent for rural areas.

The split in base payments has created interest in raising the rate shared by rural and other urban areas to the level of the large urban rate, primarily as a method of improving payments to rural facilities. This could be done budget neutrally through differential updates (as Congress did previously in eliminating the rural differential) or with new monies.

Arguments can be offered for and against raising the rural (and other urban) base rate. On the one hand, rural hospitals' costs per discharge remain below those of urban hospitals after controlling for other factors accounted for in the payment system (such as teaching activity and wage levels). On the other hand, hospitals in large urban areas do not have higher costs than those in other urban areas. Thus, implementing a single base payment rate would have a mixed impact in terms of matching payments to underlying treatment costs across broad groups of hospitals. One could argue that there is an advantage to applying a single

¹³ It is important to remember that a hospital's decision on whether to apply for or retain CAH status would consider outpatient and swing bed payments along with inpatient payments. In addition, safety code issues might prevent some CAHs from returning to the PPS.

base payment rate to all hospitals and then using targeted payment adjustments to account for costs that differ geographically and that are outside the control of hospital managers. With one base rate, the payment system would have one less set of borders.

From a different perspective, raising the rural base payment rate would not necessarily offer the most accurate means of targeting the payment change to significant cost factors affecting rural providers. Later in the chapter, we discuss the option of extending Medicare's expanded transfer policy, which reduces payments for cases with unusually short lengths of stay, from 10 diagnosis related groups (DRGs) to all DRGs and returning the savings to the base payment rates. Thus, we have two options that could raise rural hospitals' base payment rates by similar amounts, but the methods of funding are quite different:

- For eliminating the differential in base payment rates, all hospitals in large urban areas pay for the increase, regardless of underlying costs or financial performance.
- For extending the expanded transfer policy, those hospitals (urban or rural) that have been successful in raising their inpatient margins by reducing length of stay, at least partly through good access to post-acute care services, pay for the increase.

We believe that our recommendations for targeted payment adjustments (discussed in the next section) will make enough progress in improving the accuracy of inpatient payments (to the benefit of many rural hospitals) that implementing a single base payment rate should not be necessary. Equalizing the base rate would have major financial implications, requiring either a large appropriation or an extensive redistribution of payments. If

implemented with new monies, the change would raise payments to rural and other urban hospitals by 1.1 percent and 1.3 percent, respectively, and would increase Medicare's expenditures by about \$480 million per year. If done budget neutrally, it would raise rural and other urban hospitals' payments by 0.5 percent and 0.7 percent, respectively, but would reduce the payments of large urban hospitals by 0.6 percent.

Specific problems and solution options

This section discusses the four key problems hospitals face with the Medicare inpatient PPS—small scale of operation, the treatment of length of stay, limitations in input price adjustment, and unequal disproportionate share payments—and reviews potential solutions. We recommend implementing a low-volume adjustment, speeding up the phase-out of certain categories of wages from the wage index, investigating whether the labor share used for the wage index should be reduced, and raising the cap on rural hospitals' DSH payments.

Small scale of operation

Making Medicare payments approximate an efficient provider's costs requires accounting for factors beyond providers' control that may affect the costs of furnishing services. Patient volume may be one such factor, particularly in small and isolated communities where some providers cannot achieve the economies of scale and service scope of their larger counterparts and thus have higher per-case costs. The current PPS rates do not directly account for the relationship between cost and volume, potentially placing smaller providers at a financial disadvantage relative to other facilities.¹⁴

The critical access, sole community, and small rural Medicare-dependent programs benefit many small and isolated hospitals, even though these programs do not directly address the small-scale issue. Eligibility for these programs is not well targeted to low-volume hospitals, however, and payments are based at least partially on hospital-specific costs, which may reflect poor management and other provider inefficiencies. A low-volume adjustment could deal with these issues more directly.

Effects of low volume on costs

To determine whether low-volume hospitals have higher costs than other hospitals, we examined the relationship between total (all-payer) inpatient volume and Medicare costs per discharge.¹⁵ Our analysis shows a statistically significant relationship between discharge volume and costs per case, after controlling for cost-related factors in the payment system.¹⁶ The volume and cost relationship is most pronounced for facilities with fewer than 200 discharges per year (Figure 4-1), which have per-case costs that are more than 20 percent higher than average. The relationship levels off after about 500 discharges.

Low-volume hospitals account for only a small fraction of acute care facilities; 2 percent of hospitals have fewer than 200 discharges and 11 percent have fewer than 500. The vast majority of these facilities, 85 percent, are in rural counties. The question then arises: which facilities are low volume and do other payment programs targeted to rural providers address the low-volume issue in another way?

Relationship to current policy

Hospitals' financial performance under Medicare's inpatient PPS, as well as across all payers, is strongly related to

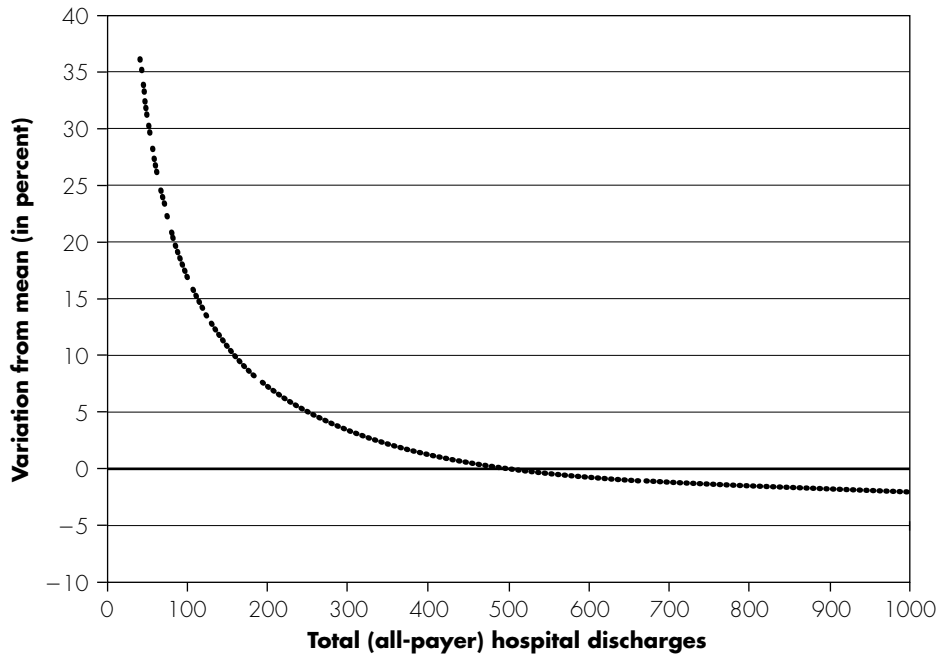
14 The exception is that sole community and small rural Medicare-dependent hospitals with more than a 5 percent drop in total discharges from one period to the next may apply for an adjustment to their payment rates to partially account for the potentially higher patient care costs associated with the drop in patient volume.

15 Although Medicare payments are intended to cover the costs of Medicare patients, a hospital's total volume of service determines its unit costs of production.

16 A statistically significant relationship also was observed when controlling for both payment system factors (such as teaching activity, wage levels, and case mix) and other factors that are thought to affect providers' costs but not used to set payment rates. These include additional measures of hospital outputs (length of stay, outpatient visits, and non-acute patient days), more detailed patient-mix data, provider characteristics, and market attributes.

FIGURE 4-1

Relationship between hospital discharge volume and costs per case, 1997



Source: MedPAC analysis of data from HCFA.

inpatient volume: the Medicare inpatient and total margins both rise as volume increases (Table 4-5). The Medicare inpatient margin is negative for hospitals with 500 or fewer discharges and is

–16.4 percent for those with fewer than 200 discharges. This provides a strong indication that the payment system is not responding to the influence of scale on provider payments. It would appear that

low-volume providers are disadvantaged by rates based on average volume and that current programs targeted to rural providers are not protecting these facilities, despite the fact that the average margin of hospitals in these programs is above that of other rural hospitals.

Our analysis shows that 64 percent of hospitals with 500 or fewer discharges receive special treatment through one of the three current programs targeted to small rural hospitals—sole community, small rural Medicare-dependent, and critical access (Table 4-6). Given this result, we must ask how well these programs compensate for the additional costs low-volume providers incur, particularly when we see most low-volume providers with poor financial performance.

The MDH program is not effective at identifying low-volume hospitals. Only 15 percent of the hospitals with 500 or fewer discharges are classified as MDHs, and just half of these receive payments based partially on hospital-specific rates trended forward. This result is not surprising, because the qualifying criteria for the MDH program have nothing to do with costs and hospitals do not need high Medicare penetration to suffer from the effects of small scale. In fact, our analysis found that MDHs have lower-than-average costs, after controlling for other cost-influencing variables reflected in the payment system.

For sole community hospitals, the picture is murkier. The program covers 27 percent of hospitals with fewer than 500 discharges, but this limited coverage results from the requirement that hospitals must be more than 35 miles from another facility (although some are closer than this because they were grandfathered into the program or meet other criteria). Because any hospital meeting the 35-mile test will qualify, the SCH program by definition covers all isolated low-volume hospitals. Whether the payments hospitals receive under the program are adequate or appropriate is another issue.

TABLE 4-5

Financial performance of hospitals, by discharge volume, 1999

Total discharge volume	Baseline Medicare inpatient		Total	
	Margin	Percent of hospitals with negative margin	Margin	Percent of hospitals with negative margin
Up to 200	-16.4%	66.7%	-1.6%	64.1%
201 to 500	-2.1	50.2	0.0	49.1
501 to 1,000	4.6	39.0	0.3	45.3
1,001 to 2,500	5.0	37.7	2.4	36.2
2,501 to 5,000	6.5	32.7	2.5	31.1
5,001 to 10,000	10.1	24.0	3.6	31.2
10,001 to 20,000	12.3	19.4	4.0	28.7
More than 20,000	17.4	7.4	2.8	26.4

Note: PPS (prospective payment system). The baseline margin is the actual 1999 margin adjusted to reflect the change in disproportionate share payments enacted by the Medicare, Medicaid and SCHIP Benefits Improvement and Protection Act of 2000. Analysis based on data from two-thirds of the hospitals covered by prospective payment in 1999, which includes some that have since been designated critical access hospitals.

Source: MedPAC analysis of data from HCFA.

The critical access hospital program provides assistance to another 22 percent of low-volume hospitals.¹⁷ A large proportion of CAHs, 70 percent, are low volume, in part because these hospitals by definition are small and thus likely to have a low number of discharges.

Overall, 37 percent of low-volume hospitals are not covered by any of the three existing programs; among those that are, a substantial portion does not benefit from hospital-specific payment rates. This leaves a fairly large number of low-volume providers without any special treatment.

Another consideration is whether existing programs target providers that may not need assistance, at least as it relates to low volume. Almost three-quarters of MDHs and SCHs and one-third of CAHs have discharge volumes above the level at which low volume is expected to significantly increase costs.

A final issue concerns the importance of inpatient services to low-volume providers. Revenue from acute-care inpatient services generally makes up a small portion of business; inpatient revenues accounted for less than 40 percent of total revenues in 88 percent of hospitals with fewer than 500 discharges, compared with only 34 percent of higher-volume facilities. Although acute inpatient services do not appear to be a primary focus, this does not necessarily diminish the importance of a low-volume adjustment for these services. Rather, it suggests that attention should be paid to the payment mechanisms Medicare uses for the other services that small and isolated hospitals provide to ensure an adequate overall level of financial performance.

