

Health Care Indicators

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Contained in this regular feature of the journal is a section on each of the following four topics: community hospital statistics; employment, hours, and earnings in the private health sector; health care prices; and national economic indicators.

Community hospital statistics

Community hospital admissions reported by the American Hospital Association dropped 1.4 percent between the third quarter of 1988 and that of 1989. The number of inpatient days also fell during this period by 1.2 percent. Hospital capacity (measured by the number

of beds available) decreased 1.5 percent. The adult occupancy rate was 63.3 percent in the quarter ending September 1989, up slightly from the rate for the same period a year ago. The number of surgical operations (both inpatient and outpatient) decreased 1.3 percent during this period. The growth in outpatient visits continued to slow, increasing only 3.1 percentage points above the level in the third quarter of 1988.

Operating expenses of community hospitals reached \$49 billion during the third calendar quarter of 1989, up 9.2 percent from the rate for the same period a year ago (Tables 1 and 2). Inpatient expenses, which excluded the costs of operating outpatient facilities, were 7.7 percent higher in the third quarter of 1989 than they had been a year earlier. Expense per patient day rose 9.0 percent, and the expense per admission rose 9.2 percent during the same period.

Average full-time equivalent (FTE) employment in community hospitals increased 1.7 percent between the third quarter of 1988 and the third quarter of 1989. FTE employees per bed grew 3.3 percent during the same period.

The change in inpatient days and outpatient visits for 1978-89 is shown in Figure 1. The change in beds and occupancy rate for the same period is shown in Figure 2.

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Table 1
Selected community hospital statistics: 1986-89

| Item | Calendar year | | | 1986 Q3 | 1987 Q3 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 |
|---|---------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
| | 1986 | 1987 | 1988 | | | | | | | |
| Operating expenses | | | | | | | | | | |
| Total in millions | \$146,032 | \$161,322 | \$177,770 | \$36,648 | \$40,978 | \$45,011 | \$45,828 | \$47,312 | \$48,202 | \$49,132 |
| Labor in millions | 80,169 | 87,533 | 96,415 | 20,176 | 22,323 | 24,511 | 25,006 | 25,563 | 26,057 | 26,769 |
| Nonlabor in millions | 65,862 | 73,790 | 81,355 | 16,473 | 18,654 | 20,500 | 20,822 | 21,749 | 22,145 | 22,363 |
| Inpatient expenses in millions | 119,281 | 129,814 | 140,475 | 29,760 | 32,738 | 35,318 | 36,042 | 37,286 | 37,444 | 38,034 |
| Amount per patient day | 535.44 | 581.30 | 632.56 | 544.30 | 593.68 | 646.42 | 662.13 | 651.82 | 684.74 | 704.75 |
| Amount per admission | 3,528.30 | 3,861.20 | 4,197.00 | 3,533.10 | 3,896.30 | 4,242.70 | 4,417.50 | 4,383.50 | 4,537.10 | 4,634.30 |
| Utilization | | | | | | | | | | |
| Admissions in thousands | 33,825 | 33,634 | 33,496 | 8,423 | 8,403 | 8,324 | 8,159 | 8,506 | 8,253 | 8,207 |
| Inpatient days in thousands | 222,904 | 223,441 | 222,313 | 54,675 | 55,145 | 54,635 | 54,433 | 57,204 | 54,684 | 53,968 |
| Adult length of stay in days | 6.6 | 6.6 | 6.6 | 6.5 | 6.6 | 6.6 | 6.7 | 6.7 | 6.6 | 6.6 |
| Surgical operations in thousands | 20,443 | 21,038 | 21,252 | 5,161 | 5,318 | 5,359 | 5,169 | 5,380 | 5,467 | 5,287 |
| Outpatient visits in thousands | 263,631 | 278,918 | 296,111 | 68,032 | 71,805 | 75,830 | 72,964 | 74,837 | 78,368 | 78,175 |
| Beds in thousands | 963 | 954 | 942 | 960 | 954 | 942 | 936 | 935 | 932 | 927 |
| Adult occupancy rate ¹ | 63.4 | 64.1 | 64.5 | 61.9 | 62.9 | 63.1 | 63.2 | 68.0 | 64.5 | 63.3 |
| Full-time equivalent (FTE) personnel | | | | | | | | | | |
| Total in thousands | 3,055 | 3,077 | 3,112 | 3,053 | 3,081 | 3,119 | 3,128 | 3,136 | 3,150 | 3,173 |
| Number per bed | 3.2 | 3.2 | 3.3 | 3.2 | 3.2 | 3.3 | 3.3 | 3.4 | 3.4 | 3.4 |
| Adjusted patient days per FTE ² | 89 | 90 | 90 | 22 | 22 | 22 | 22 | 23 | 22 | 22 |
| Adjusted patient days in thousands | 272,834 | 277,603 | 281,246 | 67,331 | 69,024 | 69,632 | 69,212 | 72,585 | 70,393 | 69,716 |

¹Adult occupancy rate is the ratio of average daily census to the average number of beds maintained during the reporting period.

²Adjusted patient days is an aggregate figure reflecting the number of days of inpatient care, plus an estimate of the volume of outpatient services, expressed in units equivalent to an inpatient day in terms of level of effort. It is derived by multiplying the number of outpatients visits by the ratio of outpatient revenue per outpatient visit to inpatient revenue per inpatient day and adding the product to the number of inpatient days.

NOTES: Q designates quarter of year. Quarterly data are not seasonally adjusted.

SOURCE: American Hospital Association: *National Hospital Panel Survey Reports*. Chicago. Monthly reports for Jan. 1986-Sept. 1989.

Table 2
Percent change in selected community hospital statistics: 1986-89

| Item | Calendar year | | | 1986 Q3 | 1987 Q3 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 |
|---|-----------------------|------|------|--|------------|------------|------------|------------|------------|------------|
| | 1986 | 1987 | 1988 | | | | | | | |
| Operating expenses | Annual percent change | | | Percent change from the same period of previous year | | | | | | |
| Total | 8.9 | 10.5 | 10.2 | 8.2 | 11.8 | 9.8 | 9.7 | 9.7 | 10.1 | 9.2 |
| Labor | 7.3 | 9.2 | 10.1 | 6.6 | 10.6 | 9.8 | 10.4 | 9.8 | 10.3 | 9.2 |
| Nonlabor | 11.0 | 12.0 | 10.3 | 10.2 | 13.2 | 9.9 | 8.8 | 9.5 | 9.8 | 9.1 |
| Inpatient expense | 7.1 | 8.8 | 8.2 | 6.3 | 10.0 | 7.9 | 7.5 | 7.9 | 8.4 | 7.7 |
| Amount per patient day | 8.5 | 8.6 | 8.8 | 8.0 | 9.1 | 8.9 | 9.3 | 9.9 | 8.9 | 9.0 |
| Amount per admission | 9.3 | 9.4 | 8.7 | 9.1 | 10.3 | 8.9 | 9.0 | 9.9 | 9.6 | 9.2 |
| Utilization | | | | | | | | | | |
| Admissions | -2.1 | -0.6 | -0.4 | -2.6 | -0.2 | -0.9 | -1.3 | -1.9 | -1.1 | -1.4 |
| Inpatient days | -1.4 | 0.2 | -0.5 | -1.6 | 0.9 | -0.9 | -1.7 | -1.9 | -0.5 | -1.2 |
| Adult length of stay | 0.7 | 0.8 | -0.1 | 1.0 | 1.1 | 0.0 | -0.4 | 0.0 | 0.6 | 0.2 |
| Surgical operations | 2.2 | 2.9 | 1.0 | 1.7 | 3.0 | 0.8 | -0.6 | 1.3 | 1.0 | -1.3 |
| Outpatient visits | 8.3 | 5.8 | 6.2 | 7.9 | 5.5 | 5.6 | 3.8 | 3.4 | 4.5 | 3.1 |
| Beds | -1.2 | -0.9 | -1.3 | -1.3 | -0.7 | -1.3 | -1.3 | -1.2 | -1.4 | -1.5 |
| Adult occupancy rate ¹ | -0.2 | 0.7 | 0.4 | -0.2 | 1.0 | 0.2 | -0.3 | 0.3 | 0.6 | 0.2 |
| Full-time equivalent (FTE) personnel | | | | | | | | | | |
| Total | 0.3 | 0.7 | 1.1 | 0.3 | 0.9 | 1.2 | 1.4 | 1.3 | 1.4 | 1.7 |
| Number per bed | 1.5 | 1.6 | 2.5 | 1.6 | 1.6 | 2.5 | 2.7 | 2.5 | 2.9 | 3.3 |
| Adjusted patient days per FTE | 0.0 | 1.0 | 0.2 | -0.2 | 1.6 | -0.4 | -1.1 | -1.5 | -0.4 | -1.6 |
| Adjusted patient days | 0.3 | 1.7 | 1.3 | 0.1 | 2.5 | 0.9 | 0.3 | -0.2 | 1.1 | 0.1 |

¹Change in rate, rather than percent change.

NOTE: Q designates quarter of year.

SOURCE: American Hospital Association: *National Hospital Panel Survey Reports*. Chicago. Monthly reports for Jan. 1986-Sept. 1989.

Figure 1

Percent change in inpatient days and outpatient visits from the same period of previous year: 1978-89

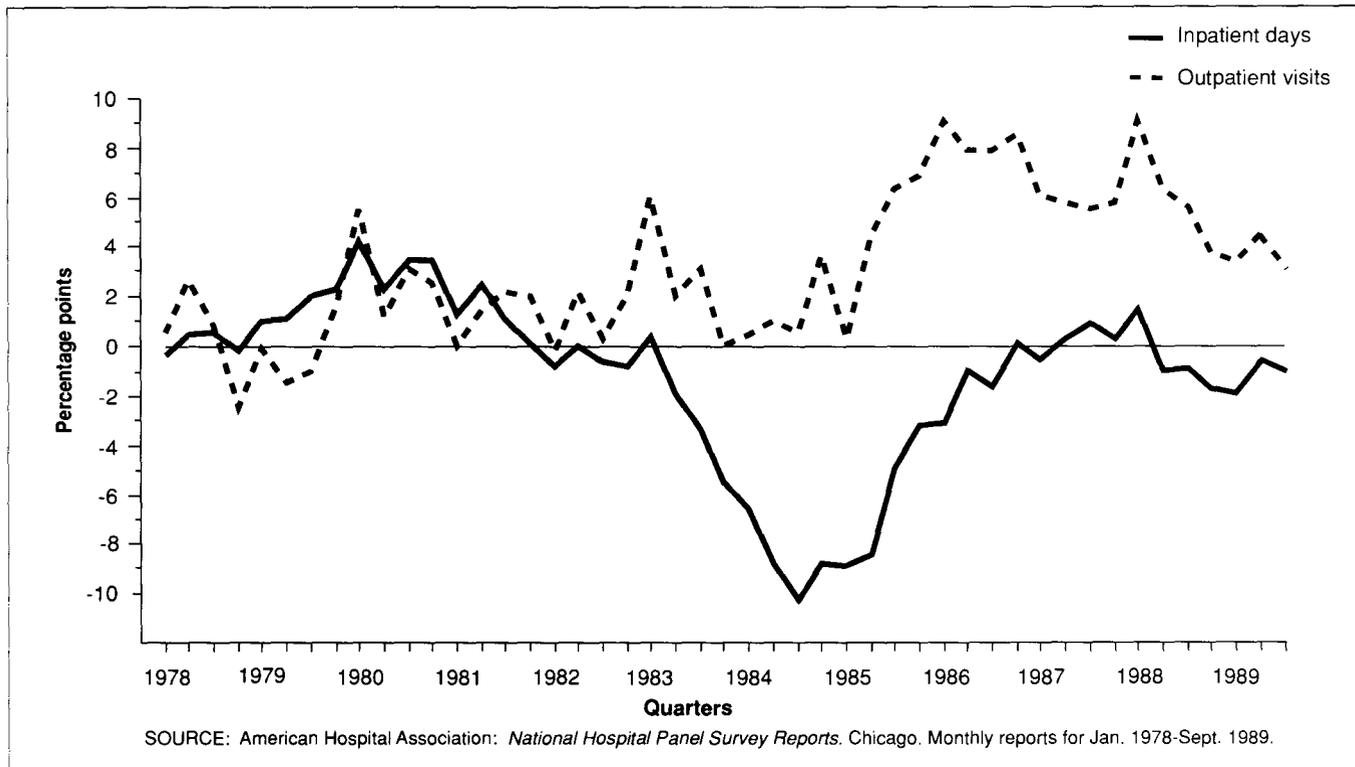
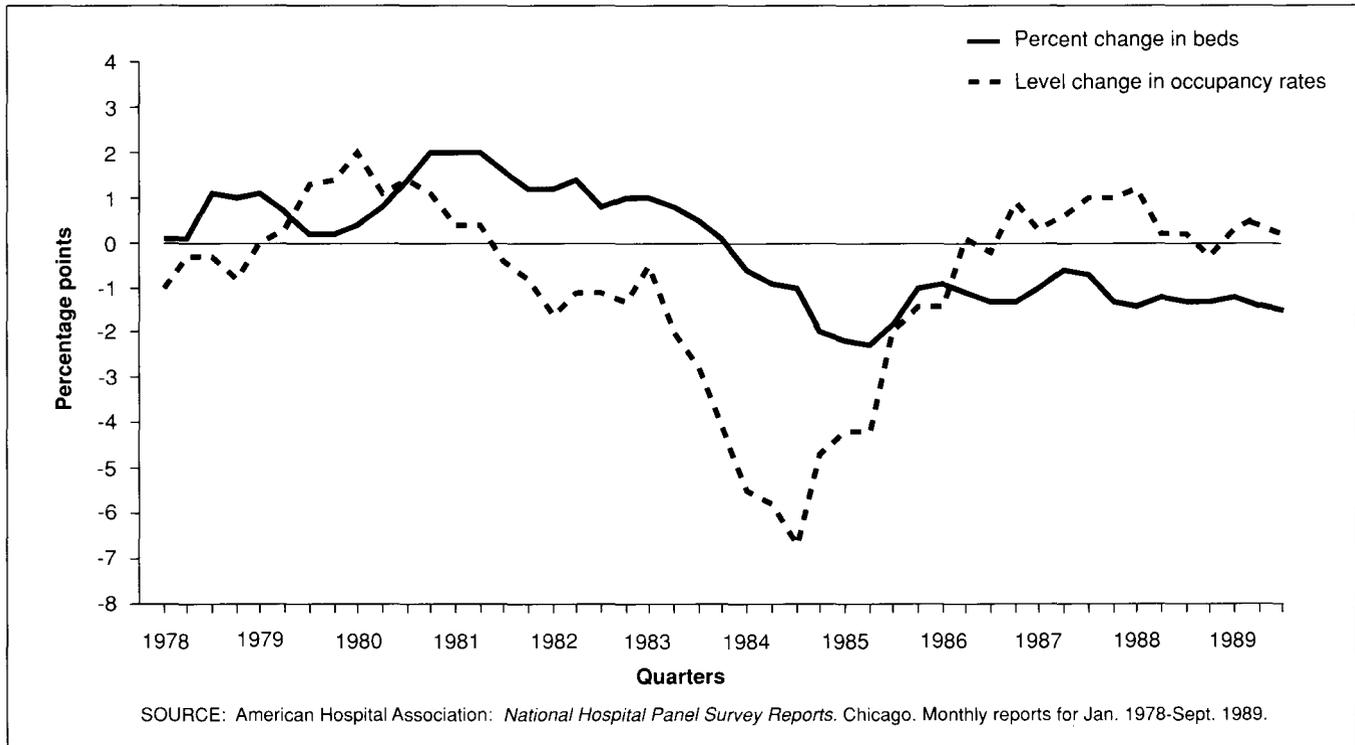


Figure 2

Percent change in beds and level change in occupancy rates from the same period of previous year: 1978-89



Private health sector: Employment, hours, and earnings

Shown in Table 3 are the levels of employment, hours, and earnings in private (nongovernment) health service establishments. These data were drawn from the Bureau of Labor Statistics "Establishment" survey of the private nonagricultural sector, which excludes—among other things—hospitals, clinics, and other health-related establishments run by all governments. An average of 7.7 million persons were employed on a full-time or part-time basis in private health service establishments during the calendar quarter ending September 1989; nonsupervisory employees worked a 32.6-hour week and earned \$9.90 an hour. Hours worked per week in these establishments were shorter than those in the private economy as a whole.

Nonsupervisory employment in the private health sector grew more than twice as fast as in the general private

economy, and growth in average hourly earnings for health sector workers also substantially exceeded that for the overall economy (Table 4). Health sector average hourly earnings were 6.6 percent higher in the third quarter of 1989 than in the same quarter of the previous year while nonsupervisory employment increased 7.0 percent during the same period.

Within the private health industry, as shown in Table 5, growth in employment and earnings varied by type of establishment. For example, the largest growth in work hours (nonsupervisory employment times average weekly hours) was experienced in physicians' offices and the smallest was in the offices of dentists. Nonsupervisory payrolls (nonsupervisory work hours multiplied by average hourly earnings) increased the slowest (11.6 percent) for offices of dentists and the fastest (15.9 percent) for offices of physicians.

The change in total employment for 1978-89 is shown in Figure 3. The percent change in nonsupervisory payroll is shown in Figure 4.

Table 3
Employment, hours, and earnings in private health service establishments, by selected type of establishment: 1986-89

| Type of establishment and measure | Calendar year | | | 1986 Q3 | 1987 Q3 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 |
|---|---------------|---------|---------|------------|------------|------------|------------|------------|------------|------------|
| | 1986 | 1987 | 1988 | | | | | | | |
| Health services (SIC 80) | | | | | | | | | | |
| Total employment in thousands | 6,535.7 | 6,827.8 | 7,227.7 | 6,591.7 | 6,889.4 | 7,299.3 | 7,407.7 | 7,494.5 | 7,571.4 | 7,714.1 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment in thousands | 5,810.2 | 6,052.1 | 6,349.2 | 5,859.5 | 6,101.9 | 6,409.8 | 6,493.4 | 6,602.8 | 6,727.0 | 6,855.7 |
| Average weekly hours | 32.4 | 32.4 | 32.4 | 32.5 | 32.6 | 32.5 | 32.3 | 32.4 | 32.4 | 32.6 |
| Average hourly earnings | \$8.35 | \$8.69 | \$9.22 | \$8.38 | \$8.73 | \$9.28 | \$9.46 | \$9.62 | \$9.70 | \$9.90 |
| Offices of physicians and surgeons (SIC 801) | | | | | | | | | | |
| Total employment in thousands | 988.2 | 1,048.8 | 1,138.4 | 997.5 | 1,061.5 | 1,151.5 | 1,175.3 | 1,191.6 | 1,195.0 | 1,220.1 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment in thousands | 817.1 | 857.9 | 911.5 | 824.5 | 866.3 | 920.2 | 936.3 | 959.3 | 978.4 | 996.7 |
| Average weekly hours | 30.9 | 30.9 | 31.2 | 31.0 | 30.9 | 31.2 | 31.3 | 31.3 | 31.4 | 31.6 |
| Average hourly earnings | \$8.18 | \$8.42 | \$8.82 | \$8.17 | \$8.46 | \$8.83 | \$8.99 | \$9.15 | \$9.22 | \$9.34 |
| Offices of dentists (SIC 802) | | | | | | | | | | |
| Total employment in thousands | 457.6 | 470.6 | 491.4 | 461.1 | 473.4 | 495.7 | 501.2 | 505.9 | 510.6 | 515.9 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment in thousands | 403.8 | 414.1 | 426.8 | 406.3 | 416.2 | 429.7 | 432.1 | 437.5 | 445.9 | 450.4 |
| Average weekly hours | 28.0 | 28.3 | 28.4 | 27.9 | 28.3 | 28.3 | 28.6 | 28.5 | 28.7 | 28.4 |
| Average hourly earnings | \$8.26 | \$8.49 | \$8.91 | \$8.27 | \$8.48 | \$8.93 | \$9.08 | \$9.30 | \$9.38 | \$9.48 |
| Nursing and personal care facilities (SIC 805) | | | | | | | | | | |
| Total employment in thousands | 1,246.7 | 1,287.8 | 1,326.8 | 1,261.7 | 1,297.9 | 1,338.5 | 1,345.9 | 1,355.4 | 1,373.8 | 1,398.0 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment in thousands | 1,126.3 | 1,161.2 | 1,190.6 | 1,140.6 | 1,170.6 | 1,201.8 | 1,207.9 | 1,221.5 | 1,241.3 | 1,263.9 |
| Average weekly hours | 31.4 | 31.6 | 31.6 | 31.6 | 32.0 | 31.8 | 31.6 | 31.6 | 31.7 | 32.2 |
| Average hourly earnings | \$5.80 | \$6.00 | \$6.35 | \$5.81 | \$6.04 | \$6.41 | \$6.51 | \$6.63 | \$6.71 | \$6.83 |
| Private hospitals (SIC 806) | | | | | | | | | | |
| Total employment in thousands | 3,038.0 | 3,153.9 | 3,335.6 | 3,053.5 | 3,182.5 | 3,366.7 | 3,405.3 | 3,436.4 | 3,465.1 | 3,523.7 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment in thousands | 2,768.2 | 2,866.9 | 3,015.3 | 2,782.2 | 2,890.5 | 3,044.6 | 3,078.1 | 3,121.3 | 3,167.8 | 3,224.8 |
| Average weekly hours | 34.3 | 34.1 | 34.0 | 34.3 | 34.3 | 34.1 | 33.8 | 33.9 | 33.9 | 34.1 |
| Average hourly earnings | \$9.36 | \$9.84 | \$10.51 | \$9.42 | \$9.89 | \$10.59 | \$10.80 | \$10.96 | \$11.05 | \$11.30 |
| All private nonagricultural establishments | | | | | | | | | | |
| Total employment in thousands | 82,832 | 85,190 | 88,212 | 83,695 | 86,206 | 89,322 | 89,832 | 88,632 | 90,811 | 91,874 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment in thousands | 67,018 | 68,976 | 71,412 | 67,792 | 69,873 | 72,385 | 72,812 | 71,550 | 73,507 | 74,449 |
| Average weekly hours | 34.7 | 34.8 | 34.7 | 34.9 | 35.0 | 35.0 | 34.8 | 34.4 | 34.7 | 34.9 |
| Average hourly earnings | \$8.76 | \$8.98 | \$9.29 | \$8.74 | \$8.96 | \$9.29 | \$9.46 | \$9.55 | \$9.60 | \$9.67 |
| Employment in thousands | | | | | | | | | | |
| All hospitals | 4,323.7 | 4,448.4 | 4,652.5 | 4,340.4 | 4,485.6 | 4,689.9 | 4,730.1 | 4,768.7 | 4,805.4 | 4,879.5 |
| Private hospitals (SIC 806) | 3,038.0 | 3,153.9 | 3,335.6 | 3,053.5 | 3,182.5 | 3,366.7 | 3,405.3 | 3,436.4 | 3,465.1 | 3,523.7 |
| Federal hospitals | 246.3 | 249.4 | 248.4 | 245.7 | 252.8 | 248.3 | 247.3 | 248.2 | 248.8 | 250.9 |
| State hospitals | 438.1 | 438.7 | 446.0 | 438.5 | 440.9 | 447.7 | 447.7 | 448.0 | 448.1 | 450.3 |
| Local hospitals | 601.3 | 606.4 | 622.5 | 602.7 | 609.4 | 627.1 | 629.8 | 636.2 | 643.4 | 654.5 |

NOTES: Standard Industrial Classification (SIC) codes for 1972 are used. Q designates quarter of year. Quarterly data are not seasonally adjusted.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics: *Employment and Earnings*. Washington. U.S. Government Printing Office. Monthly reports for Jan. 1986-Sept. 1989.

