

# **Direct Pricing of Health Insurance in the Consumer Price Index**

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## **Abstract**

For many years, the U.S. Consumer Price Index (CPI) has used an indirect approach to measuring the price change for medical care purchased through insurance. The Bureau of Labor Statistics has begun a new examination of the direct pricing of health insurance, as part of the continuing expansion of service sector coverage in the Producer Price Index. This paper describes how a directly-priced index for health insurance would be incorporated in the CPI. It also discusses the issues raised by this potential change. Those issues include how employer-paid insurance should be handled, how price and quality changes should be defined and measured in the health insurance index, and how direct pricing of insurance should affect the collection of prices for the remaining medical care components of the index.

## Direct Pricing of Health Insurance in the Consumer Price Index

### Introduction

For many years, the U.S. Consumer Price Index (CPI) has used an indirect approach to measuring the price change for medical care purchased through insurance. This has resulted from the lack of consistently and easily available data on the price and quality of health insurance, in particular on the value of changes in the coverage offered by specific health insurance policies. Lacking such data, the current CPI approach tracks price change for medical care inputs—such as physicians' and hospital services—that are covered by health insurance, rather than directly pricing health insurance premiums, which are the largest component of consumers' medical care expenditures.

In 1997, the Bureau of Labor Statistics (BLS) began a new examination of the direct pricing of health insurance, as part of the continuing expansion of service sector coverage in the Producer Price Index (PPI). For most of the PPI's history from its inception in 1902, the program's measurement efforts focused almost exclusively on the goods-producing sector. After the completion of the last major methodological revision in 1986, the PPI gradually shifted its attention to the service sector in recognition of its growing importance in the U.S. economy. In 1995 the PPI began work to cover the insurance sector of the economy, publishing an index for Property and Casualty Insurance (SIC 6331) in 1998. This was followed by the publication of an index for Life Insurance (SIC 6311) in January 1999.

Survey activities are now underway for SIC 6325, the Accident, Health and Medical Insurance industry. These survey activities have been structured as a joint PPI-CPI initiative, because of the prospect of mutual benefits and cost efficiencies. Staff of both programs visited with several insurance companies and concluded that the actuaries from those companies would be able to provide the required adjustment values for changes in policy benefits and risk. Now that actuaries rely heavily on electronic data, it is easier to determine exactly how much of any premium increase or decrease would be due to demographic changes, benefit changes, utilization changes, or technological changes. Plans call for the calculation of test indexes for this industry beginning with data for January 2001. Assuming that a measure of price change of acceptable quality can be routinely compiled during the testing phase, PPI publication would begin with data for January 2002.<sup>1</sup> It also has been possible to develop a sampling methodology meeting the requirements of both programs, so that the raw data collected by PPI economists also could be used to calculate directly priced indexes for the CPI program.

The prospect of direct pricing of health insurance in the CPI is attractive for several reasons. In general, the CPI is designed to reflect changes over time in the prices of consumer goods and services, those items being weighted by their share of the aggregate budget of U.S. consumers. Ideally, then, the BLS would price health insurance policies, because purchases of those policies comprise about 45 percent of the CPI's medical care weight. The current, indirect method, by contrast, must rely on a maintained assumption: that the quality-adjusted price of health insurance must move in proportion to the quality-adjusted prices of the medical care

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<sup>1</sup> The attachment to this paper shows the prospective PPI published indexes.

commodities and services purchased as health insurance benefits (with a small adjustment for changes in insurers' retained earnings, as described below).

That assumption, although reasonable, is untestable. Estimation of health insurance costs through the prices paid for covered commodities and services also forces the BLS to collect third-party reimbursement rates for those items as well as the prices paid by "self-pay" (uninsured) consumers. This increases the difficulty and cost of data collection and also increases the respondent burden on medical care providers. Moreover, the indirect method sometimes creates confusion among users of the CPI, and may even reduce the index's credibility.

This paper describes how a directly-priced index for health insurance would be incorporated in the CPI. It also discusses the issues raised by this potential change. Direct pricing has many potential advantages, but it does not eliminate the problem of measuring changes in the quality of health care; this problem merely arises in a different form. Some unanswered questions also remain about how direct pricing of insurance would affect the collection of prices for the remaining medical care components of the index.