Access considerations

The issue of a low-volume adjustment is most critical for isolated hospitals, where the facility is important for maintaining

TABLE 4-6

Distribution of low volume hospitals, by hospital type, 1997

Hospital type	Share of all hospitals	Share of hospitals with 500 or fewer discharges	Share of hospitals within group with 500 or fewer discharges
Urban	54%	14%	3%
Rural	46	86	21
Sole community	13	27	23
Medicare dependent	6	15	26
Critical access	4	22	70
Other rural <25 beds	1	7	58
Other rural 25-50 beds	7	15	25
Other rural > 50 beds	15	1	1
Total	100	100	11

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

beneficiaries' access to care. Such facilities, because of their market circumstances, have little ability to grow and take advantage of economies of scale and scope realized by larger facilities. Adjusting payments for a low-volume facility that is near other facilities, however, is not a priority because beneficiaries' access to care is less likely to be affected.

Low-volume hospitals are more isolated than higher-volume hospitals, but most low-volume hospitals would not meet the 35-mile distance standard used for designating sole community hospitals. Just over half of low-volume hospitals are more than 25 road miles from the nearest hospital, and a relatively small proportion, 14 percent, have a potential competitor within 15 miles.¹⁸

Low-volume adjustment

Medicare's PPS payment rates do not reflect the higher unit costs of low-volume hospitals, placing these facilities at greater financial risk. Many low-volume facilities are not near another hospital, and therefore may play an important role in maintaining beneficiaries' access to patient care services. A low-volume

adjustment with a distance requirement would allow Medicare payment rates to reflect the higher costs of low-volume facilities that are important to patient access.¹⁹

RECOMMENDATION 4B

The Congress should require the Secretary to develop a graduated adjustment to the rates used in the inpatient prospective payment system for hospitals with low overall volumes of discharges. This adjustment should only apply to hospitals that are more than a specified number of miles from another facility providing inpatient care, with appropriate exceptions for topography or weather conditions.

The Commission believes that a low-volume adjustment would strengthen the current inpatient PPS by aligning payments better with efficient providers' costs. The adjustment should reflect the basic underlying relationship between patient volume and costs per case, avoiding cliffs (points in the formula where a small change in volume would produce a large change in payment) that might provide inappropriate incentives.

17 The number of low-volume hospitals benefitting from the critical access hospital program today is likely larger, as the number of CAHs has risen since we developed the count used in this analysis.

18 A beneficiary-level analysis of how far patients in isolated communities must travel for care would provide a more direct measure of access than the distance from each hospital to the nearest alternative facility. But investigating that approach was infeasible given our time frame for this project.

19 As discussed in Chapter 5, we also intend to consider a low-volume adjustment for Medicare outpatient payments.

To avoid problems with annual volume variation and to encourage stability in the level of the adjustment and provider payment rates over time, the volume adjustment should be set for an individual facility based on a multi-year average volume. The level of the adjustment should be periodically reexamined to reflect improvements made in the inpatient PPS that might affect the measured relationship between volume and cost.²⁰

The Medicare program would not necessarily want to reward a low-volume hospital with a payment adjustment if it were close to other facilities; such proximity could be one reason for the low volume. In addition, extremely low volumes may pose a quality-of-care risk, and Medicare would not want to encourage hospitals operating at such levels unless necessary to maintain access to care. Including a distance requirement with a low-volume adjustment would alleviate some of these concerns. Further, as long as a distance criterion is in place, there is no reason to restrict a low-volume adjustment to rural hospitals.

The low-volume adjustment also could be applied to hospitals that are closer than the distance criterion by basing the adjustment on the pooled volume for all facilities falling within the distance limit. If one other hospital were within the distance limit, for example, the size of the low-volume adjustment would be based on the combined patient volume of both facilities. In essence, the low-volume adjustment would be set as if there were only one hospital in the community.

The distance measure used is an important issue. The standard used for sole community hospitals (35 miles) would be fairly restrictive; only about 21 percent of low-volume providers would qualify. But a distance standard set at a lenient level, such as 5 miles, would likely help providers in markets in which it is not

clear that the low-volume hospital is essential to Medicare beneficiaries' access to care. A 15- or 20-mile standard might provide a reasonable tradeoff for including facilities that are important for beneficiary access to care while excluding facilities that markets cannot support because of overcapacity.

To illustrate the financial impact of a low-volume adjustment, we simulated an adjustment that increases payments by up to 25 percent and drops to zero for hospitals with more than 500 discharges. This formula, for example, would provide a 20 percent increase in payments for hospitals with 100 discharges and a 10 percent increase for those with 300 discharges.²¹

The low-volume adjustment would not increase Medicare spending much, but could provide payment increases—some substantial—to roughly 10 percent of hospitals. In our illustration, Medicare inpatient payments would increase by \$17 million a year with a 15-mile distance standard (or by \$22 million without such a standard). For all hospitals with up to 200 discharges, payments would rise by 8 percent with the distance standard (or by 11 percent without), and for those with 201 to 500 discharges, these impacts would be 4 percent and 5 percent, respectively (Table 4-7).

This simulation suggests that a low-volume adjustment could substantially improve the Medicare inpatient margins of many of these facilities, including a number of sole community and Medicare dependent hospitals. About one-quarter of the low-volume hospitals currently paid based on hospital-specific rates under the SCH or MDH programs would benefit from the volume-adjusted PPS over the hospital-specific rate.

A low-volume adjustment probably would enable some CAHs to come back into the Medicare inpatient PPS (if these facilities

were allowed to reverse their CAH status), because the adjusted base payment would be more reflective of their underlying cost structure. In addition, many hospitals might decide not to become CAHs if a low-volume adjustment were provided.

Treatment of length of stay

Providers with longer-than-average inpatient stays generally have higher per-case costs. Several factors can increase the average length of an inpatient stay:

- less access to post-acute care,
- a sicker and older patient population,
- local practice patterns, and
- provider inefficiencies.

Our analysis confirms that costs per case tend to rise as length of stay increases. In addition, costs per case decline with increases in the volume of non-acute inpatient days in the facility. This latter relationship may reflect provider substitution of post-acute days for inpatient days, potential economies of scope, or departmental cost shifting from acute inpatient to other settings, but we cannot discriminate among these three factors using currently available data.

Effects of post-acute care availability on costs

Under a fixed per-case payment system, hospitals are rewarded for sending patients to post-acute care earlier in their stays. Providers with post-acute care units discharge patients to these units more often and earlier than hospitals without post-acute services (ProPAC 1996).

A shortage of ambulatory and post-acute care resources may prevent rural hospitals from discharging patients as early in the episode of care as urban hospitals would. Substitution of post-acute services (including skilled nursing, rehabilitation, and home care) for the latter days of inpatient stays was one of the key factors

20 Examples of policy changes that could affect the cost and volume relationship include case-mix refinements (such as all patient refined diagnosis related groups, which the Commission recommended in its March 2000 report) and an occupational mix adjustment to the wage index (discussed later in this chapter).

21 The payment adjustment we simulated produces a multiplier that is applied to the PPS base payment rate for a case, in a manner similar to how the indirect medical education and disproportionate share adjustments are applied. Only hospitals with fewer than 500 discharges would have their payments adjusted. The low-volume adjustment multiplier = $[1.25 - (0.0005 \times d)]$ if $d < 500$; otherwise, the multiplier = 1.0, where d = total inpatient acute care discharges. We assumed that hospitals must be located at least 15 miles from the closest similar hospital to qualify for the low-volume adjustment.

**TABLE
4-7**

Impact on Medicare inpatient margins of implementing a low-volume adjustment with an access-related eligibility requirement

Hospital group	Baseline			After policy change	
	Margin	Percent of hospitals with negative margin	Change in payments	Margin	Percent of hospitals with negative margin
All hospitals	12.4%	31.7%	0.0%	12.4%	30.5%
Urban	13.6	25.4	0.0	13.6	25.2
Rural	5.8	38.9	0.1	5.7	36.6
Rural referral	6.0	32.2	0.0	6.0	32.2
Sole community	5.9	32.0	0.1	6.1	31.5
Small rural Medicare-dependent	10.2	30.7	0.3	10.5	28.6
Critical access	-4.2	66.9	2.5	-2.1	53.2
Other rural <50 beds	6.9	38.9	0.3	7.2	36.8
Other rural ≥50 beds	4.0	40.9	0.0	4.1	40.9
Urban					
Low-margin	-7.3	97.3	0.0	-7.3	96.4
Mid-margin	6.5	0.0	0.0	6.5	0.0
High-margin	23.6	0.0	0.0	23.6	0.0
Rural					
Low-margin	-8.3	91.0	0.2	-8.1	85.7
Mid-margin	6.9	0.0	0.1	7.0	0.0
High-margin	22.7	0.0	0.1	22.8	0.0
Total discharge volume:					
Up to 200	-16.4	66.7	8.2	-8.5	57.7
Remaining in PPS	-15.7	58.7	5.1	-10.0	54.3
Moved to CAH	-17.7	80.0	13.2	-5.3	64.0
201 to 500	-2.1	39.0	3.8	1.6	38.4
Remaining in PPS	1.1	40.9	3.0	4.0	34.9
Moved to CAH	-8.9	70.6	5.2	-3.5	45.9
501 to 1,000	4.6	37.7	0.0	4.6	39.0
1,001 to 2,500	5.0	32.7	0.0	5.0	37.8
2,501 to 10,000	9.0	28.2	0.0	9.0	28.2
More than 10,000	14.8	15.9	0.0	14.8	15.9

Note: PPS (prospective payment system). CAH (critical access hospital). Baseline margin is the actual 1999 margin adjusted to reflect the change in disproportionate share payments enacted by the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000. Analysis based on data from two-thirds of the hospitals covered by prospective payment in 1999.

The critical access groups include hospitals that were designated CAHs in 1999 or after, and the results estimate what the baseline margin and impact of the policy change would have been had they remained in the PPS. Those becoming CAHs before filing their 1999 Medicare cost reports were excluded from the analysis due to lack of data.

Low-margin is defined as having a Medicare inpatient margin below zero in 1999, which included 17 percent of urban and 30 percent of rural hospitals. High-margin defined as above 12 percent, which included 27 percent of urban and 21 percent of rural hospitals.

The formula used for this simulation is detailed in footnote 21.

Source: MedPAC analysis of data from HCFA.

behind a 33 percent drop in Medicare's acute care length of stay since 1989. The drop has been greater for urban than for rural hospitals (34 percent compared with 25 percent through 1999), which may have increased rural hospitals' relative unit costs. The smaller decline in length of stay leads us to believe that rural hospitals may have longer absolute lengths of stay, given the mix of cases they receive.

The drop in length of stay has differed sharply by the degree of isolation of rural hospitals (Figure 4-2). The cumulative drop in length of stay since 1990 for hospitals in rural areas with no town of at least 2,500 people, for instance, was 13 percent, compared with 24 percent for hospitals in areas that are not adjacent to an urban area but still include a sizeable town and 33 percent for urban hospitals. This smaller drop appears correlated to the change in costs per case, which has been much higher for the most isolated rural hospitals, and likely reflects the lesser availability of post-acute services in isolated and sparsely populated communities.

