The Medical Care Price Index

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I. The Concept of an Index Number

IT IS A CURIOUS FACT," wrote one of America's foremost economists, Wesley C. Mitchell, "that men did not attempt to measure changes in the level of prices until after they had learned to measure such subtle things as the weight of the atmosphere, the velocity of sound, fluctuations of temperature and the precession of the equinoxes."[1] This lag could not last long, however, in the face of a rapidly mounting accumulation of data that accompanied economic development.

The difficulty of making sense out of masses of raw data encompassing thousands of individual figures, each changing over time in unpredictable fashion, necessitated the development of measures to condense and describe the typical behavior of a series. An index number is one such measure. "It makes possible a ready comparison of the values for different dates and enables one to follow the trend of the series much more easily than when the data are presented in their original form . . ."[2] In particular, Mills states, what is needed is "a measure of the *composite effect* of the numerous forces that are causing individual prices to rise or fall. This measure will constitute an index number of . . . prices."[3] (Italics added.)

Early attempts at constructing index numbers were of necessity quite crude, since statistical theory was embryonic, collection of data was unsystematic, and devices for rapid computation were undeveloped. Contemporary index numbers are a product of

[1]Wesley C. Mitchell, "The Making and Using of Index Numbers," *Bulletin 656,* United States Bureau of Labor Statistics (1938) p. 10.

[2]Frederick C. Mills, *Statistical Methods,* Henry Holt & Co., N. Y. Revised Edition (1938), p. 162.

[3]*Ibid.,* p. 171.

developments in all three areas. Although statistical and economic research in index-number theory and construction continues, Mitchell assures us that "today few, if any, competent judges doubt the validity of index numbers or the substantial accuracy of the results they show when properly constructed from carefully collected data."[4]

II. The Consumer Price Index of the Bureau of Labor Statistics

The Consumer Price Index of the United States Bureau of Labor Statistics is an example of what Mitchell had in mind. Calculation of this index was begun by the Bureau of Labor Statistics during World War I, and regular publication started in 1921. As more and better data on the patterns of actual consumer spending became available, the index underwent continual revision. Currently it represents the different goods and services "bought by city wage-earners and clerical worker families, to use, replace and add to their possessions . . ."[5] The various types and quantities of goods and services consumed by Americans in 1950 were determined by a comprehensive consumer expenditure

[4]Mitchell, *loc. cit.*, p. 11.

[5]"Techniques of Preparing Major B.L.S. Statistical Series," *Bulletin 1168*, United States Bureau of Labor Statistics (December 1954), p. 64.

Table 1

Relative Importance of Major Groups in the C.P.I.

(As of December 1957)

Group	Per cent[a] of total	No. of items[b] priced
Food	28.6	90
Housing	32.9	72
Transportation	11.5	18
Apparel	9.0	75
Medical care	5.3	18
Reading and recreation	5.3	8
Personal care	2.2	13
Other goods and services	5.2	4
Total	100.0	298

Source: (a) *Monthly Labor Review*, July 1958, Vol. 81, p. 769;
(b) *Bulletin 1168*, Bureau of Labor Statistics, p. 68.

survey;[6] these constitute the "market basket" of the index. Price changes for approximately 300 items in the "market basket" are taken to represent the price movements of the several thousand separate goods and services that Americans typically buy. These 300 items are grouped into eight categories. Table 1 shows the categories, their relative importance,[7] and the number of items priced.

A 46-city average which includes large, medium, and small cities in all geographic areas is taken to represent urban United States. Retail outlets customarily patronized by wage earners provide data by personal interview, mail, and/or phone. Interviewers, trained by the Bureau of Labor Statistics (hereafter referred to as B.L.S.), price according to specification so that items are similar from time to time and from city to city. For example, penicillin is priced as follows:

Penicillin (buffered for oral use)
Content 1 tablet, 100,000 units
Pricing Unit 24 tablets[8]

The formula used by the B.L.S. to calculate the price index for any period is basically the following:

$$\text{Price Index} = \frac{\text{Base year quantities x current prices}}{\text{Base year quantities x base year prices}} \times 100$$

The quotient thus represents the change in prices over the two periods, since the quantities in both numerator and denominator are the same. In the words of the Joint Commitee on the

[6]"Family Income, Expenditures, and Savings in 1950," *Bulletin 1097 (Revised)*, United States Bureau of Labor Statistics (June 1953). For additional detail, see *Study of Consumer Expenditures, Incomes and Savings*, tabulated by the Bureau of Labor Statistics for the Wharton School of Finance and Commerce, University of Pennsylvania, 18 volumes, 1956 and 1957.

[7]Relative importance is derived from "weights" obtained by periodic surveys, multiplied by subsequent price changes.

[8]"Specifications Used for the Collection of Prices of Medical Care Items Included in the Consumer Price Index," September 5, 1957, p. 3 (mimeographed), Bureau of Labor Statistics, Washington, D. C.

Economic Report, "It [the C.P.I.] is a *price barometer,* not a measure of changes in the total amount families spend for living, which depend not only on price changes but also on changes in income and in the manner in which families live."[9] (Italics added.)

III. The Medical Care Component of the Consumer Price Index

A. History

Medical care items have been part of the Consumer Price Index since its beginning. However, it was not until the last revision of the index in 1953 that medical care was made a separate group index. Since then a separate Medical Care Group index has been published monthly, for the average of U.S. cities and for ten large cities separately. Indexes of the components of medical care are published quarterly, based on 19 large and small cities, combined. Historical series of medical care indexes going back to 1927 were first published in the Monthly Labor Review of September 1957.[10]

B. Construction

Table 2 lists the items that constituted the medical care component of the Consumer Price Index as of December 1957, along with their relative importance.

The 18 items in Table 2 are of course not the only medical goods and services consumers purchase. It is assumed, however, that the items included are representative of the price movements of related ("families" of) items. Only a sample of all the drugs purchased, for instance, can be included in the index. The medical care price index represents the composite effect of the price

[9] *The Consumer Price Index,* Report of the Joint Committee on the Economic Report on the Consumers Price Index of the United States Bureau of Labor Statistics, Joint Committee Print, 80th Congress, 2nd Session, Washington, 1949, p. 1.

[10] Elizabeth A. Langford, "Medical Care in the Consumer Price Index, 1935-56," *Monthly Labor Review,* September 1957, Reprint No. 2251, p. 5. This article presents the most comprehensive treatment to date of the medical-care price index.

Table 2

Relative Importance of Medical Care Components of the C.P.I.

