The Role of Critical Access Hospital Status in Mitigating the Effects of New Prospective Payment Systems Under Medicare

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ABSTRACT: *This article examines rural hospitals that potentially qualify as critical access hospitals (CAH) and identifies facilities at substantial financial risk as a result of Medicare's expansion of prospective payment systems (PPS) to nonacute settings. Using Health Care Financing Administration (HCFA) cost reports from the federal year ending Sept. 30, 1996, combined with county-level sociodemographic data from the Area Resource File (ARF), characteristics of potential CAHs were identified and their finances analyzed to determine whether they could benefit from the cost-based reimbursement rules applicable to CAH status. Rural hospitals were identified as potential CAHs if they met a combination of federal and state criteria for necessary providers. Rural facilities were classified as "at risk" if they had poor financial ratios in conjunction with high levels of dependence on outpatient, home-care or skilled nursing services. Almost 30 percent of all rural hospitals were identified as potential CAHs. Ninety percent of potential CAH facilities were identified as "at risk" by at least one of five possible risk criteria, and one-third were identified by at least three. Of those classified "at risk," 48 percent might not benefit from conversion to CAH because their inpatient Medicare reimbursement would likely be less under CAH payment rules than under their current PPS payment rules. Many potential CAHs were doing well under inpatient PPS because they were sole community hospitals (SCH) and were therefore eligible for special adjustments to the PPS rates. The Rural Hospital Flexibility Act would be more beneficial to the population of isolated rural hospitals if those eligible for both CAH and SCH status were given the option of retaining their SCH inpatient payment arrangements while still qualifying for outpatient cost-based reimbursement.*

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The Balanced Budget Act of 1997 contained a number of provisions that affected rural hospitals. Of particular importance are the expansion of Medicare's prospective payment systems (PPS) to nonacute care services and the Medicare Rural Hospital Flexibility Program, which created a new, limited-service inpatient facility called the critical access hospital (CAH). Conversion to a CAH places certain restrictions on a hospital (Reif and Ricketts, 1999) but allows the hospital to receive cost-based reimbursement from Medicare for hospital inpatient and outpatient services. For qualifying hospitals, conversion to CAH status is one possible strategy for responding to possible reduced reimbursement for services delivered in hospital-based outpatient departments, home health agencies and skilled nursing facilities.

This article identifies rural hospitals that could qualify as CAHs if their states elect to participate in the Rural Hospital Flexibility Program, emphasizing institutions that are exposed to substantial financial risk as a result of Medicare's expansion of PPS. The financial and operational characteristics of potential CAHs are described, including the extent to which they have diversified into home care and skilled or extended nursing care, their mix of inpatient and outpatient services, their Medicare utilization and payment-to-cost ratios and their operating margins. Although CAH status does not alter the reimbursement for home health or skilled nursing, hospitals with high dependence on these services will be even less able to absorb simultaneous cuts from outpatient prospective payment, and they might therefore be more likely to consider conversion to CAH.

A classification system is developed to identify hospitals at particular financial risk, based on historically poor margins or on greater-than-average dependency on Medicare-sponsored nonacute care services. Potential CAHs are compared to other rural facilities based on this classification system. Rural hospitals with positive inpatient PPS margins are less likely to improve their financial status by converting to a CAH. The findings regarding high-risk hospitals are therefore combined with data on PPS payment-to-cost ratios in order to identify facilities that are likely to apply for a CAH status change, based on whether they have historically experienced losses or operated at near break-even points from Medicare inpatient PPS services.

Although the focus of this article is financial, this is not meant to imply that CAH conversion decisions should be made purely on this basis. Conversion to a limited-service hospital has significant clinical and community implications, and many factors should be taken into account when assessing the attractiveness of conversion.

Hospital Study Sample: Data Sources and Criteria for Selecting Facilities Eligible for CAH Status

Hospital characteristics, cost and utilization data were taken from Medicare cost reports for PPS Year 13, which includes facilities with fiscal years beginning between October 1995 and September 1996. These data were supplemented by county and ZIP code data from HCFA's current Provider of Services file, which is updated quarterly and available from HCFA. All short-stay hospitals with cost report data, including rural primary care hospitals (RPCH) and medical assistance facilities (MAF), were included in the analytic files except for those located in Puerto Rico. County-level demographics and health resource statistics were obtained from the area resource files (ARF). ARF data could not be merged for hospitals located in Alaska, because of restrictions in the county-level coding.

All facilities that were closed, merged or acquired, or that converted to nonacute care settings after PPS 13, were identified through a combination of sources, including HCFA's Provider of Services listing, the American Hospital Association's Hospital Survey and local community or provider Internet sites. From the latitude and longitude of each hospital's ZIP code centroid, mileage was computed to the nearest Medicare-participating, short-stay hospital. If a facility was known to have closed its doors or converted to a nursing home, ambulatory surgery or other outpatient facility (not including RPCH, MAF or CAH) it was excluded from the distance variable computation, even though its PPS 13 data were included in the main analyses.

Rural hospitals were defined as those located in nonmetropolitan counties. Identification of potential CAHs drew on previous work both at Project HOPE (Blanchfield, et al., 1998) and at the North Carolina Rural Health Research Program (Reif, et al., 1999). First, facilities were identified that met all mandatory CAH requirements delineated in the Balanced Budget Act of 1997 except the distance requirement. These requirements include: being located in a county that is not an MSA and has not been reclassified for payment

Table 1. Study Group Definition: Rural Hospitals That Could Qualify as CAHs.

	Number of Facilities	Percentage of Total	
		All U.S. (%)	Non-MSA (%)
Known Medicare-participating Short-stay Hospitals in FY1996	4,927		
Less: Facilities with no data on PPS 13 Cost Report File	−153		
1. Total short stay facilities with cost data	4,775	100.0	
2. Total located in non-MSA counties	2,598	54.4	100.0
3. Total meeting criteria of non-MSA, not reclassified, under public or not-for-profit control and			
a. Size criteria (≤15 beds, or 25 beds with swing) or	315	6.6	21.1
b. Average daily census no greater than 80% of above bed size	733	15.4	28.2
4. Subtotal (sum of 3a and 3b)	1,048	21.9	40.3
5. Total from 4, above, meeting distance criterion (no other short-stay hospitals within 15-mile radius)	770		
6. Total from 5, above, meeting the following optional state criteria for "necessary provider status" (figures in parentheses are the number and percentage of facilities that met each individual criterion):			
a. Sole community hospital status (334, or 43%)			
b. Only hospital in county (576, or 75%)			
c. HPSA-county (488, or 63%)			
d. Percentage population over 65>state average (668, or 87%)			
e. Percentage unemployed>state average (460, or 60%)			
Total CAH-eligible hospitals identified	769	16.1	29.6

purposes to an MSA; being under public or not-for-profit control; and having a maximum of 15 licensed acute care beds (25 if the hospital has approval for swing bed use). Selection criteria were then expanded to include hospitals with more than 15 licensed acute care beds but with an average daily census no higher than 80 percent of the maximum allowable acute-bed capacity (or 12 acute patients per day). It was assumed that these hospitals would be willing to reduce unused capacity in order to meet regulatory requirements, given that their normal acute care patient load can be met within a 15-bed limit (Note 1). Forty percent of all nonmetropolitan hospitals (or 1,048 facilities) met these initial criteria.