Table 4
Percent change in employment, hours, and earnings in private health service establishments, by selected type of establishment: 1986-89

| Type of establishment and measure | Calendar year | | | 1986 Q3 | 1987 Q3 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 |
|---|-----------------------|------|------|--|------------|------------|------------|------------|------------|------------|
| | 1986 | 1987 | 1988 | | | | | | | |
| Health services (SIC 80) | Annual percent change | | | Percent change from the same period of previous year | | | | | | |
| Total employment | 3.8 | 4.5 | 5.9 | 4.1 | 4.5 | 5.9 | 6.5 | 6.4 | 5.7 | 5.7 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment | 3.6 | 4.2 | 4.9 | 4.0 | 4.1 | 5.0 | 5.7 | 6.5 | 6.8 | 7.0 |
| Average weekly hours | -0.2 | -0.1 | 0.0 | -0.3 | 0.3 | -0.3 | 0.0 | 0.0 | 0.3 | 0.3 |
| Average hourly earnings | 3.6 | 4.2 | 6.1 | 3.6 | 4.2 | 6.3 | 6.6 | 6.7 | 6.2 | 6.6 |
| Offices of physicians and surgeons (SIC 801) | | | | | | | | | | |
| Total employment | 4.5 | 6.1 | 8.5 | 4.7 | 6.4 | 8.5 | 8.9 | 8.3 | 6.1 | 6.0 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment | 4.2 | 5.0 | 6.2 | 4.4 | 5.1 | 6.2 | 6.9 | 8.3 | 8.3 | 8.3 |
| Average weekly hours | 1.1 | -0.2 | 1.1 | 1.3 | -0.3 | 1.0 | 1.3 | 0.3 | 1.0 | 1.3 |
| Average hourly earnings | 4.1 | 2.9 | 4.7 | 4.1 | 3.5 | 4.4 | 4.9 | 5.3 | 5.4 | 5.7 |
| Offices of dentists (SIC 802) | | | | | | | | | | |
| Total employment | 4.2 | 2.9 | 4.4 | 4.3 | 2.7 | 4.7 | 5.3 | 5.3 | 4.6 | 4.1 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment | 3.2 | 2.5 | 3.1 | 3.3 | 2.4 | 3.2 | 3.4 | 4.1 | 4.8 | 4.8 |
| Average weekly hours | -1.8 | 0.9 | 0.5 | -2.1 | 1.4 | 0.0 | 0.0 | 0.0 | 1.4 | 0.4 |
| Average hourly earnings | 4.9 | 2.8 | 4.9 | 4.0 | 2.5 | 5.4 | 5.5 | 6.2 | 5.8 | 6.1 |
| Nursing and personal care facilities (SIC 805) | | | | | | | | | | |
| Total employment | 4.0 | 3.3 | 3.0 | 4.3 | 2.9 | 3.1 | 3.7 | 3.9 | 4.3 | 4.4 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment | 3.8 | 3.1 | 2.5 | 4.1 | 2.6 | 2.7 | 3.5 | 4.3 | 5.0 | 5.2 |
| Average weekly hours | 0.7 | 0.5 | 0.1 | 0.0 | 1.3 | -0.6 | 0.3 | 0.6 | 0.6 | 1.3 |
| Average hourly earnings | 3.4 | 3.5 | 5.8 | 3.0 | 4.0 | 6.1 | 6.7 | 6.9 | 7.0 | 6.6 |
| Private hospitals (SIC 806) | | | | | | | | | | |
| Total employment | 1.4 | 3.8 | 5.8 | 1.8 | 4.2 | 5.8 | 5.9 | 5.5 | 4.6 | 4.7 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment | 1.3 | 3.6 | 5.2 | 1.8 | 3.9 | 5.3 | 5.7 | 5.9 | 5.9 | 5.9 |
| Average weekly hours | -0.1 | -0.4 | -0.5 | -0.6 | 0.0 | -0.6 | -0.6 | -0.3 | 0.0 | 0.0 |
| Average hourly earnings | 4.0 | 5.1 | 6.8 | 4.1 | 5.0 | 7.0 | 7.1 | 7.0 | 6.3 | 6.8 |
| All private nonagricultural establishments | | | | | | | | | | |
| Total employment | 2.1 | 2.8 | 3.5 | 2.0 | 3.0 | 3.6 | 3.4 | 3.4 | 3.2 | 2.9 |
| Nonsupervisory workers: | | | | | | | | | | |
| Employment | 2.2 | 2.9 | 3.5 | 2.1 | 3.1 | 3.6 | 3.4 | 3.4 | 3.2 | 2.9 |
| Average weekly hours | -0.5 | 0.1 | -0.1 | -0.6 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3 |
| Average hourly earnings | 2.3 | 2.5 | 3.5 | 1.9 | 2.6 | 3.7 | 3.8 | 4.1 | 3.9 | 4.1 |
| Employment | | | | | | | | | | |
| All hospitals | 0.5 | 2.9 | 4.6 | 0.8 | 3.3 | 4.6 | 4.8 | 4.5 | 3.9 | 4.0 |
| Private hospitals (SIC 806) | 1.4 | 3.8 | 5.8 | 1.8 | 4.2 | 5.8 | 5.9 | 5.5 | 4.6 | 4.7 |
| Federal hospitals | -0.7 | 1.2 | -0.4 | -2.2 | 2.9 | -1.8 | -1.2 | -0.8 | 0.4 | 1.0 |
| State hospitals | -2.3 | 0.1 | 1.7 | -2.0 | 0.5 | 1.6 | 1.7 | 1.2 | 0.5 | 0.6 |
| Local hospitals | -1.1 | 0.9 | 2.6 | -0.9 | 1.1 | 2.9 | 3.2 | 3.8 | 3.8 | 4.4 |

NOTES: Standard Industrial Classification (SIC) codes for 1972 are used. Q designates quarter of year.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics: *Employment and Earnings*. Washington. U.S. Government Printing Office. Monthly reports for Jan. 1986-Sept. 1989.

Table 5
Percent change in implied nonsupervisory payrolls and work hours in private health service establishments, by selected type of establishment: 1986-89

| Type of establishment | Calendar year | | | 1986 Q3 | 1987 Q3 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 |
|---|-----------------------|------|------|--|------------|------------|------------|------------|------------|------------|
| | 1986 | 1987 | 1988 | | | | | | | |
| Private health service establishments (SIC 80) | Annual percent change | | | Percent change from the same period of previous year | | | | | | |
| Payrolls | 7.0 | 8.5 | 11.3 | 7.2 | 8.9 | 11.4 | 12.7 | 13.6 | 13.7 | 14.5 |
| Work hours | 3.4 | 4.1 | 4.9 | 3.6 | 4.5 | 4.7 | 5.7 | 6.5 | 7.2 | 7.3 |
| Offices of physicians and surgeons (SIC 801) | | | | | | | | | | |
| Payrolls | 9.6 | 7.9 | 12.6 | 9.8 | 8.8 | 11.9 | 13.5 | 14.4 | 15.0 | 15.9 |
| Work hours | 5.3 | 4.7 | 7.4 | 5.7 | 4.7 | 7.3 | 8.2 | 8.6 | 9.3 | 9.7 |
| Offices of dentists (SIC 802) | | | | | | | | | | |
| Payrolls | 6.2 | 6.4 | 8.5 | 5.0 | 6.7 | 8.7 | 9.0 | 10.6 | 12.7 | 11.6 |
| Work hours | 1.3 | 3.5 | 3.6 | 1.1 | 3.9 | 3.2 | 3.4 | 4.1 | 6.3 | 5.2 |
| Nursing and personal care facilities (SIC 805) | | | | | | | | | | |
| Payrolls | 8.1 | 7.2 | 8.6 | 7.3 | 8.1 | 8.3 | 10.7 | 12.2 | 13.0 | 13.4 |
| Work hours | 4.6 | 3.6 | 2.6 | 4.1 | 3.9 | 2.0 | 3.8 | 5.0 | 5.7 | 6.5 |
| Private hospitals (SIC 806) | | | | | | | | | | |
| Payrolls | 5.1 | 8.6 | 11.8 | 5.4 | 9.1 | 12.1 | 12.4 | 12.8 | 12.4 | 13.1 |
| Work hours | 1.2 | 3.2 | 4.6 | 1.2 | 3.9 | 4.7 | 5.1 | 5.6 | 5.9 | 5.9 |
| All private nonagricultural establishments | | | | | | | | | | |
| Payrolls | 4.0 | 5.5 | 7.1 | 3.6 | 5.8 | 7.4 | 7.3 | 7.5 | 7.0 | 6.8 |
| Work hours | 1.7 | 3.1 | 3.4 | 1.5 | 3.4 | 3.6 | 3.4 | 3.4 | 3.2 | 2.6 |

NOTES: Standard Industrial Classification (SIC) codes for 1972 are given. Q designates quarter of year.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics: *Employment and Earnings*. Washington. U.S. Government Printing Office. Monthly reports for Jan. 1986-Sept. 1989.

Figure 3
Percent change for total employment from the same period of previous year: 1978-89

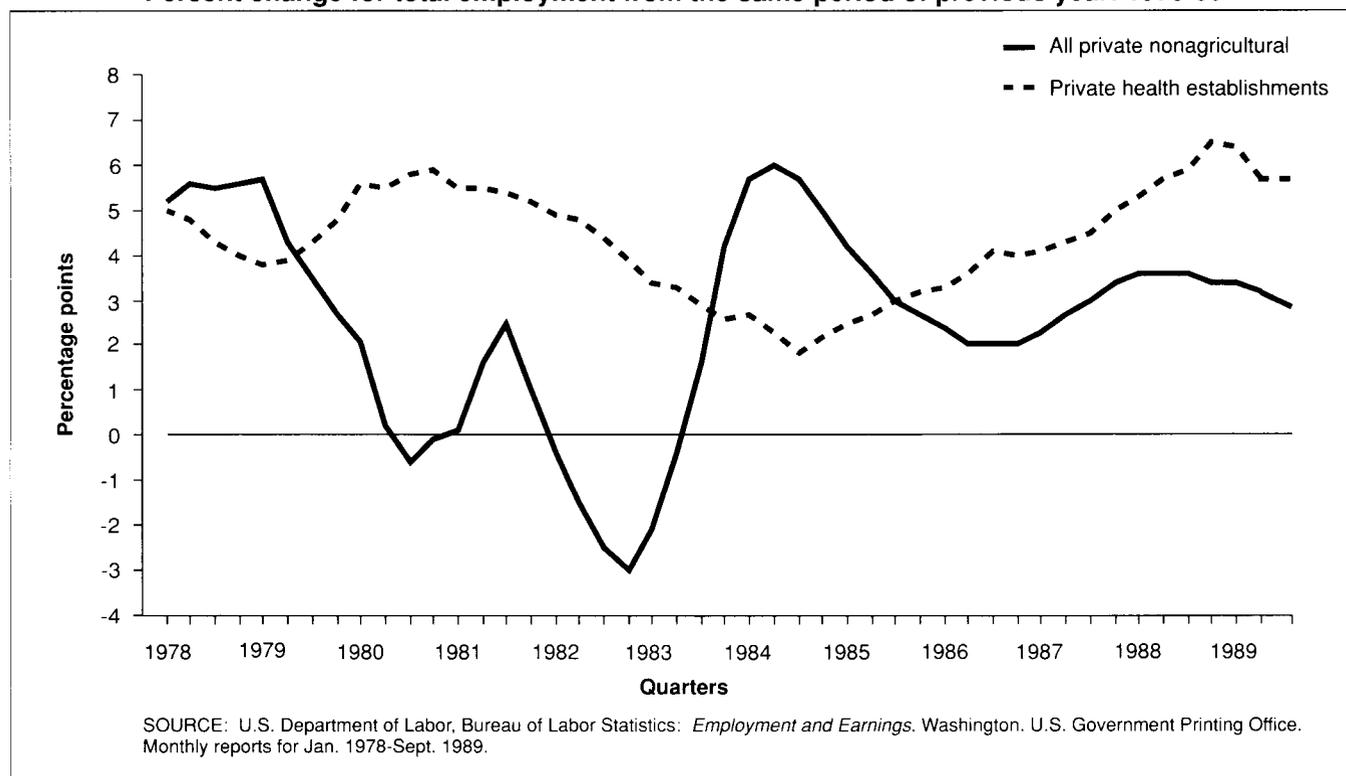
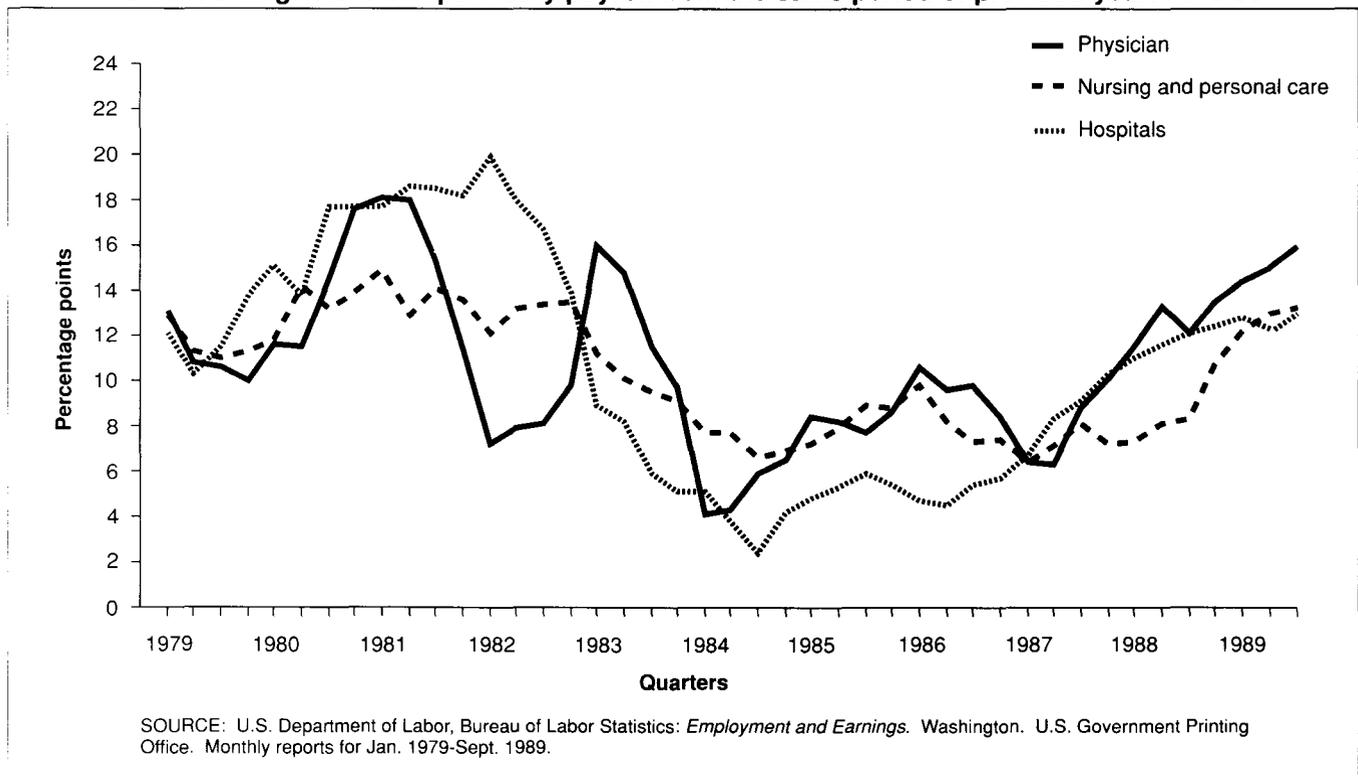


Figure 4

Percent change for nonsupervisory payroll from the same period of previous year: 1979-89



Health care prices

Medical care consumers

Prices paid by consumers of medical care in the third calendar quarter of 1989, as measured by the Consumer Price Index (CPI) for all urban consumers were 7.7 percent higher than those paid in the third quarter of the previous year (Tables 6 and 7). The growth in the medical care component of the CPI was 3.0 percentage points higher than the 4.7-percent increase in the index for all items.

Within the medical care component of the CPI, inflation was higher for hospital and prescription drug prices than it was for professional services or nonprescription drugs and medical supplies. Hospital-related prices rose 11.6 percent between the third quarter of 1988 and the third quarter of 1989 while prescription drug prices rose 9.0 percent. Professional service fees were up 6.3 percent above the level for the third quarter of 1988, and prices for nonprescription drug and medical supplies rose 5.7 percent.

Prices for all items less medical care rose 4.4 percent between the third quarter of 1988 and that of 1989. The growth for energy prices increased 5.7 percent during the same period. Price inflation for food and beverages increased 5.2 percent between the third quarters of 1988 and 1989 compared with 4.9 percent between the third quarters of 1987 and 1988. Apparel and upkeep price growth slowed to 2.0 percent between the third quarter of 1988 and the third quarter of 1989, down from the 4.0-percent increase between the same periods of 1987 and

1988. The growth for housing showed an increase of 4.6 percent (Table 7).

The percent change in measures of price inflation is shown in Figure 5.

Health care providers

Background on input price indexes

In 1979, the Health Care Financing Administration (HCFA) developed the hospital input price index. This input price index is designed to measure the pure price changes associated with expenditure changes for hospital services. The skilled nursing home facility (SNF) and home health agency (HHA) input price indexes were developed in the early 1980s. These indexes are often referred to as "market baskets" because they price a consistent set of goods and services over time. Since their creation, they have played an important role in helping to set payment percent increases and understanding the contribution of input price increases to growing health expenditures.

The input price indexes or "market baskets," are Laspeyres or fixed-weight indexes that are constructed in two steps. First, a base period is selected. For example, for the prospective payment system (PPS) hospital market basket, the base period is 1982. Next, a set of cost categories such as food, fuel, and labor are identified and their 1982 expenditure levels determined. The proportion or share of total expenditures accounted for by specific spending categories is calculated. These proportions are called cost or expenditure weights. There are 28

Table 6
Selected items of the Consumer Price Index for all urban consumers: 1986-89

| Item | Calendar year | | | 1986 Q3 | 1987 Q3 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 |
|---|---------------|-------|-------|------------|------------|------------|------------|------------|------------|------------|
| | 1986 | 1987 | 1988 | | | | | | | |
| All items | 109.6 | 113.6 | 118.3 | 109.8 | 114.4 | 119.1 | 120.3 | 121.7 | 123.7 | 124.7 |
| All items less medical care | 108.8 | 112.6 | 117.0 | 109.0 | 113.3 | 117.9 | 119.0 | 120.2 | 122.2 | 123.1 |
| Apparel and upkeep | 105.9 | 110.6 | 115.4 | 105.7 | 110.0 | 114.4 | 119.5 | 116.6 | 119.7 | 116.7 |
| Energy | 88.2 | 88.6 | 89.2 | 86.2 | 92.0 | 91.9 | 89.2 | 89.4 | 97.1 | 97.1 |
| Food and beverages | 109.1 | 113.5 | 118.2 | 109.8 | 113.9 | 119.4 | 120.4 | 122.7 | 124.5 | 125.6 |
| Housing: shelter | 115.8 | 121.2 | 127.1 | 116.6 | 122.0 | 128.0 | 129.1 | 130.4 | 131.8 | 133.9 |
| Medical care | 122.0 | 130.1 | 138.6 | 123.1 | 131.2 | 139.9 | 141.8 | 145.0 | 147.6 | 150.7 |
| Medical care services ¹ | 121.9 | 130.0 | 138.3 | 123.0 | 131.0 | 139.6 | 141.4 | 144.8 | 147.1 | 150.3 |
| Professional services | 120.8 | 128.8 | 137.5 | 121.7 | 130.1 | 138.8 | 140.3 | 143.4 | 145.4 | 147.5 |
| Physicians' services | 121.5 | 130.4 | 139.8 | 122.4 | 131.7 | 141.3 | 142.9 | 146.8 | 148.9 | 151.4 |
| Dental services | 120.6 | 128.8 | 137.5 | 121.5 | 130.1 | 138.6 | 140.5 | 143.0 | 145.2 | 146.9 |
| Hospital and related services | 123.1 | 131.6 | 143.9 | 123.9 | 132.8 | 145.7 | 149.7 | 154.6 | 157.5 | 162.6 |
| Hospital room | 122.3 | 131.1 | 143.3 | 122.8 | 132.2 | 145.4 | 148.4 | 152.8 | 154.8 | 159.8 |
| Other inpatient services ² | NA | 103.9 | 114.0 | NA | 104.9 | 115.2 | 119.3 | 123.9 | 126.7 | 130.7 |
| Outpatient services ² | NA | 103.3 | 112.5 | NA | 104.0 | 113.5 | 116.4 | 119.9 | 122.6 | 126.7 |
| Medical care commodities | 122.7 | 130.9 | 139.9 | 123.8 | 132.2 | 141.2 | 143.6 | 146.0 | 149.8 | 152.3 |
| Prescription drugs | 130.4 | 140.8 | 152.0 | 132.0 | 142.2 | 153.4 | 156.3 | 159.4 | 163.7 | 167.2 |
| Nonprescription drugs and medical supplies ² | NA | 103.1 | 108.1 | NA | 104.1 | 109.1 | 110.5 | 111.7 | 114.4 | 115.3 |
| Internal and respiratory over-the-counter drugs | 117.7 | 123.9 | 130.8 | 118.4 | 125.2 | 131.9 | 133.8 | 135.4 | 138.5 | 139.4 |
| Nonprescription medical equipment and supplies | 115.0 | 119.6 | 123.9 | 115.7 | 120.6 | 124.9 | 126.3 | 127.6 | 130.7 | 132.1 |

¹Includes private health insurance (not shown separately).

²December 1986 = 100.

NOTES: 1982-84 = 100.0 unless noted. Q designates quarter of year. Quarterly data not seasonally adjusted. NA designates not available.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics: *CPI Detailed Report*. Washington. U.S. Government Printing Office. Monthly reports for Jan. 1986-Sept. 1989.

