Health Care Expenditures in Nine Industrialized Countries, 1960–76

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This article reports the findings of a study developed to compare health care costs in the United States with those of eight other industrially advanced countries over the period 1960–76. All of the countries studied were found to share with the United States the problem of increased health care spending that has outpaced inflation in other sectors of the economy and continues to consume a growing share of national resources. The American growth rate in these expenditures has, in fact, been lower than that of all the other countries. Though U.S. health care expenditures have traditionally been relatively high when measured as a share of gross national product, Canada outspent the United States in this respect during the 1960's. In more recent years, West Germany, the Netherlands, and Sweden have devoted a larger share of GNP to health care than has the United States.

Over the years the Social Security Administration has received numerous queries on foreign health care expenditures from persons in and outside of Government. Interest in the comparative costs of American and foreign health care systems has been heightened by the various national health insurance proposals that have come before Congress and by concern over the continuing rise in domestic outlays for health services.

The study on which this article is based was undertaken to determine the level of spending on health care in eight countries (Australia, Canada, Finland, France, the Federal Republic of Germany, the Netherlands, Sweden, and the United Kingdom) that are at an advanced stage of economic development similar to that of the United States. These nations, which have been the focus of most of the questions, provide examples of virtually all the forms of health care delivery in the Western World.[1]

Definitions and Data Sources

The analysis here is based on the concept of health care developed by the Office of Research and Statistics of the Social Security Administration and now used by the Office of Research and Health Care Financing Administration. The totals for physician, diagnostic, and hospital services include direct and indirect government subsidies as well as other forms of public and private funding. The cost of over-the-counter medicines is factored in along with prescription drugs, as are administrative expenses with health insurance costs. Dental care, nursing-home care, eyeglasses, and appliances are also included. Public and private disbursements of a cash-benefit, income-maintenance nature are not included.

The national data for the study were obtained largely from official Government abstracts and other Government publications.[2] This information was supplemented by material provided directly by Government offices abroad in response to specific questions. The source of the estimates for the United States is the national health expenditure series prepared by the Social Security Administration and the Health Care Financing Administration. The data provided by Canadian sources reflect basically the same reporting approach as used by the United States and should therefore represent a high degree of comparability with American data.

Because the other countries studied have health care delivery systems less akin to our own and employ a wide variety of reporting approaches in presenting their expenditure statistics, appropriate estimates had to be developed to bridge existing gaps. The resulting approximations, however, were reviewed and amended where required by know-

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[1] Joseph G. Simanis, **National Health Systems in Eight Countries,** Office of Research and Statistics, Social Security Administration, 1975.

[2] For the most significant public sources used, see the list of references at the end of this article.

ledgeable specialists in each of the countries concerned. For West Germany, it was necessary to compile estimates for private health insurance expenditures, for private out-of-pocket expenses, and for sizable Government health expenditures outside the public medical care system (mostly in the form of hospital subsidies). Other estimates of West German expenditures tend to omit one or more of these categories and thus are somewhat lower than the figures given here.

This research effort has also benefited from the data and insights provided by a number of economic studies conducted by national and international organizations, beginning with the pioneering work of Brian Abel-Smith more than a decade ago.[3] This widely recognized survey of shares of gross national product (GNP) spent on health care was followed by others, including Social Security Administration studies published in 1970 and 1973.[4]

The growing concern over increasing health care expenditures in the United States and other nations also became a topic for review at a number of meetings and symposia later in the decade. Conferences were held on the effects of inflation on the health care sector (1974), health costs and expenditures (1975), cost containment policies (1976), and the rising cost of medical care under social security programs (1977), the latter meeting held under the sponsorship of the International Labor Organization (ILO).[5] More recently, the Organization for Economic Cooperation and Development (OECD) published a study of health care expenditures in its 24 member countries that analyzed developments in the public sector in considerable detail.[6] Cited as causes for rising health care costs were a wide variety of factors, with emphasis on ordinary inflationary pressures, demographic changes, and technological development.

[3] Brian Abel-Smith, **An International Study of Health Expenditures,** World Health Organization (Public Health Paper No. 32), 1967, and **Paying for Health Services: A Study of the Costs and Sources of Finance in Six Countries,** World Health Organization (Public Health Paper No. 17), 1963.

[4] Joseph G. Simanis, "International Health Expenditures," **Social Security Bulletin,** December 1970, pages 18-19, and "Medical Care Expenditures in Seven Countries," **Social Security Bulletin,** March 1973, pages 39-42. See also, Joseph P. Newhouse, "Medical-Care Expenditure: A Cross-National Survey," **The Journal of Human Resources,** Winter 1977, pages 115-125.