	Per cent of all-items total			
	1947-49 average	January 1950	December 1952	December 1957
MEDICAL CARE	3.3	5.2	5.1	5.3
Medical care (excluding drugs)	2.9	4.4	4.2	4.4
General practitioner	1.1	1.3	1.6	1.6
Office visit	.6	.6	.7	.7
Home visit	.4	.5	.7	.7
Obstetrical care	.1	.2	.2	.2
Surgeon	.2	.2	.3	.3
Appendectomy	.1	.1	.2	.2
Tonsillectomy	.1	.1	.1	.1
Dentist	.7	1.2	.8	.8
Filling	.5	.9	.6	.6
Extraction	.2	.3	.2	.2
Optometric examination and eyeglasses	.1	.2	.3	.3
Hospital services	.6	.5	.2	.2
Men's pay ward	.2	.2	.1	.1
Semiprivate room Private room	.4	.3	.1	.1
Group hospitalization	—	1.0	1.0	1.1
Accident and health insurance	.2	—	—	—
Prescriptions and drugs	.4	.8	.9	.9
Prescriptions, narcotic and non-narcotic	.2	.4	.3	.3
Penicillin tablets	—	—	.1	.1
Multiple vitamin concentrates	—	—	.2	.2
Aspirin	[1]	.1	.2	.2
Milk of magnesia	.1	.2	.1	.1
Tincture of iodine	.1	.1	—	—

[1] Less than 0.05 per cent.

Source: "Relative Importance of C.P.I. Components, 1957," *Monthly Labor Review,* July 1958, p. 769.

changes of this "medical market basket" since its average price in 1947, 1948, and 1949, the so-called 1947-49 base (i.e., 1947-49 = 100). Prior to January 1953, the base year was the average of the five years 1935-39. On the recommendation of the Bureau of the Budget the base period was changed to 1947-49 in order to reflect more accurately changes in the postwar pattern of consumer expenditures.[11]

The general calculation procedure may be illustrated as follows:

Example 1

General Practitioners' Fees
(Fee for One Office Visit)

Year I	Year II	Index (Year I = 100)
$3.00	$4.00	133

The index number 133 is calculated according to the formula given on page 3:

$$\text{Price Index} \quad \frac{1 \text{ visit} \times \$4}{1 \text{ visit} \times \$3} = \frac{4}{3} = 1.33 \times 100 = 133$$

The index number in this illustration means that general practitioners' fees have increased by 33 per cent since the base period, Year I. (Index numbers less than 100 signify percentage decreases—e.g., 75 represents a 25 per cent decrease from the base period). The index number does *not* measure any qualitative change in the service that may have occurred over the period in question, although B.L.S. attempts to eliminate price changes because of quality changes wherever possible. Neither does it

[11]For a more detailed discussion of the relative merits of the old (1935-39) and new (1947-49) base periods, see Frank Dickinson and James Raymond, "The Economic Portion of Medical Care, 1929-53," pp. 20-26, *Bulletin 99*, Bureau of Medical Economic Research, American Medical Association, 1955; and Frank Dickinson, "Medical Care Prices: Long Run Versus Short Run," *Miscellaneous Publication M-116*, Bureau of Medical Economic Research, September 1958; also Leonard W. Martin, "Personal Consumption Expenditures, 1947-1957, New Series vs. Old Series," *Bulletin 106*, Bureau of Medical Economic Research, American Medical Association, reprinted from the *Journal* of the Association, 169:608-615, Feb. 7, 1959.

measure the number of times physicians were, in fact, visited. Nor does it attempt to measure the greater ease or difficulty in paying for the service.

A common misuse of the index is the attempt to compare the costs of medical care in one city with those in another, or with the U.S. total, by reference to their respective price indexes. Since the indexes measure price *changes* only, it is entirely possible to have a high medical care index and a relatively low cost of medical goods and services within one city or *vice versa*.

To obtain the final index, price changes are multiplied by the internal subgroup weights and by the population weight for the area, and are then compared with similar calculations for the base period. Problems that arise when old items are dropped from the index, when new items are added, or when the quality of an existing item changes, are handled so as not to affect the price movement.[13]

C. Limitations

Apart from statistical "errors" inherent in any sampling procedure (which can be measured and which form the basis for probability statements) the medical care price index has other limitations. In part they arise from the defined scope of the entire C.P.I., and in part they are peculiar to the medical care component. Like the C.P.I. itself, the medical care component does not apply to very low or very high income groups, or to the rural population. If price changes for these groups are found to differ significantly from price changes for the urban wage and clerical worker population, separate indexes must be calculated. The general assumption, however, is that price changes measured by the C.P.I. (and, by inference, its components) are indicative of the trends of price changes in other parts of the economy. The fact that rural patterns of spending for medical care are approaching urban patterns tends to strengthen this assumption.[14]

Some other limitations of the medical care component should be noted. First, whereas a can of salmon (of a given brand) is

[13]See B.L.S. *Bulletin 1168, op. cit.*, pp. 68-69 for an explanation of this "linking" process.

[14]Jean L. Pennock, "Farm Medical Care Expenditures," *Public Health Reports*, vol. 73, April 1958.

identical whether purchased in different cities or in different stores in the same city, the services of physicians, surgeons, dentists, hospitals, and optometrists may not, for various reasons, possess the same uniformity of quality. Thus we may not be averaging similar items. This, however, is a less serious problem than it may appear, since the basic consideration in the index is the *price trend* of the service from one period to another.

Secondly, the relative weights of the separate items comprising the medical care component may sometimes fail to correspond to changed patterns of medical care purchases. This is usually true of periods between weight revisions. Thirdly, the list of items selected by the B.L.S. may not be representative of the actual kinds of medical goods and services currently purchased by consumers. Finally, the importance of medical care in the over-all C.P.I. changes with time, necessitating changes in the weight of the component.

Aware of these limitations, the B.L.S. undertakes continuous supervision of collection and calculation procedures. Major revisions in coverage and weights are based on periodic surveys of consumer expenditures. Business and technical advisory groups are consulted regularly, as well as interested professional organizations such as medical societies and associations of drug manufacturers.

Additional items have been added to the medical care component of the index at various times: surgeons and specialists (eye, ear, nose, and throat) in 1939; hospitalization insurance in 1950; penicillin tablets in 1952. Further additions, such as ancillary charges in hospitals, the newer antibiotics, and surgical insurance, are in progress. Samples of doctors and stores are being broadened from the standpoints of size, type of outlet or physician, and geographical distribution.[15]

D. Validity

Confidence in the B.L.S. medical care price index is established not only by an objective review of B.L.S. methodology but also by a comparison of its indexes with those compiled from

[15]This information is based on a preliminary progress report on the medical care index supplied by Ethel D. Hover, Chief, Commodities and Services Branch, U.S.B.L.S.

independent sources. Such a comparison is difficult to make, however, because of the scarcity of data in the field. In price data we have been able to collect, questions of comparability remain. In our opinion, though, the following three comparisons are of interest as well as use. (The basic data are given in the Appendix.)

We compare, first, indexes of physicians' fees (office visit, delivery, house visit) compiled by the B.L.S. and by the Vermont Agricultural Experiment Station for the years 1927 through 1940. This period was selected because 1940 is the terminal date for the Vermont data and 1927 the beginning date of the B.L.S. series. The indexes are given in the Appendix, Table A-1.