### **Medical Care in the CPI**

For the purpose of explaining how medical care expenditures are handled in the CPI, consumer medical expenditures can be divided into three categories:

- Health insurance premiums, including those charged by fee-for-service, HMO, and other plan types
- Copays, deductibles and coinsurance, which are payments by insured individuals to medical care providers for the part of the cost of covered care that insurance does not reimburse
- Payments by uninsured consumers and payments by policyholders for uncovered commodities and services

The CPI weight, or relative importance, of medical care is based on "out-of-pocket" expenditures by consumers on all three of these categories, as reported in the Consumer Expenditure Survey (CEX) during the period 1993-1995.<sup>2</sup> The term out-of-pocket is sometimes misinterpreted to mean that only direct payments by consumers to providers are included. This is incorrect; spending is defined to include insurance premium payments by consumers, plus their direct medical care spending net of third-party reimbursements. The issue of the CPI medical care weight is distinct from the pricing initiative described in this paper. It remains controversial, however, and deserves some review here.

Observers often note that the share of health care spending is much higher in the National Income and Product Accounts (NIPAs) than in the CPI. For example, according to the Health Care Financing Administration (HCFA), national health expenditures constituted 13.5 percent of GDP in 1998, whereas the relative importance of medical care in the CPI-U in December 1998 was only 5.7 percent.

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<sup>2</sup> With very minor exceptions, the same procedure is followed for all CPI components. Effective in January 2002, the CPI expenditure base period will be updated to the two-year period 1999-2000.

This divergence arises because of the CPI's exclusion of several large spending categories. First, the CPI excludes government spending for Medicaid and for Medicare Part A. This follows the index's general exclusion of government spending funded through direct taxes even when the spending provides consumption benefits (for example, public education and the Smithsonian Institution). Because Medicaid and Medicare A services are purchased by government on behalf of consumers, however, they are included as part of Personal Consumption Expenditures (PCE) in the NIPAs. In their 1996 report, the Advisory Commission to Study the Consumer Price Index (the "Boskin Commission") argued that the CPI weight should include this spending,<sup>3</sup> but most countries' CPIs do not include this category of expenditure.

The CPI also excludes medical care spending by firms on behalf of their employees. Because of the prevalence of employment-based health insurance, this is a quantitatively significant exclusion. According to HCFA, employer contributions accounted for \$242 billion of the \$311 billion total private health insurance premiums in 1995. These employer contributions are also included in PCE as household spending in kind. Because employees can be viewed as "purchasing" this benefit through reduced cash wages, a strong argument can be made for including employer contributions in the CPI medical care weight, but both conceptual and operational difficulties would have to be overcome.

First, it would be very difficult to obtain data on employer contributions from the CEX, because respondents would often be unequipped to provide the information. Potential alternative sources would include HCFA and the BLS National Compensation Survey. Second, there is a potential issue arising from differences between individual costs and benefits. At the individual level, reported employer contributions to a health insurance pool may not be viewed as accurately measuring the cost of consumption (in foregone wages or retirement benefits). This is important because the BLS produces not only the CPI-U for All Urban Consumers but also the CPI-W for Urban Wage Earners and Clerical Workers and the experimental CPI-E for consumers age 62 and over. For construction of those series it is necessary to measure the cost of consumption by individual consumer units.

Rapid changes in technology, and difficulties in observing and valuing changes in the quality of care, make medical care pricing particularly problematic. Pricing of the medical care component is, in fact, widely viewed as a major limitation on the accuracy of the index. Consequently, some have suggested that, given the problems in medical care pricing, it would be inadvisable to take any steps that would increase the weight of medical care in the CPI.

### **The Current CPI Approach to Health Insurance**

Prior to the 1964 revision, health insurance premiums were priced directly in the CPI. The procedure was to price, as a fixed amount of protection for the individual consumer, the most widely held Blue Cross/Blue Shield family policy being sold to consumers. Using this method led to a number of problems involving quality and quantity changes over time. In pricing premiums directly, the Bureau found it impossible to account for quality differences due to changes in both the benefits provided by policies and in utilization of the provided benefits. These problems led the Bureau to switch to the current indirect method of pricing health

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<sup>3</sup> See U.S. Senate (1996), page 37.

insurance in the 1964 revision of the CPI. In 1984-85, the feasibility of directly pricing health insurance was re-tested. Results showed the same unavailability of data from insurers on changes in quality, utilization, and benefits.

The CPI's current method for pricing health insurance decomposes medical insurance expenditure into two parts:<sup>4</sup>

- Prices of medical care items covered by health insurance policies
- Cost of administration, maintaining reserves and, as appropriate, profits

Most of the expenditure for health insurance goes for the first item—the part that reflects the insurers' payments for medical treatment. The CPI allocates this part of health insurance spending to the indexes for those treatments. This means that most of the expenditures for health insurance reported on the CEX are assigned to the other medical care strata; the share assigned to each stratum is based on insurance industry information. The remaining weight, for the other part of insurance, is for the retained earnings of the insurers; this is all that remains in the unpublished CPI health insurance index.