Table 7
Percent change in selected items of the Consumer Price Index for all urban consumers: 1986-89

| Item | Calendar year | | | 1986 Q3 | 1987 Q3 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 |
|---|-----------------------|------|------|--|------------|------------|------------|------------|------------|------------|
| | 1986 | 1987 | 1988 | | | | | | | |
| | Annual percent change | | | Percent change from the same period of previous year | | | | | | |
| All items | 1.9 | 3.7 | 4.1 | 1.6 | 4.2 | 4.1 | 4.3 | 4.8 | 5.2 | 4.7 |
| All items less medical care | 1.6 | 3.4 | 3.9 | 1.2 | 4.0 | 4.0 | 4.1 | 4.6 | 5.0 | 4.4 |
| Apparel and upkeep | 0.8 | 4.4 | 4.3 | 0.7 | 4.0 | 4.0 | 4.4 | 4.5 | 3.2 | 2.0 |
| Energy | -13.2 | 0.4 | 0.8 | -16.7 | 6.7 | -0.2 | 0.1 | 2.8 | 9.1 | 5.7 |
| Food and beverages | 3.3 | 4.1 | 4.1 | 4.0 | 3.7 | 4.9 | 5.2 | 5.9 | 6.3 | 5.2 |
| Housing: shelter | 5.5 | 4.7 | 4.8 | 5.2 | 4.7 | 4.9 | 4.6 | 4.3 | 4.4 | 4.6 |
| Medical care | 7.5 | 6.6 | 6.5 | 7.6 | 6.6 | 6.6 | 6.8 | 7.1 | 7.3 | 7.7 |
| Medical care services ¹ | 7.7 | 6.6 | 6.5 | 7.8 | 6.5 | 6.6 | 6.8 | 7.2 | 7.2 | 7.7 |
| Professional services | 6.4 | 6.6 | 6.7 | 6.4 | 6.9 | 6.7 | 6.7 | 6.7 | 6.4 | 6.3 |
| Physicians' services | 7.2 | 7.4 | 7.2 | 7.2 | 7.5 | 7.3 | 7.3 | 7.7 | 7.3 | 7.1 |
| Dental services | 5.6 | 6.7 | 6.8 | 5.6 | 7.1 | 6.5 | 6.6 | 6.3 | 6.3 | 6.0 |
| Hospital and related services | 6.0 | 6.9 | 9.3 | 6.1 | 7.1 | 9.7 | 10.7 | 11.3 | 11.3 | 11.6 |
| Hospital room | 6.0 | 7.2 | 9.2 | 6.0 | 7.6 | 10.0 | 10.3 | 10.6 | 9.7 | 9.9 |
| Other inpatient services | NA | NA | 9.7 | NA | NA | 9.8 | 11.9 | 13.0 | 13.4 | 13.5 |
| Outpatient services | NA | NA | 8.9 | NA | NA | 9.1 | 9.5 | 9.7 | 10.5 | 11.6 |
| Medical care commodities | 6.6 | 6.7 | 6.9 | 6.5 | 6.7 | 6.8 | 7.0 | 7.2 | 7.9 | 7.8 |
| Prescription drugs | 8.6 | 8.0 | 7.9 | 8.6 | 7.7 | 7.9 | 7.8 | 7.9 | 8.7 | 9.0 |
| Nonprescription drugs and medical supplies | NA | NA | 4.9 | NA | NA | 4.8 | 5.3 | 5.8 | 6.4 | 5.7 |
| Internal and respiratory over-the-counter drugs | 4.9 | 5.3 | 5.5 | 4.6 | 5.7 | 5.4 | 5.8 | 6.1 | 6.7 | 5.7 |
| Nonprescription medical equipment and supplies | 4.9 | 4.0 | 3.6 | 5.0 | 4.3 | 3.6 | 4.5 | 5.5 | 5.9 | 5.7 |

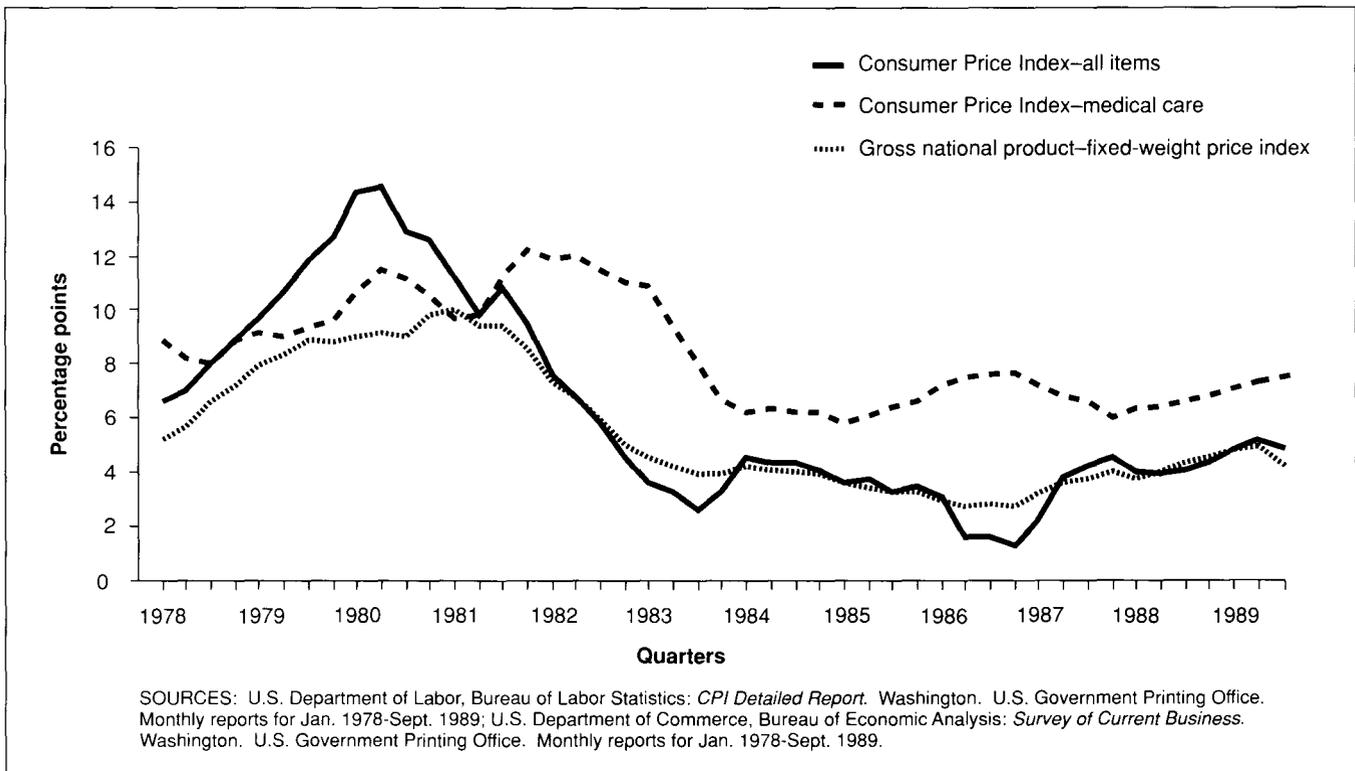
¹Includes private health insurance (not shown separately).

NOTES: Q designates quarter of year. NA designates not available.

SOURCE: U.S. Department of Labor, Bureau of Labor Statistics: *CPI Detailed Report*. Washington. U.S. Government Printing Office. Monthly reports for Jan. 1986-Sept. 1989.

Figure 5

Percent change in measures of price inflation from the same period of previous year: 1978-89



expenditure categories in the 1982-based hospital regulation market basket. In the next step, a price proxy is selected to match each expenditure category. The purpose of the price proxy is to measure the rate of price increase of the goods or services in that expenditure category. The price proxy index for each spending category is multiplied by the expenditure weight for the category. The sum of these products (weights multiplied by the price index) over all cost categories yields the composite input price index for any given time period, usually a fiscal year or a calendar year. The percent change in the market basket is an estimate of price change over time for a fixed quantity of goods and services purchased by a provider.

The input price indexes are estimated on a historical basis and forecasted out several years. The HCFA-chosen price proxies are forecasted under contract with Data Resources, Inc. (DRI). Each quarter, 1 month after the end of a calendar quarter, DRI updates its macroeconomic forecasts of wages and prices. DRI bases its new forecasts on updated historical information and revised forecast assumptions. New forecasts and estimates are done in February, May, August, and November. Most

of the data in Tables 8 through 13 are forecasted and are expected to change as more recent historical data become available and subsequent quarterly forecasts are received.

The methodology and price proxy definitions used in the market basket are described in the *Federal Register* notices that accompany the annual revisions of the PPS, HHA, and SNF cost limits. A description of the current PPS input price index was published September 3, 1986 (*Federal Register*, 1986). The latest HHA regulatory market basket was published July 7, 1987 (*Federal Register*, 1987a) and the latest SNF market basket was published October 2, 1987 (*Federal Register*, 1987b).

Current data

Each market basket is presented in two tables: the first is a percent-change table, and the second provides the actual index numbers from which the percentages were computed. The hospital market basket for PPS is in Tables 8 and 9. The SNF market basket is in Tables 10 and 11. The HHA market basket is in Tables 12 and 13.

Table 8

**Percent change in four-quarter averages in the prospective payment system hospital input price index,
by expense category: 1988-91**

| Expense category ¹ | Base year weights 1982 ² | Four quarters ending | | | | | | | |
|----------------------------------|---|----------------------|------------|------------|------------|------------|------------|------------|------------|
| | | 1988 Q1 | 1988 Q2 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 | 1989 Q4 |
| Total | 100.000 | 4.2 | 4.6 | 4.9 | 5.3 | 5.6 | 5.6 | 5.5 | 5.2 |
| Wages and salaries | 55.774 | 4.2 | 4.4 | 4.7 | 4.8 | 5.1 | 5.0 | 5.0 | 5.0 |
| Employee benefits | 9.785 | 2.9 | 4.0 | 5.2 | 6.6 | 6.2 | 5.7 | 5.0 | 4.3 |
| Other professional fees | 0.759 | 4.2 | 4.4 | 4.6 | 4.5 | 4.8 | 4.6 | 4.6 | 5.0 |
| Energy and utilities | 3.159 | 3.0 | 3.2 | 0.5 | -1.6 | -0.4 | 2.4 | 4.2 | 6.8 |
| Fuel oil, coal, and other fuel | 1.150 | 15.7 | 13.1 | 3.2 | -5.2 | -4.2 | 0.9 | 5.8 | 12.2 |
| Electricity | 1.084 | -1.5 | -1.0 | -0.3 | 0.6 | 1.6 | 2.4 | 1.8 | 3.0 |
| Natural gas | 0.473 | -7.5 | -4.1 | -4.3 | -2.7 | -0.6 | 2.0 | 5.7 | 6.8 |
| Motor gasoline | 0.417 | 14.9 | 12.6 | 4.3 | -2.4 | -0.9 | 6.0 | 9.2 | 12.3 |
| Water and sewerage maintenance | 0.035 | 5.4 | 5.3 | 5.3 | 5.5 | 5.8 | 6.0 | 6.1 | 6.2 |
| Malpractice insurance | 0.657 | 17.3 | 18.0 | 20.3 | 24.2 | 22.5 | 17.0 | 9.7 | 0.6 |
| All other | 29.866 | 4.6 | 4.8 | 5.4 | 6.0 | 6.7 | 7.2 | 7.1 | 6.6 |
| Other products | 21.133 | 4.3 | 4.5 | 4.9 | 5.5 | 6.1 | 6.6 | 6.5 | 6.2 |
| Pharmaceuticals | 4.096 | 8.8 | 8.3 | 8.0 | 7.9 | 8.1 | 8.5 | 9.2 | 9.5 |
| Food | 3.558 | 3.1 | 2.9 | 3.6 | 4.3 | 5.0 | 5.4 | 4.9 | 4.4 |
| Direct purchase | 2.265 | 2.6 | 2.3 | 3.3 | 4.5 | 5.4 | 6.0 | 5.1 | 4.1 |
| Contract service | 1.294 | 3.8 | 3.8 | 3.9 | 4.0 | 4.3 | 4.4 | 4.6 | 4.7 |
| Chemicals and cleaning products | 3.127 | 7.3 | 8.2 | 10.0 | 11.9 | 13.9 | 14.6 | 12.0 | 8.4 |
| Surgical and medical instruments | 2.372 | 1.6 | 1.3 | 1.4 | 1.7 | 2.3 | 3.4 | 3.9 | 3.9 |
| Photographic supplies | 2.265 | 1.6 | 1.7 | 1.7 | 2.3 | 3.9 | 5.8 | 7.7 | 8.7 |
| Rubber and plastics | 2.157 | 2.6 | 4.2 | 5.6 | 6.2 | 6.1 | 5.4 | 4.2 | 3.0 |
| Paper products | 1.186 | 4.4 | 5.9 | 7.6 | 8.9 | 9.7 | 9.5 | 8.2 | 6.6 |
| Apparel | 1.078 | 1.1 | 1.6 | 2.4 | 3.0 | 2.7 | 2.3 | 2.0 | 2.0 |
| Minor machinery and equipment | 0.755 | 1.6 | 1.8 | 2.2 | 2.6 | 2.9 | 3.2 | 3.5 | 3.6 |
| Miscellaneous products | 0.539 | 2.6 | 2.4 | 2.3 | 2.5 | 3.3 | 4.3 | 4.7 | 4.9 |
| Other services | 8.733 | 3.5 | 3.8 | 4.0 | 4.3 | 4.7 | 5.0 | 5.3 | 5.3 |
| Business services | 3.019 | 4.2 | 4.6 | 4.6 | 4.4 | 4.3 | 4.6 | 5.2 | 5.7 |
| Computer and data processing | 1.401 | 5.7 | 6.5 | 7.1 | 7.5 | 7.6 | 7.6 | 8.0 | 8.1 |
| Transportation and shipping | 1.078 | 4.6 | 4.6 | 4.0 | 3.1 | 3.3 | 4.3 | 4.7 | 5.0 |
| Telephone | 0.755 | -0.9 | -0.7 | -0.6 | -0.4 | -0.3 | -0.0 | 0.9 | 1.7 |
| Blood services | 0.539 | 0.6 | -2.0 | -2.4 | 1.2 | 4.7 | 7.9 | 8.0 | 5.7 |
| Postage | 0.324 | 0.0 | 3.4 | 6.8 | 10.1 | 13.5 | 9.8 | 6.3 | 3.1 |
| Other—labor intensive | 0.970 | 2.7 | 2.6 | 2.9 | 3.4 | 3.8 | 4.0 | 3.8 | 3.5 |
| Other—nonlabor intensive | 0.647 | 4.1 | 4.1 | 4.1 | 4.1 | 4.3 | 4.6 | 4.8 | 4.9 |

See footnotes at end of table.

Table 8—Continued

Percent change in four-quarter averages in the prospective payment system hospital input price index, by expense category: 1988-91

| Expense category ¹ | Base year weights 1982 ² | Four quarters ending | | | | | | | |
|----------------------------------|-------------------------------------|----------------------|---------|---------|---------|---------|---------|---------|---------|
| | | 1990 Q1 | 1990 Q2 | 1990 Q3 | 1990 Q4 | 1991 Q1 | 1991 Q2 | 1991 Q3 | 1991 Q4 |
| Total | 100.000 | 5.1 | 5.0 | 5.1 | 5.2 | 5.2 | 5.2 | 5.2 | 5.3 |
| Wages and salaries | 55.774 | 5.0 | 5.3 | 5.5 | 5.7 | 5.7 | 5.7 | 5.5 | 5.4 |
| Employee benefits | 9.785 | 4.7 | 5.0 | 5.2 | 5.4 | 5.1 | 5.1 | 5.1 | 5.3 |
| Other professional fees | 0.759 | 5.2 | 5.7 | 5.9 | 6.0 | 5.9 | 5.6 | 5.3 | 5.0 |
| Energy and utilities | 3.159 | 7.1 | 4.2 | 3.7 | 2.6 | 2.2 | 3.6 | 4.1 | 4.5 |
| Fuel oil, coal, and other fuel | 1.150 | 13.2 | 5.5 | 3.7 | 1.3 | 0.1 | 3.4 | 3.9 | 4.2 |
| Electricity | 1.084 | 3.7 | 4.0 | 4.6 | 3.5 | 2.7 | 2.3 | 2.5 | 2.9 |
| Natural gas | 0.473 | 5.8 | 5.3 | 5.2 | 6.0 | 7.5 | 8.6 | 8.9 | 9.2 |
| Motor gasoline | 0.417 | 11.2 | -0.7 | -3.2 | -4.1 | -3.4 | 2.5 | 4.3 | 4.7 |
| Water and sewerage maintenance | 0.035 | 6.3 | 6.6 | 6.8 | 7.1 | 7.5 | 7.6 | 7.9 | 8.0 |
| Malpractice insurance | 0.657 | -2.2 | -1.6 | -0.7 | 0.1 | -0.2 | -0.9 | -0.5 | 3.0 |
| All other | 29.866 | 5.7 | 4.9 | 4.5 | 4.5 | 4.6 | 4.8 | 5.1 | 5.4 |
| Other products | 21.133 | 5.5 | 5.0 | 4.6 | 4.5 | 4.6 | 4.8 | 5.0 | 5.3 |
| Pharmaceuticals | 4.096 | 9.9 | 10.1 | 9.6 | 9.1 | 8.5 | 8.2 | 8.3 | 8.5 |
| Food | 3.558 | 3.7 | 3.3 | 3.5 | 3.7 | 4.0 | 4.2 | 4.3 | 4.3 |
| Direct purchase | 2.265 | 2.9 | 2.1 | 2.3 | 2.6 | 3.1 | 3.5 | 3.6 | 3.7 |
| Contract service | 1.294 | 4.9 | 5.1 | 5.3 | 5.4 | 5.4 | 5.3 | 5.3 | 5.2 |
| Chemicals and cleaning products | 3.127 | 3.8 | 0.9 | 0.3 | 1.0 | 2.6 | 3.7 | 4.6 | 5.1 |
| Surgical and medical instruments | 2.372 | 3.6 | 2.8 | 2.2 | 2.0 | 1.9 | 2.3 | 2.7 | 3.0 |
| Photographic supplies | 2.265 | 7.8 | 6.5 | 4.6 | 3.1 | 2.5 | 2.3 | 2.5 | 2.7 |
| Rubber and plastics | 2.157 | 2.1 | 1.4 | 1.6 | 2.1 | 2.8 | 3.6 | 4.1 | 4.6 |
| Paper products | 1.186 | 5.0 | 3.7 | 3.6 | 3.9 | 4.4 | 4.9 | 4.9 | 5.0 |
| Apparel | 1.078 | 2.4 | 2.9 | 3.2 | 3.2 | 3.1 | 3.0 | 3.0 | 3.2 |
| Minor machinery and equipment | 0.755 | 3.6 | 3.5 | 3.3 | 3.3 | 3.5 | 3.7 | 3.9 | 4.1 |
| Miscellaneous products | 0.539 | 4.6 | 3.7 | 3.5 | 3.4 | 3.4 | 3.9 | 4.1 | 4.3 |
| Other services | 8.733 | 5.3 | 5.0 | 4.8 | 4.7 | 4.6 | 4.8 | 5.0 | 5.1 |
| Business services | 3.019 | 5.8 | 5.6 | 5.0 | 4.7 | 4.6 | 4.5 | 4.6 | 4.5 |
| Computer and data processing | 1.401 | 8.3 | 8.3 | 7.7 | 7.2 | 6.8 | 6.5 | 6.5 | 6.5 |
| Transportation and shipping | 1.078 | 4.8 | 3.3 | 3.0 | 2.9 | 3.1 | 3.9 | 4.4 | 4.9 |
| Telephone | 0.755 | 2.4 | 3.0 | 3.3 | 3.5 | 3.7 | 3.8 | 3.9 | 4.1 |
| Blood services | 0.539 | 3.9 | 2.2 | 2.0 | 2.6 | 2.8 | 3.1 | 3.0 | 3.0 |
| Postage | 0.324 | 0.0 | 0.0 | 0.0 | 0.0 | 0.7 | 3.8 | 6.8 | 9.8 |
| Other—labor intensive | 0.970 | 3.8 | 4.2 | 4.9 | 5.4 | 5.5 | 5.5 | 5.4 | 5.1 |
| Other—nonlabor intensive | 0.647 | 4.7 | 4.4 | 4.2 | 4.1 | 4.2 | 4.3 | 4.5 | 4.7 |

¹For the data sources used to estimate the market basket relative weights and choice of price proxies, see *Federal Register*, Vol. 51, No. 170, 31582-31587, Sept. 3, 1986.

²Category weights may not sum to total due to rounding.

NOTES: Data for 1988 are historical. Data for 1989, 1990, and 1991 are forecasted. Q designates quarter of year. Percent change data shown are four-quarter moving averages. The following is an example of how this computation is done: Use the quarterly index levels shown in Tables 9, 11, and 13. Choose the four-quarter period ending for which you would like to calculate the percent change (e.g., year-end 1990: Quarter 3). Count back three quarters so that you have a total of four (e.g., 1990: Quarter 3; 1990: Quarter 2; 1990: Quarter 1; 1989: Quarter 4). Average these four quarters (add the index levels and divide by 4). Now, take the four quarters previous to the four quarters that you just used (e.g., 1989: Quarter 3; 1989: Quarter 2; 1989: Quarter 1; 1988: Quarter 4). Average these four quarters. Finally, compute a percent change using the two averages.

SOURCES: Health Care Financing Administration, Office of the Actuary: Data from the Office of National Cost Estimates, Division of Statistical Analysis; forecasts created by Data Resources, Inc.

Table 9
Quarterly index levels of the prospective payment system hospital input price index,
by expense category: 1988-91

| Expense category ¹ | Base year weights 1982 ² | 1988 Q1 | 1988 Q2 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 | 1989 Q4 |
|----------------------------------|---|------------|------------|------------|------------|------------|------------|------------|------------|
| Total | 100.000 | 126.0 | 127.8 | 129.9 | 131.5 | 133.2 | 134.6 | 136.3 | 137.8 |
| Wages and salaries | 55.774 | 129.9 | 131.4 | 133.4 | 134.9 | 136.6 | 137.7 | 139.8 | 141.6 |
| Employee benefits | 9.785 | 124.6 | 125.7 | 127.2 | 128.6 | 129.9 | 131.2 | 132.6 | 134.3 |
| Other professional fees | 0.759 | 130.3 | 131.9 | 134.0 | 134.7 | 136.6 | 137.6 | 140.5 | 142.4 |
| Energy and utilities | 3.159 | 77.0 | 79.4 | 81.3 | 78.1 | 80.2 | 87.4 | 85.1 | 84.5 |
| Fuel oil, coal, and other fuel | 1.150 | 52.9 | 55.4 | 54.7 | 52.5 | 55.5 | 66.1 | 60.2 | 60.0 |
| Electricity | 1.084 | 108.9 | 111.7 | 118.3 | 111.3 | 112.1 | 115.2 | 118.4 | 118.0 |
| Natural gas | 0.473 | 78.1 | 77.5 | 75.4 | 78.4 | 82.5 | 82.9 | 82.1 | 82.9 |
| Motor gasoline | 0.417 | 53.8 | 58.5 | 60.2 | 56.8 | 57.1 | 74.1 | 65.2 | 61.1 |
| Water and sewerage maintenance | 0.035 | 139.6 | 141.7 | 145.3 | 146.3 | 148.4 | 150.3 | 153.9 | 155.8 |
| Malpractice insurance | 0.657 | 281.8 | 301.6 | 322.6 | 343.6 | 318.0 | 307.0 | 314.9 | 316.9 |
| All other | 29.866 | 119.7 | 121.9 | 124.3 | 126.3 | 129.1 | 130.8 | 131.7 | 132.8 |
| Other products | 21.133 | 120.9 | 122.9 | 124.9 | 126.9 | 129.5 | 131.2 | 132.3 | 133.4 |
| Pharmaceuticals | 4.096 | 164.0 | 167.6 | 170.2 | 174.1 | 178.4 | 182.5 | 187.9 | 191.5 |
| Food | 3.558 | 115.0 | 117.0 | 119.7 | 120.1 | 121.9 | 122.9 | 123.6 | 124.0 |
| Direct purchase | 2.265 | 109.3 | 111.6 | 115.0 | 114.9 | 116.9 | 117.5 | 117.7 | 117.4 |
| Contract service | 1.294 | 125.0 | 126.4 | 127.9 | 129.2 | 130.7 | 132.2 | 133.9 | 135.6 |
| Chemicals and cleaning products | 3.127 | 100.6 | 104.5 | 109.3 | 112.8 | 117.2 | 117.1 | 114.5 | 114.2 |
| Surgical and medical instruments | 2.372 | 108.8 | 109.0 | 110.1 | 111.5 | 112.8 | 114.4 | 114.5 | 114.8 |
| Photographic supplies | 2.265 | 111.0 | 112.3 | 113.2 | 115.7 | 120.3 | 122.4 | 123.9 | 125.2 |
| Rubber and plastics | 2.157 | 106.9 | 108.7 | 110.5 | 111.2 | 112.3 | 112.9 | 112.6 | 112.8 |
| Paper products | 1.186 | 118.7 | 121.7 | 124.8 | 127.4 | 129.8 | 131.7 | 131.3 | 132.1 |
| Apparel | 1.078 | 103.5 | 104.6 | 104.9 | 104.8 | 105.4 | 106.0 | 106.9 | 107.7 |
| Minor machinery and equipment | 0.755 | 112.1 | 112.8 | 113.6 | 114.5 | 116.0 | 116.9 | 117.9 | 118.6 |
| Miscellaneous products | 0.539 | 106.2 | 107.4 | 108.6 | 109.7 | 111.6 | 113.8 | 113.3 | 114.6 |
| Other services | 8.733 | 123.9 | 125.2 | 126.6 | 128.4 | 130.4 | 132.1 | 133.5 | 134.9 |
| Business services | 3.019 | 126.0 | 126.0 | 127.1 | 128.8 | 131.8 | 133.1 | 135.2 | 136.5 |
| Computer and data processing | 1.401 | 142.6 | 144.3 | 146.4 | 149.9 | 153.0 | 155.5 | 159.5 | 162.5 |
| Transportation and shipping | 1.078 | 110.1 | 111.3 | 112.8 | 113.9 | 115.0 | 119.1 | 118.0 | 118.4 |
| Telephone | 0.755 | 124.6 | 124.8 | 123.8 | 124.7 | 125.0 | 126.1 | 126.9 | 128.2 |
| Blood services | 0.539 | 103.8 | 104.3 | 108.4 | 112.2 | 113.3 | 113.2 | 112.8 | 113.9 |
| Postage | 0.324 | 110.2 | 125.1 | 125.1 | 125.1 | 125.1 | 125.1 | 125.1 | 125.1 |
| Other—labor intensive | 0.970 | 123.6 | 124.8 | 126.4 | 127.8 | 128.6 | 129.5 | 130.2 | 131.9 |
| Other—nonlabor intensive | 0.647 | 120.3 | 121.8 | 123.4 | 124.7 | 126.1 | 128.2 | 129.5 | 130.3 |

See footnotes at end of table.