The Balanced Budget Act of 1997 permitted states to develop other, less stringent criteria for identifying "necessary providers" that can qualify as CAHs if they are part of an approved state rural health plan. The effort to capture hospitals that might qualify based on optional state standards relied on answers to a survey of all state-level Office of Rural Health Directors that was conducted in 1998 by Reif and Ricketts (1999).

First hospitals were identified that met a less stringent criterion of no neighboring hospitals within 15 miles. Next, additional screens were applied sequentially; these were the ones most commonly mentioned by the Rural Health Directors in their responses. They included: status as a sole community hospital (SCH); being the only hospital in the county; being located in a county with whole or partial designation as a Health Professional Shortage Area (HPSA); being located in a county where the proportion of aged residents was above the state average; or being located in a county where the unemployment rate was above the state average. Thirty percent of all nonmetropolitan hospitals (or 769 facilities) met these final criteria (Table 1).

Four important aspects of this definition of CAH eligibility are worth emphasizing. First, it is intended to be as inclusive as is reasonable, given the flexibility of the enabling legislation. Second, from secondary data collected at the hospital level, it is not possible to consider any additional federal regulations regarding staffing requirements or limits on the length of stay for any individual discharge. Consequently, these restric-

tions are ignored in the definition. Third, the criteria for identifying "necessary providers" are not exhaustive; they include distance and one other criterion, but state agencies would probably identify other grounds for qualification. Finally, software limitations allowed a distance computation based only on the latitude and longitude of ZIP code centroids. This is a stricter definition of geographic isolation than is applied by HCFA in practice, as "road miles" are normally greater than "crow-flies" miles.

The definition of geographic isolation used here might result in an underestimation of the number of potential CAHs. Of the 69 hospitals that were participating CAH facilities by August 1999, 63 had cost data in the PPS 13 files. Among these, 17 would have been excluded from the list of potential CAHs because they were located less than 15 "crow-flies" miles from another (Note 2).

Potential CAHs: Who Are They? Where Are They? What Types of Communities Do They Serve?

Of the 769 facilities identified as potentially eligible for CAH status, 60 percent were under public ownership or control, 5 percent were church-owned and 35 percent were private, nonprofit institutions. By the selection criteria, 51 percent of all public hospitals located in nonmetropolitan areas qualified as potential CAH facilities. Among the potential CAHs identified in this study, 41 percent were already sole community hospitals and qualified for some cost-based adjustments to their inpatient prospective payment rates (Note 3). Another 4 percent were RPCH or MAF sites, where both inpatient and outpatient services to Medicare beneficiaries were already being paid as outpatient Part B services, using modified cost-based rules.

The number and proportion of potential CAHs varied by region (Figure 1). The West Central and Mountain regions combined accounted for 69 percent of the CAH study group, though they account for only 35 percent of all hospitals nationally. At the other extreme, in the New England and Middle Atlantic regions, less than 5 percent of hospitals qualified. At the state level there was also considerable variation in the proportion of qualifying hospitals.

Thirty-five percent of potential CAHs were located in counties adjacent to metropolitan areas, as identified by urban influence codes (Ghelfi and Parker, 1995). These facilities were predominantly in towns with populations of less than 10,000. Thirty-four percent were located in nonadjacent counties having towns with populations between 2,500 and 10,000, and 26 percent were located in nonadjacent counties with no population centers greater than 2,500.

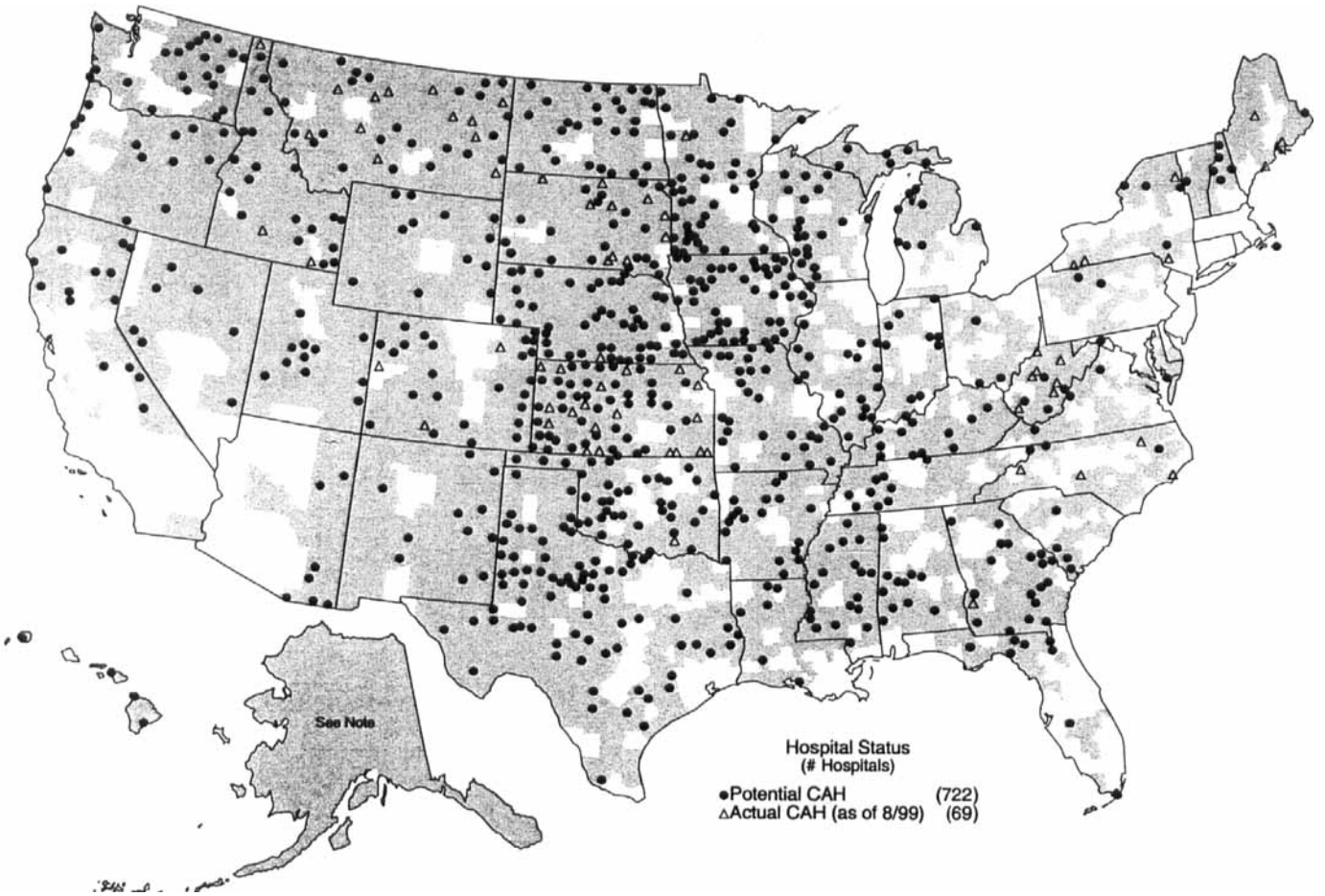
Using data from the Area Resource File, characteristics of the counties where potential CAHs were located ("eligible counties") were compared to characteristics of rural counties where other hospitals were located ("noneligible counties") across a variety of commonly measured demographic and socioeconomic characteristics. As might be expected given the dominance of Western and Mountain areas in the study sample, the mean population density was substantially lower in eligible counties (18.9 people per square mile) than in noneligible rural counties (57.3 people per square mile). Twenty-nine percent of eligible counties had six or fewer people per square mile. Even when stratified by census region, the mean population densities within each region were still considerably lower for eligible than for noneligible counties. This confirms that the selection criteria effectively identified both the most isolated facilities and the facilities serving the most isolated populations.