Relationship to current policy

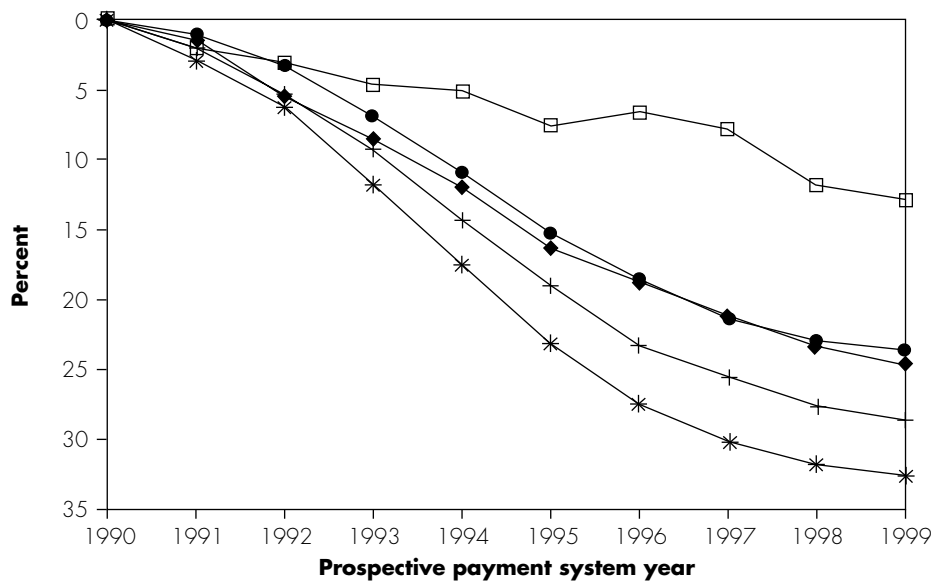
Medicare's transfer payment policy is intended to recognize that when hospitals discharge patients to another provider, they may not provide the full course of care implied by the DRG payment. Transfer cases with shorter-than-average stays, therefore, are counted as partial cases and paid a graduated per diem.

Before the Balanced Budget Act of 1997 (BBA), a case was considered a transfer only if the patient was discharged from one PPS hospital and immediately admitted to another PPS hospital. The BBA expanded the transfer policy to include patients in 10 DRGs who are discharged to PPS-exempt facilities or SNFs, and some cases discharged to home health care.

The decision to transfer a patient to a post-acute care setting should be based on clinical rather than financial considerations, and Medicare's transfer payment policy should lessen the influence of payment policy on clinical decision making (MedPAC 2000a).

FIGURE 4-2

Cumulative change in length of stay, by location of hospital (UIC), 1990-1999



* Urban, in an MSA (1,2)

Rural:

+ Adjacent to an MSA and includes a town with at least 10,000 people (3,5)

◆ Adjacent to an MSA but does not include a town with at least 10,000 people (4,6)

● Not adjacent to an MSA but includes a town with at least 2,500 people (7,8)

□ Not adjacent to an MSA and does not include a town with at least 2,500 people (9)

Note: UIC (urban influence code, as defined by the U.S. Department of Agriculture). MSA (metropolitan statistical area, as defined by the U.S. Office of Management and Budget).

Source: MedPAC analysis of data from HCFA.

However, because the current transfer policy is limited to 10 DRGs and does not apply to hospitals transferring patients to swing beds, its incentives are not spread over all cases that use post-acute care.

Expanding the transfer policy to cover all DRGs and all post-acute settings—including swing beds—and returning any savings to the base payment rates might provide a more equitable distribution of payments and help payments reflect the market circumstances faced by hospitals without access to post-acute providers. Payments for long-stay cases would increase and payments for short-stay cases transferred to post-acute settings would fall. Hospitals with swing beds also would no longer receive what is essentially a partial double payment for care. If the transfer policy was expanded to all DRGs

in a budget-neutral manner, rural hospitals on average would benefit from the higher base payments. Payments likely would fall on average for urban hospitals, which may have easier access to, and hence are more likely to use, post-acute care providers. The Commission will examine the financial impact and other implications of extending the transfer policy to all DRGs in the coming year.

Hospital swing beds

The swing-bed program, established in 1980, allows rural hospitals with fewer than 100 beds to use their beds interchangeably to furnish either acute care or skilled nursing services to Medicare and Medicaid patients. The program is aimed at increasing rural beneficiaries' access to skilled nursing

services by providing small hospitals with a way to use their facilities more efficiently than they would in operating a SNF. Roughly two-thirds of rural hospitals have approved swing beds, and about one-quarter of hospitals with swing beds also operate a SNF.

Hospitals that operate swing beds have a financial advantage relative to other hospitals because discharges made to swing beds are not subject to the expanded transfer policy. Hospitals therefore receive the full DRG payment for cases they transfer to swing beds. In addition, discharges to swing beds currently are exempt from the new PPS for SNFs, although HCFA is scheduled to start phasing in the SNF PPS for these providers later this year.

The swing-bed policy allows an empty hospital bed to be used for providing SNF services and an empty SNF bed to be used for providing acute care services. There is limited rationale, however, for exempting these providers from either the expanded transfer policy or the SNF PPS. First, by exempting these providers from the expanded transfer policy, Medicare is paying twice for the days that bridge acute and skilled nursing care: once through the DRG payment rate and again through the swing bed payment for SNF care. Second, patients transferred earlier to a swing bed potentially face higher cost-sharing requirements, because they may use more SNF days and hence reach the 20-day SNF copayment window earlier in their spell of illness. To the extent that small rural hospitals with swing beds face financial difficulty because of their small scale of operation, a low-volume adjustment would be a more equitable policy option than an exception from the expanded transfer policy.

Although HCFA plans to phase in swing-bed hospitals under the SNF PPS later this year, the Commission is concerned about bringing these stays under the PPS, which has substantial problems. Once we are sure that the case-mix system distributes payments appropriately, there would be no reason to continue paying differently for swing-bed SNF care.

Limitations in input price adjustment

Medicare's prospective payment systems for facility services—acute inpatient care, outpatient services, ambulatory surgery, skilled nursing care, and home health services—include input-price adjustments that raise or lower the payment rates to reflect the hourly wages of health care workers in each local market (see the box below).²² Currently, HCFA uses a single measure of geographic differences in area wage levels—the hospital wage index—for this purpose. The wage index compares the level of hospital hourly wages in each labor market area with the national average hospital hourly wage. Labor market areas are based on groups of counties: metropolitan statistical areas (MSAs)—as defined by the U.S. Office of Management and Budget—for urban labor markets, and statewide rural areas, including all nonmetropolitan counties in each state (those excluded from any MSA) for rural labor markets. HCFA annually calculates the wage index using these labor markets and the most recent data on wages, paid hours of employment, and contract labor spending and hours reported by hospitals on their annual cost reports. The index value for each labor market area is its average hourly wage rate (for all paid hours of hospital employment in the market area) divided by the national average hourly wage.

Only part of providers' payments in each setting is adjusted, depending on the labor share. The labor share is HCFA's estimate of the proportion of facilities' costs consisting of resources (inputs) purchased in the local labor market and thus affected by local wage rates. The labor share in each setting generally includes wages, fringe benefits, and locally purchased labor-intensive inputs, such as building maintenance and repair, landscaping, and legal, accounting, or consulting services.

Rural health care advocates, policymakers, and providers have raised concerns about the geographic adjustment's fairness, arguing that it

causes systematic underpayments to rural facilities for services furnished to beneficiaries. This section describes the geographic adjustment's objective, its major problems, and potential solutions.

Purpose of the geographic adjustment

The objective of the geographic adjustment is to make Medicare's payment rates accurately reflect the costs efficient providers would incur in furnishing services to beneficiaries given local market wages. Making accurate adjustments for market wage differences is important for two reasons. First, serious problems could arise for beneficiaries and taxpayers if Medicare's payment rates differ from efficient providers' costs (MedPAC 2001). Second, hospitals' reported wage rates vary substantially among labor market areas (HCFA 2000, Dalton et al. 2000).

Whether and how well the adjustment achieves its objective depends on the accuracy of its components:

- Do the wage data reported by hospitals accurately represent differences in wage levels among markets?
- Do the labor market areas identify homogeneous labor markets?
- Does the share of the base payment rates to which the adjustment is applied reflect accurately the portion of facilities' costs affected by local labor market conditions?

Without a geographic adjustment, the payment rate for each service would be the same nationwide. Consequently, Medicare's payment rates would be too high in labor markets with relatively low wage rates and providers in those markets would face incentives to furnish too many services. Payment rates would be too low in labor markets with relatively high wage rates, giving providers financial incentives to produce too few services, stint on services or inputs (especially labor), or cease participating in Medicare. In addition, health facilities would be unable to compete for labor.

How the wage index affects providers' payment rates

Medicare's payment rates for most facility services are based on a national base payment amount adjusted to reflect local market conditions. The national base amount typically comprises two components: a labor-related amount, which reflects the labor share, and a nonlabor amount. The Health Care Financing Administration calculates the adjusted payment rate for a labor market area by multiplying the national labor-related amount by the wage index for the area to get its wage-adjusted amount, and then adding the nonlabor amount to the wage-adjusted amount. In the acute inpatient hospital prospective payment system, for instance, the national base operating payment amount in fiscal year 2001 is \$4,007

(excluding payments for capital costs) for facilities located in rural and other urban areas (small metropolitan statistical areas). Based on a national labor share of 71.1 percent, the labor-related amount is \$2,849 and the nonlabor amount (representing 28.9 percent) is \$1,158. As measured by the wage index, hospital wage rates in rural New York are 15 percent below the national average. Thus, the local base payment rate for a hospital located in rural New York (wage index 0.85) is \$3,580 ($[\$2,849 \times 0.85] + \$1,158$). For a case assigned to a diagnosis related group with a relative weight of 1.4 (roughly typical for a rural hospital), a hospital in rural New York would receive a total operating payment of \$5,012 ($\$3,580 \times 1.4$). ■

²² In some instances, payment rates are also adjusted to reflect market differences in the level of nonlabor input prices. For example, portions of the payment rates in the hospital acute inpatient PPS are adjusted to compensate for relatively high nonlabor input prices in Alaska and Hawaii. Other payment systems under development for inpatient rehabilitation care, inpatient psychiatric services, and long-term hospital care also will include input-price adjustments.

The wage adjustment's accuracy is important because it strongly influences payment rates among urban and rural market areas. The hospital wage index ranges from 0.7445 in rural Arkansas to 1.4983 in Oakland, California—25 percent below and 50 percent above the national average, respectively. Given a labor share of 71 percent, hospitals' payment rates for acute inpatient care in Oakland are 35 percent above the national average compared with 18 percent below the national average in rural Arkansas. The wage adjustment has roughly similar effects on payment rates for other facility providers, although the strength of the adjustment varies with the labor share (which ranges from 50 percent for hospital outpatient services to 78 percent for skilled nursing care).

According to conventional wisdom, the wage index is low in rural labor markets and high in urban ones. Wage index values among rural and urban labor markets, however, exhibit wide variability, with substantial overlap (Figure 4-3). Some rural areas have wage indexes above, and some urban areas have indexes well below, the national average.

Problems with the geographic adjustment

MedPAC and others have identified four problems with the adjustment:

- The wage index may be distorted because using aggregate wages and hours in each labor market area inappropriately raises the average hourly wage where hospitals employ a relatively costly mix of labor categories and depresses it where hospitals employ an inexpensive labor mix. This is the so-called occupational-mix problem.
- The market areas often encompass distinct health care labor markets.
- The hospital wage and hour data are four years old before they are used for payment and may not capture recent labor market trends.
- The labor share includes cost components, such as computing services, that may not be locally purchased or affected by local labor market conditions.

