

SECTION  
2 A

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**Accounting for changes  
in input prices**

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## **R E C O M M E N D A T I O N**

The Secretary should use the wage and benefit proxies that most closely match the training and skill requirements of health care occupations in all input price indexes used for updating payments. In determining index weights, measures specific to the health sector and to occupation categories in which health care plays a major role should be emphasized.

**\*YES: 15 • NO: 0 • NOT VOTING: 0 • ABSENT: 2**

**\*COMMISSIONERS' VOTING RESULTS**

# SECTION 2A

## Section 2A: Accounting for changes in input prices

The Centers for Medicare & Medicaid Services (CMS) and the Congress use forecasts of price indexes to update payment rates. In this section, the Commission reviews and assesses the price indexes CMS uses to measure input price changes for its prospective payment systems. Because the indexes rely heavily on measures of labor compensation from the general economy that do not reflect changes in compensation rates in health care, they may overestimate or underestimate changes in input prices, leading to payment updates that are too high or too low. Accordingly, we recommend that CMS change the treatment of wages and benefits in its input price measures to improve their accuracy in predicting changes in provider costs.

### In this section

- Why measure input prices?
- How to measure input prices
- Input price indexes used by CMS
- Treatment of labor costs in input price indexes

Inflation in input prices is one of the key determinants of change in the cost of providing health care services. Input price indexes provide information with which to estimate price changes over time. The Centers for Medicare & Medicaid Services (CMS) uses input price indexes for its payment systems to determine price change, and CMS and the Congress use these measures to update payment rates. As explained earlier in the chapter, the forecasted change in the appropriate input price index plays a prominent role in MedPAC’s approach for developing update recommendations in all fee-for-service sectors. This section explains the concept of input price measurement, details Medicare’s use of price indexes, and then discusses an important policy issue—the treatment of wages and benefits in CMS’s market basket indexes.

## Why measure input prices?

Input prices are the amounts actually paid by health care providers for the goods and services used to produce and deliver care. They include payments for items purchased, leased, or rented, and wage and benefit payments to individuals who provide labor services. Depreciation, interest, and other measures of capital-related costs are used to estimate prices for capital inputs.

Price indexes are used to measure changes in input prices over time.<sup>1</sup> Policymakers can use indexes to set payment rates that provide desirable incentives to providers. Rates should not encourage providers to produce too many or too few services or respond with actions detrimental to the government or beneficiaries. Payments should be perceived as equitable by providers and encourage participation in the program.

An input price index measures prices for specific provider types in specific time periods. In most cases, the unit of analysis

is providers nationwide—that is, the price index reflects change in prices over time for a class of providers but does not vary geographically. Such indexes are typically calculated using information on a large number of prices and measures of the relative importance of each input in producing health care services.

## How to measure input prices

Most input price indexes are calculated by constructing a weighted sum of individual price measures. First, cost categories, or components, are identified to reflect the range of products providers use to furnish patient care. For each component, a proxy is chosen to measure its price. Proxies are chosen to match the actual prices of the components as closely as possible and are weighted by the share of expenditures in a base year. Proxies that rise more rapidly than average influence the price index more; those increasing less rapidly become less important. Input price indexes thereby reflect the relative importance of each component in the base period and each component’s cumulative price change. The value of the overall input price index in a period is divided by the value in an earlier period to get the increase between periods. Periodically, weights must be recalibrated and updated.

Input price measures must use data that are reliable, regularly published by an independent source, and sufficient in quantity to permit evaluation and extrapolation. In general, these considerations lead designers of such measures to use statistical data published by government agencies such as the Bureau of Labor Statistics (BLS). The input price measures used by CMS rely on indexes of wages and salaries and employee benefits from the BLS to measure labor costs (Appendix A, Tables A-1 and A-2). CMS generally uses producer price indexes (PPIs) from the BLS to measure other costs (Appendix A, Tables A-3 and A-4).

Input price measures should reflect changes in prices and wages but not shifts in the mix of inputs purchased or types of labor employed. Because measures such as average hourly earnings may increase either because of increases in wages or in the share of hours paid at higher wages, they do not reflect changes in wages for a fixed mix of labor services, and thus would not be appropriate for use in updating payments. The BLS publishes employment cost indexes (ECIs) for wages and salaries, employee benefits, and compensation that calculate costs for a fixed mix of labor inputs. Changes in the ECIs thus reflect changes in unit costs for labor rather than changes in the composition of occupations. CMS generally uses the ECIs to measure labor compensation in its input price measures.