Consistent with the differences in population density and with the selection criteria, eligible counties had fewer health resources. The mean population served per practicing physician in 1996 was 66 percent greater among eligible than noneligible rural counties (2,012 and 1,295 people per physician, respectively). Forty-one eligible counties (5.8 percent) had more than 4,000 residents per physician, whereas only eight noneligible counties (0.8 percent) had ratios that high. Eligible counties were also more than twice as likely as other rural counties to receive HPSA designation for the full county. Across other sociodemographic characteristics, however, the differences between eligible and non-eligible counties are slight. We found no evidence that eligible counties consistently represent more vulnerable populations.

Potential CAHs: What Are Their Service Delivery and Financial Characteristics?

Participation in Long-term Care. Potential CAHs are more likely than other rural hospitals to have inpatient long-term care capacity. Ninety percent of the CAH study sample had long-term care beds of some sort; 86 percent had approval for swing beds, and 27 percent had licensed skilled or intermediate nursing

Figure 1. Actual and Potential Critical Access Hospitals (CAHs).

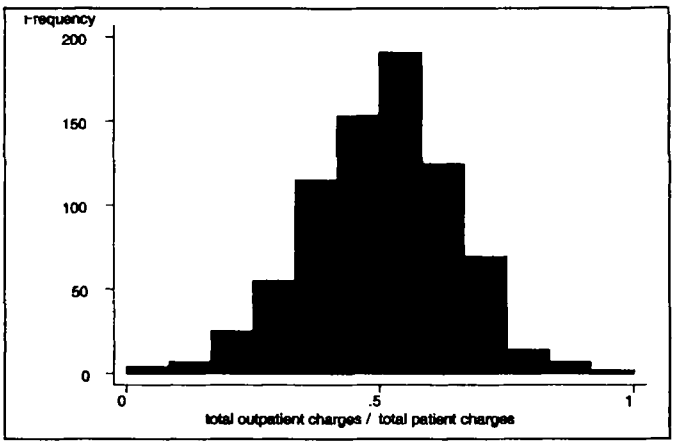


Note: Nonmetropolitan counties are shaded. Metropolitan counties are aggregated into white areas on the map. Potential CAHs could not be identified in Alaska due to Area Resource File limitations.
Source: Health Care Financing Administration; Hospital Cost Report Information System Minimum Data Set, PPS 13, 1996.

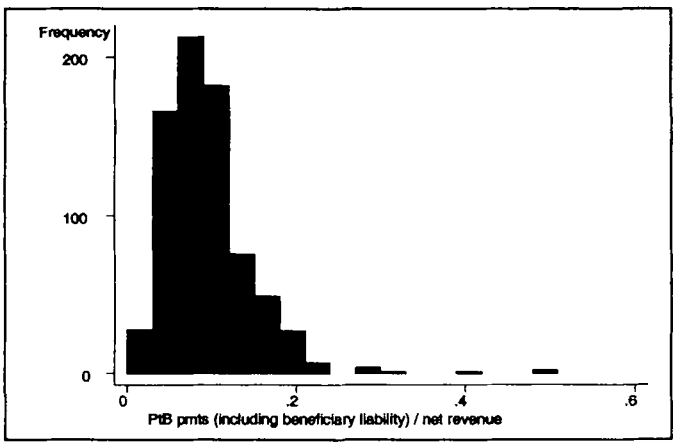
care beds. Among potential CAHs that were authorized for swing beds, the average occupancy rate in the acute care units was 26 percent, as compared to 20 percent among those that were not so authorized, and swing days accounted for 27 percent of the total days of care provided in the acute care units. Reliance on business from long-term care varied by state because capacity is heavily influenced by Medicaid regulations, but certain regional patterns were noticeable in the data. In general, hospitals in the Central and Western states have taken the greatest advantage of swing bed provisions. Ninety-eight percent of eligible facilities in the West North Central region operated swing beds, and they used them for long-term care more frequently than did hospitals in other regions. A significant subset of potential CAHs depend heavily on long-term care, to the point where it might be more reasonable to consider these institutions as extended care facilities with some additional acute care capacity. Within the group of potential CAHs that also operated licensed long-term care beds, total nursing days—which can include skilled, intermediate, convalescent or other types of extended care—accounted for an average of 76 percent of total bed days.

Figure 2. Reliance on Outpatient Activities Among Potential CAH Facilities.