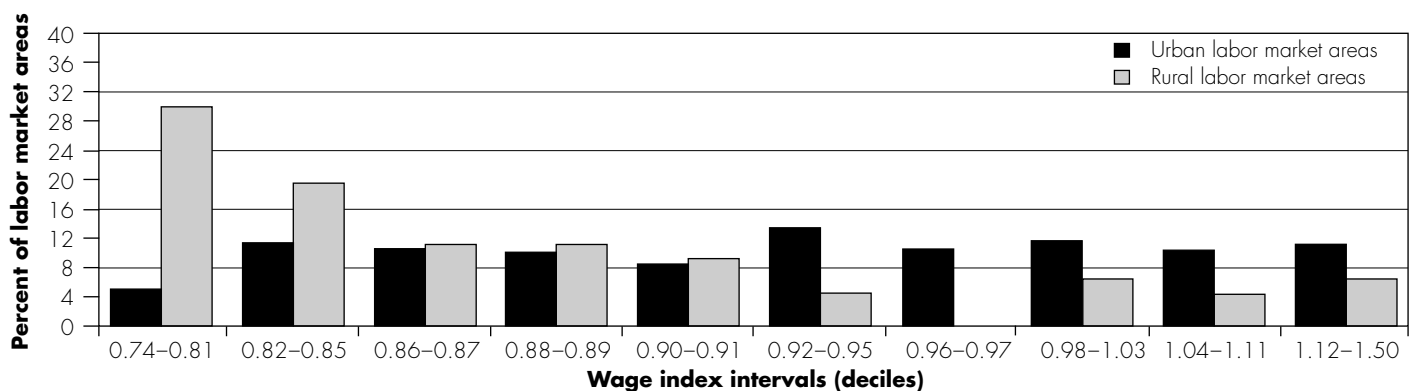
These problems may have important consequences for some providers. In response, some observers have suggested limiting the range of the wage index

adjustment—or even eliminating it—on the grounds that it misrepresents the labor market conditions that rural hospitals face. Some advocates even argue that providers in low-wage markets really do not have low wages. But this begs the question of why hospitals in these areas annually report low wage rates and attest to their accuracy.

Some rural health care advocates have proposed limiting the range of the adjustment by establishing a floor under the wage index, at 0.9 for instance. Alternatively, the effects of the adjustment could be reduced by compressing the wage index—for example, by raising its values to a fractional power, such as 0.8 or 0.9.²³ These proposals would change the wage index and payments under the inpatient PPS, but in different ways (Table 4-8). A floor would raise the lower end of the wage index distribution so that hospitals (or other facility providers) located in low-wage areas would be paid as if the local wage index were the floor value.²⁴ A wage index floor set at 0.9, for example, would raise the wage index in 34 of the 47 statewide rural labor markets, thereby increasing PPS payments for 87 percent of all rural hospitals and 89 percent of Medicare discharges from rural providers. A 0.9 floor also would increase

FIGURE 4-3

Distributions of hospital wage index values among urban and rural labor markets in fiscal year 2001



Note: Wage index intervals are deciles of wage index distribution across all labor markets in fiscal year 2001.
Source: MedPAC analysis of HCFA hospital wage index for fiscal year 2001.

23 Applying a fractional power would increase wage index values lower than 1.0 and reduce values above 1.0.

24 Without a change in the law, HCFA would have to offset increases in payments for hospitals in low wage markets by reducing payments to all other hospitals. This would be necessary to meet the current statutory budget neutrality requirement for changes in the wage index.

the wage index in 119 urban labor markets (38 percent), raising PPS payments for 23 percent of all urban hospitals and about the same percentage of discharges from urban facilities.

Compressing the wage index would raise low index values while reducing high ones, thereby changing PPS inpatient payments for virtually all rural and urban providers. The percentage change in the wage index (and payments) would be greatest at the extremes of the distribution and diminish for index values approaching 1.0.

Whether either of these solutions might be appropriate or desirable depends on the overall performance of the current wage index adjustment, including the nature, size, and distribution of its errors among labor market areas. Proposals to implement a floor implicitly assume that the wage index substantially understates the level of market wage rates at the low end and that the errors are disproportionately larger for lower wage index values. Proposals to compress the wage index assume that it understates wage levels at the low end and overstates them at the high end, with the size of the errors increasing disproportionately for index values further from the national average.

In general, we would expect health care facilities' wage rates to vary with the overall wage scale paid by other employers in the same market area, with both reflecting the local cost of living. If the hospital wage index grossly distorted true market wage levels, we would expect it to diverge substantially from an index based on wage rates for all occupations and industries. If the premise behind the floor proposal were true, the divergence would be entirely at the low end; the hospital wage index would be further below average than an overall index in low-wage markets, with the size of the discrepancies diminishing as index values approach the floor value. If the premise behind the compression proposal were correct, the hospital wage index would be lower at the low end and higher at the high end than the overall index.

TABLE 4-8

Percentage change in wage index and prospective payment system payments under selected policies

Wage index	Wage index		PPS payments	
	Floor	Compression	Floor	Compression
0.75	20.0%	5.9%	14.2%	4.2%
0.80	12.5	4.6	8.9	3.3
0.85	5.9	3.3	4.2	2.3
0.90	—	2.1	—	1.5
0.99	—	0.2	—	0.1
1.30	—	-5.1	—	-3.6
1.50	—	-7.8	—	-5.5

Note: PPS (prospective payment system). Floor set at wage index value = 0.9. Compression wage index is defined as HCFA wage index raised to the 0.8 power.

Source: MedPAC analysis of HCFA wage index.

To examine these hypotheses, we created an overall wage index using fiscal year 1997 wage data for all occupations and industries by MSAs and statewide rural areas.²⁵ These data are based on Bureau of Labor Statistics' estimates of employment and wages for workers in all industries covered by state unemployment insurance and unemployment compensation for federal employees.

Consistent with our expectations, the overall wage index and the hospital wage index are positively correlated—the estimated simple correlation (r) is 0.64, which means that they have about 40 percent of their variation in common (Figure 4-4). If both indexes were tracking the same relative wage levels (or local living costs) across labor markets, the paired values would fall on a 45 degree line from the origin. Under the floor hypothesis, the dots should cluster below the 45 degree line for hospital wage index values below the floor, demonstrating that the hospital wage index is understating wage levels at the low end. If the compression hypothesis were true, the dots would cluster below the 45 degree line at the low end and above it at the high end—the index is exaggerating the distribution at both ends—and the vertical distance between the dots and the line should diminish as the hospital wage index approaches 1.0. The hospital wage

index, however, has a smaller range, with higher values at the low end and lower values at the high end, than the overall wage index—as indicated by the regression line ($R^2 = 0.4225$). Apparently, the geographic pattern of variation in hospital wage rates is not radically different than that for overall wage rates based on all types of labor.

These results are not consistent with the idea that the hospital wage index somehow exaggerates the variation in market wage levels—the premise of the compression proposal. They are also inconsistent with the idea that the hospital wage index substantially understates market wage levels in relatively low wage markets—the hypothesis underlying the floor proposal.

Another way to evaluate the overall performance of the wage index is to examine its relationship to hospitals' Medicare inpatient margins or payment-to-cost ratios for inpatient services. Other things being equal, if the hospital wage index were distorting market wage levels and PPS payments as suggested by proponents of the floor and compression proposals, hospitals' Medicare inpatient margins would be directly related to the wage indexes in their local labor markets; hospitals in areas with low wage indexes would have low or negative margins, while those located in areas with high

25 These data are posted on the web site for the Bureau of Economic Analysis, Department of Commerce.

wage indexes would have average or high margins. Consistent with other recent findings (Dalton et al. 2000), however, hospitals' Medicare inpatient margins do not appear to be related to their local wage index values (Figure 4-5).

Still, these analyses are not conclusive because Medicare accounts for a high proportion of hospitals' revenues in many rural markets and providers' revenues generally drive spending and costs. Some rural facilities thus could exhibit relatively low wage rates because Medicare's payments are low. This is an unlikely outcome for many providers, however, because most rural hospitals' wage rates are substantially lower than the average in their labor markets (Table 4-9). This result suggests that although some rural hospitals may not be able to pay high wage rates, few face this problem because the wage index is too low. Instead, their financial weakness generally stems from other sources, which may include other limitations in Medicare's payment policies, or larger problems, such as insufficient overall market demand for their services or high levels of uncompensated care.

Occupational mix in the wage index

As discussed in our March 2001 report, the computation and application of the wage index raise concerns about the level of payments to rural hospitals (MedPAC 2001). The current wage index confounds differences in wage rates with differences among areas in the occupational mix of employment. In the early 1990s, staff at the Prospective Payment Assessment Commission (ProPAC) estimated that occupational-mix differences probably change the wage index, on average, by plus or minus 2 percent (Williams, et al. 1990). Eliminating them generally would raise the wage indexes for rural hospitals in all regions except the Northeast. Conversely, wage indexes would fall somewhat for providers located in many urban labor markets. The General Accounting Office is conducting a study using more recent data for California and New York, and the results will be available later this year.

In the BIPA, the Congress required HCFA to implement an occupational-mix adjustment to the wage index. To comply,

HCFA will have to revise the Medicare cost reporting forms for hospital reporting periods beginning in fiscal year 2001. Consequently, an occupational-mix adjusted wage index will not be available until October 2004. Thus, at least three years will pass before major improvements in accuracy can be achieved.

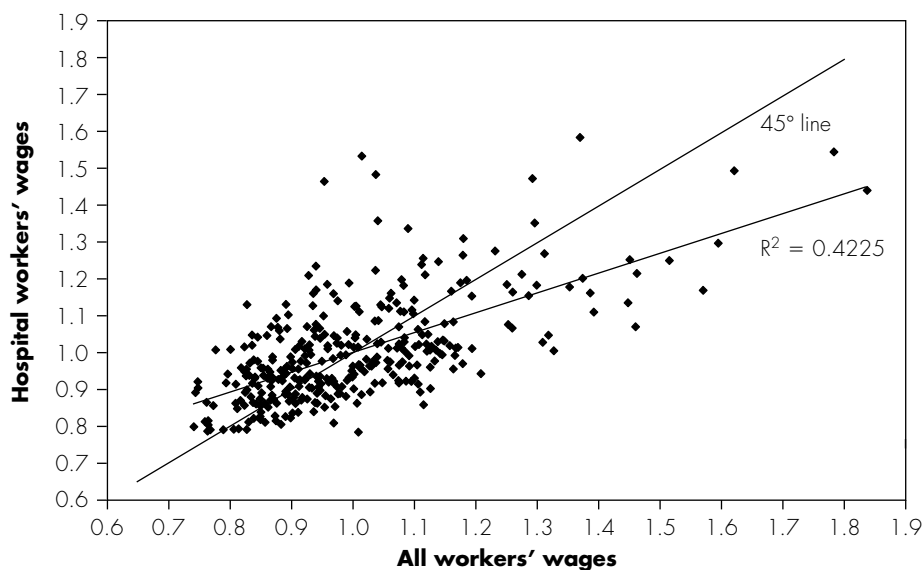
This timeline raises the issue of what interim policies might be adopted to mitigate the effects of the occupational-mix problem. Policymakers might consider three options: establishing a floor, compressing the wage index, or accelerating implementation of the phase-out from the wage index of wages and hours for teaching physicians, residents, and certified registered nurse anesthetists (CRNAs).

As mentioned earlier, imposing a wage index floor would increase facilities' PPS payments in market areas with low hospital wage rates. However, only raising the wage index at the low end would be inconsistent with the anticipated effects of occupational-mix adjustment. Moreover, a wage index floor would substantially over-correct the wage index in areas with the lowest wage indexes, which likely would lead to potentially large payment reductions and resistance to change when direct occupational-mix adjustment becomes possible. Further, benefits from the floor would be arbitrary. For example, if the floor were set at 0.9, hospitals in the Iowa City MSA with a wage index of 0.96 would receive no benefit while those in rural Iowa (at 0.8) would receive a 7 percent increase in payments. Hospitals in markets with wage index values just above the floor—for example, those in Spartanburg-Anderson, SC (0.9003), Hamilton-Middletown, OH (0.9061), or Lewiston-Auburn, ME (0.9036)—would not receive any benefit and likely would argue that the floor should be set higher.