The limitations of this comparison are obvious—the B.L.S. index represents city wage earners on a national basis, the Vermont data are for farmers in one state. Furthermore, the B.L.S. indexes are compiled on a 1947-49 base, those for Vermont on a 1910-14 base. The different base periods may be compensated for by plotting on semi-logarithmic paper, which permits a comparison of rates and directions of change, rather than the absolute magnitudes. The limitation of the one state-U.S. comparison cannot be overcome.

The fact that we have here a continuous series of index numbers, covering a turbulent period of American social, political, and economic history, lends weight to the comparison. If we want to know whether the rates and directions of changes in the prices of medical goods and services are correctly represented by the B.L.S. index, then this comparison has some meaning. Surely, over this 14-year period, the powerful forces that affected prices in the United States could not have left Vermont or any other state, city, or locality untouched. The *magnitude* of the effects is bound to differ, but not the over-all trends.

Moreover, these indexes are truly independent in that B.L.S. does not collect data from farmers for its index. An examination of Table A-1 indicates that the congruence between the indexes is remarkably close. The table also illustrates an important characteristic of medical care prices during this significant period, namely that they were relatively stable in the face of pronounced fluctuations in all other consumer prices.

Tables A-2, A-3 and A-4 compare another component of the medical care index, hospital room rates (private, semi-private, and ward). The three sources of data here are the B.L.S., the American Hospital Association (A.H.A.) and the United Hospital Fund (U.H.F.) of New York for the years 1946-1958. Again the limitations of the comparison are apparent: B.L.S. and A.H.A. are nationwide samples, whereas the U.H.F. represents a group of hospitals in the Greater New York Area. In addition, some duplication is bound to exist between the B.L.S. and A.H.A. data, since both include some of the same hospitals. Although some divergence in the movement of these indexes may be observed (notably in the case of ward rates in New York), the general directions and rates of change are quite similar.

Another comparison may be made between physicians' fees for office and home calls as determined from a survey by the publication *Medical Economics* and indexes of general practitioners' fees for office and house visits in the medical care component of the C.P.I. The results of this comparison are shown in Table A-5. Allowing for variations in the population of physicians sampled, the dates at which the prices were collected, and the survey techniques used, the differences between these two series appear negligible.

These few comparisons strengthen our confidence in the accuracy of the Bureau of Labor Statistics' medical care index. For many medical care items, the B.L.S. appears to be the only readily available source.[16]

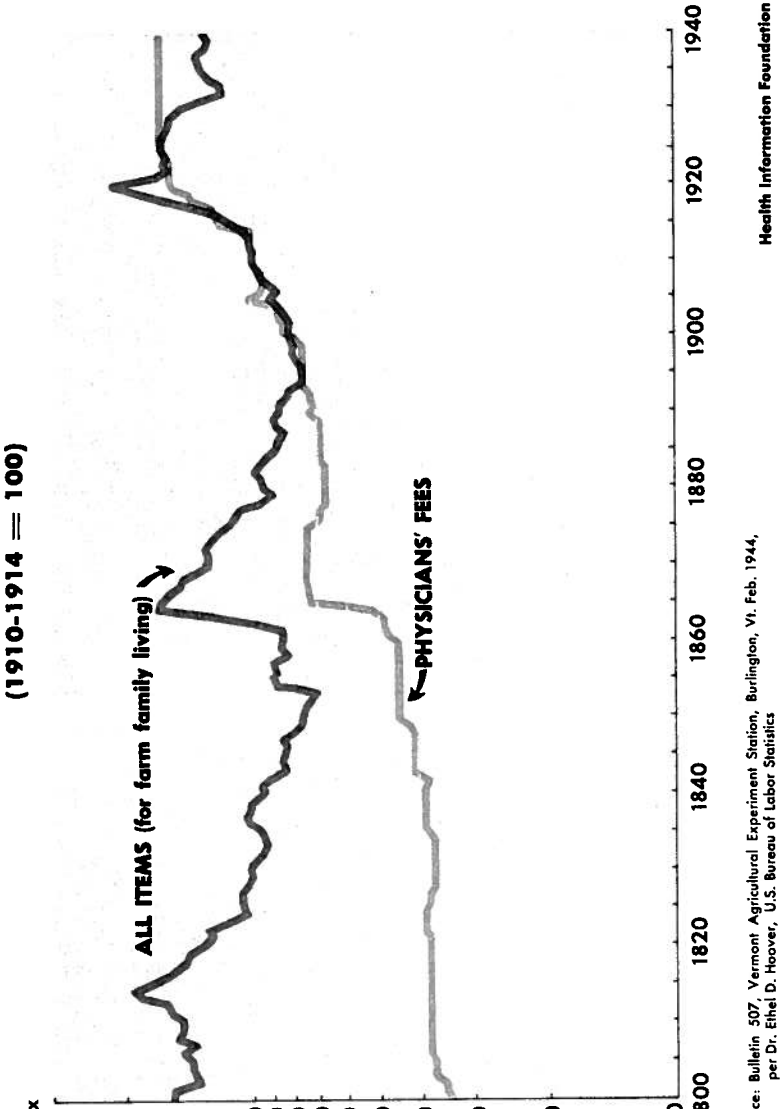
E. Uses of the Index

The medical care price index may be used (a) to describe the general price changes of the "medical market basket" as a whole as well as of its component goods and services, over time; (b) to compare the changes in prices of medical goods and services with changes in the prices of other goods and services purchased by consumers; (c) to adjust ("deflate") expenditure data in order to eliminate the effects of pure price changes from them; (d) to express succinctly the changing value of the medical care dollar,

[16]See, for example, "Average Retail Prices, 1955," *Bulletin 1197* (June, 1956), U.S.B.L.S., Table 4, Medical Care Prices.

Chart 1

Index Numbers of Retail Prices for Vermont Farmers, 1800-1940, All Items and Physicians' Fees, 1800-19
(1910-1914 = 100)



Source: Bulletin 507, Vermont Agricultural Experiment Station, Burlington, Vt. Feb. 1944, per Dr. Ethel D. Hoover, U.S. Bureau of Labor Statistics