## Input price indexes used by CMS

CMS uses a different input price measure for each Medicare fee-for-service program (Appendix A, Table A-1).

- The inpatient prospective payment system (PPS) uses the PPS hospital market basket for operating costs and the capital market basket for capital costs.
- The outpatient PPS uses the PPS hospital market basket.
- The Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA) payment system—for hospitals exempt from the inpatient PPS—uses the exempt-hospital market basket.
- The PPS for inpatient rehabilitation facilities uses the exempt-hospital market basket with capital costs.
- The PPS for home health agencies uses the home health market basket.
- The PPS for skilled nursing facilities (SNFs) uses the SNF market basket.

<sup>1</sup> Price measurement also is required to allow appropriate comparison of expenditures across geographic areas. Medicare uses wage indexes and special cost-of-living adjustments to adjust fee-for-service payment rates for geographic differences in costs.

**TABLE  
2A-1**

**Growth in input price measures by fiscal year:  
comparison with PPS hospital market basket**

**Difference in rate of change relative  
to PPS hospital market basket**

Fiscal year	PPS hospital market basket	Exempt hospital market basket	SNF market basket	Home health market basket	Physician Medicare Economic Index
1995	3.0%	0.2%	0.0%	-0.2%	-1.5%
1996	2.7	-0.2	0.0	0.0	-1.0
1997	1.8	0.2	0.6	0.9	0.1
1998	2.9	-0.2	-0.1	0.2	-0.7
1999	2.5	-0.1	0.5	0.3	-0.5
2000	3.6	0.0	0.4	0.0	-1.1
2001*	4.1	0.0	0.8	0.1	-1.7
Mean (1995-2000)	2.8	0.0	0.2	0.2	-0.8

Note: \* calculated using forecasted data. PPS (prospective payment system). SNF (skilled nursing facility). Difference = market basket-PPS hospital market basket.

Source: MedPAC analysis of data from CMS.

**TABLE  
2A-2**

**Input price measures: market basket weights by type  
of cost and origin of labor price proxies**

**Sector**

Proxy	PPS hospitals	PPS-exempt hospitals	Home health	SNF	Physician
Labor					
Health sector	20.2%	20.9%	17.6% <sup>1</sup>	63.0%	0.0%
General economy	41.2	42.8	60.1	0.0	71.3
Total	61.4	63.7	77.7	63.0	71.3
Non-labor	38.6	36.3	19.7	27.1	28.7
Capital	N/A <sup>2</sup>	N/A <sup>3</sup>	2.6	9.9	N/A <sup>3</sup>
Total	100.0	100.0	100.0	100.0	100.0

<sup>1</sup> Based on hospital rather than home health data.

<sup>2</sup> Included in a separate capital market basket.

<sup>3</sup> Not included in market basket.

Note: PPS (prospective payment system). SNF (skilled nursing facility). Proxies: health sector (based on data for wages, salaries, and employee benefits in health care organizations). General economy (based on data for wages, salaries, and employee benefits in the general economy). Capital (depreciation, interest, and other capital-related costs). Non-labor (all proxies except labor and capital). Columns may not add to totals because of rounding.

Source: MedPAC analysis of data from Global Insights, Inc., DRI-WEFA, and CMS.

- The sustainable growth rate system for physician services uses the Medicare Economic Index (MEI).

CMS does not currently maintain a separate market basket to measure prices or update payments for outpatient dialysis services. In the absence of a dialysis market basket, MedPAC developed a measure of input price change to inform its update recommendations. The Commission has urged CMS to develop a dialysis-specific market basket (MedPAC 2000), and the Benefits Improvement and Protection Act of 2000 requires the Secretary to do so and report his results no later than July 1, 2002.

The price indexes CMS uses reflect differences in the relative importance of cost components and in the choice of price proxies among provider groups. The PPS hospital, exempt hospital, home health, and SNF market baskets showed similar growth rates from 1995 through 2001 (Table 2A-1). The physician MEI grew at a significantly slower rate, reflecting differences in components as well as inclusion of a productivity offset that reduced the impact of labor cost increases on the index. (See Section 2C of this chapter for further discussion of this issue.)