Price movement over time for the CPI's unpublished health insurance indexes is determined by the movements of the other medical care strata, adjusted by changes in the retained earnings ratio (see below). Movement in the unpublished medical insurance index reflects both changes in benefits paid and changes in the unit cost of administering these benefits. This process yields a measure of price change for insurance of constant coverage and utilization. That is, changes in benefit coverage and utilization levels generally will be offset by compensating premium charges, and thus will not affect retention rates significantly. Implicit in the process is the assumption that the level of service from the individual carriers is strictly a function of the benefits paid. Other changes in the amount of service provided for policy holders, such as more convenient claims handling, will affect the movement of the index when—strictly speaking—they should be removed, but these effects are probably small.

*Retained earnings ratio.* The Bureau obtains data for premium income, benefit payments, and retained earnings on a calendar year basis. Blue Cross/Blue Shield supplies data directly to BLS. BLS gets data for commercial carriers from *Best's Insurance*. For each year, the ratio of retained earnings to benefit payments is calculated, yielding a retained earnings ratio. Next, the latest year's ratio is divided by the previous year's ratio, to obtain the relative of change in the ratios. Finally, this annual relative of change is converted to a monthly relative (by taking its twelfth root) so that the CPI can reflect the change month by month over the calendar year. Since it is not feasible to obtain the monthly change in price caused by changing retention margins, spreading the annual change evenly over the year is preferable to reflecting the entire annual change in one month.

A hypothetical example of the calculation of the change in retained earnings for commercial carriers is as follows:

Year	Income	Benefits	Retentions	Retention-Benefits Ratio
1	\$100,000	\$94,000	\$6,000	.063830

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<sup>4</sup> See Fixler (1996) for a detailed description of the current CPI approach.

2                      \$108,000              \$100,000              \$8,000              .080000

The Year 2 adjustment for change in retentions is computed using the proportional movement in the retention-benefits ratio. The relative of change is  $.080000/.063830$  or  $1.253329$ . This annual relative is spread equally over 12 months as follows:

$$^{12}\sqrt{1.253329} = 1.018995$$

yielding a monthly adjustment of 1.9 percent.

### **Direct Health Insurance Pricing**

#### *Structure and Weights*

The component CPI medical care indexes are listed in Table 1, along with their percentage shares of total consumer spending as reported in the CEX for 1993-1995. The shares are displayed both with and without the distribution of health insurance weights to individual components. The total weight of medical care is unaffected. As shown in the table, however, the explicit weight for "health insurance" would rise from 0.3 percent to 2.7 percent if it were priced directly.<sup>5</sup> The weights for the individual CPI medical care components would drop correspondingly once the health insurance portion of their weight has been removed and reallocated to the health insurance stratum. Most of the health insurance weight increase would come from two key areas, Hospital Services and Physicians' Services.

Under current plans, the directly-priced Health Insurance expenditure class would contain two item strata: Health Insurance Other than Medicare and Consumer Paid Medicare. As the table shows, Health Insurance Other than Medicare would comprise most of the weight of the expenditure class (2.2 percent of the total 2.7 percent based on 1993-1995 data).

#### *Schedule*

The schedule of proposed dates for testing and implementation of direct pricing of health insurance is:

- |                      |   |
|----------------------|---|
| During 2001          | <ul style="list-style-type: none"><li>• CPI sets up a system to calculate test indexes for directly priced policies</li><li>• PPI calculates unpublished test indexes for SIC 6325 – Accident, Health &amp; Medical Insurance Carriers</li></ul>                        |
| January 2002         | <ul style="list-style-type: none"><li>• CPI calculates unpublished test Health Insurance indexes with proper weights obtained as part of the 2002 CPI reweighting</li><li>• PPI begins publication of Accident, Health and Medical Insurance Carriers indexes</li></ul> |
| January 2003 or 2004 | <ul style="list-style-type: none"><li>• The CPI replaces the indirect health insurance method with the direct pricing of policies and makes associated changes to individual medical care components</li></ul>  |

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<sup>5</sup> The weights shown are for all urban consumers. Actual future CPI-U and CPI-W relative importances would vary depending on later CEX data and index movements.

