

Adjusting for Labor Market Differences among Maryland Hospitals

Health Services Cost Review Commission
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FINAL RECOMMENDATION

Introduction:

Many Health Services Cost Review Commission (HSCRC) policies rely on a comparison of adjusted charges among Maryland hospitals. In making these comparisons, the HSCRC seeks to hold hospitals harmless for cost differences that are beyond their control and to provide hospitals with an incentive to reduce costs that are within the hospitals' control.¹ The purpose of the labor market adjustor (LMA) is to adjust charges for differential labor market costs among hospitals. The LMA should: 1) reflect labor market differences that are exogenous to the hospital; 2) avoid passing through changes in labor costs under the hospital's control, such as increases in wages to gain an edge in recruiting from surrounding hospitals; and 3) reflect differences in unit labor costs only, not differences in utilization of specific job categories.

The LMA is used in the Inter-Hospital Cost Comparison (ICC) and Reasonableness of Charges (ROC) methodologies to adjust charges prior to comparing hospitals' costs when analyzing relative efficiency. Information from the HSCRC annual Wage and Salary Survey (WSS) is used to create a labor market adjustor for each hospital. The HSCRC currently uses Maryland's 23 counties and Baltimore City to define hospital labor markets. Hospital representatives expressed concern that these current labor market boundaries are artificial and do not adequately represent the market from which hospitals actually draw their labor. In response to these concerns, the Commission staff worked with the hospital industry throughout the past year to develop a labor market adjustor methodology based on employee zip code information. This approach is designed to reflect the actual geographic distribution of employees for each hospital. The details are presented below.

Current Method for Calculation of LMA:

Hospitals report wage and fringe benefit data from a two-week pay period that includes February 1. The data are reported to the Commission on April 1 of each year. The adjustor distinguishes between hospital specific and general job categories, reflecting the belief that while hospitals compete with other hospitals for a subset of employees, other employees (e.g., cafeteria workers, security personnel, etc.) are drawn from a broader labor market in which hospitals compete with non-hospital employers. Because WSS data are reported by job classification, the resulting labor market adjustor is adjusted for skill mix differences. The adjustors are calculated by simply dividing the skill-adjusted average compensation (wages and fringe benefits) per hour in the State by the skill-adjusted average compensation per hour in the county. In order to minimize the impact of one-time changes in the wage and salary structure of hospitals or undetected reporting errors, a three-year average of WSS data are used to calculate LMAs.

An individual hospital's raw LMA is the sum of the county's hospital specific adjustor multiplied by the county's percent of salaries attributed to hospital specific job

¹ Another purpose of the adjustments is to recognize socially desirable costs that are within the hospitals' control, such as direct and indirect medical education or disproportionate share, for example.

categories and the county's non-hospital specific wage adjustor multiplied by the county's percent of salaries attributed to general job categories. The raw LMA is multiplied by the percentage of the hospital's own total costs attributable to salaries to determine the hospital's final LMA.

An exception to the above policy occurs for counties in which there is only one hospital. In this case, the above policy would allow one hospital to be the sole determinant of the reasonableness of wages in its county. To prevent this, in the case of single hospital jurisdictions, all hospitals from contiguous counties are included in the calculations above as if they were in that county (contiguous county rule).²

Final LMAs are expressed as an index. A hospital with a LMA of 1.063 is expected to have total costs 6.3% below the state average because of lower labor costs in its labor market. Similarly, a hospital with a LMA of 0.988 would be expected to have total costs 1.2% higher than the state average because of higher labor costs in its labor market. Each hospital's charge and/or cost per case would be adjusted accordingly before any comparisons would be made in the ICC, ROC, or other Commission policies.

Concerns Regarding Current LMA Policy:

Hospitals have expressed concern that the current labor market boundaries are artificial (by county and Baltimore City) and do not truly represent the market from which hospitals draw labor. The Maryland Hospital Association, therefore, proposed that the labor market adjustor be individualized to each hospital based on the zip codes from which a hospital draws employees.

A second concern regarding the current policy is that the LMAs are expressed counter-intuitively. Under the current policy, the adjustor is calculated by dividing the State compensation per hour by the county compensation per hour. Therefore, hospitals with labor costs below the State average have an adjustor that is above 1.0 and those with labor costs above the state average have an adjustor that is below 1.0.