Table 9—Continued
Quarterly index levels of the prospective payment system hospital input price index,
by expense category: 1988-91

| Expense category ¹ | Base year weights 1982 ² | 1990 Q1 | 1990 Q2 | 1990 Q3 | 1990 Q4 | 1991 Q1 | 1991 Q2 | 1991 Q3 | 1991 Q4 |
|----------------------------------|-------------------------------------|---------|---------|---------|---------|---------|---------|---------|---------|
| Total | 100.000 | 140.1 | 141.6 | 143.4 | 144.9 | 147.5 | 149.0 | 151.0 | 152.7 |
| Wages and salaries | 55.774 | 144.2 | 145.6 | 147.9 | 149.7 | 152.4 | 153.5 | 155.8 | 157.4 |
| Employee benefits | 9.785 | 137.2 | 138.4 | 139.6 | 141.0 | 143.7 | 145.5 | 147.4 | 149.2 |
| Other professional fees | 0.759 | 144.6 | 146.2 | 148.9 | 150.9 | 152.8 | 153.2 | 156.0 | 158.0 |
| Energy and utilities | 3.159 | 84.8 | 86.4 | 87.5 | 87.4 | 88.1 | 90.2 | 91.6 | 91.7 |
| Fuel oil, coal, and other fuel | 1.150 | 60.5 | 60.7 | 61.8 | 61.9 | 62.6 | 63.3 | 64.6 | 64.7 |
| Electricity | 1.084 | 118.6 | 120.3 | 120.9 | 120.1 | 121.4 | 123.5 | 124.7 | 124.3 |
| Natural gas | 0.473 | 84.3 | 87.0 | 88.8 | 90.0 | 91.4 | 95.1 | 97.0 | 98.8 |
| Motor gasoline | 0.417 | 58.1 | 62.0 | 63.9 | 63.0 | 60.8 | 64.9 | 67.0 | 65.9 |
| Water and sewerage maintenance | 0.035 | 158.2 | 161.3 | 164.4 | 167.6 | 171.1 | 174.2 | 177.5 | 180.5 |
| Malpractice insurance | 0.657 | 318.2 | 321.1 | 318.1 | 300.4 | 314.7 | 326.3 | 326.3 | 328.3 |
| All other | 29.866 | 134.7 | 136.4 | 137.6 | 139.1 | 141.3 | 143.3 | 145.2 | 147.3 |
| Other products | 21.133 | 135.4 | 136.9 | 138.2 | 139.7 | 141.9 | 143.9 | 145.7 | 147.5 |
| Pharmaceuticals | 4.096 | 196.7 | 200.2 | 203.8 | 207.2 | 212.1 | 216.9 | 221.4 | 226.3 |
| Food | 3.558 | 125.8 | 127.0 | 128.6 | 129.3 | 131.1 | 132.4 | 134.1 | 135.0 |
| Direct purchase | 2.265 | 119.0 | 119.9 | 121.4 | 121.5 | 123.3 | 124.3 | 125.9 | 126.3 |
| Contract service | 1.294 | 137.5 | 139.5 | 141.1 | 143.0 | 144.9 | 146.6 | 148.4 | 150.2 |
| Chemicals and cleaning products | 3.127 | 114.8 | 116.9 | 117.2 | 118.5 | 120.1 | 121.8 | 123.7 | 125.7 |
| Surgical and medical instruments | 2.372 | 115.9 | 116.3 | 116.4 | 117.1 | 118.6 | 119.7 | 120.2 | 121.3 |
| Photographic supplies | 2.265 | 126.0 | 127.0 | 126.4 | 127.7 | 129.0 | 130.3 | 130.1 | 131.7 |
| Rubber and plastics | 2.157 | 113.4 | 114.4 | 115.7 | 116.6 | 117.7 | 119.5 | 121.3 | 122.6 |
| Paper products | 1.186 | 133.9 | 135.6 | 137.3 | 138.7 | 140.5 | 142.3 | 144.0 | 145.8 |
| Apparel | 1.078 | 109.0 | 109.6 | 110.3 | 110.7 | 112.1 | 112.8 | 113.9 | 114.7 |
| Minor machinery and equipment | 0.755 | 119.7 | 120.7 | 121.7 | 122.8 | 124.2 | 125.6 | 126.9 | 128.1 |
| Miscellaneous products | 0.539 | 115.7 | 116.6 | 117.5 | 118.8 | 120.2 | 121.5 | 122.7 | 124.3 |
| Other services | 8.733 | 136.9 | 138.1 | 139.4 | 141.2 | 143.5 | 145.2 | 146.8 | 148.3 |
| Business services | 3.019 | 138.8 | 139.7 | 140.6 | 142.9 | 145.2 | 146.2 | 147.1 | 148.6 |
| Computer and data processing | 1.401 | 165.5 | 167.3 | 170.2 | 173.0 | 176.0 | 178.3 | 181.4 | 183.9 |
| Transportation and shipping | 1.078 | 119.1 | 120.7 | 121.7 | 122.5 | 124.5 | 126.0 | 127.8 | 129.2 |
| Telephone | 0.755 | 129.2 | 130.4 | 131.6 | 132.9 | 134.3 | 135.5 | 137.1 | 138.9 |
| Blood services | 0.539 | 115.4 | 114.8 | 116.6 | 118.0 | 118.7 | 117.7 | 120.0 | 122.4 |
| Postage | 0.324 | 125.1 | 125.1 | 125.1 | 125.1 | 128.8 | 140.2 | 140.2 | 140.2 |
| Other—labor intensive | 0.970 | 135.3 | 136.5 | 137.8 | 138.9 | 142.7 | 144.1 | 144.9 | 144.9 |
| Other—nonlabor intensive | 0.647 | 131.3 | 133.2 | 134.8 | 135.8 | 137.1 | 139.2 | 141.2 | 142.5 |

¹For the data sources used to estimate the market basket relative weights and choice of price proxies, see *Federal Register*, Vol. 51, No. 170, 31582-31587, Sept. 3, 1986.

²Category weights may not sum to total due to rounding.

NOTES: Data for 1988 are historical. Data for 1989, 1990, and 1991 are forecasted. Q designates quarter of year.

SOURCES: Health Care Financing Administration, Office of the Actuary; Data from the Office of National Cost Estimates, Division of Statistical Analysis; forecasts created by Data Resources, Inc.

Table 10
Percent change in four-quarter averages in the skilled nursing facility input price index,
by expense category: 1988-91

| Expense category ¹ | Base year weights 1977 ² | Four quarters ending | | | | | | | |
|--------------------------------|-------------------------------------|----------------------|---------|---------|---------|---------|---------|---------|---------|
| | | 1988 Q1 | 1988 Q2 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 | 1989 Q4 |
| Total | 100.00 | 4.0 | 4.5 | 5.0 | 5.4 | 5.8 | 6.1 | 6.1 | 5.9 |
| Wages and salaries | 63.02 | 4.2 | 4.8 | 5.3 | 5.9 | 6.3 | 6.8 | 6.8 | 6.4 |
| Employee benefits | 7.60 | 2.9 | 4.0 | 5.2 | 6.6 | 6.2 | 5.7 | 5.0 | 4.3 |
| Food | 9.74 | 3.3 | 3.0 | 3.5 | 4.3 | 5.1 | 5.7 | 5.5 | 5.1 |
| Direct purchase | 4.93 | 2.6 | 2.4 | 3.3 | 4.5 | 5.4 | 6.0 | 5.3 | 4.4 |
| Contract service | 4.81 | 3.8 | 3.5 | 3.7 | 4.1 | 4.8 | 5.5 | 5.6 | 5.6 |
| Fuel and other energy | 4.27 | 2.8 | 3.2 | 2.2 | 1.0 | 1.2 | 1.6 | 2.4 | 3.4 |
| Electricity | 1.21 | 0.6 | 1.0 | 1.1 | 1.4 | 1.5 | 2.1 | 2.9 | 2.9 |
| Natural gas | 0.91 | -3.9 | -3.0 | -2.1 | -0.6 | 1.3 | 2.4 | 3.1 | 2.7 |
| Fuel oil and coal | 1.66 | 8.6 | 8.9 | 4.9 | 0.3 | -0.8 | -1.0 | 0.3 | 3.1 |
| Water and sewerage maintenance | 0.49 | 5.4 | 5.3 | 5.3 | 5.5 | 5.8 | 6.0 | 6.1 | 6.2 |
| All other | 15.37 | 4.9 | 4.9 | 4.9 | 5.0 | 5.1 | 5.4 | 5.6 | 5.7 |
| Drugs | 1.50 | 8.8 | 8.3 | 8.0 | 7.9 | 8.1 | 8.5 | 9.2 | 9.5 |
| Supplies | 3.28 | 4.2 | 4.2 | 4.2 | 4.2 | 4.3 | 4.7 | 4.8 | 4.8 |
| Health services | 1.21 | 7.2 | 7.1 | 7.0 | 7.2 | 7.4 | 7.4 | 7.4 | 7.6 |
| Other business services | 4.59 | 4.2 | 4.3 | 4.4 | 4.5 | 4.7 | 4.8 | 4.9 | 5.0 |
| Miscellaneous | 4.79 | 4.2 | 4.2 | 4.2 | 4.2 | 4.3 | 4.7 | 4.8 | 4.8 |

| Expense category ¹ | Base year weights 1977 ² | Four quarters ending | | | | | | | |
|--------------------------------|-------------------------------------|----------------------|---------|---------|---------|---------|---------|---------|---------|
| | | 1990 Q1 | 1990 Q2 | 1990 Q3 | 1990 Q4 | 1991 Q1 | 1991 Q2 | 1991 Q3 | 1991 Q4 |
| Total | 100.00 | 5.9 | 5.8 | 5.7 | 5.8 | 5.5 | 5.3 | 5.2 | 5.2 |
| Wages and salaries | 63.02 | 6.5 | 6.4 | 6.3 | 6.4 | 6.0 | 5.6 | 5.4 | 5.3 |
| Employee benefits | 7.60 | 4.7 | 5.0 | 5.2 | 5.4 | 5.1 | 5.1 | 5.1 | 5.3 |
| Food | 9.74 | 4.3 | 3.6 | 3.5 | 3.4 | 3.6 | 3.8 | 3.9 | 4.0 |
| Direct purchase | 4.93 | 3.2 | 2.4 | 2.5 | 2.7 | 3.2 | 3.6 | 3.7 | 3.8 |
| Contract service | 4.81 | 5.3 | 4.6 | 4.3 | 4.1 | 3.9 | 4.0 | 4.1 | 4.2 |
| Fuel and other energy | 4.27 | 3.3 | 3.1 | 3.0 | 2.9 | 3.4 | 4.1 | 4.6 | 4.8 |
| Electricity | 1.21 | 3.3 | 3.1 | 3.3 | 3.2 | 3.0 | 3.0 | 2.9 | 3.1 |
| Natural gas | 0.91 | 1.4 | 1.6 | 2.3 | 3.1 | 4.3 | 4.6 | 4.6 | 4.8 |
| Fuel oil and coal | 1.66 | 3.5 | 2.8 | 1.8 | 1.1 | 1.7 | 3.2 | 4.5 | 5.0 |
| Water and sewerage maintenance | 0.49 | 6.3 | 6.6 | 6.8 | 7.1 | 7.5 | 7.6 | 7.9 | 8.0 |
| All other | 15.37 | 5.7 | 5.6 | 5.5 | 5.4 | 5.3 | 5.4 | 5.5 | 5.6 |
| Drugs | 1.50 | 9.9 | 10.1 | 9.6 | 9.1 | 8.5 | 8.2 | 8.3 | 8.5 |
| Supplies | 3.28 | 4.7 | 4.3 | 4.2 | 4.1 | 4.1 | 4.3 | 4.5 | 4.7 |
| Health services | 1.21 | 7.6 | 7.9 | 8.3 | 8.3 | 8.2 | 7.9 | 7.6 | 7.4 |
| Other business services | 4.59 | 5.0 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.2 | 5.3 |
| Miscellaneous | 4.79 | 4.7 | 4.3 | 4.2 | 4.1 | 4.1 | 4.3 | 4.5 | 4.7 |

¹For the data sources used to estimate the market basket relative weights and choice of price proxies, see *Federal Register*, Vol. 52, No. 191, 37109, Oct. 2, 1987.

²Category weights may not sum to total due to rounding.

NOTES: Data for 1988 are historical. Data for 1989, 1990, and 1991 are forecasted. Q designates quarter of year. Percent change data shown are four-quarter moving averages. The following is an example of how this computation is done: Use the quarterly index levels shown in Tables 9, 11, and 13. Choose the four-quarter period ending for which you would like to calculate the percent change (e.g., year-end 1990: Quarter 3). Count back three quarters so that you have a total of four (e.g., 1990: Quarter 3; 1990: Quarter 2; 1990: Quarter 1; 1989: Quarter 4). Average these four quarters (add the index levels and divide by four). Now, take the four quarters previous to the four quarters that you just used (e.g., 1989: Quarter 3; 1989: Quarter 2; 1989: Quarter 1; 1988: Quarter 4). Average these four quarters. Finally, compute a percent change using the two averages.

SOURCE: Health Care Financing Administration, Office of the Actuary: Data from the Office of National Cost Estimates, Divisions of Statistical Analysis; forecasts created by Data Resources, Inc.

Table 12
Percent change in four-quarter averages in the home health agency input price index,
by expense category: 1988-91

| Expense category ¹ | Base year weights 1976 ² | Four quarters ending | | | | | | | |
|--|-------------------------------------|----------------------|---------|---------|---------|---------|---------|---------|---------|
| | | 1988 Q1 | 1988 Q2 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 | 1989 Q4 |
| Total | 100.00 | 5.0 | 5.5 | 5.9 | 6.2 | 6.3 | 6.3 | 6.2 | 5.9 |
| Wages and salaries | 65.14 | 5.5 | 6.0 | 6.5 | 6.8 | 7.0 | 6.8 | 6.6 | 6.3 |
| Employee benefits | 7.90 | 2.9 | 4.0 | 5.2 | 6.6 | 6.2 | 5.7 | 5.0 | 4.3 |
| Transportation | 4.87 | 4.6 | 4.6 | 4.0 | 3.1 | 3.3 | 4.3 | 4.7 | 5.0 |
| Office costs | 2.79 | 4.2 | 4.3 | 4.4 | 4.5 | 4.7 | 4.8 | 4.9 | 5.0 |
| Rent | 1.35 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.8 | 3.7 |
| Nonrental space occupancy | 1.17 | 2.9 | 3.3 | 2.3 | 1.1 | 1.2 | 1.6 | 2.5 | 3.4 |
| Medical and nursing supplies and equipment | 2.81 | 3.7 | 3.7 | 3.5 | 3.8 | 4.8 | 5.7 | 6.6 | 7.2 |
| Contract services | 6.87 | 5.0 | 5.5 | 5.9 | 6.2 | 6.3 | 6.3 | 6.2 | 5.9 |
| Miscellaneous | 7.10 | 4.2 | 4.2 | 4.2 | 4.2 | 4.3 | 4.7 | 4.8 | 4.8 |

| Expense category ¹ | Base year weights 1976 ² | Four quarters ending | | | | | | | |
|--|-------------------------------------|----------------------|---------|---------|---------|---------|---------|---------|---------|
| | | 1990 Q1 | 1990 Q2 | 1990 Q3 | 1990 Q4 | 1991 Q1 | 1991 Q2 | 1991 Q3 | 1991 Q4 |
| Total | 100.00 | 5.7 | 5.6 | 5.6 | 5.7 | 5.8 | 5.9 | 5.9 | 5.8 |
| Wages and salaries | 65.14 | 6.0 | 6.0 | 6.0 | 6.2 | 6.3 | 6.3 | 6.2 | 6.1 |
| Employee benefits | 7.90 | 4.7 | 5.0 | 5.2 | 5.4 | 5.1 | 5.1 | 5.1 | 5.3 |
| Transportation | 4.87 | 4.8 | 3.3 | 3.0 | 2.9 | 3.1 | 3.9 | 4.4 | 4.9 |
| Office costs | 2.79 | 5.0 | 5.1 | 5.1 | 5.1 | 5.1 | 5.1 | 5.2 | 5.3 |
| Rent | 1.35 | 3.7 | 3.6 | 3.3 | 3.0 | 2.9 | 3.0 | 3.4 | 4.0 |
| Nonrental space occupancy | 1.17 | 3.3 | 3.1 | 3.0 | 3.0 | 3.5 | 4.1 | 4.6 | 4.9 |
| Medical and nursing supplies and equipment | 2.81 | 7.3 | 7.4 | 7.5 | 7.4 | 7.2 | 7.0 | 6.7 | 6.6 |
| Contract services | 6.87 | 5.7 | 5.6 | 5.6 | 5.7 | 5.8 | 5.9 | 5.9 | 5.8 |
| Miscellaneous | 7.10 | 4.7 | 4.3 | 4.2 | 4.1 | 4.1 | 4.3 | 4.5 | 4.7 |

¹For the data sources used to estimate the market basket relative weights and choice of price proxies, see *Federal Register*, Vol. 52, No. 129, 25562-25566, July 7, 1987.

²Category weights may not sum to total due to rounding.

NOTES: Data for 1988 are historical. Data for 1989, 1990, and 1991 are forecasted. Q designates quarter of year. Percent change data shown are four-quarter moving averages. The following is an example of how this computation is done: Use the quarterly index levels shown in Tables 9, 11, and 13. Choose the four-quarter period ending for which you would like to calculate the percent change (e.g., year-end 1990:Quarter 3). Count back three quarters so that you have a total of four (e.g., 1990:Quarter 3; 1990:Quarter 2; 1990:Quarter 1; 1989:Quarter 4). Average these four quarters (add the index levels and divide by 4). Now, take the four quarters previous to the four quarters that you just used (e.g., 1989:Quarter 3; 1989:Quarter 2; 1989:Quarter 1; 1988:Quarter 4). Average these four quarters. Finally, compute a percent change using the two averages.

SOURCE: Health Care Financing Administration, Office of the Actuary: Data from the Office of National Cost Estimates, Division of Statistical Analysis; forecasts created by Data Resources, Inc.

Table 13

Quarterly index levels of the home health agency input price index, by expense category: 1988-91

| Expense category ¹ | Base year | 1988 | 1988 | 1988 | 1988 | 1989 | 1989 | 1989 | 1989 |
|--|------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | weights 1976 ² | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Total | 100.00 | 228.0 | 231.6 | 235.4 | 239.5 | 243.0 | 245.4 | 249.1 | 252.6 |
| Wages and salaries | 65.14 | 235.6 | 239.1 | 243.5 | 248.3 | 252.1 | 254.0 | 258.7 | 262.6 |
| Employee benefits | 7.90 | 224.0 | 225.9 | 228.6 | 231.1 | 233.4 | 235.9 | 238.3 | 241.3 |
| Transportation | 4.87 | 193.9 | 195.9 | 198.6 | 200.6 | 202.5 | 209.7 | 207.8 | 208.4 |
| Office costs | 2.79 | 237.7 | 240.2 | 242.8 | 246.0 | 249.3 | 252.1 | 255.2 | 258.5 |
| Rent | 1.35 | 206.5 | 207.6 | 210.1 | 212.2 | 214.0 | 215.6 | 218.4 | 219.8 |
| Nonrental space occupancy | 1.17 | 221.8 | 223.8 | 223.3 | 222.5 | 228.2 | 230.6 | 231.2 | 231.9 |
| Medical and nursing supplies and equipment | 2.81 | 199.9 | 204.0 | 206.6 | 210.1 | 213.8 | 218.5 | 221.5 | 225.7 |
| Contract services | 6.87 | 228.5 | 231.6 | 235.4 | 239.5 | 243.0 | 245.5 | 249.2 | 252.6 |
| Miscellaneous | 7.10 | 204.4 | 206.7 | 209.1 | 211.4 | 214.2 | 217.6 | 219.0 | 221.2 |
| | | | | | | | | | |
| Expense category ¹ | Base year | 1990 | 1990 | 1990 | 1990 | 1991 | 1991 | 1991 | 1991 |
| | weights 1976 ² | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| Total | 100.00 | 256.6 | 259.1 | 263.6 | 267.5 | 271.8 | 274.3 | 278.9 | 282.8 |
| Wages and salaries | 65.14 | 267.0 | 269.5 | 274.8 | 279.3 | 284.0 | 286.2 | 291.4 | 295.5 |
| Employee benefits | 7.90 | 246.5 | 248.8 | 250.9 | 253.5 | 258.3 | 261.6 | 264.8 | 268.2 |
| Transportation | 4.87 | 209.7 | 212.6 | 214.2 | 215.7 | 219.3 | 221.8 | 225.1 | 227.4 |
| Office costs | 2.79 | 261.7 | 265.0 | 268.3 | 271.6 | 275.1 | 278.8 | 282.6 | 286.6 |
| Rent | 1.35 | 221.4 | 222.7 | 224.3 | 225.4 | 228.1 | 230.7 | 233.7 | 236.6 |
| Nonrental space occupancy | 1.17 | 233.9 | 235.8 | 238.3 | 241.2 | 244.5 | 247.3 | 250.4 | 253.6 |
| Medical and nursing supplies and equipment | 2.81 | 229.8 | 235.0 | 238.0 | 241.6 | 245.5 | 250.5 | 253.3 | 257.2 |
| Contract services | 6.87 | 256.6 | 259.2 | 263.6 | 267.5 | 271.9 | 274.4 | 279.0 | 282.8 |
| Miscellaneous | 7.10 | 223.4 | 225.6 | 228.0 | 230.5 | 233.1 | 235.9 | 238.8 | 241.8 |

¹For the data sources used to estimate the market basket relative weights and choice of price proxies, see *Federal Register*, Vol. 52, No. 129, 25562-25566, July 7, 1987.

²Category weights may not sum to total due to rounding.

NOTES: Data for 1988 are historical. Data for 1989, 1990, and 1991 are forecasted. Q designates quarter of year.

SOURCE: Health Care Financing Administration, Office of the Actuary: Data from the Office of National Cost Estimates, Division of Statistical Analysis; forecasts created by Data Resources, Inc.

National economic indicators

To put health-related economic trends into perspective, the focus in this section is shifted to national indicators of output, employment, and inflation. The change in selected national economic indicators for 1978-89 is shown in Figure 6.

Output and income

The gross national product (GNP), the most widely used measure of the Nation's output, was \$5.3 trillion during the third calendar quarter of 1989 (seasonally adjusted at annual rates), up 7.0 percent from the same period of 1988 (Tables 14 and 15). The growth of "real" GNP (also called "constant dollar" or "price-deflated" GNP) slowed during the third quarter of 1989 to 2.9 percent.

Personal income rose to \$4.5 trillion during the third calendar quarter of 1989, up 8.8 percent from the same quarter of 1988. Growth in disposable personal income (personal income net of taxes) slowed to 8.5 percent during the same period, reaching a level of \$3.8 trillion. The proportion of disposable personal income that was saved rather than spent (personal savings rate) was 5.1 percent, 0.8 percentage points higher than in the third calendar quarter of 1988.

Employment, unemployment, and earnings

During the third calendar quarter of 1989, the unemployment rate for all workers was 5.2 percent, approximately the same level as in the prior three quarters. The U.S. workforce held 91.9 million jobs during the third quarter, up 2.9 percent from the same quarter a year ago. For nonsupervisory workers, average hourly earnings increased by 4.1 percent.

Prices

Growth in the GNP fixed-weight price index, the most comprehensive measure of price inflation, slowed to 4.2 percent between the third quarters of 1988 and 1989. The GNP implicit price deflator (which reflects changes in the composition of output as well as in price inflation), rose 4.0 percent between the third quarter of 1988 and that of 1989. During the same period, the CPI for all items and all urban consumers showed an increase of 4.7 percent (Tables 14 and 15).

The Producer Price Index for finished consumer goods grew 4.9 percent between the third quarter of 1988 and the third quarter of 1989.