Initial publication of the new health insurance index in the CPI will follow that in the PPI for two reasons. First, additional time will be required to ensure that the new method is an improvement over the existing CPI approach to medical care pricing. This evaluation will be based in part on comparison of the official CPI to the test indexes using direct health insurance pricing. Second, BLS policy stipulates that structural changes to the CPI be made in January so that index methods are consistent through out each year and also that we notify users one year in advance of such changes. Consequently, the earliest we could move to direct pricing of health insurance would be January 2003, after notifying users by January 2002.

### *Pricing Procedures*

The CPI and PPI programs are working together in the effort to directly price health insurance policies. The two programs are looking at the issues from different angles; the PPI is a modified Laspeyres index designed to estimate a fixed-input output price index, whereas the CPI's measurement objective is a cost-of-living index. It is clear, however, that all required information can be found in the same place: the actuarial offices of these insurance companies. Specifically, we intend to obtain the total health insurance premium (both employer and employee portion), policy and benefit changes from year to year, and necessary quality adjustment factors for those changes. Data for the Health Insurance other than Medicare stratum will be collected by the PPI staff, and then passed to the CPI program.

To track price movement for the selected policy, the responding company is presented with two options. In the first option, the price determining characteristics of the selected policy effectively are held fixed, or "frozen," over time. At repricing, which occurs at an annual interval, the respondent is asked to provide an estimated premium using current charges for the characteristics of the initially selected policy.

The second option allows the company to report premiums for the selected policy over time. The company is asked to provide the actual premium charged to the policyholder and to identify any modifications to the policy each year on the anniversary, or renewal, date. In addition, the company must be able to provide the value of the risk change associated with any change to the policy characteristics in order to maintain constant quality. Since these policies are priced when they are renewed, companies can report these changes as they are considered in the rate determination for that year.

The fundamental issue in pricing insurance services over time is the ability to identify, and adjust for, changes in risk. An advantage of the frozen policy approach is that quality adjustment should be needed less frequently than when following an actual policy over time. Since all demographic and policy benefit risk factors are held constant for the frozen policy, only changes in external risk factors should require quality adjustment. Such external factors include changes in technology, utilization, mandated coverages, and benefits offered by the insurance company. If a company prefers to price an actual policy, quality adjustment will be more frequent. In addition to the risk factors listed above, it would be necessary to adjust for demographic changes and any policy modifications (e.g. benefits, deductibles, etc.) initiated by the insured at the time of the policy renewal.

For changes in explicitly endogenous risk factors such as changes in coverage, benefits or deductibles, we believe that companies now have suitable cost data to allow for meaningful cost-based quality adjustment. However, for changes in exogenous risk factors that go beyond the scope of policy negotiations, such as a severe flu season or a new treatment for cancer, company

specific data would not be sufficient to quantify risk definitively. Only outside data sources will be able to identify short-term vs. long-term changes in risk.

New item bias is a potential concern for both repricing methods, but this form of bias may be more likely when pricing a frozen policy. Over time, that policy may no longer be representative. Although the problem may not be as severe when an actual policy is being followed, it can occur if the general population has changed preferences among types of insurance products or if the policy represents a smaller portion of the company's business. To reduce new item bias, the PPI program has developed a "directed substitution" procedure. This procedure captures evolutionary changes to current products or services that did not exist when the sample was selected. Periodically, each company will be contacted in order to review the insurance products included in the sample. The existence of these evolutionary changes in the industry will be identified and disaggregation (a probability proportional to size selection process) will be performed to determine if a substitution should be made from the current product to an evolutionary product. Producer cost-based quality adjustment will then be attempted to adjust for these changes.

#### *Self-Insuring Firms*

Many large employers self-insure; they retain the risk associated with uncertain benefit payouts, while contracting with health insurance firms for third-party administrative services—premium handling, claims processing, etc. From the perspective of the consumer, and therefore the CPI, these arrangements are essentially indistinguishable from those in which the health insurance firm assumes the risk. When these ASO (administrative services only) contracts are sampled, therefore, the PPI will collect a "premium equivalent" that will be used as the health insurance price in the CPI.

#### *Medicare*

Medicare is not part of SIC 6325 and therefore is not part of the PPI health insurance initiative. Medicare Part A also is out of scope for the CPI, as noted above, because it is funded by payroll taxes. That portion of Medicare that is paid for by premium payments, however, is in scope for the CPI. Quotes for the Consumer Paid Medicare stratum will be initiated and priced by the CPI only, using premium data from HCFA.