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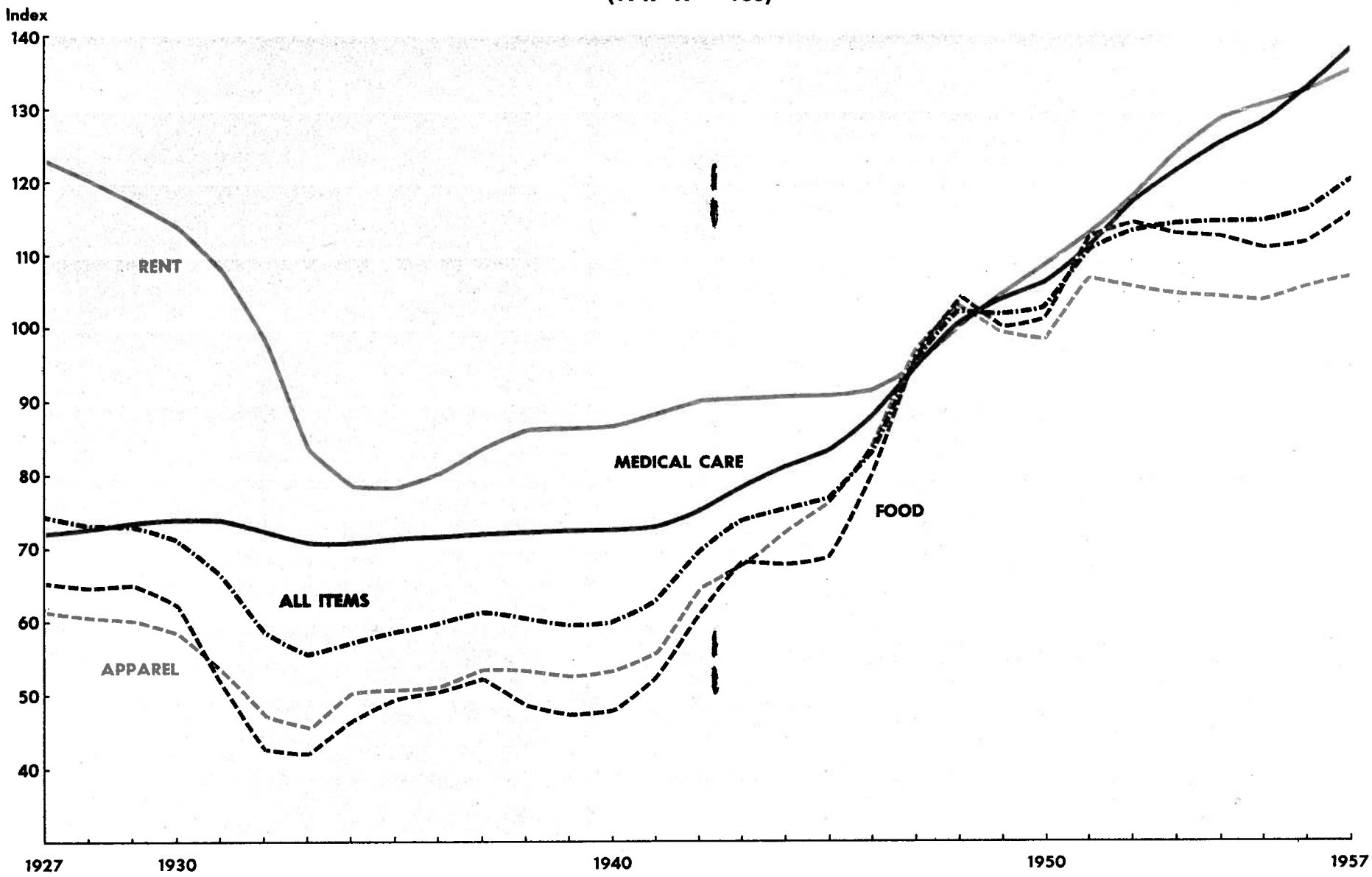
(1947-49 = 100)



Source: *Monthly Labor Review*, Sept. 1957 and *Statistical Abstract of the United States*, U. S. Department of Commerce, 1958.

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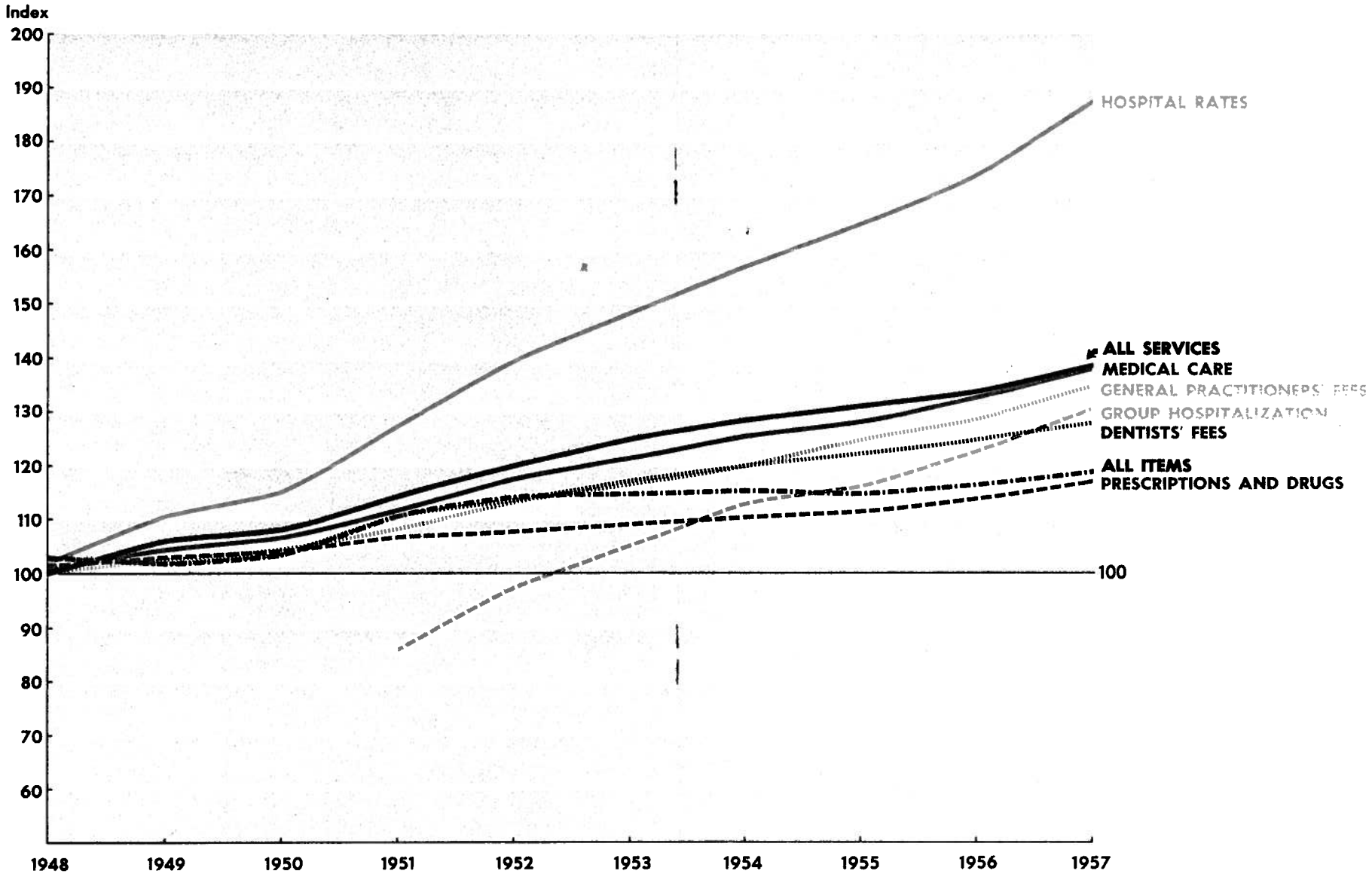
Consumer Price Index and Medical Care Price Indexes, 1948-1957
(1947-49 = 100)