Proposed Changes to LMA Policy:

In response to these concerns, the Commission staff proposes the following changes to the current LMA policy:

1. Hospital labor market adjustors should be calculated using employee zip code information collected in the Wage and Salary Survey.
2. The LMAs should be expressed intuitively so that low cost labor markets are less than 1.0 and high cost labor markets are greater than 1.0. This can be

² Implementation of the "contiguous county rule" (along with ad hoc adjustments for St. Agnes and Good Samaritan Hospitals) results in a labor market adjustor that is not revenue neutral.

accomplished when calculating the adjustors by dividing average compensation per hour in the hospital’s labor market by the average compensation per hour in the State. This will put the HSCRC policy in line with most other labor market adjustors used in health care finance.

Calculation of LMAs with Proposed Changes:

The following is an outline of steps used by HSCRC staff to calculate a zip code based labor market adjustor:

The employee zip code data necessary to implement a zip code based labor market analysis were not collected under the existing Wage and Salary Survey. Therefore, at the March 5, 2003 meeting, the Commissioners approved the adoption of supplemental reporting requirements to include employee zip code information under the existing Wage and Salary Survey regulations. Hospitals were required to submit supplemental 2002 and 2003 Wage and Salary Survey data that included zip code information for each employee. The following table is a sample of the data fields from the supplemental survey that were used to calculate labor market adjustors for each hospital:

Employee ID #	Employee Zip Code	Job Category	Hours Worked	Total Compensation
1	20003	1	77	\$1,244.25
2	21882	6	80	\$1,037.64
3	21882	11	81	\$1,212.43
4	21505	1	83	\$1,769.52
5	21222	24	74	\$1,375.48
6	22456	9	82	\$1,512.50

Hospitals also submitted the total number of hours that contractual nurses worked during the two-week survey period. These agency nurse hours were added to the appropriate nursing job categories (11 = RN, 18 = LPN) so that statewide weights for skill mix would include all nursing hours worked.

The data sets from all hospitals were merged to form a statewide database. From these data, “Statewide Total Hours” worked and “Statewide Total Compensation” paid were calculated for each job category.

Using the same statewide database, “Market Total Hours” worked and “Market Total Compensation” paid were calculated for each job category by zip code. Using the “Market Total Hours” and “Market Total Compensation”, the Market Hourly Compensation Rate for each job category within each hospital was then calculated. Hospitals with missing job categories were assigned the Statewide Hourly Compensation Rate for that job category (all zip codes).

The Market Total Compensation for each job category was adjusted (Adjusted Market Total Compensation) in order to standardize the skill mix of each hospital to that of the State profile. This was accomplished by multiplying each hospital's Market Hourly Compensation Rate for each job category by the Statewide Total Hours for that job category. Commission staff believes that this is a critical step for the development of an appropriate labor market adjustor. Standardizing the skill mix results in an adjustor for price differences across markets (an element out of the hospital's control) without capturing differences in the composition of employees across hospitals (an element within the hospital's control).

The Raw LMA for 2002 and 2003 for each hospital was calculated as the sum of the Adjusted Market Total Compensation for all job categories in a given hospital divided by the sum of Statewide Total Compensation for all job categories.

$$\text{Raw LMA} = \frac{\text{Sum Adjusted Market Total Compensation}}{\text{Sum Statewide Total Compensation}}$$

Placing the Statewide Total Compensation in the denominator provides an adjustor that makes intuitive sense, i.e. low cost labor markets will have an index that is less than 1.0 and high cost labor markets will have an index that is greater than 1.0.

The average of the raw LMA for 2002 and 2003 was multiplied by the percentage of the hospital's own total costs (including agency nurse costs) attributable to salaries (% Salaries) to determine the hospital's final LMA.

$$\text{Final LMA} = (\text{Average Raw LMA} * \% \text{ Salaries}) + (1 - \% \text{ Salaries})$$

An example of the raw labor market adjustor calculation is provided in *Table 1*. The Final LMA for each hospital using the zip code based methodology is provided in *Table 2*.

Summary of Recommendations:

Staff recommends the following changes to the current labor market adjustor policy:

1. Hospital labor market adjustors should be calculated using the zip code based methodology described above.
2. The LMAs should be expressed so that low cost LMAs are less than 1.0 and high cost LMAs are greater than 1.0.