Medicare Part B enrollees have two plan type options: the original fee for service (FFS) Medicare B plan, and Medicare+Choice (managed care). The FFS plan will be referred to as Original Medicare B. For the time being, the CPI plans to price only Original Medicare B policies. Private insurance companies operate Medicare+Choice plans (managed care). When a Medicare recipient elects the +Choice option, he or she contracts with a private insurance company who receives the premium for part B that is paid by the consumer, and they also receive the premium equivalent reflecting the allotted Medicare A subsidy toward that private health insurance plan. Depending on the plan purchased, an additional monthly premium may also be charged. The private health insurance plan is then responsible for all medical care for those enrollees who opt for a managed care plan. Each managed care plan is required to supply, at a minimum, the same package of benefits as given under the FFS plan, but they tend to offer more benefits than the Original Medicare B plan offers. Examples of additional benefits have typically included prescription drug coverage and preventative services. Just as in other managed care plans, the primary care physician (PCP) acts as a "gatekeeper of care." The Original



Medicare B (FFS) plan is handled by a single insurance company in each state and their enrollees can go to any participating provider without a referral from a PCP.

At this time we are still researching strategies for dealing with the HMO Medicare Part B coverage. This type of Medicare coverage is further complicated because enrollees are receiving both part A and B coverage; we would need to be able to subtract out all benefits received from the part A portion, which may be difficult. Another potential issue arises from legislation currently being debated that would add prescription drug coverage to the Medicare plan.

### *Medigap*

Medigap plans are health insurance plans that fill the gaps in Medicare plan coverage. Medigap policies pay most or all of the Medicare coinsurance and deductible amounts. Some Medigap plans also pay for services not covered by Medicare, such as outpatient prescription drugs. Because Medigap insurance policies are sold by private insurance companies, they are in scope for the PPI, and the PPI will collect prices for Medigap policies. In the CPI they will be part of the Health Insurance other than Medicare stratum.

## **CPI Quality Adjustment Issues**

Direct pricing of health insurance would not affect the measurement objective of the CPI, nor would it affect the proper treatment of changes in medical care quality. Direct pricing would, however, fundamentally change the way movements in health care costs and benefits are reflected in the data reported to BLS. Many of the obstacles to accurate quality adjustment in the current CPI would be mitigated or even eliminated, but other, new problems would arise.

Changes in the premium charged for a specified health insurance policy can result from changes in several price-determining factors. Among these are:

- Demographic Changes (e.g., a change in the average age of the covered population, or in the percent of policyholders who are women of childbearing age)
- Plan/Benefit Changes (e.g., mandated coverage changes or changes in deductibles, copays and coinsurance rates)
- Utilization Changes (e.g., as a result of the increased prevalence of a disease, such as AIDS)
- Technological Changes (e.g., shorter hospital stays for cataract treatment, non-surgical treatment of ulcers, introduction of high-cost liver transplants)
- Demand-altering Changes (e.g., legalization of abortion pills, improved cancer detection)

Although effective observation and valuation of these changes certainly presents a challenge for the PPI health insurance index, a special issue for the CPI is to determine which of the above should be treated as quality changes and which as price changes. By contrast, in the current CPI approach, which constructs the index from the prices of individual commodities and services, most of the above changes are unobserved.

The most important of these situations concern changes in the underlying demand for medical care, or in the technologies and methods used in that care. Increases in the demand for medical care, perhaps due to population aging or improved disease detection, will tend to raise health insurance premiums even if individual medical care commodity and service prices remain

unchanged. Breakthroughs in medical technology can raise or lower premiums by introducing more costly or less costly treatment methods, again without affecting the prices of items currently sampled in the CPI. In all these situations, if the appropriate decision is to reflect a price change in the CPI, direct pricing of health insurance facilitates that decision. If the change should be judged a change in quality, however, with no change in the index, direct insurance pricing can make the process more complex.

As an example of how this issue presents itself, consider the case of AIDS. Again, the onset of such a disease will not directly change the price of individual medical care goods and services, but it will increase the price of health insurance policies that cover its prevention or treatment. In the PPI, this would be viewed conceptually as a quality increase, because the insurer is assuming more risk for a given set of policy parameters. The appropriate handling in the CPI is less clear. On the one hand, consumers must pay a higher premium cost merely to achieve the same level of health, on average. On the other hand, the higher premiums purchase a higher level of expected care, suggesting that a quality adjustment is warranted.

The BLS views the CPI as an approximation to a cost-of-living subindex, “conditional on the excluded factors that affect consumer well being, such as health status and the quantity and quality of government-provided goods and services.”<sup>6</sup> Unfortunately, this provides no clear guidance on the handling of the above AIDS example. The choice of whether to adjust the index for quality change ultimately will depend on a judgment about which approach is appropriate for the primary uses of the index.