Distribution of Outpatient Charges as a Proportion of Total Charges:



Distribution of Payments for Medicare Part B Services as a Proportion of Net Revenue:



Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

Home Health Services. More than 55 percent of all potential CAHs (426 hospitals) operated certified home health agencies (HHA), compared with 59 percent of other rural hospitals, and 46 percent of hospitals in metropolitan areas. Among potential CAHs that operated HHAs and documented home care charges separately, those charges averaged 11 percent of total patient charges. (Eight percent of hospitals that ran certified HHAs failed to separate home care charges from other charges on their cost reports.) When participation by census region was examined, home services ranged in importance from 7 percent to 20 percent of business for the average potential CAH. Patterns of hospital participation in home health services might be heavily influenced by states' historical certificate-of-need regulations. Many states in the New England and in the Middle Atlantic and South Atlantic regions had no potential CAHs participating in home care, whereas in the Western and Mountain states, participation rates were above 50 percent.

Outpatient Business. To assess hospitals' relative dependence on outpatient activities, a variable was constructed from the individual hospital revenue sum-

maries by dividing the sum of charges for all noninpatient services by total patient service charges (Note 4). Charges for noninpatient services account for a larger proportion of business among hospitals located in rural areas than among those in urban areas in general, but dependence on outpatient services is even greater among potential CAHs than it is among other rural hospitals. Outpatient charges average 50 percent of total patient charges in potential CAHs, as compared with 45 percent of total patient charges in other rural hospitals and only 36 percent in urban hospitals. These differentials are consistent across most regions of the country.

The change to prospective payment for outpatient services will affect only the Medicare portion of a hospital's outpatient revenue. To isolate the extent to which the potential CAHs rely on Medicare outpatient payments, a variable for net Medicare revenue was constructed from the hospital-based outpatient Part B services (Note 5). This variable is computed as the sum of Medicare Part B payments (under the current system, which is a blend of national fee schedules and hospital cost) plus the copay and deductible amounts billed to beneficiaries. It is expressed as a share of each hospital's total net revenue from patient services. The Medicare outpatient share of business averaged 9 percent for potential CAH facilities and 8 percent for other nonmetropolitan facilities. The mean among urban hospitals, for comparison, was only 6 percent. The two variables capturing a hospital's reliance on outpatient activities have somewhat different distributions across potential CAHs, as can be seen in Figure 2. The facilities at or near 100 percent outpatient charges in the first frame of Figure 2, however, represent the RPCH/MAF sites.

HCFA simulated individual hospital outpatient payments under its proposed new payment system. The most recent revision to the proposed payment rules contained revised estimates of expected changes in Part B payments attributable to a combination of the proposed prospective payment for outpatient services and to changes in the rules for computing Part B copayments due from beneficiaries (Note 6). The published estimates were aggregated by selected hospital characteristics. The average payment reduction across all affected hospitals was projected to be 5.7 percent. Payments to rural hospitals with fewer than 50 beds were expected to decline by 13.8 percent. Table 2 includes HFCA's estimates of the expected impact of the proposed rules, as computed for all rural hospitals within the census region. The biggest projected reductions appeared to be in the regions with the highest dependence on Medicare payments.

Table 2. Comparison of Medicare Part B Payments as Percentage of Net Revenue.

	Part B Payments Share of Net Patient Revenue		HCFA Projections: Total Estimated Percent Change in Part B Payments
	Among Potential CAHs	Among Other Nonmetropolitan Hospitals	Among All Nonmetropolitan Hospitals
Nationally			
N	756	1385	
Mean	9%	8%	−7.4%
Median	9%	7%	
By Region (Means)			
New England	7%	8%	−12.2%
Middle Atlantic	7%	7%	0.2%
South Atlantic	8%	7%	−7.7%
East North Central	9%	8%	−6.1%
East South Central	7%	6%	−6.5%
West North Central	12%	10%	−10.9%
West South Central	10%	8%	−10.6%
Mountain	7%	6%	−8.3%
Pacific	8%	7%	−3.4%

Note: Means are unweighted averages across all hospitals in category. Thirteen observations were excluded from calculations because of inconsistent or missing data.
Sources: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration and Federal Register (1999, June 30).

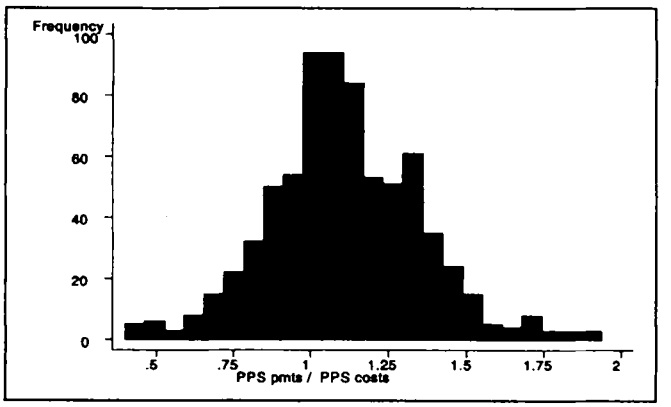
PPS Inpatient Payment Ratios. As provided for in the Balanced Budget Act, CAHs are exempt from prospective payment for inpatient and hospital-based outpatient services and are paid, instead, under retrospective cost reimbursement. The intention of cost reimbursement is to protect low-volume, isolated facilities that might be unable to reduce their unit costs below the nationally standardized rates—both those set for inpatients (in 1982) and those about to be set for outpatient services. Among potential CAHs that were receiving Part A PPS payments in 1996 (737 fa-

cilities), these payments accounted for an average of 24 percent of net patient revenues from all sources, compared to 28 percent for other rural hospitals and 30 percent for urban hospitals. Thus, the Medicare inpatient share of business in our study population is not insignificant, despite the selection criteria that limit potential CAHs to very small facilities. Medicare patients accounted for 56 percent of total acute care discharges in CAH-eligible facilities, compared to 49 percent in other rural hospitals and 39 percent in urban hospitals.

Conversion to CAH status is not likely to be financially beneficial to an acute care facility if its PPS payments already exceed its costs (Note 7). To determine the subset of potential CAHs likely to receive higher Medicare inpatient reimbursement under a cost-based system, we examined the Medicare PPS payment-to-cost ratios for all hospitals that received PPS payments in PPS 13. Historically, hospitals in nonmetropolitan areas have shown lower inpatient payment-to-cost ratios than have those in metropolitan areas, because they are less likely to receive special teaching and disproportionate share adjustments. The differential has been getting smaller over the last several years, but lower rural payment ratios still prevailed in PPS 13. It is important to keep in mind that computations are derived from the period two years before the Balanced Budget Act of 1997 became effective. In many instances, the Balanced Budget Act payment provisions preferentially reduced reimbursement to urban and teaching hospitals, so the geographic differentials that were noticed in the 1996 data were probably less pronounced by 1999 (Medicare Payment Advisory Commission, 1998).

