Medicare claims show remarkable variations by region, hospital ownership, and teaching status

Variation in Medicare spending among types of hospitals is an important concern among health-care policymakers. Similarly, hospital finance leaders need to understand variations in costs among hospitals at a time when the industry is challenged to measure and control those costs.

The findings of a study of these variations among hospitals according to location, type of ownership, and teaching status, based on Medicare claims for the 12 months ending Sept.30, 2009, are instructive for finance leaders. The study focused on Medicare fee-for-service discharges from short-term acute care hospitals for five common, high-volume services that together represent nearly 20 percent of total Medicare services:

> Heart failure
> Chronic obstructive pulmonary disease (COPD)
> Total joint replacement
> Pneumonia
> Septicemia

Teaching versus nonteaching hospitals. The study first compared variations between teaching hospitals and nonteaching hospitals. Teaching status was determined by whether a hospital was actively involved as a major participant in specialty and subspecialty programs accredited by the Accreditation Council for Graduate Medical Education. As might be expected, average costs

HIGH-VOLUME SERVICES STUDIED

Service	Medicare Severity-Adjusted Diagnosis-Related Groups	% Total
Heart Failure	291,292,293	4.8%
COPD	190,191,192	3.8%
Total Joint Replacement	469,470	3.7%
Pneumonia	193,194,195	3.7%
Septicemia	871,872	3.0%

VARIATION IN PAYMENT AND COST BETWEEN TEACHING AND NONTEACHING HOSPITALS

	Nonteaching Hospitals				Teaching Hospitals			
			Severity-Adjusted Average				Severity-Adjusted Average	
Service	Cases	CMI	Payment	Cost	Cases	CMI	Payment	Cost
Heart Failure	308,909	1.1280	$6,093	$6,796	235,798	1.1527	$6,990	$7,425
COPD	269,852	1.0064	$6,122	$6,771	153,250	1.0249	$6,863	$7,176
Total Joint Replacement	234,916	2.1104	$6,162	$7,603	207,191	2.1145	$6,820	$7,892
Pneumonia	247,708	1.0741	$6,109	$7,146	152,920	1.1089	$6,939	$7,514
Septicemia	204,550	1.6603	$6,347	$6,894	153,808	1.6897	$7,193	$7,668

for teaching hospitals were higher than for nonteaching hospitals, ranging from 3.8 percent higher for total joint replacement to 11.2 percent higher for septicemia. It is generally recognized teaching hospitals have higher costs due to inefficiencies and practices inherent in medical education and that many teaching hospitals attract more severely ill and medically fragile patients.

It is also understandable that average payments to teaching hospitals were higher than for nonteaching hospitals. Medicare reimbursement to teaching hospitals includes indirect medical education adjustments, and most teaching hospitals are eligible for disproportionate share adjustments. Average payments ranged from 10.7 percent higher for total joint replacement to 14.7 percent higher for heart failure.

The disparity between higher cost and higher payment percentages could be due to several factors. The cost allocation methodology used in this study may not fully reflect medical education costs. Similarly, the severity adjustments based on Medicare severity-adjusted diagnosis-related groups (MS-DRGs) may not fully account for the effects of sicker patients. It is also possible that Medicare reimbursement adjustments for medical education provide a financial advantage.

Hospital ownership. The study next compared variations among hospitals according to type of ownership, which was determined based on each hospital's most recent, available cost report information. The average cost for all services was highest for not-for-profit hospitals and lowest for for-profit hospitals. Average cost variations among the three types of ownership ranged from 2.7 to 11.8 percent. This high variability suggests that there are opportunities to manage costs more closely. The operational practices in for-profit hospitals seem to yield consistently lower average costs.

The average cost for all services was highest for not-for-profit hospitals and lowest for for-profit hospitals. Average cost variations among the three types of ownership ranged from 2.7 to 11.8 percent.

