Findings Brief *January 2004*

Rural-Urban Issues in the Wage Index Adjustment for Prospective Payment in Skilled Nursing Facilities

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In July of 1998, the method for determining payments for Medicare services in skilled nursing facilities (SNFs) began a three-year transition from retrospective cost-based reimbursement to a SNF prospective payment system (SNF PPS). SNF PPS is based on national rates with an adjustment for differences in local wages that is based upon the Medicare inpatient hospital wage index.[1] Many problems of concern to rural providers have been identified in the hospital wage index, and additional problems may arise if relative wage patterns for hospitals and nursing homes are not the same. In an analysis of hourly wages for Medicare-certified SNFs, we find that:

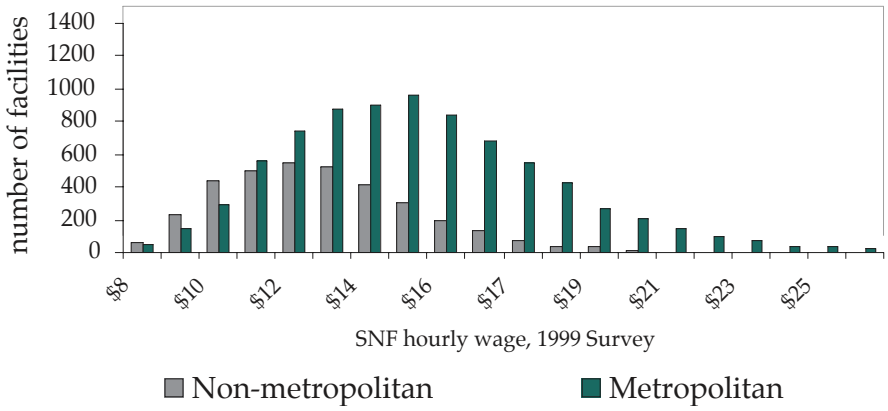
- Rural-urban SNF wage differences are similar to, but not quite as severe as, those found in hospitals. SNF hourly wages paid in non-metropolitan areas averaged 83.5% of those in metropolitan areas, compared to 81.8% among hospitals.
- Wages in hospital-based SNFs are substantially higher than those in freestanding facilities in all but the most rural counties.
- All non-metropolitan areas in a state are grouped into a single labor market for wage index purposes. SNFs in the very rural counties tend to have lower wages and benefit by being grouped in statewide rural markets, but SNFs in more urbanized non-metropolitan counties tend to have a wage structure that is similar to what is found in smaller metropolitan areas. Unlike PPS hospitals, SNFs have no recourse to geographic reclassification to correct possible labor market misclassifications.
- A switch from a wage index based on hospital wages to one based on SNF wages would result in a slight redistribution of payments away from facilities in large metropolitan areas.

[1] In 1998, the Centers for Medicare and Medicaid Services (CMS) had no reliable data on regional differences in nursing home wages, so the wage adjustment was based upon the Medicare inpatient hospital wage index. Although by 2001 preliminary SNF wage indexes were available based on 1998 and 1999 data, for FY 2004 payments CMS still uses the hospital index, citing insufficient resources to audit the SNF data. For more technical information on the construction of the wage index and SNF PPS, please see:
Dalton, K., Slifkin, R.T. Rural-Urban Issues in the Wage Index Adjustment for Prospective Payment in Skilled Nursing Facilities. NC RHR&PAC Working Paper #78, located at:
http://www.shepscenter.unc.edu/research_programs/rural_program/wp.html.

Geographic Patterns in Nursing Home Wages

In 1999, the average hourly wage across non-metropolitan SNFs was $11.99, which is 83.5% of the average wage across metropolitan SNFs ($14.36) (Figure 1). Although the overall variation in SNF hourly wages across all nursing facilities is greater than the variation across all PPS hospitals, the rural-urban differentials for nursing facilities are less pronounced than those for hospitals.

Figure 1: Distribution of FY 1999 Skilled Nursing Facility Average Hourly Wages by Metropolitan and Non-Metropolitan Location



Source: 1999 SNF Wage Survey. Metropolitan status as defined by OMB, 1999.

Wage Variation within the Statewide Rural Labor Markets

To assess whether state-wide rural labor markets are too broadly defined, a measure of with-in market wage deviations was constructed and examined across counties grouped according to Rural Urban Continuum Code[2]. The evidence for rural sub-markets among SNFs is similar to the evidence found for hospitals: those in more rural areas tend to have wages that are below their state rural market averages and therefore enjoy an advantage by being grouped in a state-wide rural market, while those in less rural non-metropolitan counties are penalized by being grouped with the lower-wage facilities in smaller counties.

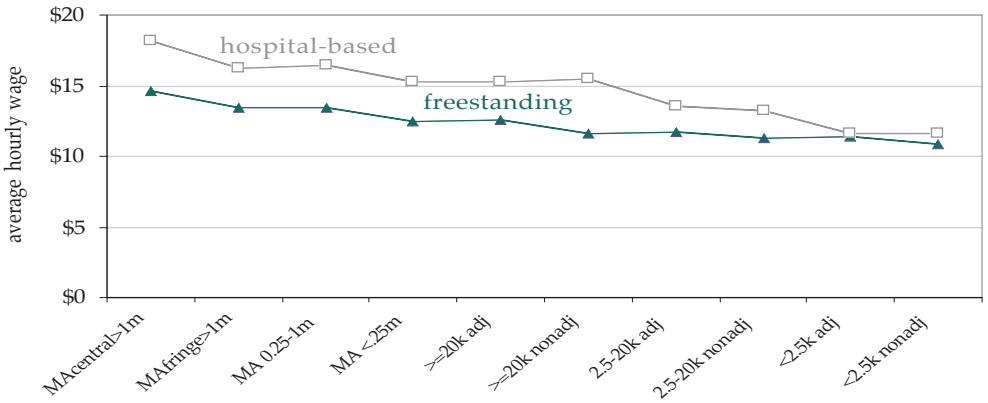
Comparisons of the aggregate hourly wage for SNFs across geographic areas are complicated because of the large within market differences in labor costs between hospital-based and freestanding settings. This variation is larger than any rural sub-market variation, and it is almost as large as the cross-market variation that a wage index is designed to address. Hourly wages for freestanding settings average about 2% below the aggregate hourly wage for their respective labor markets, but those from hospital-based units average 22% higher. These setting-specific differences – which result primarily from differences in the skill mix of employees – are present in all but the most rural counties (Figure 2). The gap between hospital-based and freestanding labor costs underscores the question of underlying product differences between the two settings, and the difficulties associated with using a single case-mix adjusted rate for both settings.