Potential CAH facilities, as a group, were found to be no more disadvantaged with respect to inpatient payments than other rural facilities. The data in Table 3 show that this might be attributable to the high number of potential CAHs that are already eligible for payment adjustments as sole community hospitals. SCHs have been allowed the option of being paid under the inpatient PPS rules based on the national standardized payment amount per discharge or at a rate based on their own updated historical cost per case-mix-adjusted discharge (Consolidated Omnibus Budget Reconciliation Act of 1989). The historical cost is computed from either 1982 or 1987. Each year, the SCH may choose whichever method results in higher payments. This approach offers protection for a low-volume, high-unit-cost facility that is unable to compete against a national standard cost per discharge, while also retaining some incentive for the hospital to control costs. In effect, it allows the SCH to compete against itself, because it has an opportunity to keep the reimbursement difference if it can reduce its own case-mix-adjusted real costs per discharge to an amount below its own historical level. Even with these special adjustments, however, 23 percent of SCHs in the sample had PPS payment ratios below 1.0.

Figure 3. Distribution of PPS Payment-to-Cost Ratios Among Potential CAHs.



Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

The distribution of PPS payment-to-cost ratios across all potential CAHs is plotted in Figure 3. From this distribution it is evident that, as of 1996, many potential CAHs were already unable to reduce their costs per discharge below national standardized rates. Thirty-one percent were paid at or below cost in PPS 13. The comparable figure for other rural hospitals is also 31 percent, but for urban hospitals it is only 20 percent.

Facilities at which PPS payments substantially exceeded costs in 1996 are unlikely to benefit from CAH cost reimbursement provisions. But it is also possible (as a result of reduced inflation, update rates and other payment reductions in the Balanced Budget Act of 1997) that many hospitals experiencing moderately positive PPS payment ratios in 1996 will face PPS losses within the next few years. A PPS ratio of 1.1, in 1996, seems a conservative cut-point for identifying facilities that might become interested in CAH conversion, because they could have ratios at or below 1.0 before the end of this year.

Table 3. Medicare Payment-to-Cost Ratios for Services Paid Under Inpatient PPS.

	Potential CAH Facilities		Other Hospitals	
	Number of Hospitals	Payment Ratio	Number of Hospitals	Payment Ratio
Located in metropolitan areas	—	—	2,550	1.17
Located in nonmetropolitan areas:				
No special payment category	421	1.06	997	1.11
Sole community hospitals	311	1.16	290	1.14
Rural referral center	—	—	91	1.12
Number of non-PPS providers	27	—	10	—
Number with incomplete margin data	10		169	
Total hospitals in study	769		4,107	

Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

Table 4. Comparing Other Financial Ratios.

	Potential CAHs	Other Non-MSA Hospitals	Urban Hospitals
Mean PPS payment ratio	1.11	1.12	1.17
Percentage of hospitals with ratios:			
Less than 0.9	17%	12%	7%
Between 0.9 and 1.0	13%	18%	13%
Between 1.0 and 1.1	20%	20%	19%
Greater than 1.1	46%	47%	59%
Not available or incomplete margin data	5%	2%	2%
Mean operating ratio	0.93	1.01	1.00
Percentage of hospitals with ratios:			
Less than 0.9	30%	10%	13%
Between 0.9 and 1.0	40%	32%	34%
Between 1.0 and 1.1	11%	43%	36%
Greater than 1.1	6%	12%	14%
Incomplete margin data	2%	2%	3%
Mean total revenue ratio	1.03	1.06	1.06
Percentage of hospitals with ratios:			
Less than 0.9	5%	3%	6%
Between 0.9 and 1.0	28%	15%	15%
Between 1.0 and 1.1	48%	52%	48%
Greater than 1.1	17%	26%	25%
Incomplete margin data	3%	4%	6%

Note: Means are unweighted averages across all hospitals with complete margin data.
Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

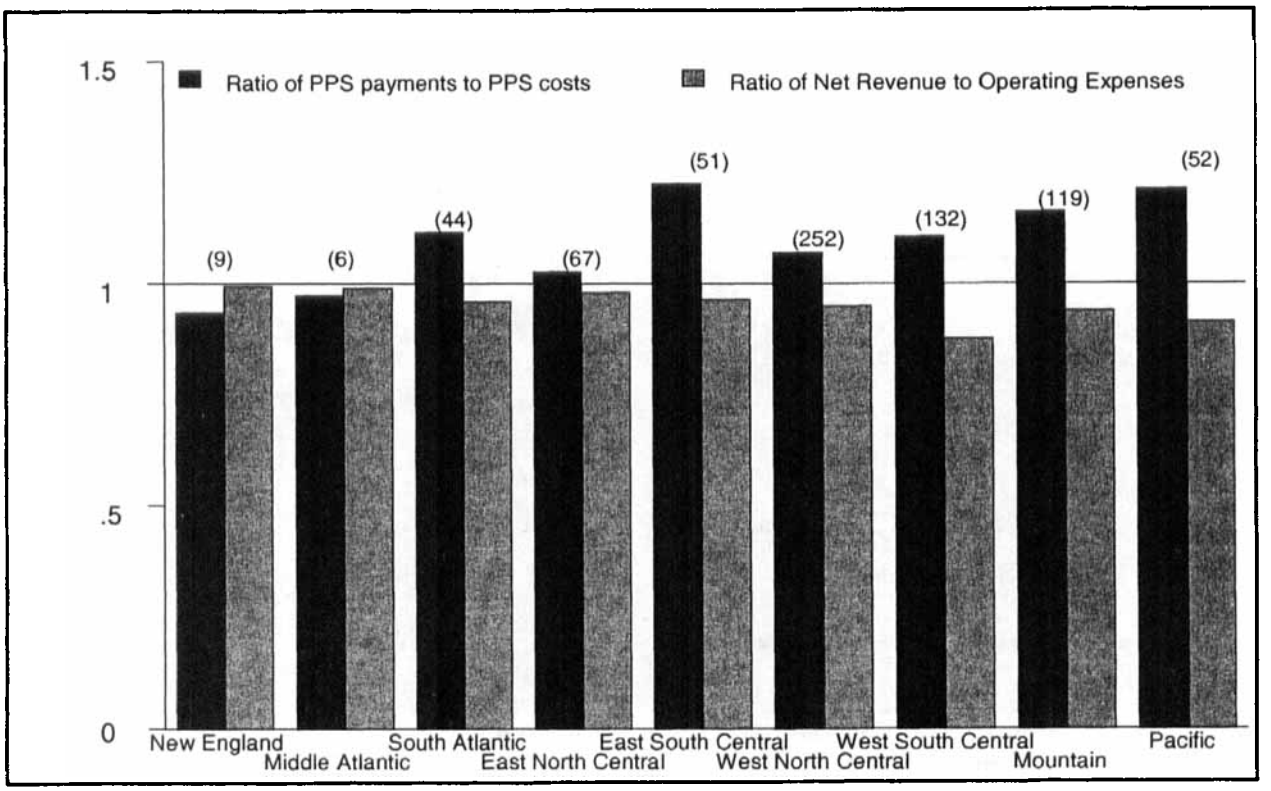
Other Financial Indicators. Other financial ratios reveal that, despite their PPS margins, potential CAH facilities face significantly more difficulty than other hospitals in generating sufficient net revenue to cover operating costs. Lower operating margins make them more dependent on nonoperating income to meet their payroll and other obligations.