Figure 6

Percent change in indicators of national economic activity from the same period of previous year: 1978-89

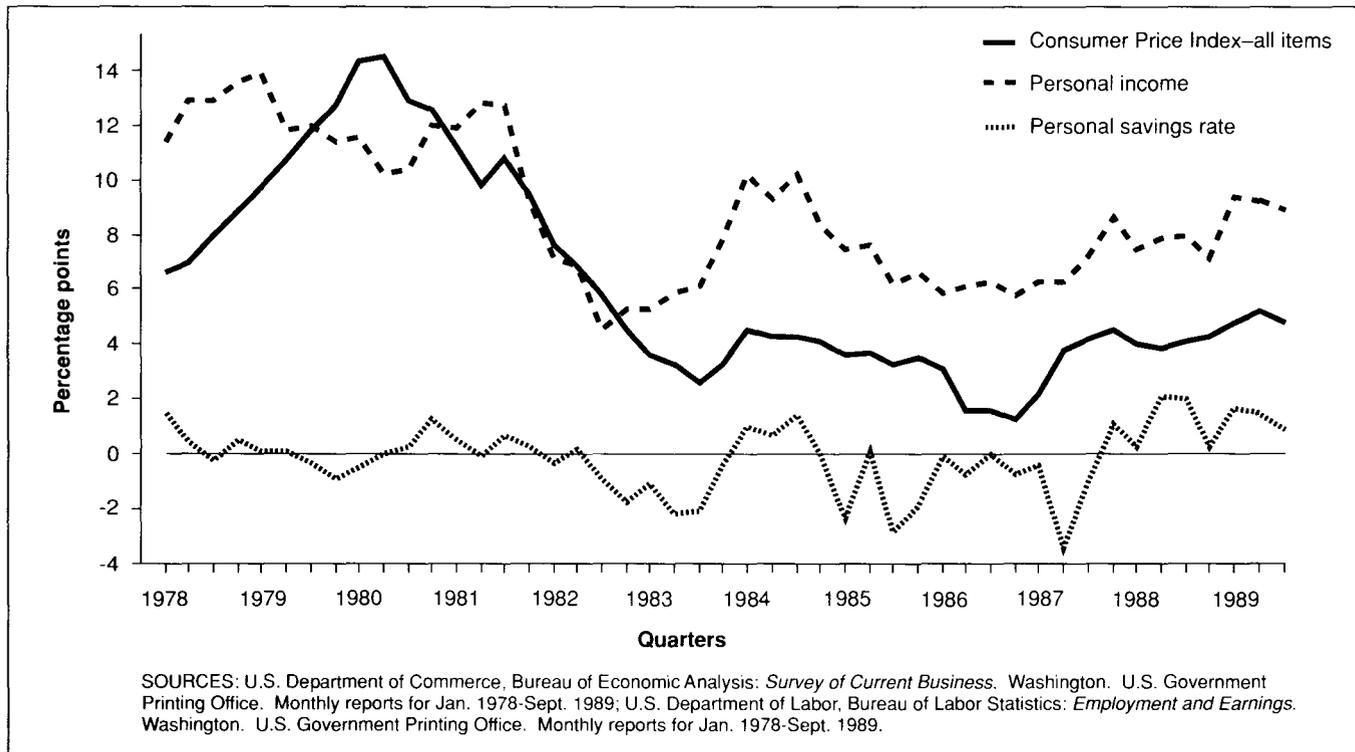


Table 14
Selected national economic indicators: 1986-89

| Indicator | Calendar year | | | 1986 Q3 | 1987 Q3 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 |
|--|---------------|-----------|-----------|------------|------------|------------|------------|------------|------------|------------|
| | 1986 | 1987 | 1988 | | | | | | | |
| Gross national product | | | | | | | | | | |
| Billions of dollars | \$4,232 | \$4,524 | \$4,881 | \$4,253 | \$4,567 | \$4,927 | \$5,017 | \$5,113 | \$5,202 | \$5,273 |
| Billions of 1982 dollars | \$3,718 | \$3,854 | \$4,024 | \$3,712 | \$3,873 | \$4,043 | \$4,069 | \$4,107 | \$4,133 | \$4,158 |
| Implicit price deflator (1982 = 100.0) | 113.83 | 117.40 | 121.25 | 114.60 | 117.90 | 121.90 | 123.30 | 124.50 | 125.90 | 126.80 |
| Employment, hours, and earnings | | | | | | | | | | |
| Unemployment rate, all workers | 7.0 | 6.2 | 5.5 | 7.0 | 6.0 | 5.5 | 5.3 | 5.2 | 5.3 | 5.2 |
| Private nonagricultural workers: | | | | | | | | | | |
| Total employment in thousands | 82,832 | 85,190 | 88,212 | 83,695 | 86,206 | 89,322 | 89,832 | 88,632 | 90,811 | 91,874 |
| Average weekly hours | 34.7 | 34.8 | 34.7 | 34.9 | 35.0 | 35.0 | 34.8 | 34.4 | 34.7 | 34.9 |
| Average hourly earnings | \$8.76 | \$8.98 | \$9.29 | \$8.74 | \$8.96 | \$9.29 | \$9.46 | \$9.55 | \$9.60 | \$9.67 |
| Health services workers: | | | | | | | | | | |
| Total employment in thousands | 6,535.7 | 6,827.8 | 7,227.7 | 6,591.7 | 6,889.4 | 7,299.3 | 7,407.7 | 7,494.5 | 7,571.4 | 7,714.1 |
| Average weekly hours | 32.4 | 32.4 | 32.4 | 32.5 | 32.6 | 32.5 | 32.3 | 32.4 | 32.4 | 32.6 |
| Average hourly earnings | \$8.35 | \$8.69 | \$9.22 | \$8.38 | \$8.73 | \$9.28 | \$9.46 | \$9.62 | \$9.70 | \$9.90 |
| Personal income and savings | | | | | | | | | | |
| Income in billions | \$3,526 | \$3,778 | \$4,064 | \$3,540 | \$3,796 | \$4,098 | \$4,185 | \$4,318 | \$4,400 | \$4,457 |
| Disposable income in billions | \$3,013.4 | \$3,206.0 | \$3,477.9 | \$3,024.3 | \$3,223.5 | \$3,511.7 | \$3,587.4 | \$3,689.5 | \$3,747.7 | \$3,809.8 |
| Savings in billions | \$124.9 | \$101.8 | \$144.7 | \$106.6 | \$73.6 | \$149.6 | \$163.4 | \$205.7 | \$200.7 | \$196.0 |
| Personal savings rate | 4.2 | 3.2 | 4.2 | 3.5 | 2.3 | 4.3 | 4.6 | 5.6 | 5.4 | 5.1 |
| Prices¹ | | | | | | | | | | |
| Gross national product | | | | | | | | | | |
| fixed-weight price index (1982 = 100.0) | 114.9 | 119.1 | 124.1 | 115.3 | 119.6 | 124.9 | 126.2 | 127.7 | 129.3 | 130.2 |
| Consumer Price Index, all items | | | | | | | | | | |
| All items less medical care | 108.8 | 112.6 | 117.0 | 109.0 | 113.3 | 117.9 | 119.0 | 120.2 | 122.2 | 123.1 |
| Apparel and upkeep | 105.9 | 110.6 | 115.4 | 105.7 | 110.0 | 114.4 | 119.5 | 116.6 | 119.7 | 116.7 |
| Energy | 88.2 | 88.6 | 89.2 | 86.2 | 92.0 | 91.9 | 89.2 | 89.4 | 97.1 | 97.1 |
| Food and beverages | 109.1 | 113.5 | 118.2 | 109.8 | 113.9 | 119.4 | 120.4 | 122.7 | 124.5 | 125.6 |
| Housing: shelter | 115.8 | 121.2 | 127.1 | 116.6 | 122.0 | 128.0 | 129.1 | 130.4 | 131.8 | 133.9 |
| Medical care | 122.0 | 130.1 | 138.6 | 123.1 | 131.2 | 139.9 | 141.8 | 145.0 | 147.6 | 150.7 |
| Producer Price Index, ² | | | | | | | | | | |
| finished consumer goods | 101.4 | 103.6 | 106.2 | 100.6 | 104.3 | 107.0 | 107.9 | 110.0 | 112.7 | 112.2 |

¹Base period = 1982-84, unless noted.

²Formerly called the "Wholesale Price Index."

NOTES: Q designates quarter of year. Quarterly data are not seasonally adjusted.

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis: *Survey of Current Business*. Washington. U.S. Government Printing Office. Monthly reports for Jan. 1986-Sept. 1989; U.S. Department of Labor, Bureau of Labor Statistics: *Employment and Earnings*. Washington. U.S. Government Printing Office. Monthly reports for Jan. 1986-Sept. 1989.

Table 15
Percent change in selected national economic indicators: 1986-89

| Indicator | Calendar year | | | 1986 Q3 | 1987 Q3 | 1988 Q3 | 1988 Q4 | 1989 Q1 | 1989 Q2 | 1989 Q3 |
|---|-----------------------|-------|------|--|------------|------------|------------|------------|------------|------------|
| | 1986 | 1987 | 1988 | | | | | | | |
| Gross national product | Annual percent change | | | Percent change from same period of previous year | | | | | | |
| Billions of dollars | 5.4 | 6.9 | 7.9 | 5.1 | 7.4 | 7.9 | 7.5 | 7.9 | 7.5 | 7.0 |
| Billions of 1982 dollars | 2.7 | 3.7 | 4.4 | 2.1 | 4.3 | 4.4 | 3.4 | 3.3 | 3.0 | 2.9 |
| Implicit price deflator (1982 = 100.0) | 2.6 | 3.1 | 3.3 | 3.0 | 2.9 | 3.4 | 4.0 | 4.4 | 4.4 | 4.0 |
| Employment, hours, and earnings | | | | | | | | | | |
| Unemployment rate, all workers ¹ | -0.2 | -0.8 | -0.7 | -0.2 | -1.0 | -0.5 | -0.6 | -0.5 | -0.2 | -0.3 |
| Private nonagricultural workers: | | | | | | | | | | |
| Total employment | 2.1 | 2.8 | 3.5 | 2.0 | 3.0 | 3.6 | 3.4 | 3.4 | 3.2 | 2.9 |
| Average weekly hours | -0.5 | 0.1 | -0.1 | -0.6 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | -0.3 |
| Average hourly earnings | 2.3 | 2.5 | 3.5 | 1.9 | 2.6 | 3.7 | 3.8 | 4.1 | 3.9 | 4.1 |
| Health services workers: | | | | | | | | | | |
| Total employment | 3.8 | 4.5 | 5.9 | 4.1 | 4.5 | 5.9 | 6.5 | 6.4 | 5.7 | 5.7 |
| Average weekly hours | -0.2 | -0.1 | 0.0 | -0.3 | 0.3 | -0.3 | 0.0 | 0.0 | 0.3 | 0.3 |
| Average hourly earnings | 3.6 | 4.2 | 6.1 | 3.6 | 4.2 | 6.3 | 6.6 | 6.7 | 6.2 | 6.6 |
| Personal income and savings | | | | | | | | | | |
| Income | 6.0 | 7.1 | 7.6 | 6.3 | 7.2 | 8.0 | 7.1 | 9.4 | 9.3 | 8.8 |
| Disposable income | 6.2 | 6.4 | 8.5 | 6.5 | 6.6 | 8.9 | 8.1 | 9.3 | 9.1 | 8.5 |
| Savings | -0.4 | -18.5 | 42.2 | 14.3 | -31.0 | 103.3 | 15.2 | 56.0 | 49.8 | 31.0 |
| Personal savings rate ¹ | -0.3 | -1.0 | 1.0 | 0.2 | -1.2 | 2.0 | 0.3 | 1.7 | 1.5 | 0.8 |
| Prices² | | | | | | | | | | |
| Gross national product fixed-weight price index (1982 = 100.00) | 2.7 | 3.6 | 4.2 | 2.7 | 3.7 | 4.4 | 4.5 | 4.8 | 4.9 | 4.2 |
| Consumer Price Index, all items | 1.9 | 3.7 | 4.1 | 1.6 | 4.2 | 4.1 | 4.3 | 4.8 | 5.2 | 4.7 |
| All items less medical care | 1.6 | 3.4 | 3.9 | 1.2 | 4.0 | 4.0 | 4.1 | 4.6 | 5.0 | 4.4 |
| Apparel and upkeep | 0.8 | 4.4 | 4.3 | 0.7 | 4.0 | 4.0 | 4.4 | 4.5 | 3.2 | 2.0 |
| Energy | -13.2 | 0.4 | 0.8 | -16.7 | 6.7 | -0.2 | 0.1 | 2.8 | 9.1 | 5.7 |
| Food and beverages | 3.3 | 4.1 | 4.1 | 4.0 | 3.7 | 4.9 | 5.2 | 5.9 | 6.3 | 5.2 |
| Housing: shelter | 5.5 | 4.7 | 4.8 | 5.2 | 4.7 | 4.9 | 4.6 | 4.3 | 4.4 | 4.6 |
| Medical care | 7.5 | 6.6 | 6.5 | 7.6 | 6.6 | 6.6 | 6.8 | 7.1 | 7.3 | 7.7 |
| Producer price index, ³ finished consumer goods | -2.4 | 2.1 | 2.5 | -2.8 | 3.7 | 2.6 | 3.5 | 5.5 | 6.8 | 4.9 |

¹Absolute change, rather than percent change.

²Base period = 1982-84, unless noted.

³Formerly called the "Wholesale Price Index."

NOTE: Q designates quarter of year.

SOURCES: U.S. Department of Commerce, Bureau of Economic Analysis: *Survey of Current Business*, Washington. U.S. Government Printing Office. Monthly reports for Jan. 1986-Sept. 1989; U.S. Department of Labor, Bureau of Labor Statistics: *Employment and Earnings*. U.S. Government Printing Office. Monthly reports for Jan. 1986-Sept. 1989.

Legislative Update

Reports to Congress: Medicare Physician Payment

This single volume presents three congressionally mandated reports that provide detailed evaluations of technical and administrative issues associated with implementing proposed physician payment systems under Medicare. The reports were released to Congress on October 18, 1989. It is expected that Congress will use these reports to address the issues identified herein.

Volume and Intensity of Physician Services

Legislative mandate

This report was developed in compliance with the Omnibus Budget Reconciliation Act of 1987, section 4056(c)(2) of Public Law 100-203, which requires the Secretary of Health and Human Services to study and report to Congress on issues related to volume and intensity of physician services.

Overview

This report primarily focuses on Medicare Part B physicians' services which account for the majority of Part B expenditures. To support the production of this report, the Department of Health and Human Services analyzed national trends in total allowed charges for physician services, consulted with nationally recognized health research experts, and commissioned four extramural research studies. The report provides background information on volume and intensity (VI) issues, including a discussion of factors contributing to physician expenditure growth (Chapter 1), presents trends in VI growth and reviews the research commissioned by the Department to analyze VI related issues (Chapter 2), reviews Medicare's and private payers' experiences with VI control methods (Chapter 3), discusses options for protecting beneficiaries and the Medicare program from the impact of VI (Chapter 4), and concludes with a discussion of possible impacts of a resource-based relative value scale (RBRVS) on VI (Chapter 5).

Background

In fiscal year 1990, Medicare expenditures for physicians' services will exceed \$25 billion. Expenditures for physicians' services are the second largest component (after hospitals) of Medicare spending and the third largest Federal domestic program. During the period from 1978 to 1987, Medicare physicians' expenditures have increased at annual compound rates of 16 percent. The projection for the next 10 years, even without any program expansions, Medicare spending for physicians' services will likely triple. About the year 2005, total

Medicare spending is expected to exceed spending on Social Security, in part, because of the rapid increase in physician spending. This will make Medicare the country's largest entitlement program.

About 15 percent of the increase in physician spending during the past 10 years resulted from an increase in the number of beneficiaries, who have increased at about 2 percent a year. About 40 percent was because of increases in payments per service, which are largely the result of adjustments for inflation. About 45 percent of the growth resulted from "residual" VI-related factors, including growth in the number of services (including those from new services and technology), and shifts from less expensive to more expensive services (greater intensity).

Forces driving the growth

VI includes all factors contributing to physician expenditure increases other than changes in payments for individual services and in the covered population. The most important aspect of Medicare's physician payment system is that it gives physicians and beneficiaries little or no incentive to control VI of services.

Ideally, a full explanation of factors responsible for Part B growth would be developed from a clinical and economic model of physician and patient behavior that incorporates all clinical and economic incentives inherent in the payment practices of all third party payers. Considering the many variables determining the physician services market, it is not realistic to expect that a model can be developed that can attribute recent changes in physician expenditures to specific factors. Problems in developing a full model are compounded by inadequate data and data measurement problems, multiple simultaneous changes in the Medicare program, technological advances, and the interactive effects of Medicare and other third party payers.

Nevertheless, a number of major VI-related factors can be identified that either affect physician willingness to supply services or affect beneficiary demand for these services. Among the factors driving VI growth are: payment incentives, technology, physician willingness to provide services, and factors related to beneficiary demand for services.

Payment mechanisms have contributed to VI growth because:

- Medicare still pays for most services through traditional fee-for-service arrangements in which a separate payment is made for each service rendered by the physician. Clearly this arrangement provides few incentives for efficiency and may actually encourage the overprovision of services.
- Physicians have considerable discretion as to how they define and report services they provide. They might assign more remunerative codes to services for which they formerly assigned less remunerative codes ("upcoding") or they might bill separately for services for which they formerly billed under a single code ("unbundling").

- The current payment system contains no incentives to encourage physicians to reduce charges for procedures to reflect technological improvements, increased experience, and other factors that might lower production costs.
- Medicare often pays more to specialists than nonspecialists for similar services, and specialists represent a growing fraction of Medicare providers. Technology has contributed to VI growth because:
- New services and treatment methods have emerged. Many of the procedures that accounted for recent growth in physician expenditures were either rarely performed or unknown when the Medicare program was legislated.
- Despite research on the effectiveness of services for certain specified conditions, there is little research base for determining whether procedures are effective in many of the circumstances in which they are used.

Physicians' willingness to provide services has contributed to VI growth because:

- There are more physicians per 100,000 of population and more of those physicians are trained in the specialties that provide the costly high technology services.
- The technology to provide services that appear useful to patients has expanded.
- The risk of malpractice suits may encourage physicians to provide services for "defensive" reasons.

Patients may be more willing to receive services because:

- Services have become available for conditions that were untreatable 20 years ago (e.g., coronary artery bypass grafts, total joint replacement).
- The inconvenience and risk of many services has dropped dramatically (e.g., ambulatory surgery, decreased operative times).
- Medigap coverage, along with Medicaid coverage of many Medicare beneficiaries, has eliminated some or all coinsurance costs for about 80 percent of beneficiaries; the growth in acceptance of assignment has reduced the cost of balance billing. As a result, many beneficiaries have no or minimal out-of-pocket cost for any covered medical service.

Support in research of this report

Considering all the important factors affecting VI that have occurred almost simultaneously, it is difficult to separate and measure their relative influence. The Department made an extensive effort to gain more information about VI issues and to respond to the congressional mandate. National trends in total allowed charges for physicians' services were examined by Health Care Financing Administration (HCFA) staff using national Part B data files. The Department consulted with nationally recognized health research experts and commissioned four extramural research studies to provide data on geographic variation in expenditure growth and to perform a wide variety of VI-related analyses. Some of the highlights from these analyses are summarized below.

Findings

During the 5-year time period from 1982 through 1987, total allowed charges¹ for physicians' services grew from \$15.1 billion to \$26.6 billion, an \$11.5-billion increase (76 percent). By type of service, the increases in total allowed charges between 1982 and 1987 were as follows:

- Surgical related services, including surgery, assistant-at-surgery, and anesthesia, increased by 85 percent and accounted for 42 percent of the overall increase in expenditures for physicians' services.
- Medical care, primarily physicians' visits, increased by 52 percent and accounted for an additional 27 percent of the increase.
- Consultations increased by 127 percent and accounted for 6 percent of the overall growth.
- Diagnostic radiology services increased by 133 percent and accounted for 12 percent of total growth. Therapeutic radiology services increased by 109 percent and accounted for 2 percent of overall growth.
- Clinical lab services increased by 84 percent, accounting for 11 percent of overall growth.

Allowed charges for physicians' services in inpatient settings increased by 27 percent between 1982 and 1987, with the largest increase occurring between 1986 and 1987 (an 11-percent increase). The increase in allowed charges for physicians' services in inpatient settings is even more striking because it occurred during a period that Medicare hospital admissions and days decreased. Notably, Medicare physician allowed charges per inpatient admission increased by 10.6 percent between 1986 and 1987.

Because Medicare allowed charges for physicians' services increased by larger amounts in other settings, the share of spending on an inpatient basis went from 62 percent in 1982 to 45 percent in 1987. In contrast, the outpatient department went from 5 percent to 16 percent of total allowed charges for physicians' services during this period. While this shift occurred because expenditures for physicians' services in outpatient settings increased more than five-fold, the very rapid year-to-year changes occurred before 1986.

Three of the studies undertaken with funding by the Department provide data for selected geographic areas. The Center for Health Economics Research reported that during the period 1983-86 for the four States it studied (Alabama, Connecticut, Washington, and Wisconsin), expenditure increases per beneficiary varied from 13.6 percent in Wisconsin to 46.4 percent in Washington State.

Mandex, Inc. analyzed spending for physicians' services in Indiana, Washington, South Carolina, South Dakota, and North Dakota from 1983 to 1985. Mandex found that the aggregate expenditure growth ranged from an increase of 10.5 percent in North Dakota to a high of 27.3 percent in South Carolina during the 2-year period.

The Urban Institute examined expenditure growth between 1983 and 1985 by region, using a 5-percent national sample of beneficiary claims from two different data sources. The Urban Institute reported that, in general, the New England and Middle Atlantic States, as

¹Allowed charges include Part B trust fund expenditures, beneficiary deductibles, and coinsurance.

well as the Mountain region, had the fastest growth rate in Medicare expenditures (19.1 percent, 18.8 percent, 21 percent, respectively), whereas the East North Central (11.5 percent) and Pacific (10.2 percent) regions had the slowest growth rates for the 2-year period.

Additional descriptive data from these studies provide important clues as to types and places of service that have experienced the most growth and factors that drive expenditure growth for individual procedures. Despite differences in methodology and data sources, these studies show that there has been dramatic growth in ambulatory surgery, especially for cataract surgery and procedures such as colonoscopies. This suggests that technological developments (e.g., flexible scopes and the extracapsular technique for cataract surgery) are an important factor affecting growth. These studies also indicate that there has been some upcoding of visits, which appears to vary in amount across States.

Experience with control strategies

The report also discusses the experiences of Medicare, Medicaid, private insurers, and Canada with volume control strategies for physician services. The Medicare program and the carriers conduct medical review, on either a prepayment or a postpayment basis, to assure that payment will only be made for items and services that are reasonable and necessary. HCFA currently mandates 13 prepayment screens that must be utilized by all carriers. During fiscal year 1989, carriers spent about \$56 million to conduct prepayment review on about 57 million claims. According to data from the Quarterly Carrier Medical Review Report, prepayment review provides approximately \$10 in program cost savings for each administrative dollar spent in support of the program.

Postpayment review is conducted by the carriers at the individual provider level. Carriers select individual providers (about 20,000 in fiscal year 1988) for intensified review through a variety of techniques such as reviewing practice patterns for high volume procedures.

During fiscal year 1988, HCFA spent about \$14 million on postpayment review. Using current techniques that measure only actual savings, carrier quarterly reports indicate that postpayment review saves \$1 to \$2 in program dollars for each administrative dollar expended. Postpayment review can provide significant but unmeasured additional savings through avoided costs, such as through a sentinel and educational effect in the physician community that helps reduce inappropriate billings.

Many State Medicaid programs have adopted managed care initiatives as authorized by the Omnibus Budget Reconciliation Act (OBRA) of 1981. Managed care is perceived by these States as an alternative to the control of utilization and expenditures through limitations on eligibility or payment.

A review of private payer VI initiatives was also conducted. Results from a survey of 111 commercial health insurance carriers that are members of the Health Insurance Association of America, representing 132 different health insurance plans, indicate that these private carriers continue to pay primarily for services using traditional fee-for-service methods; 111 of the 120 plans

responding to the survey indicated that they pay using usual and customary charges.

In addition, the Canadian experience with regard to volume and expenditure control was reviewed. The absolute level of Canadian health care expenditures per capita is well under United States per capita expenditures. Nevertheless, the Canadian experience in controlling expenditures must be discussed in the context of its health care system. Since 1971, every Canadian province has paid for physician services under a comprehensive and universal health insurance program. There is only one payer for each province, and fee levels for physicians' services are negotiated between provincial government health representatives and professional associations. Although each province has a unique payment system, the medical associations generally determine the relative fee levels for each service and negotiate annual percentage increases in payments with the provincial governments. In effect, the approach is to control total expenditures through adjusting fee levels rather than attempt to directly manage or control volume.