Another way of posing the same question is to assume a hypothetical situation in which a costly disease appears and then a technological breakthrough leads to an inexpensive cure. Probably most economists would agree that the second event should be viewed as a price decrease in the CPI.<sup>7</sup> Then, the issue is whether the combination of the two events—after which consumers by assumption pay the same premiums and have the same health level as before—should return the CPI to its original index level. For that to occur, the initial onset of the disease, and the associated higher premiums, would have to have been treated as a price increase in the CPI.

It perhaps is worth noting that the Boskin Commission, which recommended strongly that the cost-of-living index should be the CPI’s measurement objective, was unclear about the proper handling of AIDS. The Commission report indicated that

“It is not clear, however, whether events such as ... the appearance of AIDS ... should be included in the definition of a price index ... The rise of AIDS would drive up the price index of health, if we define it as the expenditure necessary to achieve an equivalent base-period health level. But while this component represents a real rise in the “cost of living,” it may not be an appropriate component in an indexing formula ...”

It also should be noted that a parallel issue arises with respect to automobile repair services. When accident risk rises, due to increased traffic or other cause, this is treated as a

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<sup>6</sup> U.S. Bureau of Labor Statistics (1998), p. 5.

<sup>7</sup> See, for example, the discussion of lower-cost cataract treatment in Shapiro and Wilcox (1996), pp. 129-134.

price increase in the CPI auto insurance index. In the PPI, however, a quality adjustment is made in the same situation.

To summarize, the prospect of a directly-priced health insurance index is forcing the CPI program to examine the assumptions underlying its treatment of insurance in general, and the factors on which the index is judged to be conditional.

### **Copays, Coinsurance, and Deductibles**

There are three general types of payment that insurance companies may require consumers to pay when they receive covered medical services:

*Copays* are a fixed dollar amount that the consumer pays each time he or she receives a medical care service: for example, \$100 per hospital admission or \$10 per doctor visit. If the copay for a hospital visit increases from \$100 to \$150, this is a decrease in quality of the insurance plan to the consumer, and hence an increase in the overall cost of the policy. We would adjust the reported premium value to reflect that increase.

*Coinsurance* is a percentage of the cost that the consumer pays, often up to a fixed maximum: for example, 20 percent of the first \$5,000 of hospital costs per person per year. If there is a decrease in a coinsurance rate from 20% to 15%, this would be considered an increase in the quality of the insurance plan. Since the quality of the insurance has increased relative to the cost, we would show this quality enhancement through a decrease in the premium.

*Deductibles* are dollar limits below which the consumer must pay full price for medical care. After that point the medical insurance policy goes into effect. The higher the deductible, the higher the out-of-pocket cost to the consumer to guard against the same risk. If the deductible increases, this should be reflected as a quality adjustment and an increase, all else equal, in the price of the insurance policy.

Within the health insurance index, each of these policy variables would be considered a quality characteristic. Insurers may be influenced to modify them as a result of changes in utilization or other risk factors. Abstracting from such risk changes, however, changes in deductibles and the other above policy variables will be treated as quality changes in the index for health insurance premiums.

There remains the question of constructing a price index for the out-of-pocket payments themselves. Expenditures for these out-of-pocket items will be part of the CPI weights for the various non-insurance medical care components. Unfortunately, constructing an appropriate price index to apply to this weight presents another set of unique issues for the CPI.

As noted above, in the current CPI the cost of health insurance, including both premiums and out-of-pocket payments by insured consumers, is assumed to move roughly in proportion to the prices of health care goods and services. In the proposed new approach, health insurance premiums will be priced directly. The required level of out-of-pocket payments for a representative consumer with a constant-quality health insurance policy, however, can be affected in complex ways by medical care prices. For example, consumers with no deductibles and a constant coinsurance rate should find their share of the costs increasing in proportion to

their insurance benefits, and therefore roughly in proportion to their premiums. At the other extreme, consumers who have only fixed copays, or who always meet their deductible limit and have a zero coinsurance rate, will experience no change over time in their total payments if the parameters of their policies remain constant. Finally, out-of-pocket costs for consumers with very high deductibles and low expenses will move roughly in proportion to health care prices, not insurance premiums.