To develop other measures similar in construction to the PPS payment-to-cost ratios, two additional ratio-based financial variables were created. "Operating ratio" was defined as net patient revenues divided by operating expenses, and "total revenue ratio" was defined as total revenues (including investment income, donations and public appropriations) divided by total expenses. For these ratios, values below one indicated a failure to recover accrued costs with income earned during the accounting period. Table 4 compares the findings across each of the three ratios.

Seventy percent of potential CAHs had operating ratios below 1.0. Nearly half of the facilities that operated at a loss appeared to have access to other (non-operating) sources of support that were sufficient to cover their total expenses. Such sources included investment income, grants and donations, as well as support from state or local governments. Forty-seven percent of the potential CAH facilities reported receiving public appropriations, compared with only 20 percent of other non-MSA facilities and 14 percent of urban facilities. Among those reporting any public support, appropriation accounted for 6 percent of total revenues in the CAH group, whereas it averaged only 3 percent in the other rural hospitals group and 4 percent in the urban group.

RPCH sites, which were already exempt from PPS and receiving fully cost-based reimbursement for inpatient and outpatient services, appeared nevertheless to be in particular financial difficulty. They were the most dependent on other sources of support. The mean operating ratio for hospitals operating as RPCH or MAF sites during PPS 13 was only 0.87, and their total revenue ratio averaged only 0.98 (Note 8.) More

Figure 4. PPS Payment and Operating Ratios Among Potential CAH Facilities, by Region.



Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

than half of these facilities reported receiving substantial external support in the form of appropriations, grants or donations.

To assess the impact of a worst-case scenario with respect to outpatient prospective payments, a model was constructed showing the effect of a 15 percent reduction in total payments for Medicare Part B services on the 1996 operating ratios of all hospitals in the study population. Out of 221 potential CAH facilities that had operating ratios above 1.0, 20 percent would have been thrown into an operating loss situation (that is, net revenues would have been less than operating expenses) under such a scenario. The comparable proportion for other nonmetropolitan hospitals, however, was only 12 percent, and for urban hospitals it was 10 percent.

There are very noticeable regional differences with respect to PPS payment ratios and operating ratios. The double bar chart in Figure 4 presents these two ratios for the CAH study sample, averaged by census region. The number appearing in parentheses at the top of each set of bars is the number of potential CAHs that were identified in that region.

In the Western states, where the majority of potential CAHs are located, PPS payments averaged well above cost. At the same time, the regional mean and median operating ratios were below 1.0, despite the surpluses generated by Medicare inpatients. To be in this financial position, these hospitals might be operating nonacute services at considerable losses, or they might serve a large Medicaid or uninsured population. We would expect hospitals in this position to be the least able to absorb reductions in Medicare payments for outpatient services. Yet, at the same time, they might also be unable to give up the inpatient PPS payments that exceed costs. For this group of fa-

Table 5. At Risk Indicators and Potential CAH Status.

Risk Indicator	Other Rural Hospitals (Not Qualifying for CAH Status) (N = 1,408)	Potential Critical Access Hospitals: All Potential CAHs in Study (N = 769)	By Historical PPS Payment-to-Cost Ratios: Low to Moderate (<1.1)	By Historical PPS Payment-to-Cost Ratios: High (1.1)	Percentage Likely to Benefit from Cost-Based Reimbursement
High percentage of outpatient business	596 (42%)	466 (61%)	229	220	49
High percentage of home care business	547 (39%)	361 (47%)	158	193	44
High percentage of skilled/intermediate care business	487 (35%)	224 (29%)	91	118	41
High percentage of part B payments to total net revenue	539 (38%)	410 (53%)	224	164	55
Operating expenses in excess of net operating revenue	603 (43%)	535 (70%)	295	211	55
Risk index score (average number of risk categories met within group)	1.98	2.61	2.62	2.60	—
Hospitals meeting all 5 of 5	17 (1%)	18 (2%)	7	11	39
Hospitals meeting any 4 of 5	136 (10%)	141 (18%)	71	65	50
Hospitals meeting any 3 of 5	319 (23%)	252 (33%)	127	108	50
Hospitals meeting any 2 of 5	432 (31%)	256 (33%)	131	113	51
Hospitals meeting any 1 of 5	346 (25%)	87 (11%)	38	46	44
Hospitals meeting none	158 (11%)	15 (2%)	7	8	47
Total number of hospitals	1408 (100%)	769 (100%)			
Less: RPCH/MAF sites		−27			
Less: incomplete margin data		−10			
Remaining: facilities with PPS ratios		732	381	351	52

Source: Hospital Cost Report Information System Minimum Data Set, Health Care Financing Administration.

