

A P P E N D I X

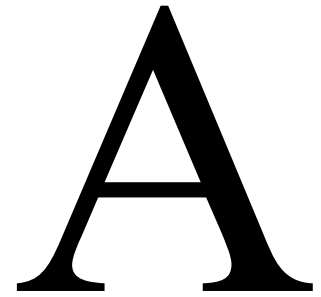
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**The construct of Medicare  
price indexes**

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## The construct of Medicare price indexes

This appendix presents detailed information on input price indexes (generally referred to as market baskets) used by the Centers for Medicare & Medicaid Services (CMS) to measure changes over time in the prices paid for inputs by specific classes of health care providers. It supplements the information in Chapter 2A and provides the data that underlie Table 2A-2.

Chapter 2A reviews and assesses the price indexes Medicare uses to measure changes in input prices for its prospective payment systems. CMS and the Congress use these indexes to update payment rates. In addition to discussing price indexes generally, Chapter 2A considers the treatment of labor costs, including wages and salaries and employee fringe benefits, in the price indexes used by CMS. These indexes rely heavily on measures of labor compensation from the general economy, as shown in Tables A-1 and A-2 in this appendix. However, measures from the general economy often do not reflect compensation changes in health care. The Commission believes that the use of measures from the general economy may cause the indexes to overestimate or underestimate input price change, resulting in payment updates that are too high or too low. The chapter includes a recommendation that CMS change the treatment of wages and employee benefits

in its input price measures to improve their accuracy in predicting changes in provider costs.

Each of CMS's five price indexes consists of categories of inputs used to produce health care services, price indexes used as proxies to represent the change in price in those categories, and percentage weights for the categories based on information about spending by providers on inputs. The categories account for spending on capital and operating inputs or just on operating inputs, depending on the input price index.

The input category names are those used by CMS in describing the indexes. The proxies are employment cost indexes, producer price indexes, and other measures used to represent the change in price of the inputs in the category. Each proxy is identified by the Bureau of Labor Statistics or CMS name for the specific series. The weights are estimates of the percentage of expenses accounted for by the input category for the specific provider type. They are generally based on data from the U.S. Department of Commerce or Medicare cost reports submitted by providers to CMS.

The tables in this appendix include information on input price indexes for prospective payment system (PPS)

hospitals, PPS-exempt hospitals, home health agencies, skilled nursing facilities, and physicians. The price indexes for PPS hospitals, PPS-exempt hospitals, and physicians exclude capital, although CMS maintains a separate capital market basket for updating PPS hospital capital payments. The home health and SNF market baskets, in contrast, include capital categories accounting for 2.64 percent and 9.88 percent, of their respective market basket weights.

For the market basket indexes that exclude capital, the weights shown in the first three tables (wages and salaries, employee benefits, and non-labor inputs) sum to 100 percent. For those indexes that include capital, the weights in the first three tables sum to less than 100 percent. In the last table, the weights sum to 100 percent for capital only.

Inputs are classified as labor, non-labor, or capital. Tables A-1 and A-2 present information on measures of prices for labor. The former focuses on wage and salary rates, and the latter focuses on employee benefits. Table A-3 presents information on non-labor inputs other than capital and Table A-4 concerns capital inputs. In combination, the four tables present complete information on the input price indexes used by CMS for the specified types of providers.

**TABLE  
A-1**

**Input price measures: input categories, price proxies,  
and weights for wages and salaries**

Category	Proxy	Weight				
		PPS hospitals	PPS-exempt hospitals	Home health	SNF	Physician
Civilian hospital	Civilian hospital	16.51%	17.14%	14.64%	–	–
Professional and technical	Professional, specialty, and technical*	16.51	17.14	14.64	–	5.66%
Managers	Managers*	4.80	4.98	3.31	–	2.41
Sales	Sales	0.20	0.21	–	–	–
Clerical workers	Clerical*	6.22	6.46	9.52	–	3.83
Craft & kindred workers	Craft and repair workers	0.85	0.88	–	–	–
Operative etc., except transport	All other operators	0.22	0.23	–	–	–
Transport operatives	Transport operatives	0.06	0.06	–	–	–
Nonfarm laborers	Nonfarm laborers	0.04	0.04	–	–	–
Service workers	Service workers*	4.83	5.01	22.13	–	0.52
Wages and salaries	Private nursing homes	–	–	–	52.26%	–
Physician time–wages & salaries	Average hourly earnings, nonfarm production workers (proxy not an ECI)*	–	–	–	–	44.20
Total wages and salaries		50.24	52.15	64.23	52.26	56.62