**Treatment of labor costs  
in input price indexes**

Labor costs (combining wages and benefits) account for more than half of expenditures on inputs as represented in the input price indexes used by CMS (Table 2A-2). Proxies for labor costs may be based on the wages and benefits paid to employees in similar occupations in the overall economy or in health care organizations. The former approach is appropriate for occupations such as accountants and computer programmers. In such cases, health care organizations and other firms hire similar employees in the same labor markets. The latter approach is appropriate for occupations such as nurses and therapists. In these cases, health care organizations and other firms face distinct labor markets. Wage levels and trends for health care employees may differ from those for other workers in the economy. For example, staff

**TABLE  
2A-3**

**Percent growth in employment cost index for wages and salaries by occupation, 1990–2001**

Calendar year	Civilian health services	Civilian hospital	All civilian workers	Professional, specialty, and technical occupations
1990	6.2%	6.0%	4.3%	5.3%
1991	4.7	4.4	3.8	4.1
1992	3.8	3.5	2.7	3.3
1993	3.1	3.1	3.0	3.0
1994	2.5	2.7	2.9	2.8
1995	2.5	2.3	2.8	2.7
1996	2.6	2.5	3.2	3.3
1997	2.7	1.9	3.5	2.9
1998	2.5	2.9	4.0	3.4
1999	2.4	2.7	3.3	3.0
2000	4.1	3.9	4.0	4.0
2001	4.8	5.4	3.6	4.0
Annual averages:				
1990–1993	4.4	4.2	3.4	3.9
1994–2000	2.8	2.7	3.4	3.2

Source: Bureau of Labor Statistics.

shortages appear to be affecting a number of health care occupations and may lead to wage increases unlike those in the general economy.

In the 1980s, some policymakers thought that inclusion of wage measures based solely on hospital wages in the PPS market basket would allow hospitals to increase wages more rapidly than necessary, thereby increasing the market basket and future Medicare payments. CMS concluded that health care labor markets were imperfect and should not be the basis for payment. Instead the agency made extensive use of wage and benefit proxies from the general economy in constructing its market baskets. These general economy proxies now account for over two-thirds of the labor measure in four input price indexes (Table 2A-2). In the 1990s, pressure to contain costs from health maintenance organizations and other private insurers increased substantially, so unwarranted wage increases are now unlikely. These developments, as well as the incentive for

each provider to minimize its own costs regardless of future aggregate effects, suggests that use of health industry proxies will not lead providers to agree to higher wages to affect future payments.

Increases in health sector wages have not closely tracked those of the general economy since 1990. From calendar years 1990 through 1993, the ECIs for the wages and salaries of civilian health services workers and hospital workers increased more rapidly than the ECI covering all workers (Table 2A-3). This was followed by six years of slower growth for health services workers and seven years of slower growth for hospital workers relative to workers in the general economy. The differences were substantial, with annual growth for health workers 1.0 percent faster from 1990 through 1993, but 0.6 percent slower from 1994 through 2000. Annual wage growth for hospital workers was 0.3 percent faster from 1990 through 1993, but 0.5 percent slower from 1994 through 2000 compared with the ECI for professional, specialty, and technical workers, which is

used in the PPS hospital market basket. This led to a divergence of 3.8 percent between the indexes from 1994 to 2000.

**RECOMMENDATION**

**The Secretary should use the wage and benefit proxies that most closely match the training and skill requirements of health care occupations in all input price indexes used for updating payments. In determining index weights, measures specific to the health sector and to occupation categories in which health care plays a major role should be emphasized.**

Compensation rates for health care workers are now increasing more rapidly than those in the overall economy. The prospect of future staff shortages for nurses, pharmacists, and other skilled health occupations raises the possibility of wage increases that will not be reflected in indexes for the general economy. The continued use of general economy wage and benefit proxies may lead to a significant divergence of market basket indexes from health care cost trends. Use of health sector wage and benefit proxies would automatically take into account the effects of staff shortages—if they occur—in future payment updates.

Although it is preferable to use proxies that reflect the market wages that providers must pay to hire the specific types of labor they require, designing input price indexes often involves a tradeoff between occupational specificity and industry specificity. The BLS publishes employment cost indexes for wages and salaries of employees in all health services, hospitals, and nursing homes.<sup>2</sup> ECIs also are available for all workers and for occupational groupings such as civilian professional, specialty, and technical, although they are not available for categories such as hospital nurses or even hospital professional, specialty, and technical workers. If such series were constructed, they would probably be based on more limited information and might be less reliable than the existing series. ■

2 The BLS does not publish ECIs for wages and salaries, employee benefits, and compensation for all health sectors.

## References

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Medicare Payment Advisory Commission. Report to the Congress: Medicare payment policy. Washington (DC), MedPAC. March 2000.