Table 1: LMA Calculation Example, Zip Code Based Methodology

Market and State Hourly Compensation (Comp) calculated from statewide data
 Market Adjusted Total Comp = Market Hourly Comp X State Hours Paid for Job Category
 State Total Comp = State Hourly Comp X State Hours Paid

Hospital ID	Job Category	Market Hours Paid	Market Total Comp Paid	Market Hourly Comp	State Hours Paid	State Hourly Comp	State Total Comp Paid	Adjusted Market Total Comp
A	1	9988	\$158,527.24	\$15.87	136087	\$15.98	\$2,175,066.00	\$2,159,700.69
A	2	4771	\$78,930.08	\$16.54	63247	\$17.41	\$1,101,212.00	\$1,046,105.38
A	3	569	\$9,051.00	\$15.91	8612	\$16.15	\$139,096.00	\$137,016.92
A	4	1033	\$14,659.00	\$14.19	20963	\$14.80	\$310,237.00	\$297,464.97
A	5	881	\$19,793.56	\$22.47	16339	\$23.02	\$376,113.00	\$367,137.33
							\$4,101,724.00	\$4,007,425.29

Raw LMA for Hospital A = Sum of Market Adjusted Total Comp/Sum of State Total Comp
Raw LMA for Hospital A = \$4,007,425.29/\$4,101,724.00 = .97701

Hospital ID	Job Category	Market Hours Paid	Market Total Comp Paid	Market Hourly Comp	State Hours Paid	State Hourly Comp	State Total Comp Paid	Adjusted Market Total Comp
B	1	33543	\$582,990.07	\$17.38	136087	\$15.98	\$2,175,066.00	\$2,365,192.06
B	2	9955	\$195,913.27	\$19.68	63247	\$17.41	\$1,101,212.00	\$1,244,700.96
B	3	1300	\$22,183.84	\$17.07	8612	\$16.15	\$139,096.00	\$147,006.84
B	4	1540	\$27,158.33	\$17.64	20963	\$14.80	\$310,237.00	\$369,787.32
B	5	452	\$11,887.09	\$26.30	16339	\$23.02	\$376,113.00	\$429,715.70
							\$4,101,724.00	\$4,556,402.88

Raw LMA for Hospital B = Sum of Market Adjusted Total Comp/Sum of State Total Comp
Raw LMA for Hospital B = \$4,556,402.88/\$4,101,724.00 = 1.11085

Table 2
HEALTH SERVICES COST REVIEW COMMISSION
ZIP CODE BASED LABOR MARKET ADJUSTOR DATA - % Salary Updated to Include Nurse Agency Costs
STATE PROFILE FOR JOB CATEGORY HOURS - Substitute Missing Job Categories
RATE YEAR 2004