Notes: Except as noted, all proxies are employment cost indexes (ECIs) for wages and salaries for the category. PPS (prospective payment system). SNF (skilled nursing facility). Columns may not add to totals because of rounding.

\*When used in the Medicare Economic Index, includes an adjustment for productivity. Proxy divided by the 10-year moving average of output per man-hour in the nonfarm business sector. Adjusted proxy = (1 + unadjusted change in proxy)/(1 + change in productivity).

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

**TABLE  
A-2**

**Input price measures: input categories, price proxies,  
and weights for employee benefits**

**Weight**

<b>Category</b>	<b>Proxy</b>	<b>PPS hospitals</b>	<b>PPS- exempt hospitals</b>	<b>Home health</b>	<b>SNF</b>	<b>Physician</b>
Civilian hospital	Civilian hospital	3.66%	3.79%	2.97%	–	–
Professional and technical	Professional, specialty, and technical	3.66	3.79	2.97	–	–
Managers	Managers	1.07	1.11	0.69	–	–
Sales	Sales	0.05	0.05	–	–	–
Clerical workers	Clerical	1.39	1.44	2.13	–	–
Craft & kindred workers	Craft and repair	0.19	0.20	–	–	–
Operative etc., except transport	All other operators	0.05	0.05	–	–	–
Transport operatives	Transport operatives	0.01	0.01	–	–	–
Nonfarm laborers	Nonfarm laborers	0.01	0.01	–	–	–
Service workers	Service workers	1.07	1.11	4.69	–	–
Physician time-fringe benefits	Private nonfarm workers*	–	–	–	–	10.26%
Nonphysician compensation-fringe benefits	White-collar workers*	–	–	–	–	4.39
Benefits-private nursing homes	Private nursing homes	–	–	–	10.73%	–
<b>Total benefits</b>		<b>11.16</b>	<b>11.57</b>	<b>13.44</b>	<b>10.73</b>	<b>14.65</b>

Notes: All proxies are employment cost indexes (ECIs) for employee benefits. PPS (prospective payment system). SNF (skilled nursing facility). Columns may not add to totals because of rounding.

\*When used in the Medicare Economic Index, includes an adjustment for productivity. Proxy divided by the 10-year moving average of output per man-hour in the nonfarm business sector. Adjusted proxy =  $(1 + \text{unadjusted change in proxy}) / (1 + \text{change in productivity})$ .

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

**TABLE  
A-3**

**Input price measures: input categories, price proxies,  
and weights for non-labor expenses**

Category	Proxy	Weight				
		PPS hospitals	PPS- exempt hospitals	Home health	SNF	Physician
Other professional fees (nonmedical)	ECI compensation for professional, specialty, and technical	2.13%	2.10%	-	2.63%	-
Malpractice insurance	CMS professional liability insurance premium index	1.19	1.08	-	-	-
MEI-malpractice expense	Physician malpractice cost index	-	-	-	-	3.15%
MEI-office	CPI-U-housing	-	-	-	-	11.58
Electricity	PPI-commercial electric power	0.93	1.01	-	1.42	-
Fuels (nonhighway)	PPI-commercial natural gas	0.37	0.40	-	0.43	-
Water and sewerage	CPI-U-water and sewerage	0.25	0.27	-	0.52	-
Utilities	CPI-U-fuel and other utilities	-	-	0.83%	-	-
Pharmaceuticals	PPI-ethical (prescription) drugs	4.16	3.07	-	3.01	1.51
Food: direct purchase	PPI-processed foods and feeds	2.31	2.37	-	3.20	-
Food: contract service	CPI-U-food away from home	1.07	1.10	-	0.94	-
Chemicals	PPI-industrial chemicals	3.67	3.75	-	0.89	-
Medical instruments	PPI-medical instruments and equipment	3.08	3.15	-	-	1.88
MEI-medical materials and supplies	PPI-surgical appliances and supplies	-	-	-	-	1.51
Photographic supplies	PPI-photographic supplies	0.39	0.40	-	-	-
Rubber and plastics	PPI-rubber and plastics products	4.75	4.87	-	1.61	-
MEI-medical equipment	CPI-U-medical equipment and supplies	-	-	-	-	1.51