Even if the goal were to help rural hospitals with poor financial performance under Medicare's inpatient PPS, a wage index floor would raise the wage index and PPS payments indiscriminately (Table 4-10). We examined the effect of a floor set at 0.9 on 3,226 hospitals that

FIGURE 4-4

Hospital wage rates in low-wage areas are higher than expected

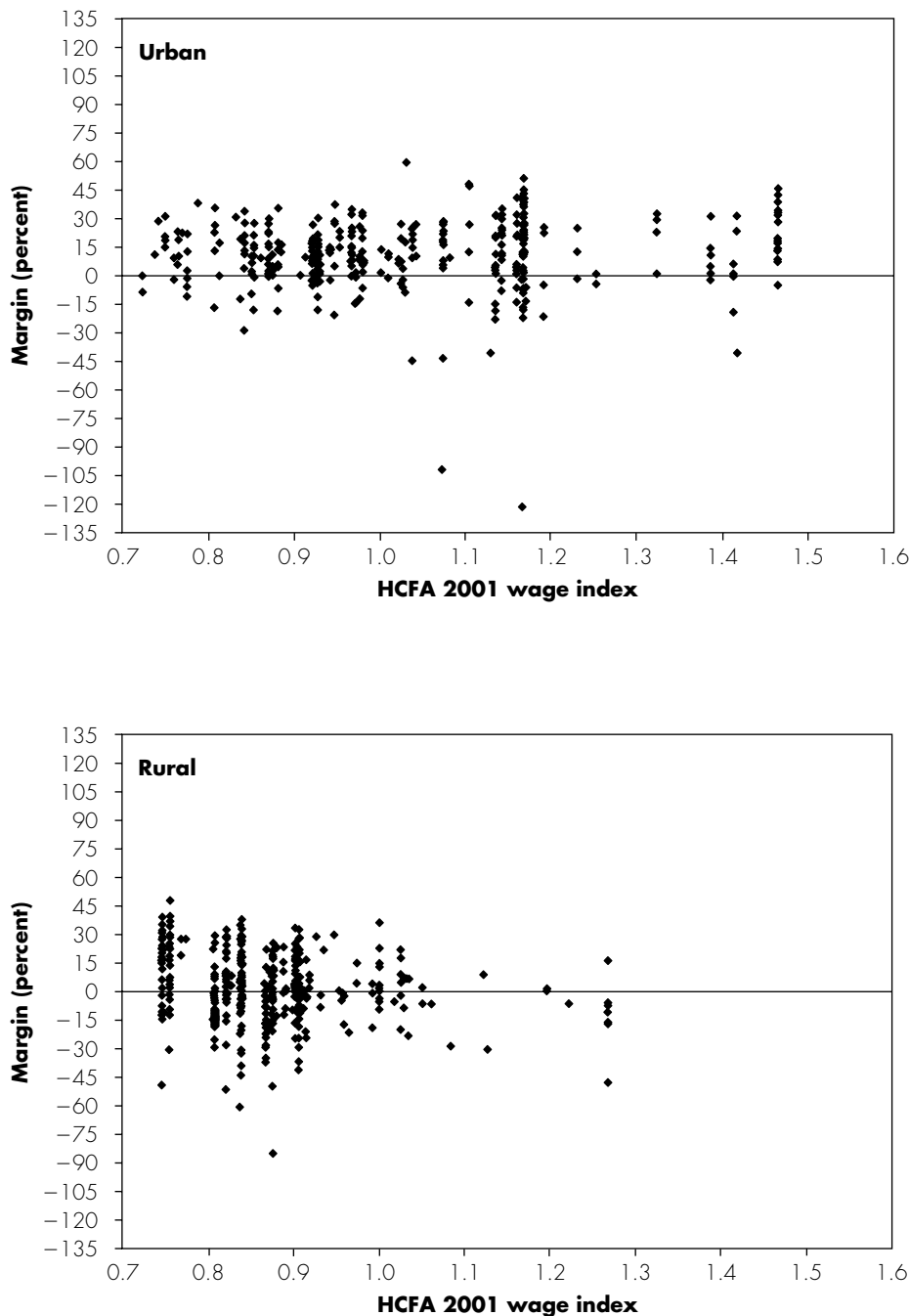


Note: Observations are average hourly wage rates for labor market areas defined by metropolitan statistical areas and statewide rural areas. 45° line indicates perfect match between relative wage rates for hospital workers and those for all workers. R² line shows that hospital workers' wage rates are comparatively high in areas where all workers' wages are low and comparatively low where all workers' wages are high.

Source: MedPAC analysis of HCFA hospital wage data for 1997 and all industries wage data for 1997 from the Bureau of Economic analysis, Department of Commerce.

FIGURE 4-5

Medicare inpatient margins by wage index value, urban and rural hospitals, 1999



Source: MedPAC analysis of data from HCFA.

have thus far reported Medicare inpatient margin data for cost reporting periods beginning during fiscal year 1999. The floor would raise the wage index—and inpatient payments—for 78 percent of rural hospitals that had negative Medicare inpatient margins in that year,

but it also would raise the index for 84 percent of those that had high Medicare inpatient margins (greater than 12 percent). If a floor were implemented at 0.9, without the statutory budget-neutrality requirement that ordinarily applies to changes in the wage index,

total payments under the hospital inpatient PPS would rise by roughly \$700 million per year.

Another option would be to adopt some form of wage index compression. The expected effects of occupational-mix adjustment—raising the wage index at the low end and reducing it at the high end—are roughly consistent with those for wage index compression. The premise behind compression, however, is that occupational-mix differences are strongly positively related to the level of the wage index—these differences exaggerate the wage index smoothly at both ends, with the extent of exaggeration rising disproportionately the further the wage level departs from the national average. Occupational-mix differences are undoubtedly positively related to providers’ case mix and to their hourly wage rates, but are likely to be highly variable across markets because they reflect the market composition of hospitals by type and bed size. As a result, occupational-mix differences are unlikely to be smoothly related to the market wage level. Wage rates might be understated by 6 percent in some low-wage rural markets but by only 0.5 percent in others. Similarly, wage levels may be overstated by 2 percent in some high-wage markets with many large teaching hospitals, but only 0.5 percent in others that have fewer large high-technology facilities. If this is so, wage index compression would overcorrect in some markets and undercorrect in others. Thus, like a wage index floor, compressing the wage index would result in arbitrary changes in the index and PPS payments, without improving payment policies for rural hospitals.

Another policy option would be to accelerate the phase-out from the wage index of compensation for teaching physicians, residents, and CRNAs. This phase-out is in its second year, so the wage index reflects a 60 percent/40 percent blend of old and new wage indexes; the old index includes wages and hours for these three groups and the new one does not. HCFA’s rationale for the phase-out is that labor costs related to

TABLE 4-9

Hospitals sheltered by labor market average wage rate

Hospital type	Before geographic reclassification		After geographic reclassification	
	Proportion sheltered	Percent difference from average	Proportion sheltered	Percent difference from average
All	62%	13%	67%	13%
Rural	64	15	73	14
Rural referral	31	6	76	9
Sole community	67	16	72	15
Other	68	15	73	15

Note: Sheltered hospitals are those with average hourly wages below the labor market average.

Source: MedPAC analysis of HCFA wage index.

teaching activities are reimbursed through direct graduate medical education (GME) payments, not the inpatient PPS.

Similarly, CRNA services generally are paid under Medicare Part B, also outside the inpatient PPS. HCFA’s impact analysis suggests that changing the blend from 80/20 to 60/40 in fiscal year 2001 raised the wage index about 0.1 percent in rural areas and decreased it by a negligible amount in urban areas.²⁶ The effect of completing the phase-out—eliminating the old index and using only the new one—might not be negligible for some areas, but it would not be large in any case (Table 4-11).

RECOMMENDATION 4C

In fiscal year 2002, the Secretary should implement fully the policy of excluding from the hospital wage index salaries and hours for teaching physicians, residents, and certified registered nurse anesthetists.

Labor markets used for the wage index

Earlier research by ProPAC and others showed systematic differences in hospital wage levels within many urban and rural labor market areas (ProPAC 1991, DeLew 1992, Hendricks 1989, Schmitz and

Merrell 1987). MSAs and statewide rural areas are frequently too large to capture homogeneous labor markets for health care workers (Figure 4-6). More recent analysis suggests that statewide rural areas typically contain three distinct markets (Dalton et al. 2000).

Moreover, the political boundaries that define current labor market areas often arbitrarily separate facilities that participate in the same labor market. For instance, Coeur D’Alene in rural Idaho is a short drive from Spokane, Washington, but the rural Idaho wage index (0.8678) is almost 18 percent lower than that for Spokane (1.0513). As a result, some hospitals can argue legitimately that a nearby labor market area (and its wage index) more accurately reflects their market circumstances than the labor market area in which they are physically located.

To address this problem, the Congress established a process enabling hospitals to appeal their labor market assignments and request reclassification. To qualify, rural hospitals generally must:

- be located close to (within 15 miles) the border of the area to which they seek to be reassigned.
- demonstrate that they are disadvantaged because their average hourly wage rate is more than 106 percent (108 percent if urban) of the average hourly wage in their actual labor market location.
- demonstrate that their wage rates are similar to those in the nearby area; their average hourly wage must be at least 82 percent (84 percent if urban) of the average wage rate in the adjacent area.

The Clinton Administration lowered the criteria for rural hospital reclassifications for fiscal year 2001. HCFA estimated that about 50 rural hospitals would benefit from this change. In fiscal year 2001, 490 hospitals (a little less than 10 percent of all hospitals receiving PPS payments) are reclassified for the wage index because they met these or related criteria.

TABLE 4-10

Hospitals affected by a wage index floor of 0.9, by financial status under Medicare’s inpatient prospective payment system, fiscal year 1999

Hospital location	Low inpatient margin			High inpatient margin		
	Number affected	Percent of low-margin hospitals	Percent change in wage index	Number affected	Percent of high-margin hospitals	Percent change in wage index
All hospitals	608	56%	9.0%	516	43%	10.4%
Urban	107	24	5.0	133	18	5.2
Rural	501	78	9.9	383	84	12.2

Note: Low inpatient margin defined as having a Medicare inpatient margin below zero in 1999. High inpatient margin defined as having a Medicare inpatient margin above 12 percent in 1999.

Source: MedPAC analysis of HCFA wage index data and data from hospitals’ cost reports for fiscal year 1999.

26 The estimated decrease was negligible even in the urban Middle Atlantic region, where we would expect the largest effects because of the high concentration of teaching hospitals.

**TABLE
4-11**

Impact on Medicare inpatient margins of phasing out teaching salaries and certified nurse anesthetists

Hospital group	Baseline			After policy change		
	Margin	Percent of hospitals with negative margin	Change in payments	Margin	Percent of hospitals with negative margin	
All hospitals	12.4%	30.2%	0.0%	12.4%	29.8%	
Urban	13.6	25.3	-0.1	13.5	25.0	
Rural	5.8	36.3	0.3	6.0	39.7	
Rural referral	6.0	32.2	0.5	6.3	28.7	
Sole community	5.9	32.0	0.3	6.0	31.8	
Small rural Medicare-dependent	10.2	30.7	0.2	10.4	30.2	
Critical access	-4.2	66.7	0.2	-4.1	66.1	
Other rural <50 beds	6.9	38.9	0.2	7.0	38.9	
Other rural ≥50 beds	4.0	40.9	0.2	4.3	40.9	
Urban						
Low-margin	-7.3	97.3	0.2	-7.1	93.7	
Mid-margin	6.5	0.0	-0.1	6.4	1.9	
High-margin	23.6	0.0	-0.1	23.9	0.0	
Rural						
Low-margin	-8.3	90.3	0.3	-7.8	88.6	
Mid-margin	6.9	0.0	0.4	7.2	0.3	
High-margin	22.7	0.0	0.2	22.8	0.0	

Note: Baseline margin is the actual 1999 margin adjusted to reflect the change in disproportionate share payments enacted by the Benefits Improvement and Protection Act of 2000. Analysis based on data from two-thirds of the hospitals covered by prospective payment in 1999.