Regardless of the institutional setting, grouping all rural counties together in one rural market at the state level has the effect of penalizing some SNFs in more urbanized non-metropolitan counties where the wage levels may more closely approximate those in nearby urban areas. For hospitals in this situation, there is an administrative remedy that allows them to request reclassification to neighboring metropolitan markets, but

[2] Originally constructed in 1993, and updated in 1995, Rural Urban Continuum Codes include four metropolitan categories and six non-metropolitan county classifications, based on the proportion of county population living in an urbanized setting and on adjacency to metropolitan areas.

under current law, the option is not available to SNFs until CMS adopts a wage index derived from SNF data. Identifying appropriate reclassification criteria for SNFs will be problematic as long as hospital-based and freestanding facilities are included under the same index and set of base payment rates. The evidence for market-level misclassification—in particular, potential rural/urban misclassification—may be masked by the larger problem of the substantially higher wages in hospital-based units.

Figure 2: Skilled Nursing Facilities Hourly Wages Averaged by Rural-Urban Continuum Code and Hospital Affiliation, 1999



Source: 1999 SNF Wage Survey

Implications of Changing from Hospital to SNF Wage Index

The SNF wage index is better than the hospital wage index as a predictor of SNF wages, and would be a more equitable adjuster for SNF PPS rates. For most labor markets, however, the differences between wage index values computed using the SNF wage data and those computed using the hospital data are modest (Table 1).

Table 1: Estimated Impact of Changing from Hospital to Skilled Nursing Facility Wage Index (1999 Survey)

	Markets with increase (%)	SNFs with increase (%)	Estimated mean change in the index*
Large metropolitan	43%	49%	- 0.005
All other metropolitan	50%	52%	+0.018
Non-metropolitan counties with:			
> = 20,000 urbanized	58%	62%	+0.018
< 20,000 urbanized	57%	59%	+0.008

Source: 1999 SNF Wage Survey and 1999 Medicare Cost Reports

**Weighted by Medicare days.*

Three-fourths of all skilled nursing facilities are located in areas where the differences are between -5% and +6%, which would translate into per-diem payment changes of from -4% to +5%. The total payment impact of changing to a SNF wage-based index depends both on the market-level differences between the two index values and the distribution of facilities and Medicare covered days across markets. Estimates indicate that on balance, the transition from a hospital index to a SNF index based on 1999 data would result in a very slight re-distribution of payments away from facilities in large metropolitan areas.

CONCLUSIONS

The cesarean section rate for rural hospitals was well above the 10-15% recommended by the World Health Organization (WHO). Women who delivered babies in rural hospitals had cesarean sections at a rate that was also higher than their urban counterparts, although the difference in rates was small. However, the fact that a difference did exist, along with the significantly lower VBAC rate in rural facilities suggests that more information is needed to determine the appropriateness of these surgical procedures in a rural setting.

Whatever the underlying reasons, the finding that women who deliver at rural hospitals have higher c-section rates is important for those concerned with the provision of health care in rural settings as well as for rural residents. Surgery carries risk for both mother and baby. Surgical deliveries are also more expensive than vaginal deliveries and cost is a consideration for rural hospitals that may be operating close to the margin. A better understanding of the medical, health care system, professional and personal factors that contribute to c-sections in rural hospitals would inform changes in policy. It may be that a large portion of c-sections in rural hospitals are medically justified. However, absent such a comprehensive review, providers in rural hospitals can still monitor their own procedures and policies to assure that pregnant women they serve receive the most appropriate care, whether it be at their rural hospital or at another hospital better suited to the needs of mother and baby.

DATA

Data for this study come from the 2001 Nationwide Inpatient Sample (NIS), part of the Healthcare Cost and Utilization Project (HCUP) within the Agency for Healthcare Research and Quality. In this study, hospitals in a Metropolitan Statistical Area (MSA) are referred to as urban hospitals and those not in an MSA are rural hospitals. A hospital's average daily census was used to categorize facilities according to volume of patient discharges. Nationwide rates were calculated using software that accounts for the complex survey design of the NIS. All reported percentages are weighted. More information on the sample and study methods can be found at:

www.shepscenter.unc.edu/research_programs/rural_program.html

References:

[1] Obstetrics: U.S. cesarean births rapidly rising. Medical letter on the CDC and FDA, July 7, 2002.

[2] Menacker F, Curtin SC. Trends in Cesarean Birth and Vaginal Birth After Previous Cesarean, 1991-99. National Vital Statistics Reports. Center for Disease Control. 49:13, December 27, 2001.

Supported by the federal Office of Rural Health Policy, Health Resources and Services Administration, U.S. Department of Health and Human Services Contract Number 6-U1C-RH-00027-04