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**TABLE  
A-3****Input price measures: input categories, price proxies,  
and weights for non-labor expenses****Weight**

Category	Proxy	Weight				
		PPS hospitals	PPS- exempt hospitals	Home health	SNF	Physician
Paper products	PPI-converted paper and paperboard	2.08%	2.18%	-	1.29%	-
Paper products	CPIU-household paper products	-	-	0.53%	-	-
Apparel	PPI-apparel	0.87	0.89	-	-	-
Machinery and equipment	PPI-machinery and equipment	0.21	0.21	-	-	-
Miscellaneous products	PPI-finished goods	2.24	2.23	-	-	-
Miscellaneous products	PPI-finished goods less food and energy	-	-	-	2.59	-
MEI-auto	CPIU-private transportation	-	-	-	-	1.30%
Postage	CPIU-postage	0.27	0.30	-	-	-
Telephone services	CPIU-telephone services	0.58	0.63	0.73	0.45	-
All other: labor intensive	ECI-compensation for private service occupations	7.28	5.44	-	4.09	-
All other: nonlabor intensive	CPIU-all items	0.80	0.83	-	4.06	-
Administrative costs	CPIU-services	-	-	7.59	-	-
Transportation	CPIU-private transportation	-	-	3.41	-	-
Insurance	CPIU-household insurance	-	-	0.56	-	-
All other	CPIU-all items less food and energy	-	-	5.32	-	6.30
Total non-labor		38.63	36.28	19.69	27.12	28.74

Notes: This table includes all non-labor and non-capital inputs. CMS (Centers for Medicare & Medicaid Services). CPIU (consumer price index—all urban consumers). ECI (employment cost index). MEI (Medicare Economic Index). PPI (producer price index). PPS (prospective payment system). SNF (skilled nursing facility). Columns may not add to totals because of rounding.

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

**TABLE  
A-4**

**Input price measures: input categories, price proxies,  
and weights for capital-related expenses**

Category	Proxy	Weight				
		PPS hospitals	PPS-exempt hospitals	Home health	SNF	Physician
<b>Building and equipment</b>						
Building and fixed	Boeckh institutional construction index (vintage weighted)	30.09%	–	–	36.54%	–
Movable equipment	PPI for machinery and equipment (vintage weighted)	34.75	–	–	16.77	–
Fixed capital	CPI-U, owner's equivalent rent	–	–	66.67%	–	–
	PPI, machinery and equipment	–	–	33.33	–	–
<b>Interest</b>						
Government and nonprofit	Average yield municipal bonds (Bond Buyer index–20 bonds) (vintage weighted)	27.06	–	–	19.13	–
For-profit	Average yield Moody's AAA bonds (vintage weighted)	4.78	–	–	19.86	–
<b>Other capital-related cost</b>						
	CPI-U–residential rent	3.32	–	–	7.69	–
Total capital		100.00	–	100.00	100.00	–

Notes: CMS (Centers for Medicare & Medicaid Services). CPI-U (consumer price index—all urban consumers). ECI (employment cost index). MEI (Medicare Economic Index). PPI (producer price index). PPS (prospective payment system). SNF (skilled nursing facility). Source of weights: PPS hospitals, PPS capital market basket; home health, home health market basket; SNF, SNF market basket. Weights of home health and SNF market basket capital components standardized to sum to 100 percent. Columns may not add to totals because of rounding.

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