The critical access hospital (CAH) group includes hospitals that were designated CAHs in 1999 or after, and the results estimate what the baseline margin and impact of the policy change would have been had they remained in the PPS. Those becoming CAHs before filing their 1999 Medicare cost reports were excluded from the analysis due to lack of data.

Low-margin is defined as having a Medicare inpatient margin below zero in 1999, which included 17 percent of urban and 30 percent of rural hospitals. High-margin defined as above 12 percent, which included 27 percent of urban and 21 percent of rural hospitals.

Source: MedPAC analysis of data from HCFA.

Although the geographic reclassification process alleviates some problems, it also creates new ones. First, the criteria for reclassification are not completely consistent with Medicare's payment policy goals. For instance, hospitals can qualify for reclassification and receive higher payments simply because they pay high wage rates relative to the market average, or because they have an unusually costly occupational mix. Reclassification thus can reward some hospitals regardless of their efficiency,

giving them payment increases of 12 percent or more and a competitive advantage over other hospitals in their actual market area.

Another problem is that the payment differentials at the edges of labor market areas are not eliminated by reclassification; instead they are shifted, leaving different sets of hospitals affected. Finally, reclassification can result in large swings in hospitals' payments if they fail to qualify in any one year because of data

errors or changes in the wage index calculation. However, the BIPA addressed this problem to some degree by extending the period for which reclassification applies; hospitals that qualify can remain reclassified (if they want to) for three years.

Despite these problems, the geographic reclassification policy ameliorates wage index differentials at the boundaries of labor market areas for some hospitals, generally without imposing substantial redistribution of payments on other hospitals. After reclassification, the hospitals remaining in the most populous rural labor markets exhibit greater wage rate homogeneity (Dalton et al. 2000). Although reclassification is certainly imperfect, it is probably worth retaining until the underlying labor market boundary problem can be solved. Adopting an occupational-mix adjustment may help somewhat, and occupation-specific wage data would enable HCFA to evaluate alternative labor market definitions. But major labor market improvements are not likely in the near future. Consequently, geographic reclassification probably should be retained for now.

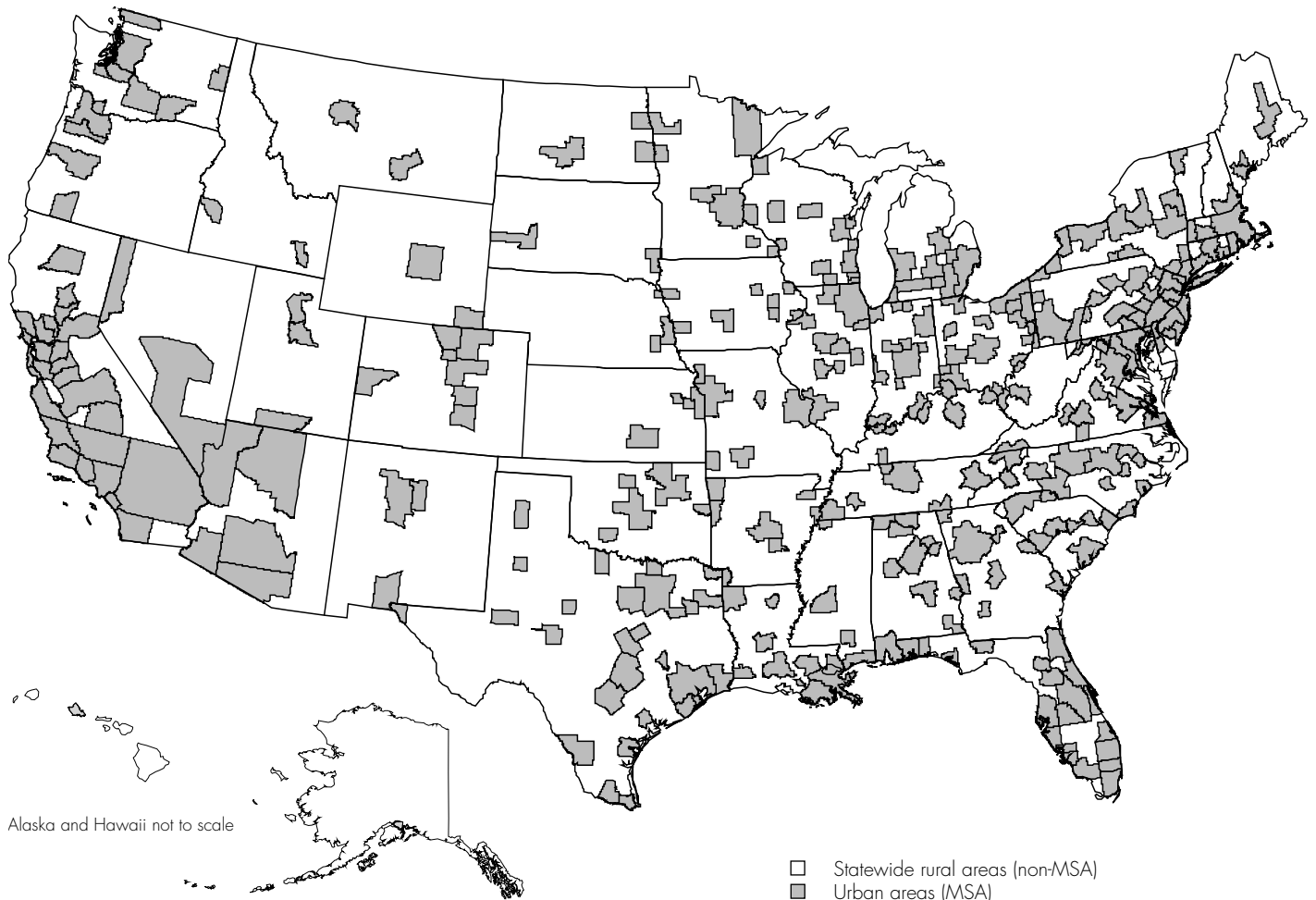
Age of the wage index data

By the time the wage index is applied to adjust payments, the underlying wage data are four years old. In general, wage rates have been increasing faster in rural areas than in urban ones (the differential was 0.7 percent in 1995, 0.4 percent in 1996, and 0.6 percent in 1997). Thus, policymakers might conclude that using old data delays justified increases in payments for rural providers. Still, relative wage levels across geographic areas apparently have remained nearly constant over time, although this finding might change if local or regional scarcities of medical professionals eventually affect wages only in certain areas (Dalton et al. 2000).

Recently, many providers have indicated that they are facing increased difficulties finding adequate numbers of well-trained nurses. These shortages, however, appear

**FIGURE
4-6**

Labor market areas for the hospital wage index



Note: MSA (metropolitan statistical area, as defined by the U.S. Office of Management and Budget).

to be widespread across most markets and thus do not raise immediate issues regarding the accuracy of the wage index. Rather, to the extent that all providers must pay more (higher wage rates or improved fringe benefits) or improve working conditions to attract additional nurses, the increase in input prices would be reflected in the annual update to Medicare's inpatient PPS payment rates through forecast changes in the HCFA hospital market basket index—a measure of inflation in the prices providers must pay to buy inputs needed to produce care (MedPAC 2001).

The four-year data lag comes from using hospitals' cost reports as the data collection vehicle. This approach helps to ensure reporting compliance and enables important data quality improvements. Moreover, because feasible alternative approaches for obtaining accurate data are not apparent, more timely data may never be available.

Labor share used in geographic adjustment

The labor share, which HCFA revises periodically in updating the market basket index, is an estimate of the national

average proportion of providers' costs associated with inputs that are directly or indirectly affected by local market wage levels.²⁷ It is used to determine the portion of the national PPS base payment rate to which the wage index is applied. For inpatient hospital services, the labor share is 71.1 percent and includes wages and salaries, fringe benefits, and other labor-related costs that are intended to capture spending for locally purchased inputs (Table 4-12).

27 HCFA has established labor shares based on the weights for their market basket indexes for most facility PPSs, including those for hospital inpatient, skilled nursing, rehabilitation, and home health services.

**TABLE
4-12**

Components of national labor share for hospital inpatient care

Category	Share
Total labor-related	71.1%
Wages and salaries	50.2
Employee benefits	11.2
Non-medical professional fees	2.1
Postage	0.3
All other labor-intensive	7.3

Note: All other labor-intensive includes business services, computer processing, landscape and horticultural services, building maintenance and repair, laundry services, auto repair, payments to membership organizations, appliance repair, and indirect business taxes.

Source: HCFA analysis of hospital data from U.S. Census, Bureau of Economic Analysis, American Hospital Association, and Health Care Provider Cost Report Information System (HCRIS).

The definition of the labor share raises several potential concerns:

- Rural and urban providers may use different mixes of labor and capital.
- The costs included in the labor share and those included in the wage index do not match. The wage index excludes contract labor costs for non-patient care services, such as purchased professional services, computing, and laundry and dietary services. These services are excluded because it is difficult to separate labor costs from overhead costs or accurately assign labor hours for contracted services.
- Some of the purchased labor-intensive services included in the labor share definition, such as postage or non-medical professional fees, likely are purchased in national markets or are frequently available at geographically uniform prices.

Some rural health care advocates and providers have argued that the current labor share overstates the proportion of costs rural hospitals devote to labor and

other locally purchased inputs. The proposed remedy—lowering the labor share—would reduce the proportion of the national base payment amount adjusted by the wage index. Consequently, hospitals located in low-wage markets (wage index less than 1.0) would receive higher payments, while those located in high-wage markets would receive lower payments. Overall, this policy change would transfer payments from urban to rural hospitals. Some urban hospitals would benefit, however, because they are located in markets with wage indexes below 1.0, and some rural hospitals would receive reduced payments because they are located in market areas with wage indexes above 1.0. Any decrease in payments for areas with wage indexes values above 1.0, however, would be partly offset by a positive budget-neutrality adjustment.

Although the national average labor share is 71.1 percent, the implied labor share—the proportion of Medicare’s payment per case that is associated with local labor and related expenses—varies with the wage index (Table 4-13). In a low-wage area, multiplying the national labor-related amount by a wage index less than 1.0 (0.75, for example) reduces the labor-related portion of payments substantially below the national average—to 64.9 percent in this example. Conversely, the implied labor share is much higher than the national average in labor markets with

relatively high wage rates. Consequently, the labor share that applies to each hospital’s payment is the local share after wage index adjustment.

Differences in labor and non-labor shares might be addressed by using provider-specific labor shares. However, this would enable providers to manipulate their payments by increasing or decreasing wages and fringe benefits relative to other costs. It would also give them inappropriate incentives to purchase certain services under contract rather than produce them. Further, Medicare’s payment rates in a market area would not reflect the costs efficient providers would incur to furnish care, but rather providers’ individual choices about production methods, whether or not they were efficient.

The labor share problem also could be addressed by reexamining the national labor share. The input categories included in the labor share were originally selected in 1983 when the hospital inpatient PPS was adopted. Most of these inputs are still largely purchased in local markets. However, some categories, such as postage, are likely purchased in national markets and not influenced by local wage levels. Still others (computer and data processing services, for instance) may include some inputs that are purchased in national markets and some that are bought in local ones. As a result, the national

**TABLE
4-13**

Effect of wage index adjustment on labor share

	Wage index value		
	1.0	0.75	1.5
Labor-related amount	\$2,849	\$2,849	\$2,849
Non-labor amount	1,158	1,158	1,158
Wage-adjusted amount	2,849	2,137	4,274
Local base payment	4,007	3,295	5,432
Local labor share	71.1%	64.9%	78.7%

Note: Wage adjusted amount = labor-related amount x wage index. Local base payment = wage-adjusted amount + non-labor amount. Local labor share = wage-adjusted amount / local base payment.