*December 1952 = 100

Source: Monthly Labor Review, Sept., 1957 and U.S. Bureau of Labor Statistics release

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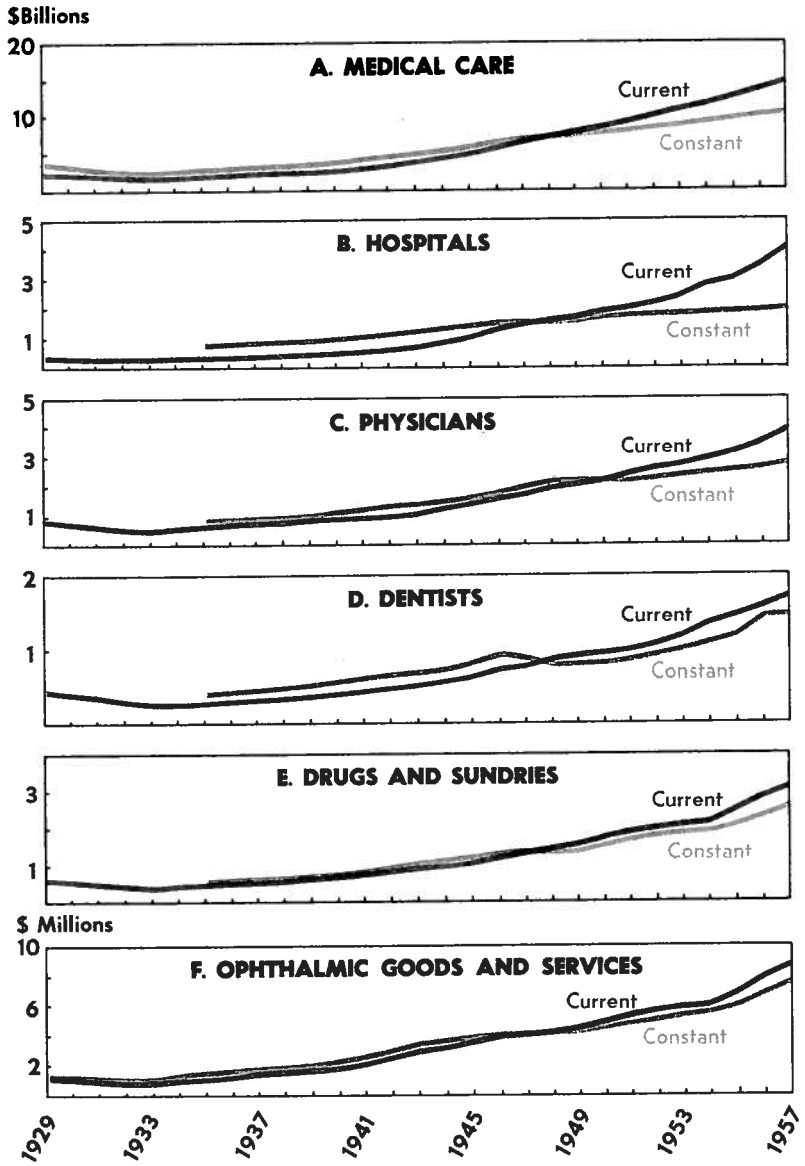
Expenditures for Medical Care in Current and Constant Dollars*
1929-1957



*1947-49 = 100

Source: U.S. Department of Commerce, U.S. Bureau of Labor

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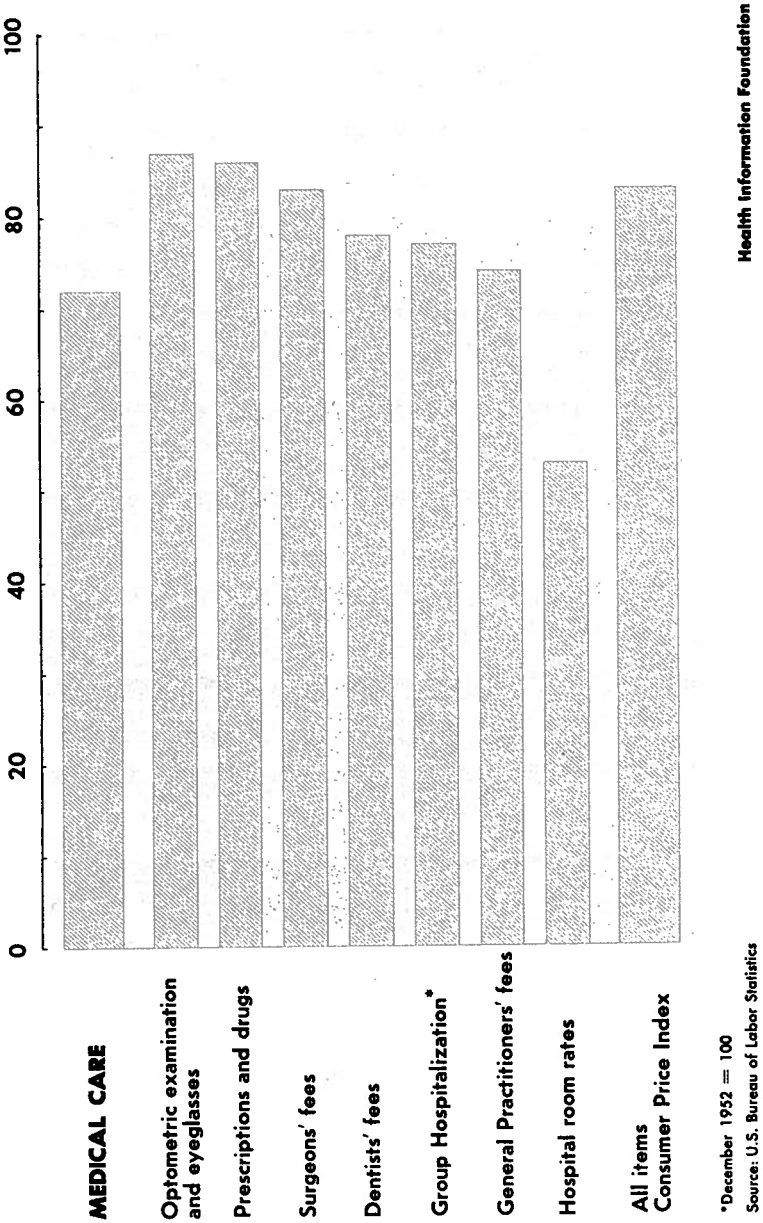
Chart V

Purchasing Power of the Medical Care Dollar, Annual Average, 1957
(1947-49 = 100)



*December 1952 = 100

Source: U.S. Bureau of Labor Statistics

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and (e) perhaps also to set insurance rates. These will be discussed in turn.