HOSPID	HOSPITAL NAME	PERCENT SALARIES	LABOR MARKET ADJUSTOR 2002	LABOR MARKET ADJUSTOR 2003	AVERAGE RAW LABOR MARKET ADJ	FINAL LABOR MARKET ADJ	CURRENT LABOR MARKET ADJ (01-03 Avg)
210001	Washington County Hospital	62.95%	0.93716	0.95992	0.94854	0.97368	0.97815
210002	University of MD Medical System	52.38%	0.96423	0.96836	0.96630	0.98852	0.98998
210003	Prince George's Hospital	46.14%	1.04408	1.03364	1.03886	1.02432	1.01751
210004	Holy Cross Hospital	57.11%	1.07026	1.07660	1.07343	1.04848	1.05528
210005	Frederick Memorial Hospital	57.93%	1.03261	1.03186	1.03224	1.02507	1.03540
210006	Harford Memorial Hospital	58.18%	0.98837	0.99711	0.99274	1.00203	1.00167
210007	St. Joseph's Hospital	49.26%	0.96870	0.98794	0.97832	0.99553	1.00376
210008	Mercy Medical Center	52.52%	0.95586	0.96647	0.96116	0.98575	0.98970
210009	Johns Hopkins Hospital	45.15%	0.93222	0.93884	0.93553	0.97699	0.99159
210010	Dorchester General Hospital	59.40%	0.95100	1.00013	0.97557	0.99168	0.98416
210011	St. Agnes Hospital	59.09%	0.96526	0.97286	0.96906	0.98788	1.00489
210012	Sinai Hospital	55.06%	0.95691	0.96778	0.96235	0.98542	0.99011
210013	Bon Secours Hospital	61.87%	0.94593	0.95446	0.95019	0.97527	0.98807
210015	Franklin Square Hospital	56.69%	0.97113	0.98834	0.97973	0.99472	1.00455
210016	Washington Adventist Hospital	52.33%	1.06301	1.05012	1.05656	1.03607	1.04916
210017	Garrett Co. Memorial Hospital	55.53%	0.89900	0.90034	0.89967	0.95022	0.94139
210018	Montgomery General Hospital	57.49%	1.08213	1.08332	1.08272	1.05414	1.05844
210019	Peninsula Regional Med. Cen.	51.26%	0.98885	0.98234	0.98560	0.99885	0.97792
210022	Suburban Hospital	51.22%	1.08330	1.10135	1.09232	1.05386	1.05056
210023	Anne Arundel General Hosp.	51.51%	1.04939	1.06804	1.05871	1.03671	1.00005
210024	Union Memorial Hospital	51.20%	0.96140	0.97472	0.96806	0.98982	0.99032
210025	The Memorial Hospital	58.13%	0.89957	0.92656	0.91306	0.95543	0.94981
210027	Sacred Heart Hospital	49.74%	0.89930	0.92229	0.91079	0.96163	0.95260
210028	St. Mary's Hospital	54.51%	0.96414	0.96320	0.96367	0.98635	0.96897
210029	JH Bayview Medical Center	48.60%	0.94640	0.96579	0.95609	0.98481	0.99065
210030	Chester River Hospital Center	54.19%	0.97535	1.00070	0.98803	0.99975	0.97650
210032	Union Hospital of Cecil Co.	57.64%	0.93753	0.94598	0.94175	0.97249	0.98294
210033	Carroll County General Hosp.	56.47%	1.00513	1.03316	1.01915	1.01716	1.00539
210034	Harbor Hospital Center	57.91%	0.97002	0.98359	0.97681	0.99276	0.98821
210035	Civista Medical Center	52.26%	0.94995	0.94884	0.94939	0.97967	1.00643
210037	Memorial Hospital at Easton	58.13%	0.95729	1.00478	0.98103	0.99519	0.97573
210038	Maryland General Hospital	67.97%	0.95709	0.96228	0.95969	0.97871	0.98679
210039	Calvert Memorial Hospital	54.87%	0.95119	0.98001	0.96560	0.98729	1.00690
210040	Northwest Hospital	56.63%	0.98850	0.99664	0.99257	1.00205	1.00449
210043	North Arundel General Hosp.	57.19%	0.98530	0.99278	0.98904	0.99997	1.00006
210044	GBMC	52.47%	0.96678	0.98579	0.97629	0.99376	1.00426
210045	McCready	52.09%	0.91260	0.88922	0.90091	0.95434	0.97776
210048	Howard Co. General Hosp.	51.36%	1.01748	1.02632	1.02190	1.01760	1.02059
210049	Upper Chesapeake Med. Cen.	52.72%	1.02009	1.03227	1.02618	1.02017	1.00146
210051	Doctors' Community Hospital	55.83%	1.04879	1.01973	1.03426	1.02553	1.02095
210054	Southern Maryland Hospital	41.36%	1.00439	0.99997	1.00218	1.00719	1.01566
210055	Laurel Regional Hospital	50.63%	1.03415	1.02720	1.03067	1.02191	1.01943
210056	Good Samaritan Hospital	56.04%	0.95349	0.97429	0.96389	0.98592	1.00419
210057	Shady Grove Adventist Hosp.	54.16%	1.07336	1.07600	1.07468	1.04698	1.05095
210058	Kernan Hospital	50.38%	1.01480	1.00783	1.01131	1.01201	0.99021
210060	Fort Washington Med. Cen.	44.07%	1.02982	1.05238	1.04110	1.02451	1.01714
210061	Atlantic General Hospital	48.60%	0.98963	0.99212	0.99087	1.00182	0.97909
Statewide Average LMA						1.00000	1.00000