Source: MedPAC analysis of HCFA wage index.

average labor share may be somewhat lower than the current estimate of 71.1 percent.

RECOMMENDATION 4D

To ensure accurate input-price adjustments in Medicare's prospective payment systems, the Secretary should reevaluate current assumptions about the proportions of providers' costs that reflect resources purchased in local and national markets.

Unequal payment formula for disproportionate share payments

Medicare's DSH adjustment for hospital inpatient services is designed to offset the financial pressure of uncompensated care and inadequate payments from Medicaid and other indigent care programs.

However, despite improvement in the DSH payment system implemented through the BIPA, the current system still provides substantially smaller payment add-ons for rural facilities. In our March 2000 and March 2001 Reports, MedPAC recommended a comprehensive reform of the DSH adjustment that would apply a consistent payment formula for all hospitals. Medicare cannot implement this reform for at least two years, however, so the Commission recommends an interim step that would help rural hospitals now while providing a transition toward the system we envision for the longer term.

Description of the disproportionate share payment system

Medicare distributes DSH payments through a hospital-specific percentage add-on to the PPS base payment rate. Consequently, a hospital's DSH payments are tied to its volume and mix of PPS cases. The add-on for each case is determined by a complex formula based on the hospital's share of low-income patients, which is the sum of two ratios—Medicaid patient days as a share of total patient days, and patient days for Medicare beneficiaries who receive Supplemental Security Income (SSI) as a percentage of total Medicare patient days.

The original justification for the DSH adjustment presumed that poor patients are more costly to treat, but ProPAC adopted an alternative premise that had evolved over time: to protect access to care for Medicare beneficiaries, additional funds should be provided to hospitals whose viability might be threatened by providing care to the poor. Although the financial pressure from treating low-income patients can include any extra costs incurred, the primary threats are underpayment or nonpayment. MedPAC data have shown that Medicaid payments are the lowest relative to costs of the major payer groups, the payments of local indigent care programs are usually even lower, and uninsured patients generate the least funding, even after accounting for local operating subsidies.

Problems with the current system and responses to date

The Commission believes that policy changes are needed to ameliorate two key problems inherent in the existing DSH payment system:

- the current low-income share measure does not include care to all the poor, most notably omitting uncompensated care, and
- the system has separate payment rates for 10 specific hospital groups, with the least favorable rates given to most rural hospitals and urban facilities with fewer than 100 beds.

The BIPA improved the equity of DSH payments by applying the most liberal current threshold (minimum low-income share needed to qualify for a payment adjustment) to all hospitals. We estimate that this will make about 840 additional rural hospitals (40 percent of all rural facilities) eligible to receive DSH payments. However, the BIPA caps the DSH add-on a rural hospital can receive at 5.25 percent, except for those rural hospitals already receiving higher payments due to their SCH or RRC status. Some large urban facilities currently receive much higher adjustments.

In this year's March report, the Commission concluded that although the BIPA significantly improved the equity of DSH payments between rural and urban hospitals, additional changes are still needed. The only way to create true equity between urban and rural hospitals is to use the same distribution formula for all hospitals (MedPAC 2001).

Additional changes needed

The changes we have recommended cannot be implemented for two to three years, while HCFA collects the necessary low-income patient cost data. The BBRA mandated this data collection effort for hospital cost reporting periods beginning in fiscal year 2001. In addition, the Congress will have to legislate a new distribution formula or provide guidelines to HCFA for developing the formula.

One step to bridge the gap between the BIPA provision and the system MedPAC envisions when comprehensive low-income share data become available would be to raise the cap on the DSH add-on a rural hospital can receive. Although there is no right level for the cap, a cap of 10 percent would distribute DSH monies roughly midway between the distribution that BIPA will produce and the distribution implied by urban and rural hospitals' cost shares for the largest two groups of low-income patients. Rural hospitals were responsible for 12.8 percent of the care provided to Medicaid and uncompensated care patients nationally in 1999 (Table 4-14). With the DSH payment rules in effect through 2000, only 3.1 percent of payments went to rural facilities; BIPA rules would increase this proportion to 6.9 percent. Raising the cap to 10 percent would lift rural hospitals' share of DSH payments to 9.8 percent.

This change would raise payments for some rural hospitals with large low-income populations that do not benefit from the higher DSH payments available to hospitals that qualify for the sole community hospital and rural referral center programs. In addition, if the Congress chose to provide new funding to implement the higher cap (which would

cost about \$180 million per year), the change would minimize the shift of payments from urban to rural hospitals that would occur when the program implements a single distribution formula for all hospitals two or three years down the line. Finally, the 10 percent cap on DSH payments for all rural hospitals would match the cap currently in law for SCHs, thus eliminating an unnecessary discrepancy among rural hospital groups.

RECOMMENDATION 4 E

The Congress should raise the cap on the disproportionate share add-on a rural hospital can receive from 5.25 percent to 10 percent.

A 10 percent cap on DSH payments with new funding would increase rural hospitals' payments, on average, by 1.4 percent (Table 4-15). Hospitals that do not have access to any of Medicare's current special payments for rural hospitals would benefit the most; those with fewer than 50 beds would get a 1.9 percent increase and larger facilities a 2.3 percent boost. If, in light of the additional DSH funding provided by the BIPA, the Congress decided to implement the change by redistributing the current funding, the currently favored hospitals—those in urban areas with more than 100 beds—would absorb a 0.2 percent cut in their DSH payments, and the gain to rural facilities would be reduced to 1.2 percent.

Congress should not remove the DSH payment cap altogether now, for two reasons. First, it would inevitably result in some hospitals receiving large increases in their DSH payments, only to have their payments cut again when uncompensated care is brought into the low-income shares used to distribute payments.

Eliminating the cap might also result in unnecessarily large payment increases for some rural hospitals, and the aggregate increase in payments would be three times that of our recommended approach. The current DSH distribution formula is graduated, offering a higher payment rate for the mostly public, inner-city hospitals with the largest low-income shares. This was done in an attempt to compensate for

TABLE 4-14

Urban and rural hospitals' shares of low-income patient costs and disproportionate share payments

Hospital group	Share of low-income costs	Share of disproportionate share payments		
		Prior to the BIPA	5.25 percent cap	10 percent cap
Urban	87.2%	96.9%	93.1%	90.2%
Rural	12.8	3.1	6.9	9.8

Note: The 5.25 percent cap on the disproportionate share add-on was enacted by the Medicare, Medicaid and SCHIP Benefits Improvement and Protection Act of 2000 (BIPA), and went into effect on April 1, 2001. Low-income costs for this analysis include Medicaid and uncompensated care.

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

TABLE 4-15

Impact on Medicare inpatient margins of raising the cap on disproportionate share payments to 10 percent

Hospital group	Baseline			After policy change	
	Margin	Percent of hospitals with negative margin	Change in payments	Margin	Percent of hospitals with negative margin
All hospitals	12.4%	31.7%	0.2%	12.6%	30.1%
Urban	13.6	25.4	0.0	13.6	24.9
Rural	5.6	38.9	1.4	6.8	35.9
Rural referral	6.0	32.2	1.4	7.2	27.6
Sole community	5.9	32.0	0.3	6.3	30.5
Small rural Medicare-dependent	10.2	30.7	0.9	11.0	29.1
Critical access	-4.2	66.7	0.8	-3.4	62.9
Other rural <50 beds	6.9	38.9	1.9	8.6	37.5
Other rural ≥50 beds	4.0	40.9	2.3	6.1	34.5
Urban					
Low-margin	-7.3	97.3	0.1	-7.2	95.5
Mid-margin	6.5	0.0	0.0	6.5	0.0
High-margin	23.6	0.0	0.0	23.6	0.0
Rural					
Low-margin	-8.3	91.0	1.2	-7.0	84.1
Mid-margin	6.9	0.0	1.2	8.0	0.0
High-margin	22.7	0.0	1.7	24.0	0.0

Note: Baseline margin is the actual 1999 margin adjusted to reflect the change in disproportionate share payments enacted by the Medicare, Medicaid, and SCHIP Benefits Improvement and Protection Act of 2000. Analysis based on data from two-thirds of the hospitals covered by prospective payment in 1999.

The critical access hospital (CAH) group includes hospitals that were designated CAHs in 1999 or after, and the results estimate what the baseline margin and impact of the policy change would have been had they remained in the prospective payment system. Those becoming CAHs before filing their 1999 Medicare cost reports were excluded from the analysis due to lack of data.

Low-margin is defined as having a Medicare inpatient margin below zero in 1999, which included 17 percent of urban and 30 percent of rural hospitals. High-margin is defined as above 12 percent, which included 27 percent of urban and 21 percent of rural hospitals.

Source: MedPAC analysis of data from HCFA.

these hospitals' unusually large uncompensated care burdens and their low Medicare penetration (often below 20 percent). Applying this formula in rural areas, where small hospitals have much higher Medicare penetration (often 80 percent or more), could result in windfall-level payment adjustments. If Congress approves revamping the DSH payment system to bring uncompensated care into the low-income share calculation, it can

avoid this problem by applying a single formula to all hospitals without a graduated rate structure.

It would be best to make DSH payment add-ons up to 10 percent available to all hospitals without taking away the higher rates currently available to qualifying rural referral centers and urban hospitals of over 100 beds. Unfortunately, this requires most of the overly complex formulation in current law to be maintained (Table 4-16).

Inpatient psychiatric care

Inpatient psychiatric facilities—freestanding hospitals and hospital-based units—specialize in treating patients with mental illnesses who range in disability from temporary disturbances to ongoing psychotic states.²⁸ They also provide treatment for alcohol and drug-related problems. These facilities are exempt from the hospital inpatient PPS.

The BBA dramatically changed payment for the 2,100 PPS-exempt psychiatric facilities by requiring one target cap for all facilities. Because rural psychiatric facilities may be disproportionately affected by the new payment method, which could influence rural beneficiaries' access to care, the Congress required MedPAC to analyze the impact of patient volume on rural facilities' unit costs and to determine whether special treatment may be warranted.

We conclude that the single target cap is problematic and recommend that it be revised to account for differences in patient characteristics. Government-owned hospitals appear to treat a different beneficiary population than do other facilities and are disadvantaged by a single cap. Although rural hospital-based units do not appear to treat a systematically different population, they do have higher unit costs and further work is needed to determine why. We also note that while rural beneficiaries' access to some types of psychiatric care may be affected by hospitals closing their PPS-exempt psychiatric units to apply for CAH status, CAHs are not precluded from providing basic psychiatric services. Finally, we provide policymakers with preliminary information about two of the challenges they face in designing a PPS for inpatient psychiatric care.

Changes in payment methods

The BBA created a single national payment cap for PPS-exempt psychiatric facilities. Before the BBA, these facilities

**TABLE
4-16**

Payment formulas required to implement MedPAC's recommendation on disproportionate share payments

Hospital group	Adjustment formula
Urban ≥ 100 beds and Rural ≥ 500 beds	If DPP = 15% to 20.2%: 2.5% + 0.65 (DPP-15%)
	If DPP ≥ 20.2% or more: 5.88% + 0.825 (DPP-20.2%)
Rural referral *	If DPP = 15% to 20.2%: 2.5% + 0.65 (DPP-15%)
	If DPP = 20.2% to 25.2%: 5.88% + 0.825 (DPP-20.2%)
	If DPP = 25.2% to 30%: 10%
	If DPP ≥ 30%: 10% + 0.6 (DPP-30%)
Urban 1-99 beds, Sole community, and Other rural 1-499 beds	If DPP = 15% to 20.2%: 2.5% + 0.65 (DPP-15%)
	If DPP = 20.2% to 25.2%: 5.88% + 0.825 (DPP-20.2%)
	If DPP ≥ 25.2%: 10%

Note: DPP (disproportionate patient percentage).