Controlling the impact of VI growth on Medicare

This report examines four general types of options for controlling the impact of VI growth on Medicare outlays:

- Aggregating payments.
 - Capitation.
 - Geographic capitation.
 - Physician capitation.
 - Preferred provider organizations (PPOs) and other managed care arrangements.
 - Bundling of physician and facility payments/physician diagnosis-related groups (DRGs).
 - Other bundling options.
 - Improved coding/definition of services.
- Incentives targeted to beneficiaries.
 - Beneficiary cost sharing.
 - Second surgical opinion programs.
- Influencing physician decisionmaking.
 - Clinical guidelines and effectiveness research.
 - Utilization review and coverage policy.
 - Conflict of interest rules.
 - Adjusting payments for services.
- Growth targets.

In evaluating these options, their ability to control the effect of VI growth on outlays, their administrative costs and feasibility, and their likely effect on the appropriateness of medical care, on beneficiary liability and access to care, and on physician and beneficiary behavior, are considered.

Aggregating payments

Capitation

Under a capitated approach, Medicare makes a single payment in advance for all covered services for each beneficiary. In contrast to fee-for-service based payment systems, capitated systems provide incentives for providers to simultaneously control both price and VI and

create a mechanism to control Medicare outlays. Capitated systems have a number of related advantages; a reduced level of Federal regulation can be achieved, for example, because the capitated providers can be assigned responsibility for payment details.

Capitated care is successful and widespread in the United States, and the number of Medicare beneficiaries enrolled in capitated systems has doubled in the last 5 years. Nevertheless, only 3 percent of Medicare beneficiaries are enrolled in capitated systems and, even with continued strong growth, other strategies are necessary for the short and medium term.

Geographic capitation

A geographic capitation system would put an organization, such as an insurer, at risk for physicians' services provided to all Medicare beneficiaries living in a geographic area, such as a State or carrier service area. In effect, the Federal Government would buy the Medicare benefit package on behalf of all Medicare beneficiaries in an area at a fixed price from a single underwriting entity. Competition could be encouraged by permitting beneficiaries to enroll in other capitated plans in the same area. Under this approach, Medicare might be able to take advantage of the benefits of dealing with capitated entities without all beneficiaries enrolling in health maintenance organizations or other capitated plans.

Physician capitation

Another alternative to making capitated payments for all Medicare services would be to make a capitated payment to physician groups that would cover some or all Part B services. As with total capitation, physician capitation shifts the risk of increasing VI from the Government to the physicians, thereby changing incentives.

Services covered could include all physician services or a package of selected services, such as primary care along with outpatient laboratory and X-ray. The individual primary care physician or group practice could receive a capitated payment for the primary care of each enrolled beneficiary. An advantage of physician capitation is that the total amount of risk is less than when all services are capitated because the relatively more expensive hospital costs are excluded from the capitated payment.

Preferred provider organizations and other care arrangements

A PPO is a network of providers who agree to provide health care services under certain constraints (such as lower fees or increased utilization review) in exchange for expected advantages, such as prompt payment and an increased volume of patients. The savings from PPOs are generally achieved through efforts such as utilization review, hospital precertification, concurrent review of inpatient days, discounted fees, and directing patients to preferred providers.

PPOs, prepaid plans, and other insurance programs often employ case management techniques as a method of controlling expenditures for especially expensive patients through directly managing use of services, offering special benefits, and directing patients to particular sources of care.

HCFA is developing a PPO demonstration involving five sites to test the feasibility of offering Medicare beneficiaries the option of receiving managed health care services on a fee-for-service basis.

Bundling physician and facility payments/physician diagnosis-related groups

At present, Medicare makes a separate payment for each physician's service and also makes a payment to the facility when services are provided in facilities such as hospitals and ambulatory surgical centers (ASCs). VI of some physicians' services might be controlled by making a single payment for all associated physician charges. This payment could be combined with the payment to the facility, or could be made separately to a physician group or the medical staff. In general, bundled payments contain incentives for providers to reduce the use of marginal procedures and reduce the opportunity for discretionary billing of services. There are many possibilities for developing prospective, per-case payments for physician services, such as including selected services performed in inpatient (e.g., physician DRGs) or outpatient hospitals and ASCs. Medicare has begun implementation of a demonstration in which a single payment will be made for all services associated with coronary artery bypass surgery.

Other bundling options

There are other less extensive bundling approaches that might help Medicare to achieve cost control of some services by redefining the payment unit from a narrow procedure to a more comprehensive packaging of services. An example might be to develop office visit packages in which the visit charge would include all associated ancillary services (e.g., lab tests, X-rays, electrocardiograms). Another bundling approach would be to include the office visit charge in the charge for some minor surgical and diagnostic procedures such as skin lesion removals. In these instances, separate bills for visits would not be allowed unless it were clear that other significant services were provided during the visit.

Improved coding/definition of services

More precise coding rules could reduce both upcoding and unbundling for some services. One area in which upcoding is of special concern is for services such as office visits, hospital visits, and consultations. Possible solutions could be to collapse the number of codes used for payment purposes or to incorporate time spent by the physician in providing the service.

Incentives targeted to beneficiaries

Beneficiary cost sharing

Currently, Medicare beneficiaries are responsible for the first \$75 of covered services before Medicare begins to pay for service. (This "deductible" amount was set at \$50 in 1966 and was raised to \$60 in 1973 and \$75 in 1982.) After the deductible is met, the beneficiary is responsible for 20 percent of the allowed charge per service and, for unassigned claims, any amount by which the actual charge, as limited by the maximum allowable actual charge, exceeds the allowed charge. The goal of cost sharing is to give beneficiaries an interest in selecting less costly providers and in questioning the necessity of services by making them more sensitive to cost.

Second surgical opinion programs

Surgery accounted for about 41 percent of the total increase in physician spending over a recent 5-year period (1982-87). In an attempt to reduce unnecessary risk to patients and control surgical spending, Medicare and many private payers and Medicaid programs use second surgical opinion programs (SSOPs) to ensure that the proposed surgery is medically necessary. Medicare encourages second surgical opinions by paying for them and by maintaining hotlines through which beneficiaries can obtain names of physicians qualified to provide second or even third opinions. In addition, as required by the Consolidated Omnibus Budget Reconciliation Act of 1985 (Public Law 99-272), peer review organizations (PROs) subject at least 10 surgical procedures to preadmission and/or preprocedure review and may require a second opinion when appropriate.

Influencing physician decisionmaking

Clinical guidelines and effectiveness research

Clinical guidelines and effectiveness research seek to provide physicians and others with information to assist in determining the type of care that should be rendered to a particular patient. Effectiveness research may have implications regarding what services will be covered even though the primary goal is to influence decisionmaking by providing better data. The argument for this strategy is the shortage of consensus and hard data as to when procedures should be done. It should be noted that neither guidelines based on consensus nor effectiveness research will necessarily reduce VI of services; effectiveness research could lead to increased use of some services.

Utilization review and coverage policy

Utilization review depends on organizations such as Medicare carriers, PROs, insurers, and medical societies to change physician behavior through education, withholding payment, or other sanctions. Utilization review may operate three ways: prospectively, before service is rendered, through methods such as preadmission screening and second surgical opinions, concurrently, through monitoring care during treatment,

and retrospectively, through reviews of claims and medical records, either before or after payment is made. It might be possible to increase utilization review activities for physicians with large increases in Medicare VI, or in geographic areas where the number of procedures per beneficiary is largest. Coverage policy is closely related to utilization review, although the administrative structures are different. Coverage policy is the method by which Medicare defines the services for which it will pay and the circumstances in which it will pay.

Conflict of interest rules

There is a potential conflict of interest any time a physician's decision regarding providing or ordering a service may increase his/her profit. In a fee-for-service system, some such conflicts are inevitable, but certain situations create even more powerful conflicts. For example, conflict of interest concerns are raised by the possibility that physicians might overprescribe drugs when they dispense them directly to patients. Conflict of interest concerns are also raised when physicians own imaging facilities or laboratories to which they refer patients. Subsequent growth in VI of those services raises inevitable suspicions in the minds of the public and Federal officials. There is little direct evidence about actual inducements resulting from such arrangements, and consequently, as to the savings that forbidding such referrals might achieve. In areas where the physicians owned the only facilities, conflict of interest rules might even create barriers to care.

Adjusting payments for services

Some economists believe that inequitable payment rates might create economic incentives for physicians to perform some services inappropriately. This suggests that it might be possible to moderate volume growth of some services through selected payment adjustments based, for example, on inherent reasonableness or on recent research on relative values for physician services. It is unlikely, however, that modifying relative payment amounts could result in a significant slowing of volume growth. Basic fee-for-service incentives to increase volume would remain in place. Furthermore, physicians might respond to decreased payments by attempting to recoup lost income in unpredictable ways (e.g., by increasing volume of the service receiving the reduced payment or by inappropriately performing other, more profitable services).

Growth targets

Growth targets can be set by determining in advance an acceptable level of aggregate Medicare expenditures for a given geographic area and time period. A widely discussed model would vary the annual physician fee update based on a comparison between actual and targeted program outlays in a preceding period. Growth targets can be set at the national level or at some other geographic level. Medicare could set a growth target for the year for a group of services, all physician services, all Part B services, or even all Part A and Part B services. This method would not control VI directly, but could

shield Medicare trust funds from the impact of VI growth since costs to Medicare would be controlled directly through the payment per service.

Although growth targets raise policy issues that are discussed in the report, they, in fact, do not reflect a major change from recent policy experience whereby the Medicare annual payment update has been reduced to partially offset large expenditure increases. A growth target has one potential advantage compared with this de facto policy. Growth targets are intended to create a collective incentive to encourage the medical community to work cooperatively with the Medicare program to identify and correct problems related to unnecessary care. A more direct linkage between the collective incentives of the growth target and the practice patterns of individual physicians might be established by an "opt-out" option for qualified physician groups. Under this policy, a physician group (such as a PPO or a hospital medical staff) could opt out of the general growth target. Such a group would then receive a fee update based on the cost performance of the group in relation to the target rate. This would provide incentives for physician groups to be organized to provide care in a cost-effective manner.

A variety of design questions would need to be addressed to develop a growth target policy. These include:

- The range of services to be included in the target.
- Whether the target should apply at a national, statewide, or substate basis.
- What factors should be used to establish and update the target.
- The nature of the fee adjustment that would result if the target is exceeded.
- Whether there should be a withhold from current year payments or an adjustment in fee levels in the subsequent year after the end of the target period.
- Whether there should be an opt-out for qualified physician groups, and if so, what the terms of the policy should be.

Impact of RBRVS on VI

For years, economists have inconclusively debated whether growth in VI was driven predominantly by physicians inducing patients to accept services or by patient demand. This debate has usually focused around issues such as whether physicians seek to attain a target income and whether physicians can induce demand for their services. This debate has important implications for the implementation of an RBRVS for payment purpose such as the one being developed by William C. Hsiao, Ph.D., and other researchers at Harvard University under a cooperative agreement with HCFA.

It is clear from preliminary analyses that most RBRVS-based payment schemes implemented in a budget-neutral fashion would substantially alter payments for a significant number of services, generally increasing payments for visits and decreasing payments for many surgical procedures. Under many scenarios, these payment changes could be substantially greater than any previous payment change implemented by the Medicare program. Thus, there is no precedent from which to predict confidently how physicians can or will respond to payments based on an RBRVS. Response is likely to

depend not only on physicians' ability to recoup losses by inducing volume, but also on many other factors such as ability to substitute other services, the amount of discretion the physician has as to billing for services, the degree of physician dependence on income from Medicare, ability to recapture Medicare losses from non-Medicare patients, and whether other payers also adopt payment schedules based on RBRVS.

Projections of physician response to an RBRVS are uncertain. Nevertheless, this response is important for two reasons. Budget impacts would need to be assessed if an RBRVS were adopted as a basis for payment. Analysis of budget impacts would require a prediction of how great a volume of services will be provided, and this volume depends, in turn, on how much specialists increase their volume of services to recoup reduced payments. If there is a substantial induction of demand by physicians in response to decreased payments, Medicare's problems with VI growth might become appreciably worse.

Because of this uncertainty as to behavioral response, the most prudent approach to implementing an RBRVS might be to adopt an expenditure growth target that would enable Medicare to take care of any behavioral response as it took place. A growth target would also take account of features of implementation that could not be made precisely budget neutral, such as changes in global fee definitions and changes in geographic areas used for payment determinations.

Relative Value Scales for Physician Services

Legislative mandate

This report was developed in compliance with the Consolidated Omnibus Budget Reconciliation Act of 1985 (Public Law 99-272), which requires the Secretary of Health and Human Services to develop a relative value scale (RVS) for physicians' services and to make recommendations to Congress for using this scale for determining Medicare payments.

Overview

An RVS is a set of numerical values, one for each service that physicians or other medical care providers may provide, reflecting the relative "valuation" of each service. By itself, an RVS does not set payment. To turn the RVS into a fee schedule, the relative values must be multiplied by a monetary conversion factor (e.g., \$10 per unit). The valuation incorporated into the RVS can be determined in many ways—from current charges, from consensus among physicians or between payers and physicians or among patients; by unilateral decisions of the payer; or from the resources used in provision of service. An RVS based on resources used is called a resource-based RVS or RBRVS.

This report focuses, because of strong interest in Congress and elsewhere, on the viability, development, evaluation, strengths, weaknesses, and possible uses of the RBRVS developed at Harvard University by William C. Hsiao, Ph.D., and his colleagues, under a

cooperative agreement with HCFA. The report describes general issues in the current Medicare payment system, including motivation for RVSs, and in the construction of RVSs (Chapter 1); explains how the Harvard team developed the Harvard RBRVS (Chapter 2); examines methodological issues in the design of the RBRVS (Chapter 3); and presents simulations (Chapter 4) of the impact of various payment options for physician payment under Medicare based upon RVSs, including the Harvard RBRVS, additive models based upon the Harvard RBRVS, and a charge-based RVS. This chapter also presents discussions on adjustments to reflect differences in practice costs among geographic areas. The report concludes with a discussion of the advisability and feasibility of using the Harvard RBRVS or variations of it for Medicare payment purposes.

Background

Since Medicare began, the Supplementary Medical Insurance program (Part B) has paid physicians using a fee-for-service system called "customary, prevailing, and reasonable" (CPR) (Appendix A describes the CPR system in detail). Under CPR, physician payments are based upon physicians' actual charges to the Medicare program.

Available evidence indicates that CPR has provided access to physician care and financial protection for Medicare beneficiaries. CPR has been less successful by other criteria: fees, volume and intensity of services, and overall expenditures have increased dramatically in the last decade. Between 1975 and 1987, Medicare's Part B expenditures per enrollee grew at an annual rate of 15.0 percent, while per capita gross national product grew at only 7.9 percent. There is general agreement that, to the extent that this growth is attributable to the payment system, the problem is fee-for-service payment and that an RVS or any other fee-schedule based payment system would probably not have reduced growth greatly.

The CPR system is complex, and some critics contend that simplification of the system should be an important goal of any reform, but given the need to update any RVS over time, an RVS-based payment system would not necessarily be simpler. The Harvard study documents that CPR has also resulted in payments that are higher for technological and invasive procedures than for evaluation and management services that require comparable resources as defined by the study. Critics of CPR argue this payment differential uses Medicare funds inefficiently, discourages primary care, and is inequitable to physicians across specialties. These critics argue that the relatively higher payments for technological procedures encourage unnecessary provision of these procedures, thus raising total costs while paying more for these procedures than is necessary to secure access to care for Medicare beneficiaries. As with other claims made criticizing or supporting either CPR or a resource-based payment system, there has been little empirical work performed that either substantiates or refutes the claim that payment rates under CPR encourage inappropriate care or, alternatively, that resource-based payment would reduce inappropriate care. Moreover, plausible theoretical arguments can be made on both sides of the issue.

If, however, payments under CPR are excessive for technological and invasive procedures, it is unclear whether beneficiaries would still have access to such services if payments for these services were cut. Access to primary care does not currently appear to be a problem at the national level, although there may be localized access problems. The extent to which this is a problem of the payment system as opposed to the other problems faced by underserved areas is not clear. Differences in payments for different services may be inequitable if equity requires equal pay for comparable work, but the question of equity is less clear if one takes account of factors such as the supply of specialties, the desires of beneficiaries for services, and medical and social value of the services.

While it is clear that the Harvard RBRVS cannot resolve all complaints against the current Medicare fee-for-service payment system and, more specifically, CPR, its advocates urge that it can:

- Provide a tool for simplifying the payment system.
- Address both the equity and efficiency issues, by revaluing procedures relative to their resource inputs and reducing incentives to provide an excess of certain services while encouraging provision of others.
- Equalize incentives across procedures, resulting, at least in theory, in more appropriate care for the Medicare beneficiary.

Again, the claim that the Harvard RBRVS could achieve these goals has not been substantiated by empirical evidence. In addition, many of these claims could be made for other RVS-based payment systems. For that reason, this report also discusses modifications of the Harvard RBRVS as well as a charge-based RVS.

Nonetheless, an RVS-based fee schedule, like other fee-for-service approaches to payment reform, does not directly address the growth in volume and intensity of services that has been the main component in the increase in Medicare expenditures.

Construction of the Harvard RBRVS

The goal of the Harvard study was to develop an RBRVS by measuring the resource inputs used in producing a service.

The construction of the Harvard RBRVS was a multistep process. The first step was to estimate the amount of work provided by the physician during the actual performance of the procedure (intraservice work). The Harvard study team determined that Current Procedural Terminology, Fourth Edition (CPT-4) codes should not be used directly as the basis for surveying physicians to estimate resource use. As a result, the Harvard team created vignettes and surveyed physicians to estimate work for the vignettes. Because CPT is the basis of the coding system under which physicians are paid under Medicare, it was then necessary to assign the appropriate CPT codes to these vignettes. These ratings were done on a specialty-specific basis and resulted in 18 different scales.

Second, statistical techniques and physician consensus were used to merge these 18 scales, resulting in one scale that contained relative intraservice work values for all surveyed procedures in the included specialties. Since this scale included only work performed during the procedure

and not work done by the physician before (pre-service work) or after (post-service work) the procedure itself, estimates for these types of work were generated and added onto the work values. This resulted in an RVS for total work.

Next, because only 372 unique services were actually surveyed, it was necessary to extrapolate to the nonsurveyed procedures. The underlying assumption for extrapolation was that, within small families of CPT-4 codes, charge ratios are reasonable proxies for relative work differences.

The study team developed a model that measured two input resources in addition to physician work: practice costs and opportunity costs. Practice cost information was derived from specialty-specific national survey data; opportunity costs were measured by attributing costs to the earnings lost during specialty training. In the Harvard model, the three factors combine multiplicatively to produce the RBRV for each service:

$$RBRV = (TW)(1 + RPC)(1 + AST)$$

where TW is the total work input by the physician, RPC is an index of relative practice costs, and AST is an index of relative amortized opportunity cost of specialty training. There is not broad-based agreement that this is the most appropriate model for determining the RBRV; another approach that has been discussed is that costs attributable to physician work be added to practice costs rather than multiplied.

Results

In the study, it was found that there was roughly 200-fold variation in resource inputs across services. Comparison of 1986 Medicare charges to Harvard RBRVS values for invasive procedures and office visits showed that the typical ratio for invasive procedures was more than three times greater than the ratio for office visits, implying that office visits are relatively underpaid. The Harvard team compared 1986 Medicare mean charges to Harvard RBRVS-based charges and found that many surgical procedures could vary in payments between the two by more than 60 percent.

Critique of the Harvard RBRVS

HCFA extensively reviewed and analyzed the study and its results. In performing the analysis, HCFA consulted with experts in the fields of medicine, statistics, and economics, solicited comments from physician specialty groups, and conducted extensive simulations. Generally, the Harvard study represents a methodologically rigorous effort to measure resource use. The study demonstrates that it is possible to use physician resource inputs to establish RVs within specialties and demonstrates that it is possible to align these specialty-specific scales to create a common scale of relative values that are meaningful across specialties.

The Harvard RBRVS, as it is currently constructed, however, is not yet ready for full implementation. In addition to the obvious fact that the study included only 18 specialties, there are a number of significant concerns with the study itself, and several significant issues that would have to be resolved before the Harvard RBRVS

could be fully implemented for Medicare payment purposes. Many of these appear to be solvable, but they may require a large allocation of resources. The major issues raised by the Harvard RBRVS follow:

- Because the Harvard RBRVS focuses only on resource input, it ignores the role of demand in determining prices. As such it ignores the value that patients attach to particular services. This implies that payments that might be set under this system may not be any closer to optimal economic prices than those that currently exist.
- Measurement of work during the performance of the service (intraservice work) and the assignment of the vignettes to the CPT codes raised a number of concerns:

The vignettes did not necessarily reflect the Medicare population. Thus, if the work required to perform a service for those above age 65 is different from the work required for the general population, the resulting relative values, when used for the Medicare population, will be biased.

There was apparently some difficulty in assigning the appropriate CPT codes to vignettes, particularly for visit codes. The difficulty with visit codes led the Harvard team to propose a separate methodology to derive relative values for visit codes. This methodology involved the use of time in the definition of CPT codes for visits, a step that would involve substantial implementation issues.

Since the process of assigning CPT codes was independent of the designing of the vignettes, the vignettes may not represent average resources for the CPT code in question.

- Although estimates of intrawork were obtained by survey for approximately 400 services, estimates of pre- and post-service work were not obtained by survey. To generate these estimates, 153 of the approximately 400 services surveyed for intrawork were surveyed to obtain estimates of pre- and post-service time. These surveyed values were used to estimate pre- and post-service times for the remainder. Finally, estimates of pre- and post-service work were derived by making assumptions about the relationships between intraservice and pre- and post-service values and estimating values from intraservice results. There are significant questions as to the validity of this methodology for pre- and post-service work, which represent as much as 46 percent of total work for some procedures.
- The validity of the common scale that crosses specialties hinges on identifying linking procedures across specialties. While there is no evidence to suggest that the linking procedures are not valid, there is some question as to whether different panels of physicians would have identified different procedures. Defining different procedures could change the locations of procedures on the common scale and change the relative values.
- Practice costs represent approximately 45 percent of physicians' gross revenues and a comparable portion of input into physician services. Relative values, and hence payments, can vary substantially based on the choice of allocation method used. A variety of

allocation methods are possible, including methods developed by the Harvard team, by the Physician Payment Review Commission (PPRC), and by HCFA. Unfortunately, there are insufficient data to determine which method is most accurate. This area needs further study.

- Practice costs and opportunity costs are calculated by specialty, not by service. This implies that any procedure performed by specialties with different practice costs will be paid differently. It is the case, however, that there is no one theoretically correct way to allocate practice costs.
- Relative values, practice factors, and opportunity cost factors are related to factors such as the state of technology and the market for medical services. Thus, relative values are not constant over time, and they will have to be updated periodically. This updating could involve a major analytic effort.
- Surveyed codes accounted for more than 30 percent of allowed charges for the included specialties. The extrapolated codes accounted for more than 20 percent and the visit code methodology accounted for more than 35 percent. The extrapolation methodology assumes that within small families of procedures, relative charges are good proxies for differences in work. Although, in general, the assumption that charges vary systematically with physician effort is justifiable, it appears that this methodology is not universally appropriate, and significant questions have been raised as to the overall validity of the method. If relative charges within families do not accurately reflect relative work differences, then the resulting relative values obtained from this methodology will not be appropriate. It was also found that when a family contained more than one surveyed service, the resulting extrapolated values within that family could differ by 10 percent, depending upon which surveyed service is used as the benchmark in one family, and nearly 50 percent in another. The typical variation is unknown, but may be substantial.
- The definition of “global” fees for surgery used by Harvard was not consistent with that used by any Medicare carriers. Since the global fee packages used in the study usually consist of fewer services than are included in Medicare global fee packages, Harvard’s relative values are usually biased downward. Conforming the RBRVS to a uniform definition will be complex and would require careful implementation.
- Harvard had difficulty in obtaining estimates of relative values for procedures that involve both professional and technical components. Some survey respondents appear to have incorrectly provided time estimates for both components. In addition, the final data of the study identify all radiology procedures as “unresolved.”
- The Harvard RBRVS assumes that specialty differentials should exist if they reflect different costs of practice and medical education. The appropriateness of paying different amounts for similar services is unclear.

Addressing issues raised by the critique

Harvard has initiated an analytic plan to assess the methodological and usage issues in further detail. Among the issues that Harvard hopes to study further are: validation of all results, more precise estimation of pre- and post-service work, coding for visit codes, extrapolation, and the reliability and validity of the linking procedures used in creating the common scale. Many of these issues may be resolved through increased data collection and analysis. Other options for the functional form are being examined by PPRC and HCFA.