(a and b) For its historical interest, and to illustrate the importance of an index, Chart I shows indexes of physicians' fees and farm cost-of-living items for Vermont farmers from 1800 to 1940. This is in all probability the longest series of physicians' fees in existence in the United States. These data were derived primarily from original physicians' ledgers and account books and merchants' records.

One notable characteristic is that physicians' fees fluctuate less violently than do prices of other cost-of-living items. In other words, physicians' fees are relatively less sensitive to general economic changes. It is also interesting that, except for the inflationary period during the War of 1812, physicians' fees responded (with some lag) to upward movements in other prices (e.g., Civil War and World War I) but not readily to downward movements (e.g., 1812-1860; 1865-1895; 1929-1932). Of course, these are stated fees and, during downswings, collections of fees by physicians would decrease.

Of more immediate interest is the medical care index of the B.L.S. This is shown in Chart II, which covers the period 1927 to 1957. Again, the stability of medical care prices relative to other items is clearly evident from 1927 to 1940. The inflationary price rise brought about by World War II was transmitted to medical care prices, which rose (with a lag of a year or so) along with other prices and at an accelerated pace in the post-war years. The latter period is shown in greater detail in Chart III.

In these post-war years the medical care price index rose at a greater rate than the "All Items" Consumer Price Index. This was also true of each component of medical care except prescriptions and drugs. On the other hand, medical care prices (with the exception of hospital room rates and hospitalization insurance) rose at about the same rate as the prices of the "All Services" component of the Consumer Price Index (e.g., rent, automobile and television repairs, haircuts, transit fares, automobile insurance, etc.). Medical care in general consists more of services than

of goods, and it can therefore be expected to follow the "services" price-movement pattern.

(c) Although the medical care component of the Consumer Price Index does not correspond exactly with the medical portion of the Department of Commerce consumer expenditure series,[17] there is enough congruence to warrant its use as a "deflator." Here is a simple example of the procedure:

Example 2

Year I —5 Office Visits to G.P. @ $3.00 per visit = $15.00 total expenditure.
Year II—5 Office Visits to G.P. @ $4.00 per visit = $20.00 total expenditure.

More money was spent for G.P. visits in Year II than in Year I; yet the same number of visits took place. Clearly, the increased expenditure was not an indication of increased services received. Dividing $20.00 by 133, the price index of G.P. fees determined from Example 1 above, gives $15.00 (actually $15.04), which indicates that no more services (visits) were purchased in Year II than in Year I. Dividing current expenditures by a price index is termed "deflating"; the original figures are said to be in "current dollars" and the calculated figures in "constant dollars" or dollars of constant purchasing power. The results are also spoken of as "real expenditures" as opposed to "nominal" expenditures and are a measure of actual volume differences in goods and/or services purchased.

Where the interval between Years I and II is not great, this procedure is the only correct technique for deriving real volume changes from expenditure data; but where the time difference is great, quality changes may vitiate the arithmetic results. To illustrate: Five physician visits in Year II may be more effective than

[17]Specifically, the medical care index does not price the following items that are part of the Commerce Department's Personal Consumption Expenditures series: Drug sundries; orthopedic appliances; services of osteopathic physicians, chiropractors, chiropodists and podiatrists, private duty trained nurses, and miscellaneous curative and healing professions; expense of non-profit hospitals; hospital services other than room rates purchased in proprietary hospitals; some types of health and accident insurance; and funeral and burial expenses. (U. S. Department of Commerce, *National Income, 1954 Edition*, pp. 206-208.) If funeral and burial expenses are excluded from the analysis, the medical care index directly or indirectly prices approximately 85-90 per cent of the medical care dollar, i.e., drug preparations, eyeglasses, physicians, dentists, hospital room rates, and group hospitalization.

five visits in Year I; similarly, $5.00 spent for antibiotics today is far more effective than $5.00 spent for drugs in the pre-antibiotic era.

In Charts IV-A through IV-F, this procedure is applied to actual expenditures for medical care. Chart IV-A shows total consumer expenditures for medical care in "current" and "constant" dollars. Total expenditures from 1929 through 1957 were adjusted (deflated) by the medical care price index. From 1929 through 1948 expenditures for medical care and the prices of medical care rose at about the same rate, so increased expenditures resulted in parallel increases in the volume of medical services received. From 1948 through 1957, however, the steep rise in medical expenditures was partially offset by a relatively steep rise in medical care prices, and the current and constant dollar series thus begin to diverge.

The fact that the constant dollar series continues to rise indicates that expenditures are increasing at an even greater rate than prices. In more concrete terms, from 1948 to 1957 expenditures for medical care in current dollars increased from about 7.7 billion to 15 billion, or about 95 per cent; in constant dollars, the increase ranged from 7.7 to 10.9 billion, or only 42 per cent. Thus, from 1948 through 1957 the real volume of medical goods and services increased by about half instead of doubling, as the current expenditures data would indicate.[18]

To obtain Chart IV-B, expenditures for hospitals were deflated by the hospital room rate component of the medical care price index. Unfortunately, room rates are the only element of hospital prices now included in the medical care index. (This is to be supplemented soon by some ancillary charges). It has been pointed out[19] that charges for room, board, and general nursing (all generally included in room rates) now constitute slightly more than half of all hospital charges and that ancillary charges

[18]The total volume of capital investment in medical services was estimated at 11.5 billion dollars as of 1955, about double the 1929-32 figure. The "real" volume of services derived from our "constant dollar" series over the same period is about 2½ times. See Davis, Michael M., *Medical Care for Tomorrow*, Harper, 1955, pp. 31-32.

[19]Odin W. Anderson, "Hospital Charges in the United States," *Hospitals, Journal of American Hospital Association*, Vol. 31, May 1957, p. 48.

(X ray, laboratory, anesthesia, etc.) have been increasing as a cost factor. We know from other data that the prices of ancillary goods and services have also increased over time. Since indexes measure the *change* in prices rather than the level of prices, the procedure employed here does no violence to the facts. (If, on the other hand, prices of ancillary services had decreased sufficiently over this period to cause over-all hospital charges to decline, our procedure would be in error.)

In money terms, expenditures in current dollars for hospital care increased from approximately 1.6 billion dollars in 1948 to 3.9 billion in 1957, an increase of 144 per cent; in constant dollars the increase ranged from 1.6 to 2.1 billion dollars, or only 31 per cent. This may be explained by the fact that, while hospital admissions have increased, average length of stay has decreased, so the total number of patient days per 1,000 of the population has remained relatively constant from 1948 to date.[20] Analysis of only the current dollar expenditure data would not show these changes in volume of services. The fact that the results shown by the constant dollar series are confirmed by actual analysis of hospital utilization lends added validity to the procedure used here.

In Chart IV-C the deflating procedure is applied to expenditures for physicians. The increase in current dollar expenditures from 1948 to 1957 was 61 per cent (from 2.3 to 3.7 billion dollars); but in constant dollars it was only 22 per cent (from 2.3 to 2.8 billion dollars). Existing data on volume of physician visits per person indicate a doubling from 1928-31 to date.[21] Our constant dollar series in per capita terms yields a remarkably similar result—112 per cent increase from 1935-1937 (B.L.S. has not published a physicians' fee index for 1928-31). The current dollar per capita series, however, is very wide of the mark—278%. Again, independent data on utilization tend to confirm the results of the "deflating" procedure, as well as the accuracy of the C.P.I. as a measure of price change.