The above examples demonstrate that neither the quality-adjusted price of health insurance, nor the quality-adjusted self-pay prices of individual health care commodities and services, will necessarily provide an appropriate index to apply to the CPI weight for the consumer share of the cost of covered care. Nevertheless, some operational decision will have to be made in order to produce an aggregate index for medical care. This probably will require some sort of maintained assumption replacing the one used in the current CPI. The most likely choice will be to allocate consumer copays, coinsurance and deductibles to the weights for individual medical care components such as prescription drugs and hospital services, and to assume that these payments move roughly in proportion to self-pay medical care prices. That is, the tentative CPI plan is that, in order to avoid double counting the effect of price changes in copays, coinsurance and deductibles, we will make them ineligible for pricing. In doing so, we will be assuming implicitly that their price movement is the same as for self-pay items in their strata.

In this regard, it is crucial to note that it would not be appropriate to sample and price movements in observed insurance copays. These copays can change over time as insurance policy parameters change, but any such changes will be treated as quality adjustments and not reflected in the health insurance strata. For example, a shift by insurers to lower premiums and higher fixed copays would not be reflected as a decrease in the price of health insurance, so it should not result in a higher index for copays.

### **Pricing Methods for Medical Care Components Other Than Health Insurance**

This section reviews how price change for medical care services in the CPI is measured by tracking prices for individual components such as physicians' care, dental care, eye care, hospital services, and the like. Many of these commodities and services are covered in typical health insurance benefits packages.

Using the current indirect method for health insurance pricing, we define the transaction price for a medical care item as the amount received by the provider, including expected or estimated reimbursement from the insurer plus estimated or expected patient payments. This approach to prices includes, where available, discounted payments to providers as well as undiscounted "self-pay" payments that may be paid by eligible uninsured consumers (those payments not covered by Medicare A or Medicaid).

#### *Prescription Drugs*

Currently, during the initial visit to the pharmacy, respondents identify both the prescription item and specific third party plans through a customized probability proportional to size process. The transaction price is the documented amount—total payment received by the outlet from all eligible sources, including the customer, the insurance provider, and/or any other party—that the outlet actually is reimbursed, for providing the prescription to the customer. Each part of the transaction price is incorporated into the reported price.

During subsequent visits to the outlet, the particular insurance provider payment arrangement for the identified drug is followed. This method allows more actual transaction price changes to be reflected in the index. Although this method is the ideal, many respondents find it difficult or impossible to provide the transaction price on an ongoing basis due to the setup of pharmacy computer systems. As a result, there are many fewer third-party-payer price observations and many more cash-price observations in the CPI's prescription drug samples than there ideally would be. Pharmacies often are unable or unwilling to provide third-party reimbursement information to our data collectors. In most cases, the pharmacist needs some form of insurance identification card to process a transaction to extract the precise terms of the contract for that particular drug on that particular day for that particular plan. When the prescription drug quotes are initiated (initiation is the process of bringing new quotes into the sample) insurance reimbursements are quite frequently selected. The problem lies in subsequent visits to the pharmacy, when the data collector cannot obtain the current insurance reimbursement amounts for the selected drugs.

As discussed above, the CPI is considering the position that, due to the fact that we simply cannot price insurance reimbursements nearly as often as we should, we move to pricing cash payments only. This would also help quite a bit with regard to respondent burden. While respondent burden is not as serious as with physicians' and hospital services, it is nonetheless an issue, as it is not uncommon to lose respondent cooperation when the data collector tries to go after more detailed data (like insurance reimbursement) than cash prices.

#### *Professional Services*

In the current CPI for professional medical services (physicians' services, dental services, eye care and other professionals' services), we once again use a probability proportional to size process to select the type of service and the type of payer—Blue Cross/Blue Shield, commercial insurance, HMO, Medicare Part B, no insurance, makes no difference, one rate for all, etc. CPI data collectors obtain prices and measures of size for the selected services and payer types, rather than automatically obtaining just a cash or published price. The transaction price is the documented amount the outlet actually is reimbursed (i.e., the total payment received by the outlet from all eligible sources, including the customer, the insurance provider, and/or any other party) for the service. As with prescription drugs, many respondents find it difficult to provide current data on the insurance payment arrangement on an ongoing basis.

In the area of physicians' services (and medical services in general) the program faces more daunting respondent burden and data-accuracy issues. Insurance contracts and Chargemaster schedules do not change very frequently, often just once a year, and respondents complain of the monthly (or bi-monthly) visits paid to them by BLS data collectors for price data that simply do not change.

Pricing insurance reimbursements also can sometimes lead to inaccurate data collection. In most cases, a given insurance company will have several plans available to people depending on where they work, what level of coverage they have, etc. BLS aims to select a unique plan so as to avoid moving from pricing the reimbursement terms for a high-level plan to those involved with a low-level, for example. The copays for these two plans need not be the same. Oftentimes it is not possible for the respondent to give our data collectors the level of detailed information (and related time) needed to accurately re-price third party payments on a tight production schedule. Still other times, it is more an issue of getting to a person who possesses the

knowledge needed to give the right reimbursement terms for the selected plan. It is not uncommon for reported insurance reimbursement data to be rejected for inclusion in the index on the grounds that a different plan is suspected of having inadvertently been priced.