The impact issue

If it is considered valid, the Harvard RBRVS could be used in a number of ways for Medicare payment purposes. Among the potential uses are: to identify “overpriced” procedures and then to limit payments or charges of these procedures; and to establish a Medicare payment schedule.

HCFA performed simulations of a fee schedule based upon the Harvard RBRVS to determine the impact of using it as a basis for a fee schedule for payment for physician services based upon the assumption that any fee schedule would be budget neutral. In addition, HCFA simulated the effects of fee schedules based upon a modification of the Harvard RBRVS using an additive model, as well as a charge-based RVS.

Simulations of the Harvard RBRVS showed that it would result in substantial redistributions. While many of the specialties in question would not experience very large redistributions, others would. Specialties such as family practice and internal medicine would experience large gains under the Harvard RBRVS, while thoracic surgery, radiology, and ophthalmology would be large net losers. The Harvard RBRVS would also often result in large geographic redistributions. These redistributions could, in turn, be affected by the use of a geographic practice cost index that takes into consideration differences in practice costs among localities.

In general, payment for invasive procedures would decrease, while payment for evaluation and management procedures would increase under a payment system based upon the Harvard RBRVS. Using the additive model modifications of the Harvard RBRVS would tend to moderate these redistributions among specialties. Specialties that would gain under the additive models gain less; losers would lose less. It would not necessarily affect geographic redistributions. Under a charge-based RVS, redistributions would be even less. This is so because such a schedule would tend to institutionalize the current payment structure.

Simulations of various models were also performed to estimate changes in beneficiary liability. These simulations were performed for the additive models. They showed that, although an additive variation of the Harvard RBRVS would have major implications for specialties and procedures, on the national level, it would not appreciably affect beneficiary out-of-pocket liability.

Implementation of a National Fee Schedule

Legislative mandate

Pursuant to section 4056(c)(1) of OBRA of 1987, this report was prepared by the Secretary of Health and Human Services to inform Congress on technical and operational issues that would be raised by implementing a national Medicare fee schedule for physician payment. The report has three sections: transition and major policies, ancillary policies, and post-implementation issues.

Transition and major policies

If a resource-based relative value scale (RBRVS) is enacted, the Department recommends a transition period of several years, prior to full implementation. During this period, charge-based fee schedule payments would begin. There would next be a blend of RBRVS and charge-based RVS payments; and, finally, payment based solely on RBRVS would be instituted. This type of transition is recommended in order to:

- Insure accuracy of payments.
- Achieve budget-sensitive payment results, while making geographic and coding changes.
- Determine behavioral changes occurring as payment is based more and more on RBRVS.
- Identify emerging beneficiary access problems.
- Make mid-course payment corrections or adjustments, where appropriate.

Alternative implementation models

There are basically two implementation approaches. One approach (i.e., Model 1) is to implement the fee schedule all at once with no phase-in. Under this approach, the current payment system would remain in effect, probably through 1992 and, during this period, new geographic areas and uniform codes and global surgical packages would be instituted.

Model 2 provides for a phase-in period, during which payments are made, in part, on the basis of an RBRVS fee schedule. This is the approach we are recommending.

Uniform code definitions

We recommend:

- Uniform global surgical packages based on the current dominant practice.
- Clarification of ambiguous codes.
- Collapsing of many seldom-used codes.

Geographic adjustment

If differentials based on geography are to be recognized, current work must be completed on various geographic practice cost indices. Also, a decision must be made regarding whether current payment localities would be retained under a national fee schedule. If metropolitan statistical areas are chosen as localities, significant technical issues arise if budget-neutral or budget-sensitive expenditures are to be maintained.

Conversion factors and budget neutrality

If conversion factors are to be "budget neutral," we recommend that, in the statute, the Secretary be given substantial latitude in defining budget neutrality. This is because of data problems that would be associated with standardizing geographic areas, service definitions, and global packages during fee schedule implementation.

Ancillary policies

Generally, we are recommending that the Secretary be given the discretion to address these policies by regulation. The policies include such issues as how to pay for multiple procedures, bilateral procedures, and care rendered by assistants-at-surgery under a fee schedule.

Post-implementation issues

New and changed codes

We recommend that, for new services (i.e., services without national relative values), fee schedule payment be made on the basis of locally established relative values.

When CPT code revisions are made annually (i.e., for existing services), we recommend immediately establishing relative values for the revised codes by making appropriate adjustments to the relative value(s) of the predecessor code(s). The nature of the adjustments would depend on the nature of the code change(s).

Relative value and conversion factor updates

We recommend:

- Relative value revisions every 5 years to reflect practice cost and work changes.
- 3-year update intervals to reflect new services.
- An annual conversion factor update.

Ordering information

Reports to Congress: Medicare Physician Payment, Stock No. 017-060-00314-6, is available for \$15 from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; the order desk telephone number is (202) 783-3238 for credit card orders.

Grants and Contracts

New awards

The Health Care Financing Administration (HCFA) administers a grants and contracts program for research and demonstration projects through the Office of Research and Demonstrations (ORD).

The following list contains information on recent ORD awards by project area and subcategory. Other grants and contracts projects have been included in earlier issues of the *Health Care Financing Review*.

Project area: Hospital payment **Category: Catastrophic coverage studies**

Title:

Ventilator support center: One demonstration site for the testing of the efficacy of a dedicated rehabilitative ventilator-dependent unit

Contractor/Grantee:

RMS Health Providers
Ventilator Support Center
55th Street and County Line Road
Hinsdale, Illinois 60521

Project director:

Roger C. Bone, M.D.

Federal project officer:

Tom Talbott

Description:

This project is in response to Section 429 of the Medicare Catastrophic Coverage Act of 1988, which mandated a demonstration program designed to examine the appropriateness of classifying hospital chronic ventilator units in hospitals as rehabilitation units. Results will serve as the basis for the feasibility of including chronic ventilator services under the Medicare program.

Project number:

29-P-99397/5-01

Title:

HCFA demonstration-ventilator-dependent units

Contractor/Grantee:

Temple University Hospital
3401 North Broad Street
Philadelphia, Pennsylvania 19140

Project director:

Gerald J. Criner, M.D.

Federal project officer:

Tom Talbott

Description:

This project is in response to Section 429 of the Medicare Catastrophic Coverage Act of 1988, which mandated a demonstration program designed to examine the appropriateness of classifying hospital chronic ventilator units in hospitals as rehabilitation units. Results will serve as the basis for the feasibility of including chronic ventilator services under the Medicare program.

Project number:

29-P-99401/1-01

Title:

Ventilator-dependent demonstration project

Contractor/Grantee:

Rhode Island Hospital
593 Eddy Street
Providence, Rhode Island 02902

Project director:

Robert G. Norton

Federal project officer:

Tom Talbott

Description:

This project is in response to Section 429 of the Medicare Catastrophic Coverage Act of 1988, which mandated a demonstration program designed to examine the appropriateness of classifying hospital chronic ventilator units in hospitals as rehabilitation units. Results will serve as the basis for the feasibility of including chronic ventilator services under the Medicare program.

Project number:

29-P-99404/1-01

Title:

The clinical, humanistic, and costs aspects of providing chronic ventilator care in a specifically designed, equipped/staffed unit—A demonstration project

Contractor/Grantee:

Sinai Hospital of Detroit
6767 West Outer Drive
Detroit, Michigan 48235

Project director:

Alvaro Skupin, M.D.

Federal project officer:

Tom Talbott

Description:

This project is in response to Section 429 of the Medicare Catastrophic Coverage Act of 1988, which mandated a demonstration program designed to examine the appropriateness of classifying hospital chronic ventilator units in hospitals as rehabilitation units. Results will serve as the basis for the feasibility of including chronic ventilator services under the Medicare program.

Project number:

29-P-99408/5-01

Title:

Demonstration projects with respect to chronic ventilator-dependent units in hospitals

Contractor/Grantee:

Mayo Foundation
200 First Street, SW.
Rochester, Minnesota 55905

Project director:

Douglas R. Gracey, M.D.

Federal project officer:

Tom Talbott

Description:

This project is in response to Section 429 of the Medicare Catastrophic Coverage Act of 1988, which mandated a demonstration program designed to examine the appropriateness of classifying hospital chronic ventilator units in hospitals as rehabilitation units. Results will serve as the basis for the feasibility of including chronic ventilator services under the Medicare program.

Project number:

29-C-99424/5-01

Project area: Health care prevention and access**Category: Prevention****Title:**

Inactivated influenza vaccine effectiveness in the elderly

Contractor/Grantee:

University of Michigan
School of Public Health
475 East Jefferson, Room 1310
Ann Arbor, Michigan 48109

Project director:

Arnold S. Monto, M.D.

Federal project officer:

Edward Hutton

Description:

The purpose of this demonstration is to gather data that will allow an independent contractor to conduct a study to determine if it is cost-effective to expand Medicare coverage to include influenza vaccine.

Project number:

71-C-99616/5-01

Project area: Subacute and Long-Term Care
Category: Alternative Payment and Delivery

Title:

Capitation reimbursement for comprehensive long-term care (PACE)

Contractor/Grantee:

Commonwealth of Massachusetts
Department of Public Welfare
180 Tremont Street
Boston, Massachusetts 02111

Project director:

Diane Flanders

Federal project officer:

William D. Clark

Description:

The goals and objectives for the Program for All-inclusive Care for the Elderly (PACE) demonstration are to implement the consolidated risk-based model of long-term care in order to address problems extant in the fee-for-service delivery of acute and long-term care.

Project number:

11-P-99356/1-01

Title:

Capitation reimbursement for comprehensive long-term care (PACE)

Contractor/Grantee:

East Boston Geriatric Services, Inc.
10 Gove Street
East Boston, Massachusetts 02128

Project director:

Jean N. Masland

Federal project officer:

William D. Clark

Description:

The goals and objectives for the Program for All-inclusive Care for the Elderly (PACE) demonstration are to implement the consolidated risk-based model of long-term care in order to address problems extant in the fee-for-service delivery of acute and long-term care.

Project number:

95-P-99357/1-01

Title:

Capitation reimbursement for comprehensive long-term care (PACE)

Contractor/Grantee:

Oregon Department of Human Resources
Senior Services Division
313 Public Service Building
Salem, Oregon 97310

Project director:

Holly Berman

Federal project officer:

William D. Clark

Description:

The goals and objectives for the Program for All-inclusive Care for the Elderly (PACE) demonstration are to implement the consolidated risk-based model of long-term care in order to address problems extant in the fee-for-service delivery of acute and long-term care.

Project number:

11-P-99358/0-01

Title:

Capitation reimbursement for comprehensive long-term care (PACE)

Contractor/Grantee:

St. Joseph's Health Services and Property Management Division
Adult Day Health Center
On Lok Replication Project
4805 NE. Glisan Street
Portland, Oregon 97213

Project director:

George Telisman

Federal project officer:

William D. Clark

Description:

The goals and objectives for the Program for All-inclusive Care for the Elderly (PACE) demonstration are to implement the consolidated risk-based model of long-term care in order to address problems extant in the fee-for-service delivery of acute and long-term care.

Project number:

95-P-99359/0-01

Title:

Replication of the PACE long-term care capitation model

Contractor/Grantee:

New York State Department of Social Services
40 North Pearl Street
Albany, New York 12243

Project director:

C. Christopher Rush

Federal project officer:

William D. Clark

Description:

The goals and objectives for the Program for All-inclusive Care for the Elderly (PACE) demonstration are to implement the consolidated risk-based model of long-term care in order to address problems extant in the fee-for-service delivery of acute and long-term care.

Project number:

11-P-99360/2-01

Title:

Capitation reimbursement for comprehensive long-term care (PACE)

Contractor/Grantee:

Beth Abraham Hospital
612 Allerton Avenue
Bronx, New York 10467

Project director:

William H. Frohlich

Federal project officer:

William D. Clark

Description:

The goals and objectives for the Program for All-inclusive Care for the Elderly (PACE) demonstration are to implement the consolidated risk-based model of long-term care in order to address problems extant in the fee-for-service delivery of acute and long-term care.

Project number:

95-P-99361/2-01

Project reports

As grants and contracts are completed, the final project reports are placed with the National Technical Information Service for public access. The reports are available in paper as well as in microfiche, which is considerably lower in cost.

Following are the abstracts and ordering information for reports that describe research results of recently completed projects. They may be ordered or further information obtained from: National Technical Information Service Document Sales, 5285 Port Royal Road, Springfield, Virginia 22161, (703) 487-4650.

A Compendium of Office of Research and Demonstrations Physician Studies 1977-86

The Compendium has been designed to index abstracts of physician payment research and physician practice pattern studies. It contains information on all past and present grants, contracts, and cooperative agreements and related reports or known journal articles associated with physician and other Medicare Part B payment projects conducted by the Health Care Financing Administration (HCFA), Office of Research and Demonstrations, or its predecessors. Citations to other relevant studies from 1977 through 1986 are also included. Although it primarily focuses on physician reimbursement issues, other Medicare Part B studies such as ambulatory/outpatient care and laboratory studies are included. The Compendium is indexed by authors or principal investigators, organizations that performed the study, keywords, and HCFA project officers. Each entry includes an abstract and a National Technical Information Service accession number when relevant. Order by accession no. PB90-100280; cost is \$42.95 for paper copy, \$6.95 for microfiche. There is a \$3.00 handling charge.

DOCTORD-1989: dBase III Plus Physician/ (Part B Medicare) Personal Computer Reference System and Users Guide

The DOCTORD System, developed for use by the Health Care Financing Administration's (HCFA) Office of Research and Demonstrations (ORD), is a dBase III personal computer application, which indexes physician research reports, nonclinical physician research projects and reports, and other Medicare Part B studies sponsored by ORD. Its function is to act as a reference tool to assist management in accessing studies made from 1977 to mid-1989.

In addition, it includes abstracts for intramural projects, proceedings of physician payment conferences sponsored by HCFA, physician payment reports to Congress, selected reports issued by other government agencies or commissions that have relied in part on HCFA studies, data, and citations to known journal articles that resulted from research projects.

The DOCTORD System is run by a menu-driven applications program, which allows the user to perform such tasks as appending new records, searching for specific data, and printing out abstracts and indexes. Knowledge of dBase is not required nor are programming

skills. Documentation is also included in the package as an ASCII text file, DOCTORD.TXT., and as a MultiMate file, DOCTORD.DOC. Attached also is significant bibliography and a directory of files. Order by accession no. PB90-100151; cost is \$21.95 for paper copy, \$6.95 for microfiche. There is a \$3.00 handling charge.

The Hospital Experimental Payments Program: 1980-87

Described in this final report is the Rochester Area Hospitals Corporation's (RAHC) evaluation of the Rochester Areas Hospitals Corporation Experimental Payment (HEP) program. This program tested whether an areawide budget system would be effective in controlling hospital costs in a metropolitan area and whether local decisionmaking can effectively allocate financial resources between hospitals to cover the cost of new services. This 8-year project, which included all-third-party payers (Medicare, Medicaid, and Blue Cross) was initiated January 1, 1980, and included nine hospitals in the Rochester areas of New York. HEP places an upper limit or cap on the total revenue paid to the community's hospitals for all patient care. Each participating hospital's revenues for 8 years is guaranteed at a base level, calculated primarily from the hospital's 1978 costs and trended forward to reflect inflation. In addition, a 2-percent contingency fund, administered by RAHC, paid for increased hospital services, as well as new and improved medical technology, and provided working capital for participating hospitals. Order by accession no. PB90-114372; cost is \$17.00 for paper copy, \$8.00 for microfiche. There is a \$3.00 handling charge.

Medicaid Services for Persons with Mental Retardation and Related Conditions

This project examined trends and projections in the use of Medicaid-funded and other long-term care services for persons with mental retardation and identified factors influencing these trends nationally and in the various States. This study also analyzed State policies and programs for mental retardation services. Findings indicated that States have moved from an institutionally-based to a community-based services system made up of small facilities. However, wide variations remain among the States with regard to the overall national trends. The intermediate care facility for the mentally retarded (ICF-MR) program has stabilized and is expected to decline by 1990, while ICF-MR per beneficiary expenditures have continued to increase. Wide use is made of the Medicaid home and community-based services waiver program. Substantial numbers of persons with mental retardation continue to use nursing homes as residential settings, but their numbers represent a small percentage of total nursing home residents. Medicaid optional services, such as case management, personal care, and rehabilitative services are viewed by States as important in reducing or delaying the need for institutional services. Order by accession no. PB90-114364; cost is \$23.00 for paper copy, \$8.00 for microfiche. There is a \$3.00 handling charge.

Should Medicare Compensate Hospitals for Administratively Necessary Days?

This report has attempted to address the issue of payment for administratively necessary days. Background information was provided as to what an administratively necessary day constitutes and the probable incidence of those days in various locations across the United States. In addition, the causative factors of administratively necessary days were also enumerated. Also provided was a cost impact analysis, a description of the study approach, and the data sources utilized. The format of the report is a series of research questions and their associated answers in narrative form. The report also furnishes a number of policy alternatives that deal with the issue of administratively necessary days. Order by accession no. PB89-238117; cost is \$13.95 for paper copy, \$6.95 for microfiche. There is a \$3.00 handling charge.

Giving Physicians Incentives to Contain Costs Under Medicare: Lessons from Medicaid

In considering that a number of Medicaid programs have designed innovative payment systems that incorporate incentives for physicians to control costs, this report summarizes partial capitation and health insuring organization risk arrangements in seven Medicaid programs—Oregon, Philadelphia, Kitsap, Washington, Santa Barbara, San Mateo, and Monterey, California—that put physicians at financial risk for some or all physician services. These programs pay physicians a capitation amount, which implicitly serves as an expenditure target for the primary care physician. Physicians also receive part of the savings from reduced hospitalization. Most of these programs have successfully lowered Medicaid costs, and although the Monterey program did not survive, all study programs except Santa Barbara are producing savings.

Lessons Medicare can learn regarding expenditure targets include:

- Risk pools need not be as large as Medical Services Administrations.
- Pools between 10 and 100 physicians have no apparent problem with spreading the risk for all physician services.
- Physicians can be given substantial incentives to control hospital costs (which argues for incorporating hospital costs in some form in an expenditure target).
- It is possible to require bills from physicians within 3 months and to adjust fees and distribute surpluses 6 months after the end of an accounting period.

Order by accession no. PB89-238109; cost is \$15.95 for paper copy, \$6.95 for microfiche. There is a \$3.00 handling charge.

Effectiveness of Medicare Volume and Intensity Controls

This study focused on the effectiveness of 13 national (mandatory) prepayment medical review screens used by

Medicare Part B carriers in 1986 and 1987. Effectiveness is defined by the authors as the likelihood that a screen will deter a physician from submitting a “bad” claim for medically unnecessary services. This concept is different from the more usual effectiveness measures of the volume or dollar amounts of inappropriate claims identified and denied by carriers. Also examined were post-payment medical review activities, innovative carrier review activities, and other methods for successfully controlling volume and intensity of services. Study methods included a national survey of Medicare Part B carriers and private insurers, case studies based on site visits, and qualitative and empirical analyses of secondary program data. On the basis of the opinion survey data, seven of the screens were considered effective.

However, there was only weak empirical evidence from program data to support this finding. On balance, they concluded that for the most carriers, most screens are likely to be somewhat effective in promoting desirable physician treatment or billing behavior, at least when the screens are initially imposed. This effectiveness was not conclusively demonstrated by the empirical portion of this study. Order by accession no. PB90-100280; cost is \$42.95 for paper copy, \$6.95 for microfiche. There is a \$3.00 handling charge.

Evaluation of HealthChoice, Inc.—Independent Broker

The HealthChoice, Inc. (HCI) demonstrations were initiated to test the efficacy of having an independent broker working cooperatively with participating health maintenance organizations (HMOs) and competitive medical plans, and to inform and educate Medicare beneficiaries about health services options available to them under the Medicare program. The HCI demonstrations were initiated in three market areas—Portland, Oregon, and Los Angeles and San Francisco, California. The purpose of this evaluation was to assess the effectiveness of HCI and HMO participants, to examine the impacts of HCI on beneficiary awareness, enrollment, and disenrollment rates; and, to determine the nature and extent of biased selection into Medicare HMOs. Key findings from the evaluation include:

- There was an increase in understanding key HMO concepts for beneficiaries who attended HCI-sponsored health fairs in Los Angeles.
- HCI had little or no impact on Medicare beneficiary behavior in the demonstration sites.
- HCI enrollees were similar to other HMO enrollees, in that they were younger on average than nonenrolled beneficiaries, but were most likely to be disabled than other HMO enrollees.

Order by accession no. PB90-113515; the cost is \$23.00 for paper copy, \$8.00 for microfiche. There is a \$3.00 handling charge.

Geographic Variation in Surgical Fees

This report examines the variation in fees for six surgical procedures (coronary artery bypass surgery, pacemaker insertion, hip fracture repair, hip replacement,

cholecystectomy, and partial colectomy) across market areas, looking specifically at the roles played by physician practice costs, the use of assistant surgeons, and the extra billing by the primary surgeon. Results showed that although taking physician practice costs into account did narrow the fee gap, considerable variation remained, especially when comparing metropolitan statistical areas across States.

Prior to the report, large variations in Medicare physician fees had been observed across States, as well as across smaller localities, like cities and urban-rural areas within States. Surgical fees had been particularly interesting in this regard because inter-area differences in the definition of the product were less likely to contribute to the variation. One explanation for the persisting variation in surgeon's fees may be area differences in the market factors that influence the demand and supply of surgical operations. This study is based on an analysis of all Medicare physician claims for 1986 for 20 States. Order by accession no. PB90-1223466; cost is \$23.00 for paper copy, \$8.00 for microfiche. There is a \$3.00 handling charge.

1989 Data Users Conference Proceedings

This report contains the proceedings of the first Health Care Financing Administration's (HCFA) Data Users Conference, which was sponsored by the Bureau of Data Management and Strategy, on June 13-15, 1989.

The Conference, developed as a result of the increasing awareness of, and interest in, the availability and use of HCFA data for all types of studies including effectiveness, quality of care, epidemiologic, and economic, had two goals: to provide an overview of the type of Medicare and Medicaid data that is available in HCFA, and to share experiences in using HCFA data to study the effectiveness of the health care delivery system.

Such information from HCFA plays a critical role in properly evaluating trends in health care financing and assurance, and is of vital interest to the health care community. The importance of gathering and sharing valid, complete, and accurate data cannot be stressed enough in pursuit of the goal of identifying and promoting health care interventions that are of consistent high quality, appropriate, and cost effective. Order by accession no. PB90-120361; cost is \$23.00 for paper copy, \$8.00 for microfiche. There is a \$3.00 handling charge.

A Description and Clinical Assessment of the Computerized Severity Index

This report describes various aspects of the computerized severity index (CSI) methodology and presents a preliminary clinical assessment of the system. The CSI is the newest chart review-based severity of illness measurement system to gain widespread attention. It aims specifically to address important health policy concerns, such as improving the fairness of hospital reimbursement and severity-adjusting outcome data for quality assessment. The CSI defines severity as the treatment difficulty presented to physicians resulting from the extent and interactions of a patient's diseases, and its underlying philosophy is that severity is a diagnostic-specific construct. The index also analyzes severity

separately for each disease listed for a patient, based on the responses to a diagnosis-specific set of queries. In addition, it also determines an overall severity score, which can be compared across large groups of patients. Thus, the CSI attempts to build a bridge between the clinical specificity of a diagnosis-dependent algorithm and the ease of use of the generic methods.

Studying the content or face validity of the CSI, such as its severity matrices of weighing vectors, offers only a limited appreciation for the measure. It will be important for other research to focus on the application of the CSI, and its ability to fulfill its stated goals, such as the prediction of resource consumption or its utility as a screen for the quality of hospital care. Order by accession no. PB90-125196; cost is \$23.00 for paper copy, \$8.00 for microfiche. There is a \$3.00 handling charge.