Expenditures for dentists, drugs, and ophthalmic goods and services in current and constant dollars are shown in Charts IV-

[20]"The Changing Patterns of Hospital Use," *Progress in Health Services*, Vol. 7, No. 5—May 1958 (Bulletin of Health Information Foundation).

[21]"The Increased Use of Medical Care," *Progress in Health Services*, Vol. 7, No. 8—October 1958 (Bulletin of Health Information Foundation).

D, E, and F. The real volume of goods and services increased in each case, but not at the rates indicated by current expenditure data.

(d) The medical care price index may also be used to give concise expression to the purchasing power of the medical care dollar. For example, as of March 1958 and relative to 1947-49, the medical care dollar was worth 72 cents; the physicians' fee dollar, 75 cents; the surgeons', 83 cents; the dentists', 78 cents; the hospital-room dollar, 53 cents; and the prescriptions and drugs dollar, 86 cents. Each of these values is simply the reciprocal of its corresponding price index. (See Chart V).

(e) Finally, in view of the close relationships between premium rates and costs covered by various types of health insurance, we must consider the possibility that premium rates may come to be adjusted by movements in medical prices (costs). This was implied in a statement recently by William S. McNary, Executive Vice President of Michigan Hospital Service (Blue Cross), to the effect that "because the Blue Cross Comprehensive Contract is designed to provide members with the hospital services they need, its rates must be adjusted upward with hospital costs to cover the higher costs of these services."[22] These adjustments may be informally based on the price index or (as in the case of "escalator clauses" in the wage contracts of about four million workers) arithmetically tied to the index. Whatever the form, the price index will undoubtedly be the focus of the discussion and subsequent arrangements.

IV. Evaluation

The recommendations and comments of a subcommittee of the Committee on Education and Labor of the House of Representatives,[23] which held extensive hearings on the Consumer Price Index (published 1952), may serve as a point of departure in evaluating the medical care price index.

[22]News release, Michigan Blue Cross-Blue Shield, November 14, 1958, p. 4.

[23]*Consumers' Price Index*, Hearings before a subcommittee of the Committee on Education and Labor, House of Representatives, 82nd Congress, First Session, Printed as House Document 404, 83rd Congress, 2nd Session, Washington, 1952. All figures in parentheses refer to page numbers in the appendix which contains the subcommittee's report.

In answer to the question, "Is the Consumer Price Index a good index?" the subcommittee stated: "On the basis of all the testimony presented to the subcommittee we believe that the Consumers Price Index of the B.L.S. is an excellent index and that it enjoys widespread confidence among labor and management groups and the general public" (p. 31). Other points made by the subcommittee were: (a) that the C.P.I. is a good measure of changes in living costs (p. 32); (b) that continuous annual revision rather than the more infrequent complete revisions would be desirable (pp. 33-34); (c) that the B.L.S. should continue its present practice of including excise and sales taxes but excluding income taxes from the index (p. 35); (d) that the index should be compiled and issued more promptly (p. 37); (e) that the system of advisory committees should be continued (pp. 37-38); (f) that the B.L.S. should make all possible efforts to develop techniques that would more adequately reflect quality changes in the goods and services priced for the index.

The subcommittee also stated that "the Consumers Price Index of the B.L.S. is the most important single statistic issued by the government" and that "we believe that the index merits the widespread confidence which the users of the index have expressed in it" (p. 39). In this connection, it may be pointed out that the National Industrial Conference Board, the only other source of a national consumer price index, decided recently to discontinue its own index (published since 1918) because "the official index compiled by the Bureau of Labor Statistics is so widely used."[24]

The foregoing recommendations apply to the Consumer Price Index as a whole. With regard to improvements in the medical care component, certain additional suggestions may be made:

1. Consideration could be given to the possibility of restoring certain items discontinued in mid-1947 because of a cut in the Bureau's budget (e.g., dentists' charges for cleaning teeth, replacement lenses for eyeglasses, hospital room rates for women's pay ward, and fees for a private nurse in hospital), or substituting similar additional items

[24]National Industrial Conference Board, *Management Record*, Vol. XXI, January 1959, p. 19.

that are currently important—e.g., dentures to represent laboratory charges.[25]

2. The speed with which planned revisions (see above, p. 8) are incorporated into the index might be increased.

3. In current practice, fees for an obstetrical case are those charged by a general practitioner or obstetrician. Since there is evidence that more and more deliveries are being performed by obstetricians and gynecologists, it may be advisable to give more weight to specialists' fees for this service.

4. Another possibility is to add fees for inoculations done in the doctor's office. But more data are needed concerning the frequency and types of "office shots" before a final determination can be made.

5. The problem of pricing health insurance premiums presents several difficulties: (a) There are many plans in existence, offering a wide range of benefits—hence the necessity of collecting and comparing a great deal of data from different localities; (b) another problem would be to decide whether increased premiums—which may be the result of increased utilization of services by the insured—should be considered a pure price change.

6. The pricing of drugs also presents problems. Developments in pharmacology are quite rapid, leading to the introduction of new drugs at a fast pace. The problem of which new drugs to price, when to begin pricing them, and when to drop older drugs, is a thorny one. More data on the pattern of utilization of different kinds of drugs are needed.

In view of the increasing importance of medical care in the economy as a whole and in the budgets of American families,[26]

[25] Langford, *loc. cit.*, p. 4.

[26] "Consumer Spending for Medical Care," *Progress in Health Services*, Vol. 7, No. 10—December 1958 (Bulletin of Health Information Foundation).

the medical care component of the C.P.I. is bound to be a continuing focus of discussion and debate. The B.L.S. index is adequate today, and is likely to become more precise in the future; naturally, it could be further improved with larger appropriations. Yet it must be remembered that the index should be used in conjunction with other measures for maximum effectiveness. As the American Statistical Association's technical committee has pointed out with reference to the C.P.I., "A thermometer reading is useful to the physician if used in conjunction with other indications of the health of the patient and as a guide to further diagnosis."[27]

[27] Joint Committee on the Economic Report, *op. cit.*, p. 16.