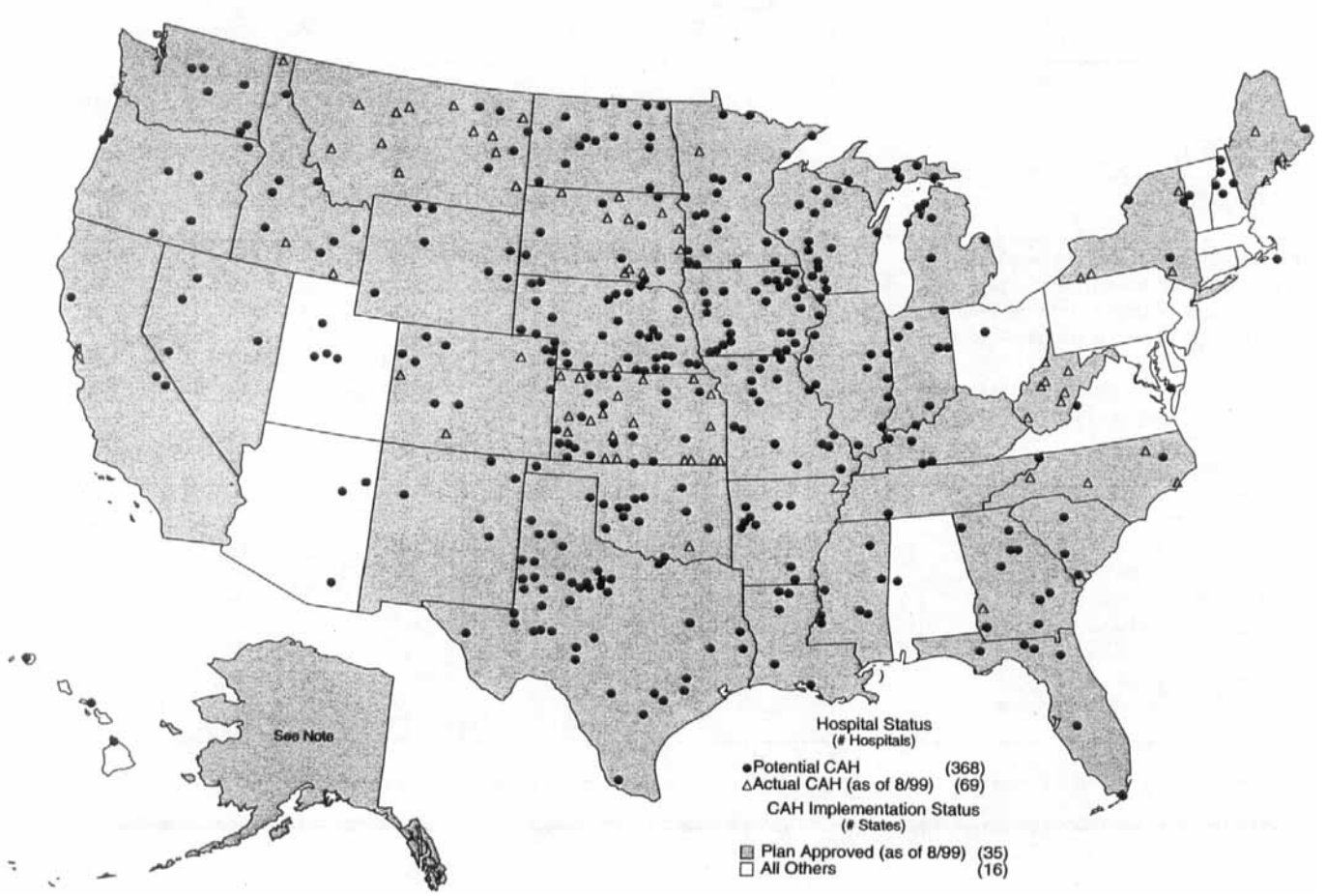
cilities, CAH status does not look like a viable strategy for combating threatened revenue losses in the nonacute care settings.

"At Risk" Hospitals and CAH Status: Identifying the Overlap

In this last section, hospitals are systematically classified according to the characteristics described in the previous sections, so that potential CAHs that also appear financially vulnerable to outpatient prospective payment can be identified. Five indicators of risk have been developed, according to whether a facility: (1) falls above the national 67th percentile (top third) for percent of business attributable to outpatient services; (2) is in the top third for percent of business attributable to home health services; (3) is in the top third for percent of business attributable to skilled nursing care; (4) is in the top third of the ratio of Medicare Part B hospital payments to net revenue; or (5) has an operating margin below 1.0.

A greater proportion of potential CAHs than other rural facilities was identified in every risk category except the one based on extended care. Only 2 percent of potential CAHs were not identified as "at risk" by any category, compared with 11 percent of other rural hospitals. More than half the potential CAHs met three or more of the risk indicators, compared with 34 percent of other rural facilities. Among the potential CAHs that were "at risk," a subset was identified that might benefit financially from CAH status as the reimbursement rules are now written. Table 5 presents the distribution of nonqualifying rural hospitals and potential CAH facilities across the five risk indicators. It then identifies the proportion of potential CAHs within each risk cate-

Figure 5. Potential Critical Access Hospitals Most Likely to Benefit From Conversion (1996 PPS Ratios Less Than 1.1)



Note: Potential CAHs could not be identified in Alaska due to Area Resource File limitations.

Source: Health Care Financing Administration; Hospital Cost Report Information System Minimum Data Set, PPS 13, 1996; State Offices of Rural Health; State Hospital Associations; State Departments of Family Licensure, 1999.

gory that might benefit from cost reimbursement, given their PPS payment histories in the year 1996.

Out of all potential CAHs, 754 (98 percent) met at least one of the five risk indicators, but 27 were already exempt from PPS payments. Another 10 had missing or inconsistent PPS margin data and could not be classified. Of the remaining 732 facilities, 52 percent had PPS payment ratios below 1.1 in 1996. This is the group of hospitals for which conversion to CAH status might be a viable financial strategy, if they are unable to respond to payment reductions through lower unit costs. This group is mapped in Figure 5, along with the 69 facilities identified as actual CAH facilities as of August 1999.

The proportion of "at risk" facilities not qualifying for CAH status is larger than expected. The number of nonqualifying rural hospitals with high dependence on Medicare Part B payments or with operating expenses in excess of net revenue should be of particular concern. In this study, 595 rural facilities met both of these two risk indicators; 289 (49 percent) of these were not CAH eligible, primarily because they did not meet the hospital size restrictions (although 90 percent had fewer than 100 beds and half had fewer than 50

beds). The majority of nonqualifying, "at risk" facilities were located in the North Central and South Central regions, and at least half were located 15 or more miles from the nearest neighboring hospital.

Summary and Conclusions

This study has confirmed that low-volume rural hospitals are at greater financial risk than other hospitals from proposed changes to Medicare payment for nonacute services. Rural hospitals have been identified that rely heavily on income from nonacute services or are already unable to cover operating expenses with net patient revenue; any further reductions in nonacute payment could pose significant hardship for these hospitals. Hospitals that are simultaneously "at risk" from expanded PPS and potentially eligible for CAH status also have been identified in order to examine the CAH option as a possible financial strategy for coping with expected payment reductions.

Designation as a CAH allows a facility to receive Medicare payments based on reasonable costs. The reimbursement provisions of the Rural Hospital Flexibility Program (RHFP) apply, however, to both acute inpatient and outpatient services. Just over half of the "at risk" potential CAHs might improve their Medicare payments under cost reimbursement. These facilities are mapped by ZIP code, to identify states where it might be particularly beneficial to educate hospital industry leaders and rural health advocates so that they might take advantage of the RHFP.

Among the remaining "at risk" potential CAH sites, however, prospective payments for inpatient acute services exceed costs, and this study documents that the resulting Medicare surpluses are very important to these hospitals' overall financial stability. These facilities are unlikely to benefit financially from CAH status, because reductions in their inpatient payments could outweigh the advantages in outpatient payment.