Learning From and Improving Diagnosis-Related Groups for End Stage Renal Disease Patients

This study addressed how the implementation of Medicare's prospective payment system (PPS) for hospital inpatient care affected the Medicare end stage renal disease (ESRD) program, providers, and patients. The main issues of concern were hospital utilization and program spending, together with patient access to care and quality. The project conducted numerous interrelated analyses of primary Medicare data on services to ESRD and other beneficiaries. The study's main findings include:

- Hospital admission rates for ESRD patients were unchanged after the introduction of PPS. However, total days of inpatient care declined, because of reductions in lengths of stays.
- Medicare hospital reimbursements per ESRD patient were generally up during the 1983-84 period.
- Hospital readmission rates for ESRD beneficiaries were not increased as a consequence of PPS.
- ESRD patient mortality did not increase as a result of PPS.
- ESRD patient access to hospital care was not affected by PPS.

Order by accession no. PB90-127176; cost is \$15.00 for paper copy, \$8.00 for microfiche. There is a \$3.00 handling charge.

Admission and Mid-Stay MedisGroups Scores as Predictors of Hospital Charges and 30-Day Mortality

This report explored the ability of MedisGroups' mid-stay review scores and other data collected during this review to predict hospital resource use (charges and length of stay) and mortality. By building on prior work, it is suggested that admission MedisGroups scores have only a modest ability to predict the cost of hospitalizations. During the mid-stay review, which occurred approximately 1 week into the hospitalization for most patients, data were collected which was similar to those gathered during the admission review. However, they were processed differently by the MedisGroups computer algorithm, to produce a three-level score: no morbidity, morbid, and major morbidity. Patients received mid-stay reviews only if they remained in-hospital for the required length of time. The work

evaluated the relationship between admission MedisGroups score alone, the mid-stay review score alone, and the clinical trajectory and two outcome variables: resource use (hospital charges and length of stay) and mortality. Order by accession no. PB90-126699; cost is \$23.00 for paper copy, \$8.00 for microfiche. There is a \$3.00 handling charge.

A Cost and Outcome Analysis of Kidney Transplantation: The Implications of Initial Immunosuppressive Protocol and Diabetes

This was an observational study of the impact of immunosuppressive protocol on cadaver renal transplantation using a sample of 396 patients from 5 major transplant centers. Detailed information on outcomes (mortality, complications, and disability) and cost were collected on these patients and were analyzed in terms of major prognostic factors. In addition, extensive data of a medical or biologic and of a sociologic nature were obtained. Some of the major findings included:

- Although cyclosporine is almost universally used in immunosuppressive therapy following cadaver kidney transplantation, there are two basic ways in which it is introduced. Under the "triple drug" protocol, initial immunosuppression consists of azathioprine, prednisone, and antilymphocyte globulin, followed by cyclosporine about 1 week after transplant. Under the "double drug" protocol, initial immunosuppression consists of cyclosporine and prednisone.

- 1-year graft survival rates under the triple drug regimen (89.2 percent) were significantly greater than under the double drug regimen (71.6 percent). Other patient and donor characteristics were not significant.
- Successful transplantation did not improve work status. Those who were working prior to transplantation tended to return to work. Those who were unemployed prior to transplantation tended to remain unemployed.
- 5-year immunosuppressive cost projections were one-half as great as that suggested by published protocols.

Order by accession no. PB90-126657; cost is \$172.00 for paper copy, \$72.50 for microfiche. There is a \$3.00 handling charge.

National Medicare Competition Evaluation: An Evaluation of the Quality of the Process of Care

The findings of this study indicate that Medicare beneficiaries enrolled in health maintenance organizations (HMOs) through the National Medicare Competition Demonstrations received medical care that was at least equal in quality to the care received by beneficiaries in a fee-for-service comparison group. In evaluating the quality of care, medical records were examined for samples of HMO enrollees and beneficiaries' process of care for two resource intensive conditions (colorectal cancer and congestive heart failure), two chronic illnesses (diastolic hypertension and diabetes mellitus), and routine care in an outpatient setting. Order by accession no. PB90-130196; cost is \$23.00 for paper copy, \$11.00 for microfiche. There is \$3.00 handling charge.

News Briefs

Nominations sought for health services research prize

Nominations are being accepted for the Baxter Foundation Prize for distinction in health services research. The prize is a recognition of an exceptional contribution to improved medical care through innovative health services research. An individual's specific contribution or a career-long achievement may be recognized.

The prize is an acknowledgment of national or international contributions of health services research, defined as a product of the application of analytic methods to the organization, financing, and/or delivery of health services. The objectives of health services research recognized by the prize include better understanding of patient and provider relations, social and behavioral epidemiology, resource allocation methodology, clinical decisionmaking, utilization patterns, technology, and monitoring and evaluation of health services more generally. Health services research addresses the entire range of health services including health promotion and disease prevention, primary care, secondary and tertiary care, as well as long-term care.

Nominations must provide complete documentation including: a statement of accomplishments that distinguishes the nominee's contribution from the work of other individuals, evidence of impact through publications and testimonials of leaders, copies of relevant publications, and a resume. Letters of support are also invited.

All materials must reach the secretary of the selection committee by November 1 to be considered for the prize for the following year. Nominations should be in English. Supporting materials may be in other languages.

The Baxter Foundation Prize is administered by the Association of University Programs in Health Administration (AUPHA) and awarded at the AUPHA annual meeting, which the prize recipient is invited to address. The prize consists of an individual award of \$10,000. In addition, \$15,000 will be awarded to a not-for-profit institution designated by the recipient, to support his or her work.

Nominations should be sent to and further information may be obtained from the Secretary, Health Services Research Prize Committee, AUPHA, 1911 North Fort Myer Drive, Suite 503, Arlington, Virginia 22209, U.S.A.

Medicare hospital mortality data released

The Health Care Financing Administration (HCFA) has released the third annual publication of *Medicare Hospital Mortality Information*, consisting of 14 volumes. For each hospital, information is presented for overall Medicare patient mortality and each of 16 diagnostic categories. The information consists of the number of Medicare patients, the actual mortality rate, and a range of predicted mortality, given the mix of patients. The

rates and ranges for 3 years—1986, 1987, and 1988—are presented.

This publication is based primarily on Medicare hospital billing information. For each calendar year, only one hospitalization for each patient was used—the last hospitalization with a discharge in that year. The event evaluated was death within 30 days of admission to the hospital.

Within the 14-volume set, the hospitals are arranged by State, with the States ordered according to the 10 HCFA regional offices. The publication is available to interested parties at no charge. For further information contact: Sandra Kappert, Health Standards and Quality Bureau, Room 2-D-2, Meadows East Building, 6325 Security Boulevard, Baltimore, Maryland 21207; (301) 966-6890.

Case management for long-term care examined in study

A new InterStudy report, *Case Management for Long-Term Care*, provides a comprehensive examination of case management for the chronically ill and functionally disabled elderly and its appropriate place in the current and future long-term care system.

The report presents an indepth overview of the current infrastructure of case management provision in the United States, and provides a description and analysis of the approaches to case management included in recent Federal bills and proposals to reform the Nation's long-term care financing system. It also provides a detailed review of five demonstration projects across the country that have served to test the concept of coordinating care for the chronically ill elderly via case management.

In addition, the authors of the report explore the existing paradox that pits demand for the personalized, noninstitutional form of care against current State and Federal reimbursement policy and delivery structure.

Finally, beyond reviewing the policy dimensions, *Case Management for Long-Term Care* provides consumers, policymakers, and long-term care providers with guidelines on what to look for in a case management program from their different perspectives.

Copies of the report are available for \$50 each from InterStudy, 5715 Christmas Lake Road, P.O. Box 458, Excelsior, Minnesota 55331-0458. For further information, contact Lynn R. Gruber at InterStudy, (612) 474-1176.

Cardiac catheterization laboratory business examined

In a study scheduled to be completed in Spring 1990, The Wilkerson Group investigates the business dynamics that will shape the fortunes of product suppliers to the cardiac catheterization laboratory.

A concentrated U.S. market with dramatic buying power—\$1.5 billion of cardiovascular drugs, devices, and equipment—the cardiac catheterization laboratory has undergone rapid and remarkable changes in the last decade. Once considered a diagnostic last stop for

patients being considered for surgery, Wilkerson researchers note, it has been transformed into an interventional cardiology center where a growing list of therapeutic as well as diagnostic procedures are now performed.

More information may be obtained by calling Mark Hurwich at The Wilkerson Group, (212) 973-2080.

Physician group begun to promote cost-effective medicine

Physicians for Research in Cost-Efficiency (PRICE) is a new organization designed to meet the challenge of the turbulent times ahead in health care. The goal of the organization is to facilitate communication about low-cost quality medical information between physicians involved in research, academics, administration, and practice. A newsletter will provide information on research efforts, political trends, and, most important, clinical observations and practice innovations for the practice of cost-effective medicine. In addition, PRICE will serve as a clearinghouse for conferences, new job opportunities, and training options for physicians interested in cost issues in medicine.

Interested physicians can gain membership by submitting a letter of interest and a curriculum vitae if they wish so that physicians interested in similar work can be connected with one another. There are no fees and no financial sponsors. PRICE is simply for physicians concerned about the future. Please address correspondence to David J. Shulkin, M.D., PRICE, 926 Bellefonte St., Pittsburgh, Pennsylvania 15232, or call (412) 682-8015.

Study issued on community-based services

The Center for Health Services Research of the University of Colorado Health Sciences Center has completed a study reviewing past and current research and providing recommendations on future research in two areas: the quality of community-based and custodial long-term care services, and the relationship between long-term care services and acute care expenditures. The study was conducted for the Health Care Financing Administration (HCFA) as part of HCFA Cooperative Agreement No. 17-C-98971/8-01, for the component entitled, "Research Synthesis and Recommendations on the Quality of Selected Long-Term Care Services and on the Relationship between Long-Term Care Services and Reduced Acute Care Expenditures."

The findings of the study are contained in a new publication, *State Survey of Community-Based Services: Summary of Quality Assurance Mechanisms in Sixteen States*, by Judith A. Miller, Robert G. Berg, Kimberly J. Bischoff, and Robert E. Schlenker. It is available for \$15 from the Center for Health Services Research, University of Colorado Health Sciences Center, 1355 South Colorado Boulevard, Suite 706, Denver, Colorado 80222, (303) 756-8350.

New report details retirement community trends

The National Continuing Care Data Base, a joint project of the American Association of Homes for the Aging (AAHA) and Ernst and Young, has published *Continuing Care Retirement Communities: An Industry in Action, 1989*. The book contains the results of a national survey of more than 250 continuing care retirement communities (CCRCs). CCRCs combine a full range of housing, supportive services, and health care in order to serve older residents as their needs change over time. This is the second survey of this marketplace that AAHA has undertaken.

Also included are benchmark data on CCRCs' physical and financial operations, marketing practices, and health care utilization. In easy-to-read charts and figures, and a clear, concise narrative, the report documents occupancy trends, resident demographics, and industry growth patterns. CCRC contract types, fees, services, fill-up rates, operating costs, and other important data also are covered.

To order *Continuing Care Retirement Communities: An Industry in Action, 1989*, contact AAHA Publications, 1129 20th St., NW., Suite 400, Washington, D.C. 20036. The book costs \$95 plus \$3 shipping. AAHA members receive a substantial discount.

For additional information about the National Continuing Care Data Base, contact Peter Collins, Research Project Manager, at (202) 296-5960, or write to: National Continuing Care Data Base, AAHA, 1129 20th St., NW., Suite 400, Washington, D.C. 20036.

Statistical volume on nations' economies released

The recent economic performance of some 90 developing economies, arranged alphabetically for easy reference, is assessed in the World Bank's newest annual statistical publication, *Trends in Developing Economies 1989*.

Data for each country include a comprehensive, up-to-date table of economic and social indicators for 1965-88. Unlike other annual statistical compilations published by the Bank—such as *The World Bank Atlas*, *World Tables*, and *Social Indicators of Development*—this volume includes descriptive analyses for the majority of countries. Each analysis highlights the problems and prospects for a country's economy and the main elements of its development strategy.

The series complements the *World Development Report*, which looks at global and regional economic trends and their implication for future prospects of the developing countries. The profiles are drawn from the Bank's data base and economic analyses of its member countries.

Trends in Developing Economies 1989 is available for \$19.95 from The World Bank, Publications Department,

J2152, 1818 H Street, NW., Washington, D.C. 20433.
The stock number is 11358.

Health care cost reduction strategies explored

Driving Down Health Care Costs offers an update of the state of the art in cost-control strategies. Written by experts in the field, and using actual case examples, the book focuses on the successes and failures in areas including preferred provider organizations, wellness programs, long-term care, utilization review, medical benefits for retirees, and flexible benefits.

Contributors describe the hidden factors in health care inflation and what can be done about them, explain how employers can get involved in benefits design and administration, and provide information on what various organizations are doing to control health care costs.

This book is available for \$69 from Panel Publishers, Inc., 14 Plaza Road, Greenvale, New York 11548-9813; (516) 484-0006.

Common working file expedites Medicare claims processing

The nationwide implementation of the common working file (CWF), a decentralized Medicare claims validation and benefit authorization system, is progressing rapidly. Contractors have been selected for all nine sector host sites that will operate the beneficiary data bases that make up the CWF system. All of the sector data bases are operational and the host site contractors are working to tie all of their assigned contractors into the CWF system, a process which should be completed by the end of 1990.

Each sector data base contains complete entitlement, utilization, and Medicare Part A and Part B claims history for each beneficiary assigned to that sector. All claims, both Part A and Part B, are posted to each beneficiary's record regardless of where in this country the beneficiary received the medical service. The CWF facilitates faster and more accurate claims payments than was possible under the Health Care Financing Administration's (HCFA) previous claims processing system. For inquiry purposes, the data are immediately available on-line to Medicare claims processors for answering beneficiary inquiries and for resolving claims processing problems. The eligibility data can also be made available on-line to hospitals to expedite resolution of problems relating to beneficiary eligibility to receive Medicare services.

Under CWF, HCFA performs all of its claims review functions on a prepayment basis which facilitates prompter and more accurate payments and greatly reduces the number of claims that require postpayment adjustment. Data relating to all claims processed under CWF are transmitted daily from CWF hosts to HCFA so that this data will be available for reporting purposes on a more timely basis after the CWF is installed nationwide.

Health care financial management volumes released

Two new guides to health care financial management were recently released. *Understanding Health Care*

Accounting, by Allen G. Herkimer, is geared toward individuals with experience in health care management, but no formal training in accounting. Terms are defined, methodologies are explained, and material is taught through selected case histories. The cost is \$37.95.

Cash and Investment Management for the Health Care Industry, by Alan G. Seidner and William O. Cleverley, shows health care financial managers how to exercise greater control over their institution's capital management and investment strategies. The cost is \$42.95.

Other reference books available include the two-volume *Handbook of Health Care Accounting and Finance, Second Edition*, by William O. Cleverley, \$175; *Understanding Health Care Budgeting*, by Allen G. Herkimer, \$34.95; and *Basic Hospital Financial Management, Second Edition*, by Donald F. Beck, \$39.50.

All volumes are available from Aspen Publishers, Inc., 7201 McKinney Circle, P.O. Box 990, Frederick, Maryland 21701-9782. The handling charge is \$3.50; Maryland residents must add 5 percent sales tax. For phone orders, call 800-638-8437 toll-free; in Maryland, (301) 251-5233.

Most health maintenance organization physicians satisfied with capitation

The majority (76.2 percent) of health maintenance organizations (HMOs) indicate that their affiliated physicians are satisfied with the capitation form of payment. This is one of the findings in a recent issue of the *InterStudy Edge* released by InterStudy, the Excelsior, Minnesota non-profit health care organization. The report focuses on HMOs that use capitation, a form of financial risk-sharing, as the method of payment for participating physicians.

InterStudy's report, based on a survey of HMOs nationwide, shows that, of responding HMOs using capitation, nearly two-thirds capitate only primary care physicians. The remaining one-third capitate both primary care physicians and specialists.

The vast majority (76.4 percent) of responding capitating HMOs indicated that the individual physician is at risk for primary services; less than half (45.9 percent) place the individual physician at risk for treatment by specialists. Approximately 40 percent of HMOs using capitation place individual physicians at risk for in-area hospital use.

An annual subscription to the *InterStudy Edge* is available for \$225. Single issues are \$60. InterStudy's address is 5715 Christmas Lake Road, P.O. Box 458, Excelsior, Minnesota 55331-0458; the phone number is (612) 474-1176.

Plan information control system implemented

The Office of Prepaid Health Care (OPHC), in conjunction with the Bureau of Data Management and Strategy, Health Care Financing Administration, recently completed the implementation of the Plan Information Control System (PICS), which began development in October 1987. PICS is an interactive, menu-driven, simultaneous user-based system developed by the Office of Health Program Systems' Division of Capitation

Systems using the Model 204 (M204) Data Base Management Systems.

The system provides OPHC and the regional offices with on-line access to a centralized prepaid health organization data base and the ability to direct reports to available printers.

PICS has been implemented in two phases. Phase I, implemented in June 1989, included Medicare contract information, textual service areas, National Data Reporting Requirements, and Federal qualification information.

Phase 2, implemented in December 1989, added information on banking and contract benefits and premiums; ZIP and county code service areas, and new and revised reports. Phase 2 also interfaced PICS with the Automated Plan Payment System and the redesigned Group Health Plan System to provide the latest Medicare contract information for generating monthly payments and processing beneficiary enrollments and disenrollments.

Audio response units being tested for Medicare phone inquiries

In early 1990, the Health Care Financing Administration (HCFA) will begin testing the use of audio response units (ARUs) for answering beneficiary telephone requests for claims status at seven Medicare carrier locations. The test period will run for 3 months in 10 States: Massachusetts, Maine, Vermont, New Hampshire, South Carolina, Illinois, Wisconsin, Texas, Arizona, and California.

During the pilot study, the beneficiary telephone lines at the test carriers will be answered by an ARU, a computer interface device connected to the phone system. The caller will hear a recorded message of a human voice. The recording will give a series of instructions on obtaining information needed to access the caller's Medicare record. The ARU will then provide the status of the three most recent claims. If a beneficiary does not want to use the ARU, has more detailed questions than the ARU can answer, or does not have a touch tone phone, the call will be switched to a live operator.

Some expected advantages of using ARUs are the flexibility of handling inquiries beyond regular carrier business hours (up to 24 hours a day) and improved consistency and quality of response. An important factor in the pilot testing, however, will be beneficiary acceptance. HCFA's Bureau of Program Operations plans to evaluate whether using ARUs for handling Medicare inquiries is acceptable to the Medicare population. After the pilot study is completed, a decision will be made regarding nationwide implementation.

System for tracking audit and reimbursement now in use

Medicare contractors have completed one full cycle of audit cost reporting using the system for tracking audit and reimbursement (STAR). This system provides complete cost and workload data for the audit of providers by contractors via time sharing option at the Health Care Financing Administration (HCFA) Data Center. The automation of the cost reporting process makes records more accurate and reports more timely.

STAR was designed to keep track of and report on past and current provider information and the time spent in audit and Medicare reimbursement activity. The provider information consists of basic data such as provider name, provider number, address, and fiscal year. In addition, detailed provider information includes key dates such as cost report received date and notice of provider reimbursement date.

STAR can be used to produce reports that serve as specific management tools and allow standardized reporting to HCFA such as the contractor auditing and settlement report. Also, a byproduct of this system for fiscal year 1989 is the regional office STAR module. This module enables the regional offices, in substantially less time and with more accuracy than with previous manual preparation, to score six contractor performance evaluation program standards with regard to audit and reimbursement data. Future development should result in even more intensive uses of the reported data as well as expanded use of the STAR provider master files maintained at the contractor site.

Health care publications available

Quality Rehabilitation: Results-Oriented Patient Care, a new American Hospital Association (AHA) book, brings the collective wisdom of 23 contributors to bear on the question of how health care providers measure and assure the delivery of high-quality rehabilitation services.

The book's contributors describe what the rehabilitation community has done and is doing to monitor and measure the quality of care patients receive. Individual chapters profile initiatives undertaken under the banners of quality assurance and program evaluation as well as initiatives to blend the two processes.

Included are discussions of strategies for information management and the roles of marketing both in assessing consumer expectations and in promoting the provider's strengths through the use of quality data. End-of-chapter references, an appendix of nearly 100 national organizations, and an annotated bibliography provide additional resources for the reader.

Also available is *Environmental Assessment Workbook: Identifying the Hospital's Local Issues*, which provides hospital planners and consultants with guidelines for gathering the information needed to evaluate and strengthen their institution's competitive position in the local or regional marketplace.

In the workbook, six areas that affect every hospital are explored—economics, patients, human resources, technology, public and private finance and payment, and government policies. There is an examination of how competitive strategies used by other area hospitals may influence a hospital's planning efforts. With the data gained from implementing the workbook's guidelines in these areas, planners can develop hospital-specific comparative information that will enhance a hospital's strategic planning efforts. Sample worksheets and graphs demonstrate convenient ways to compile and compare data. Topics are explored through lists of questions to ask, comparisons to make, types of information to seek, and organizations and publications to consult that will yield insights into the specific marketplace in which the institution is operating.

Another publication being offered is *Preferred Provider Organizations: Strategies for Sponsors and Network Providers*, developed as a collaborative effort between the Section for Health Care Systems of the AHA and the leadership of the American Association of Preferred Provider Organizations. This book is a detailed examination of the issues confronting preferred provider organization (PPO) developers and participant providers alike as they structure PPOs to fully realize the characteristics of a true managed-care entity. The book's 19 contributors share their hands-on experience to help readers make appropriate choices among alternative strategies in such operational aspects as provider payment systems, marketing and sales, utilization management, data management, and benefits design; they also help prepare readers to respond to such environmental influences as hospital medical staff concerns, potential liability exposure, and the regulatory climate.

Quality Rehabilitation: Results-Oriented Patient Care, catalog number 175141, is available for \$42.95; for AHA members, \$32.95. *Environmental Assessment Workbook: Identifying the Hospital's Local Issues*, catalog number 127182, is available for \$41.50; for AHA members, \$32.95.

The price of *Preferred Provider Organizations: Strategies for Sponsors and Network Providers*, catalog no. 067101, is \$56.95; for AHA members, \$44.95. All three publications can be ordered from American Hospital Association Services, Inc., P.O. Box 99376, Chicago, Illinois 60693.

Dollars saved by dollars spent for family planning

The first data since 1979 on the cost effectiveness of publicly funded family planning services is provided in the January/February 1990 issue of *Family Planning Perspectives* from The Alan Guttmacher Institute. According to the article "Public-Sector Savings Resulting from Expenditures for Contraceptive Services," an average of \$4.40 is saved for every public dollar spent to provide contraceptive services to women who might find it difficult or impossible to obtain contraceptives without help.

Public dollars spent on family planning services for these women save taxpayers, on average, \$1.8 billion a year. These savings represent money that would be spent on medical, welfare, and nutritional services (as required by law) for women who would have unplanned pregnancies if publicly funded contraceptive care were not available. Without government support for these family planning services, an average of 1.2 million additional unintended pregnancies would occur each year to women of reproductive age in the United States.

One of four American women using contraceptives each year (exclusive of sterilization) obtain services from publicly funded health care providers. More than 90 percent of these 4.5 million women obtain contraceptives from family planning clinics, and the rest obtain them from physicians reimbursed through Medicaid. One-third of women using the most effective reversible methods (the pill and the IUD) obtain their contraceptive care from clinics or Medicaid-reimbursed physicians. Many of these women are poor; more than one-half have family incomes that are less than the Federal poverty level, and more than three-quarters of Medicaid recipients rely on publicly funded services.

Statistical components handle inquiries

Inquiries regarding the availability of statistical information other than those pertaining to the specific contents of articles in the *Health Care Financing Review* should be directed to the following components:

For Medicare Statistics

Statistical Information Services Branch
Division of Information Analysis
Office of Statistics and Data Management
Bureau of Data Management and Strategy
Room 3-A-12, Security Office Park Building
6325 Security Boulevard
Baltimore, Maryland 21207
Telephone: (301) 597-3934 (inquiries from government offices); (301) 597-3933 (inquiries from the public)

For Medicaid Statistics

Division of Medicaid Statistics
Office of Statistics and Data Management
Bureau of Data Management and Strategy
Room 2-A-1, Security Office Park Building
6325 Security Boulevard
Baltimore, Maryland 21207
Telephone: (301) 597-3792

For Data Documentation and Public Use Files Requests

Division of Data Documentation and Release
Office of Statistics and Data Management
Bureau of Data Management and Strategy
Room 3-A-10, Security Office Park Building
6325 Security Boulevard
Baltimore, Maryland 21207
Telephone: (301) 597-5151