Again, as with prescription drugs, the direction the CPI should take in pricing physicians' services upon the implementation of the direct pricing of health insurance is unclear. There are strong operational incentives, however, to move to the pricing of book rates only in the area of physicians' services.

### *Hospital Services*

At hospitals, respondents first differentiate between inpatient and outpatient services using the standard probability proportional to size process also known as disaggregation. Next, respondents who are willing and able provide a list of all major payers generating revenues at the hospital over the last year. CPI field staff eliminate ineligible payers such as Medicare, Medicaid, Workers' Compensation, TRICARE, and others from the list and, using the remaining payers as the universe, select the required number through the disaggregation process. At this stage, respondents supply the most recently closed out or estimated bill for the particular payers selected along with the payment arrangements stated on the specific insurance contracts. When they can get them, field staff base item descriptions on the live hospital bills, often sanitized to remove personal information.

The transaction price remains, as above, the total estimated payment to the outlet from all sources including the patient, the insurance provider, and any other eligible party. In the case of hospitals, transaction prices or discounted rates comprise the majority of the monthly price observations. Movements of discounted rates have a significant impact on the CPI for hospitals.

If health insurance becomes a directly priced item for the CPI, changes in the treatment of the individual hospital service components will be inevitable. If it is assumed that movements in cash prices or published Chargemaster rates can adequately reflect the movements in the out-of-pocket costs of insured patients, it will no longer be necessary to collect third-party reimbursement rates. Rather, the entire sample would revert to representing direct out-of-pocket consumer payments, made mostly by the working uninsured and covered patients choosing to go out of plan for treatment.

### *Summary of Pricing Issues*

With all these components of the medical care index, the significant current pricing problem for the CPI is collecting third-party insurance reimbursement rates for commodities and services. Direct pricing of health insurance offers relief from this problem. Some approach to indexing the consumer share of the cost of covered services must be found, however, before the problem can be considered solved.

## **Concluding Questions**

This paper has raised three general issues that need to be decided concerning the treatment of health insurance in the CPI: the treatment of employer-paid insurance, quality adjustment of health insurance policies, and the treatment of the consumer share of the cost of covered care. These issues can be highlighted by asking the following specific questions, which the CPI program will be addressing in the coming months:

- *Should the weight of medical care in the CPI be expanded to include the value of employer contributions for health care?*
- *Should changes in health insurance premiums due to increases or decreases in risk—for example, the onset of diseases—be treated as price change or quality changes in the health insurance index?*
- *Should insurance copays, coinsurance and deductibles be included in the weights for individual medical care commodities and services, and indexed by self-pay prices for those items, or should these payments be handled in a different fashion?*

## References

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Table 1  
Weights for Medical Care in the CPI  
Using 1993-95 Consumer Expenditure Weights

	Health Insurance Benefit Weight	
	Distributed among Medical Care items (Indirect Pricing)	Left in Health Insurance (Direct Pricing)
Medical Care	5.9	5.9
Medical Commodities	1.3	1.1
Prescription drugs & medical supplies	0.8	0.7
Non prescription drugs & Medical supplies	0.4	0.4
Medical Services	4.6	4.8
Professional services	2.9	1.7
Physicians' services	1.6	0.5
Dental services	0.8	0.7
Eye care	0.3	0.3
Other medical professionals	0.3	0.2
Hospital & related services	1.4	0.4
Hospital services	1.3	0.4
Nursing homes	0.1	0.0
Health insurance	0.3	2.7
Health Insurance other than Medicare	NA	2.2
Consumer Paid Medicare	NA	0.5

**Attachment**  
**PPI Published Indexes for SIC 6325**  
**Accident, Health, and Medical Insurance Carriers**

6325	Accident, health, and medical insurance carriers
6325P	Primary services
63251	<b>Medical service plans</b>
6325101	Group comprehensive medical service plans
632510101	Group managed care medical service plans
632510102	Group fee-for-service medical service plans
6325102	Other group and individual medical service plans
632510201	Individual comprehensive medical service plans
632510202	Dental service plans
632510203	Supplemental Medicare service plans
632510204	Other medical service plans
63252	<b>Accident and health insurance</b>
63253	<b>Third party administrative services</b>
6235SM	Other receipts