TABLE A-1

Indexes of Physicians' Fees and Cost of Living, 1927-1940—Bureau of Labor Statistics (1947-49 = 100) and Vermont Agricultural Experiment Station (1910-14 = 100)

Year	Office Visit		Obstetrical Care		House Visit			Cost of Living	
	(V.A.S.)	(B.L.S.)	(V.A.S.)	(B.L.S.)	(V.A.S.)[a]	(V.A.S.)[b]	(B.L.S.)	(V.A.S.)[c]	(B.L.S.)
1927	183	74.1	223	62.8	165	151	78.9	158	74.2
28	183	74.2	223	64.6	165	151	78.8	155	73.3
29	183	75.5	223	66.5	165	151	79.1	154	73.3
30	183	76.2	223	68.1	165	151	79.6	145	71.4
31	183	75.9	223	68.4	165	151	79.6	128	65.0
32	183	74.6	230	67.8	165	151	78.7	116	58.4
33	183	73.1	230	66.4	165	151	76.9	117	55.3
34	183	72.7	230	65.0	165	151	76.5	126	57.2
35	183	73.3	230	65.5	165	151	77.2	130	58.7
36	183	73.5	230	65.8	165	151	78.0	131	59.3
37	183	73.8	230	66.2	165	151	78.3	134	61.4
38	183	73.6	230	66.8	165	151	78.0	127	60.3
39	183	73.8	230	67.1	165	151	78.0	125	59.4
40	183	73.9	230	67.1	165	151	78.0	128	59.9

a. Day home call, no mileage.
b. Day home call, five miles.
c. Indexes of retail prices of goods and services comprising farm family living.

Source: Vermont Indexes calculated from data in "Prices Paid by Vermont Farmers For Goods and Services and Received By Them For Farm Products, 1790-1940; Wages of Vermont Farm Labor, 1780-1940," Bulletin 507 Vermont Agricultural Experiment Station, Burlington, Vermont, February 1944, p. 60; Family Living Index — page 21. Bureau of Labor Statistics Indexes of Medical Items from "Medical Care in the Consumer Price Index, 1936-56" by E. A. Langford, Monthly Labor Review, September 1957; Cost of Living is the B.L.S. Consumer Price Index, Statistical Abstract, 1958, p. 332.

Bureau of Labor Statistics (B.L.S.), American Hospital Association, and United Hospital Fund Indexes of Private Room Rates (Table A-2), Semiprivate Room Rates (Table A-3), and Ward Rates (Table A-4), 1946-1958

TABLE A-2

Year	PRIVATE ROOM RATES			Per cent change from preceding year		
	B.L.S.	A.H.A.	U.H.F.	B.L.S.	A.H.A.	U.H.F.
1946	76.2	n.a.	80	—	—	—
1947	89.0	93	93	16.8	—	16.3
1948	102.1	n.a.	n.a.	14.7	—	—
1949	108.9	107	107	6.7	15.1*	15.1*
1950	112.1	n.a.	111	2.9	—	3.7
1951	122.5	122	121	9.3	14.0*	9.0
1952	134.0	n.a.	129	9.4	—	6.6
1953	142.1	139	133	6.0	13.9*	3.1
1954	150.9	n.a.	136	6.2	—	2.3
1955	157.7	152	149	4.5	9.4*	9.6
1956	164.4	164	155	4.2	7.9	4.0
1957	174.2		163	6.0		5.2
1958	n.a.		169			3.7

n.a. = not available.
* Per cent change from preceding two years.
Source: See end of Table A-4

TABLE A-3

Year	SEMIPRIVATE ROOM RATES			Per cent change from preceding year		
	B.L.S.	A.H.A.	U.H.F.	B.L.S.	A.H.A.	U.H.F.
1946	74.4	n.a.	77	—	—	—
1947	87.4	93	90	17.5	—	16.9
1948	101.9	n.a.	n.a.	16.6	—	—
1949	110.7	107	110	8.6	15.1*	22.2*
1950	114.6	n.a.	115	3.5	—	4.5
1951	126.6	126	130	10.5	17.8*	13.0
1952	138.3	n.a.	148	9.2	—	13.8
1953	145.9	142	159	5.5	12.7*	7.4
1954	153.5	n.a.	169	5.2	—	6.3
1955	160.0	159	172	4.2	12.0*	1.8
1956	170.0	168	184	6.3	5.7	7.0
1957	183.0		194	7.6		5.4
1958			204			

n.a. = not available.
* Per cent change from preceding two years.
Source: See end of Table A-4.

TABLE A-4

Year	WARD RATES			Per cent change from preceding year		
	B.L.S.	A.H.A.	U.H.F.	B.L.S.	A.H.A.	U.H.F.
1946	69.9	n.a.	73	—	—	—
1947	85.8	94	83	22.7	—	13.7
1948	102.3	n.a.	n.a.	19.2	—	—
1949	111.9	106	117	9.4	12.8*	41.0*
1950	117.2	n.a.	120	4.7	—	2.6
1951	131.2	130	140	11.9	22.6*	16.7
1952	145.3	n.a.	166	10.7	—	18.6
1953	155.1	149	182	6.7	14.6*	9.6
1954	164.4	n.a.	185	6.0	—	1.6
1955	173.9	166	212	5.8	11.4*	14.6
1956	183.8	178	240	5.7	7.2	13.2
1957	202.3		243	10.1		1.3
1958			245			0.8

n.a. = not available.

* Per cent change from preceding two years.

Source: Bureau of Labor Statistics indexes from Monthly Labor Review, September 1957 and current release (1947-49 = 100); American Hospital Association indexes calculated from data in "Hospital Rates, 1956" published by the Association, (1947 and 1949 = 100); United Hospital Fund indexes calculated from medians of their annual surveys, (1946-47 = 100).

TABLE A-5

Price Changes for Physicians' Fees from Bureau of Labor Statistics and Medical Economics Magazine

Per cent change from	OFFICE VISIT			HOUSE VISIT		
	B.L.S.	Medical Economics	Difference	B.L.S.	Medical Economics	Difference
1937-1946	+23.2	+27.5	4.3	+17.4	+20.9	3.5
1946-1947	+ 6.5	+ 7.0	.5	+ 6.2	+ 7.1	.9
1947-1948	+ 4.1	+ 7.5	3.4	+ 2.6	+ 5.4	2.8

Source: B.L.S. indexes from Langford, E. A., "Medical Care in the Consumer Price Index: 1936-56," Monthly Labor Review, Sept. 1957; Medical Economics, May 1948, p. 54.

About Health Information Foundation—

The Foundation was organized in 1950 by a group of leaders in the drug, pharmaceutical, chemical, and allied industries who believe that the health field can continue its great progress only if citizens assume responsibility for its freedom.

These progressive representatives of the more than 200 companies supporting the Foundation decided they could serve the public interest by:

—documenting through research the accomplishments of the present system of medical care;

—defining areas in the health field in need of improvement and investigating possible solutions to current problems;

—bringing, through all media of communication, research findings, needed facts and new knowledge related to health problems to organizations active in the health field and to the public.

Today the Foundation is studying many of the most vital problems related to health in the United States, among them the ways by which voluntary health insurance can be expanded and improved, the special problems of Americans over 65, and the opinions and attitudes of the general public toward health services.

The Foundation's president is George Bugbee; its research director is Odin W. Anderson, Ph.D. Harry I. Greenfield, Ph.D. is a lecturer in the Department of Economics at Hunter College, New York, N. Y., and at the time of writing this report was Research Associate at Health Information Foundation.