*A rural referral center that is also a sole community hospital receives the larger disproportionate share payment adjustment.

Source: MedPAC analysis.

28 Inpatient psychiatric care is also provided in regular beds in acute hospitals, usually called "scatter beds." In 1995, these patients represented 28 percent of beneficiaries treated on an inpatient basis for psychiatric conditions (Cano et al. 1997). Medicare pays for patients in scatter beds under the hospital inpatient PPS.

received a base operating payment for each discharge equal to the lesser of their current operating costs or a facility-specific target, based on their historical operating costs trended forward by an inflation factor. The BBA required that a facility's target amount be capped at the 75th percentile of all target amounts nationally. Psychiatric facilities are now paid the least of their own costs, their own target, or the national cap (which is \$11,364 per case for fiscal year 2001).²⁹

Medicare beneficiaries may experience difficulty in accessing care when payment methods change because changes in financial performance can affect facilities' willingness to admit them or the quality of care provided to them. In 1998, the first post-BBA year, psychiatric facilities' aggregate margin decreased by 5 percentage points from the previous year, to -2.3 percent, reversing an earlier upward trend. Exit of facilities from the Medicare program also can be an indicator of potential payment problems. After years of increases, the number of hospital-based units declined 14 percent from 1999 to 2000. These trends could be

early warnings that beneficiaries needing psychiatric care may experience access problems.

Problems with the target cap

One target cap, based on national averages, assumes that all PPS-exempt psychiatric facilities have a similar mix of cases. We found that government-owned hospitals treat more costly beneficiaries than other facility types; a single target cap clearly disadvantages these hospitals. Hospital-based units in rural areas have higher costs than units in urban areas, but we were unable to test the relationship between those higher costs and patient characteristics, volume, or allocation of administrative costs of those facilities in the time allowed. However, a single target cap for all facilities appears inappropriate.

Historically, psychiatric facilities have played different roles (Eselius 2000). ProPAC (1992) found that psychiatric providers were arrayed on a continuum of patient complexity. PPS hospital scatter beds fell at the low end of the continuum,

followed by hospital-based units and non-government hospitals, while government-owned hospitals were at the high end. ProPAC found that government-owned hospitals had longer lengths of stay and admitted higher proportions of disabled beneficiaries and involuntarily committed patients than other facility types. (Disabled beneficiaries who use inpatient psychiatric care are more likely to be disabled because of mental illness.)

We compared PPS-exempt facility types—government-owned freestanding hospitals, other freestanding hospitals, and hospital-based units—to determine whether these historical differences are still present. We also tested whether different facility types have similar case mixes. We found that government-owned hospitals have patterns consistent with historical data, but that patterns for other hospitals and units may have changed.

Government-owned hospitals in both rural and urban areas have lengths of stay twice as long as other facility types, as well as higher costs per case (Table 4-17).³⁰ They admit a larger proportion of disabled

TABLE 4-17

Patient and psychiatric facility characteristics, by facility type and urban or rural location

	Number of facilities	Patient characteristics		Facility characteristics			
		Disabled	Committed involuntarily	Average length of stay (days)	Average case-mix index	Average cost per case	Average percent over cap
Rural facilities							
Government-owned	41	77%	22%	24	N/A	\$10,631	54%
Hospital-based	348	45	2	11	1.01	7,770	30
Freestanding	25	65	4	12	0.95	6,300	4
Urban facilities							
Government-owned	119	81	20	26	N/A	9,560	54
Hospital-based	979	55	1	12	1.01	6,481	11
Freestanding	274	69	2	12	0.97	5,297	4

Note: Cost per case is standardized for wage index; cap for fiscal year 1998 = \$10,547. Length of stay and cost per case weighted by discharges. Case-mix index calculated using all patient refined diagnosis related groups (APR-DRGs). N/A (not applicable); we were unable to calculate comparable case-mix index values for government-owned hospitals.

Source: MedPAC analysis of fiscal year 1998 cost reports and 1997 MedPAR data from HCFA.

²⁹ The labor-related portion of the cap is adjusted by the local wage index. The target cap also affects extra payments and future payments; annual updates to rates are linked to the extent to which a facility's costs exceed or fall below its target amount. The cap's effect on extra payments and annual updates is small relative to its effect on payment per case, but these additional effects can exacerbate poor financial performance for facilities with costs above the cap.

³⁰ All psychiatric facilities' costs have been standardized by removing the effects of geographic differences in wage levels.

beneficiaries and a much larger proportion of Medicare patients who are involuntarily committed. Consistent with this greater patient complexity, government-owned hospitals in both urban and rural areas had the highest costs per case and more than half of these hospitals had an average cost per case above the target cap. The hospitals with costs above the cap also had average costs of almost double the cap. We found that it was impossible to compare case mix for government-owned hospitals with that for other facility types because their costs were so different. Government-owned hospitals may have higher costs in part because they cannot refuse patients.

Other freestanding hospitals (not government-owned) and hospital-based units in both rural and urban areas have similar lengths of stay—between 11 and

12 days. Urban freestanding hospitals have a higher case-mix index than do their rural counterparts, but costs per case are higher in rural areas. Urban and rural hospital-based units have an identical case-mix index (1.01), but units in rural areas have a higher cost per case and are more likely to be over the target cap.

To examine differences in hospital-based units' case mix, lengths of stay, and costs per case more closely, we used urban influence codes (UICs).³¹ In general, as hospital-based units become more rural, cost per case increases (Table 4-18). Average lengths of stay vary in rural areas, from 9 to 14 days, but generally increase as case mix increases. For example, facilities in areas not adjacent to an MSA but including a town with at least 10,000 people have the lowest case-mix index, shortest average length of stay, and

lowest cost per case. Totally rural areas (not adjacent to an MSA and not including a town with at least 2,500 people) have the highest case-mix index, longest average length of stay, and highest cost per case. However, in the two UICs with an 11-day average length of stay, case mix differs slightly but costs vary widely—the area with a lower case-mix index has an average cost per case 31 percent higher than the area with the higher case mix.

As units become more rural, the proportion with costs over the cap generally increases. Almost three-fourths of units in totally rural areas have costs above the cap. However, the average cost per case for hospital-based facilities above the cap is similar, regardless of whether they are urban or rural, and ranges from \$12,989 to \$14,572.

TABLE 4-18

Hospital-based units' length of stay and cost per case

Location of hospital-based unit (UIC)	Number	Average length of stay	Average case-mix index	Average standardized cost per case (CPC)	Percent over cap	Average CPC for facilities over cap
Urban, in an MSA (1,2)	979	12	1.01	\$6,914	11%	\$13,842
Rural	348	11	1.01	8,424	30	13,776
Adjacent to an MSA and includes a town with at least 10,000 people (3,5)	107	11	1.01	7,654	21	13,021
Adjacent to an MSA but does not include a town with at least 10,000 people (4,6)	71	13	1.02	9,123	34	13,622
Not adjacent to an MSA but includes a town with at least 10,000 people (7)	87	9	0.99	6,791	14	12,989
Not adjacent to an MSA but includes a town with between 2,500 and 10,000 people (8)	64	11	1.00	10,025	47	14,572
Not adjacent to an MSA and does not include a town with at least 2,500 people (9)	19	14	1.04	12,230	74	14,098

Note: UIC (urban influence code, as defined by the U.S. Department of Agriculture). MSA (metropolitan statistical area, as defined by the U.S. Office of Management and Budget). Cost per case is standardized for wage index; cap for fiscal year 1998 = \$10,547. Length of stay and cost per case weighted by facilities. Case-mix index calculated using all patient refined diagnosis related groups (APR-DRGs).

Source: MedPAC analysis of fiscal year 1998 cost reports and 1997 MedPAR data from HCFA.

³¹ See Chapter 1 for more information on UICs.

Higher costs may be related to volume, or rural PPS hospitals may allocate a greater proportion of overhead to psychiatric units. Rural units may also be more likely to have management contracts. One management company has reported to us that its fees are \$175,000 per year for a 10-bed unit, which could add an additional \$1,300 or more to the cost per case. These contracts may be necessary for rural hospitals to have PPS-exempt psychiatric units; however, it will not be possible to systematically identify facilities with management contracts for our future work on this issue because of data limitations.

One target cap for all psychiatric facilities is inappropriate. A single cap disadvantages government-owned freestanding hospitals and may disadvantage rural hospital-based units as well. The BBRA required HCFA to develop a PPS for exempt psychiatric facilities for implementation in October 2002. Revising the cap will provide a stopgap in the event that the PPS is not in effect by that time.

RECOMMENDATION 4 F

The Congress should revise the target cap for inpatient psychiatric facilities in a way that better addresses differences among them.

More knowledge about the reasons for differences among facilities will be needed to design more appropriate caps because the major consequence of introducing more than one target cap will be to redistribute payments. For example, if government-owned hospitals have their own cap, the cap for other facilities will be lower. The proportion of rural facilities

with costs above the cap may be even greater with a separate cap for government hospitals. Facilities with costs per case above the new cap may discharge patients prematurely or may refuse to admit beneficiaries they believe to be costly. HCFA's current research on psychiatric facilities will provide more information on why differences exist.

Critical access hospitals and psychiatric units

Another potential problem for beneficiary access may result from hospitals closing their PPS-exempt psychiatric units to apply for CAH status. Psychiatric unit beds and lengths of stay are included in the CAH qualifying criteria (maximum 15 acute care inpatient beds and an average length of stay of 96 hours).

On the one hand, closing a psychiatric unit could affect rural beneficiaries' access to psychiatric care in specialized facilities near their homes. On the other hand, CAHs are not precluded from admitting, stabilizing (through a scatter bed approach), and transferring psychiatric patients or providing treatment in a day-hospital program. PPS hospitals frequently treat beneficiaries for psychiatric conditions in scatter beds, rather than in PPS-exempt specialty units (Cano et al. 1997).

Challenges in designing a prospective payment system for inpatient psychiatric care

The BBRA required HCFA to develop a PPS for psychiatric facilities. In the course of our preliminary study of inpatient psychiatric care, two issues emerged that may complicate developing a PPS for

these facilities. Developers of other prospective payment systems have faced one of these challenges in the past, but the other issue may be unique to psychiatric facilities.

First, the data reported by psychiatric facilities are inaccurate. Although patients in PPS-exempt psychiatric facilities must have a principal psychiatric diagnosis, about 6 percent of the hospital-based units' stays had no psychiatric diagnosis. In addition, facilities do not report medical comorbidities, although psychiatric patients frequently have them. We believe these errors result from facilities' lack of attention to coding diagnoses because their payment is currently unaffected. Developers of other PPSs have also encountered inaccurate coding and found ways to compensate.

We were unable to use the same weights to derive a case-mix index for government owned hospitals that is comparable to the index for other facility types because the measured relative costliness for patients with the same diagnosis was very different. For example, patients with schizophrenia treated in government-owned hospitals have an average charge as much as three times that of patients treated in other facilities. This meant we could not construct a valid measure of case mix for both government-owned and the other facility types. The inability to construct one set of relative weights for all patients could create problems in designing a PPS. However, if the differences in cost per case were exclusively the result of much longer lengths of stay, a per diem system could mitigate the effect of those differences. ■

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