Similarly, average payments for all services were higher for not-for-profit and government hospitals than for for-profit hospitals. Average payment variations among the three types of ownership ranged from 3.4 to 8.1 percent. In general, average payment fluctuated with average costs. Unfortunately, however, all hospitals experienced apparent losses for all services. The difference between average cost and average

VARIATION IN PAYMENT AND COST BY TYPE OF HOSPITAL OWNERSHIP

	Nonteaching Hospitals				Teaching Hospitals			
			Severity-Adjusted Average				Severity-Adjusted Average	
Service	Cases	CMI	Payment	Cost	Cases	CMI	Payment	Cost
Heart Failure	389,828	1.1439	$6,526	$7,207	86,331	1.1315	$6,225	$6,637
COPD	289,632	1.0183	$6,451	$7,050	78,665	1.0039	$6,194	$6,582
Total Joint Replacement	327,417	2.1136	$6,551	$7,882	69,850	2.1004	$6,061	$7,052
Pneumonia	283,043	1.0945	$6,455	$7,340	62,849	1.0715	$6,263	$7,021
Septicemia	260,699	1.6754	$6,736	$7,274	56,614	1.6688	$6,561	$7,085

	Teaching Hospitals			
			Severity-Adjusted Average	
Service	Cases	CMI	Payment	Cost
Heart Failure	68,548	1.1182	$6,588	$6,840
COPD	54,805	0.9990	$6,372	$6,700
Total Joint Replacement	44,840	2.1214	$6,520	$7,750
Pneumonia	54,736	1.0689	$6,505	$7,324
Septicemia	41,045	1.6629	$6,787	$7,145

VARIATION IN PAYMENT AND COST BY GEOGRAPHIC REGION

	Severity-Adjusted Average Payment			Severity-Adjusted Average Cost			Average Gain/(Loss)	
Service	**High**	**Low**	**Variance**	**High**	**Low**	**Variance**	**High**	**Low**
Heart Failure	$7,892	$5,715	38.1%	$9,067	$5,520	64.3%	−$1,175	$195
COPD	$7,827	$5,739	36.4%	$8,982	$5,485	63.8%	−$1,155	$254
Total Joint Replacement	$7,578	$5,828	30.0%	$9,259	$6,507	42.3%	−$1,680	−$679
Pneumonia	$7,810	$5,712	36.7%	$9,296	$5,905	57.4%	−$1,486	−$194
Septicemia	$8,081	$5,836	38.5%	$9,099	$5,747	58.3%	−$1,018	$89

This brief look at average payments and costs for several categories of hospitals points to an opportunity for hospitals with higher average costs to focus on ways to manage and reduce them.

payment ranged from −3.7 to −15.9 percent among the five services, with not-for-profit hospitals showing the highest loss for all five services.

Hospital location. The third set of comparisons focuses on payment and cost variation among geographic areas. For purposes of this study, hospitals were categorized according to their CMS Census Regions. The Pacific region (Alaska, Calif., Hawaii, Ore., and Wash.) consistently had both the highest average payment and the highest average cost for all five services studied. Similarly, the East South Central Region (Ala., Ky., Miss., and Tenn.) consistently had both the lowest payments and the lowest costs. It was interesting to note, however, that the highest and lowest case mix indexes (CMIs) did not always correspond to these extremes, suggesting that fluctuations in payments and costs are influenced by factors other than patient severity, such as the cost of labor (i.e., local area wage index).

This brief look at average payments and costs for several categories of hospitals discloses some remarkable variations, and points to an opportunity for hospitals with higher average costs to focus on ways to manage and reduce them. It also hints at the existence of policy issues with Medicare reimbursement that may be leading to improper payments to hospitals. ■

This analysis was developed by American Hospital Directory, Louisville, Ky. The DRG classifications, numbers of claims, and total payments were taken directly from the Medicare Provider Analysis and Review (MedPAR) file that contains IPPS billing records for Medicare beneficiaries using hospital inpatient services. Cost information was allocated using departmental charges from the MedPAR file and departmental cost to charge ratios determined for each hospital from the Healthcare Cost Report Information System (HCRIS) dataset that contains the most recent version of each cost report filed with CMS.

Each service studied comprises up to three MS-DRGs (i.e., three levels of severity). A case mix index (representing the average relative weight of all patients) was calculated for each service to represent the patient mix among levels of severity. This CMI was then used to severity-adjust average payments and average costs for comparison among hospital categories.

For more information, contact William Shoemaker at wshoemaker@ahd.com.