Many of these hospitals were able to earn surpluses from inpatient PPS payments because they were eligible for special payment provisions as SCHs. Many small rural hospitals are eligible for both sole community status and CAH designation and are also at substantial financial risk from nonacute care prospective payment. Whether the RHFP will help these isolated "at-risk" hospitals depends both on the potential reimbursement benefits and on whether the limited-service CAH designation is consistent with the institution's clinical practice and mission. For institutions that decide conversion to CAH is consistent with their mission, the RHFP would be strengthened if these dually eligible hospitals could choose to retain the inpatient PPS reimbursement rules applicable to SCHs while also receiving cost-based outpatient reimbursement. It is quite possible that a number of hospitals will not choose to convert to CAHs because of the length-of-stay restrictions. Analysis of the study data reveals that many of these hospitals, as well as a substantial group of isolated 25-to-100-bed nonqualifying hospitals, are at risk from nonacute care PPS. Congress could grant relief to these hospitals by extending fully cost-based outpatient reimbursement to all SCHs.

Because the Balanced Budget Act of 1997 did not mandate Medicaid reimbursement to CAHs, no estimates are included in this analysis of the effects of Medicaid cost reimbursement. Medicaid utilization tended to be less important for CAH eligible facilities than for others (12 percent of acute days of care, compared to 16 percent among other rural hospitals and 15 percent in urban hospitals), but there is considerable variation in Medicaid dependence across hospitals in each of these groups. In states where Medicaid programs choose to mirror the Medicare reimbursement rules for CAHs, and in potential CAHs where Medicaid utilization is at or above the mean, Medicaid policies could have a substantial influence on the hospitals' decisions.

CAHs are limited-service inpatient facilities. Conversion to this status is a strategic decision that would normally be made in the context of clinical and community needs as well as financial objectives. This analysis has been restricted to the financial bases on which the decision might be made, but the reimbursement implications are only one component to a complex decision. Many rural facilities might find ways to reduce their unit costs or might be able to respond to the challenges of expanded prospective payment systems with other strategies.

Note

The recently passed Balanced Budget Refinement Act (1999) changed some of the Medicare payment rules that motivated this analysis of potential CAHs. For-profit hospitals are now eligible to participate in the Rural Hospital Flexibility Program. Although these hospitals are not included in this analysis, they would have increased the group of potential CAHs by 35 (or 4.6 percent on the base of 769). Thirty of the additional hospitals were located in the South. As a group, the eligible for-profit facilities tended to have higher PPS margins than the eligible nonprofits and therefore would be less likely to consider CAH conversion.

A number of provisions in the Balanced Budget Refinement Act of 1999 will ameliorate or at least delay some of the effects of the new payment systems. The most important of these is that rural hospitals with fewer than 100 beds are "held harmless" for the first three years of outpatient PPS. In addition, a scheduled 15 percent cut for home health rates under PPS has been delayed for one year, and skilled nursing facility rules have been changed to better account for high-cost patients. These changes should reduce financial pressures for some of the rural hospitals identified in this study, and they might make CAH conversion a less pressing decision.

The Balanced Budget Refinement Act also contains changes that make conversion to CAH more attractive. Most notably, the previous 96-hour restriction on individual inpatient stays has been replaced with a 96-hour average length-of-stay limitation. CAHs also now have an option to be paid at an all-inclusive rate that includes a professional component, and this can greatly simplify billing procedures for some institutions.

Although these changes are welcome news for rural hospitals, they do not invalidate any part of the underlying analyses or alter the conclusions from this study.

Notes

1. Information on average daily census and staffed bed capacity was obtained from the PPS 13 cost report files. Location-related requirements, however, were based on the most recent available data for actual and reclassified MSA status.
2. Ten of the 17 were RPCH/MAF sites that were, by statute, grandfathered in as CAH and were therefore not required to meet the current CAH criteria. This was viewed in this study as a standard research design problem of classification in the presence of measurement error. When the effect of expanding the definition to include facilities located within 10 miles of another hospital was tested, the number of qualifying hospitals grew from 769 to 971; but the new group included only 10 of the 16 previously excluded actual CAH facilities. It was decided to retain the 15-mile standard for the remainder of the study, on grounds that the improvement in sensitivity (correctly classifying all eligible hospitals) to be gained by reducing it to 10 miles was not worth the likely reduction in specificity (correctly classifying ineligible hospitals).
3. Beginning in fiscal year 1998, additional hospitals could be eligible for payment adjustments under the rules for Medicare dependent hospitals (MDH). Because this category was eliminated in fiscal year 1994 and then reinstated by the Balanced Budget Act of 1997, the 1996 files used in this study do not identify any MDH facilities. Under current payment rules, a hospital qualifying for CAH as well as for SCH or MDH status must choose one of these designations under which to define its Medicare reimbursement methods.
4. The source for charge data by service type (rather than payer type) is the patient charge summary appearing on the financial statements at the end of each cost report. These data are provided to the Medicare program for informational purposes and might be less reliable than data taken from worksheets that actually influence reimbursement. In constructing these summary statistics, observations with clearly inconsistent values were excluded. No variable for total Medicare outpatient charges was constructed, because the summarized cost report files do not included Medicare settlement data for home health, ambulance or skilled nursing services.
5. Payments for home care, ambulance, durable medical equipment sales and dialysis are intentionally excluded from this computation because they are not included in the outpatient PPS plans. Although a small portion of the remaining Part B services that are included in the variable might not come under the proposed outpatient PPS regulations (e.g., certain rehabilitation therapies), this measure is regarded as an adequate proxy for a hospital's risk associated with outpatient prospective payment.
6. This change was also mandated by the Balanced Budget Act of 1997 (§ 4521) and occurs at the same time as the prospective payment implementation.
7. A 1998 Government Accounting Office study found that cost-based payments for RPCH inpatients between September 1993 and May 1996 averaged 8.8 percent higher than they would have under the rules for rural per-discharge payments. The study also found, however, that more than 20 percent of the cases paid had stayed longer than the 72-hour limit that was supposed to have been imposed by the RPCH regulations. It was not clear whether cost-based payments would have exceeded diagnosis-related group payments if the patients had been discharged within the 72-hour limit. Under the Balanced Budget Act of 1997, CAHs were not supposed to keep an admitted patient longer than 96 hours.
8. Margin data were unusable for 6 of the 37 such sites included in the PPS 13 file, but of the remaining 31 facilities, 21 had operating margins below 0.9, and another 5 were between 0.9 and 1.0.

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