[5] The following inflation conferences were held in 1974: the National Center for Health Services Conference on the Effects of Inflation and Anti-Inflationary Policies on the Health Sector, September 15-16; the Health, Education, Income Security and Social Services Conferences on Inflation, September 19-20; and the White House Summit on Inflation, September 27-29. On June 2-4, 1975, and April 26-28, 1976, respectively, the John E. Fogarty International Center for Advanced Study in the Health Sciences, National Institutes of Health, sponsored an "International Conference on Health Costs and Expenditures" and a conference on "Policies for the Containment of Health Care Costs and Expenditures." See also, "Cost Trends, Causes and Possible Cost Containment Measures," a paper presented at the Meeting of Experts on the Rising Cost of Medical Care Under Social Security, Social Security Department, ILO, Geneva, May 17-20, 1977.

[6] Organization for Economic Cooperation and Development, **Public Expenditures on Health** (Studies in Resources Allocation No. 4), July 1977.

Methods of Comparing Costs

This study compares annual health care expenditures for the United States and eight foreign countries over the period 1960–76. The figures are presented as shares of GNP, as actual outlays, and as expenditures adjusted for cost and wage inflation. The results confirm the widespread view that rising health care costs are a worldwide phenomenon and that they have outpaced inflationary trends in the rest of the economy in each of the countries studied. The findings do not support the general assumptions that health care costs are rising faster in the United States than elsewhere and that the share of national resources devoted to the health care sector is greatest in the United States. The United States ranked fourth in the share of GNP devoted to health care in 1975. It had the lowest average annual rate of increase in actual expenditures during the entire study period.

Shares of GNP

Data on the percentages of GNP devoted to health care expenditures in the countries studied are as follows:

Country	Health care expenditures as percent of GNP, 1975
Federal Republic of Germany	9.7
Sweden	8.7
Netherlands	8.6
United States	8.4
France	8.1
Canada	7.1
Australia	7.0
Finland	6.8
United Kingdom	5.6

The nations are listed in descending order according to the share of their GNP expended for this purpose in 1975. The Federal Republic of Germany, which spent 9.7 percent of its GNP on health care, ranks first, followed by Sweden (8.7 percent) and the Netherlands (8.6 percent). The United States ranks fourth with 8.4 percent. The United Kingdom, which has consistently devoted the smallest share of GNP to health care since the mid-1960's, ranks last with only 5.6 percent.

The percentage of GNP devoted to health care from 1960 through 1975 or 1976 by all the countries studied is given in table 1. Although Sweden expended the lowest proportion of GNP on health care in 1960, by 1975 it was devoting the second highest share for that purpose. Canada shifted in the opposite direction. That country spent 5.6 percent of its GNP on health care in 1960 (ranking first among the nations studied); in 1975, it spent 7.1 percent for that purpose (ranking sixth). In other dramatic shifts during the period 1960–75, Australia fell from third place (which it shared with France) to seventh and West Germany rose from fifth place to first. The position shift for Sweden took place between 1960 and 1965 but those for Australia, Canada, and West Germany occurred primarily after 1965. Though the remaining countries experienced annual in-

Table 1.—Health care expenditures as percent of gross national product, 1960–76

Country	Percent																
	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
Australia	5.0	5.1	5.2	5.2	5.2	5.2	5.4	5.4	5.5	5.6	5.6	5.9	6.1	6.1	6.0	7.0	7.7
Canada	5.6	5.9	5.9	6.0	6.0	6.1	6.1	6.4	6.6	6.8	7.1	7.4	7.2	6.8	6.7	7.1	7.1
France	5.0	5.1	5.2	5.4	5.8	5.9	6.1	6.2	6.2	6.3	6.6	6.8	6.9	7.0	7.3	8.1	8.2
Federal Republic of Germany	4.4	4.5	4.6	4.8	4.8	5.2	5.6	6.1	6.2	6.3	6.1	6.6	7.1	7.6	8.5	9.7	....
Netherlands	....	....	4.4	4.7	4.8	5.0	5.1	5.3	5.9	6.0	6.3	6.8	7.2	7.4	7.7	8.6	8.5
Sweden	3.5	....	5.0	5.2	5.5	5.8	6.2	6.6	7.0	7.2	7.5	8.0	8.0	7.9	8.2	8.7	....
United Kingdom	3.8	3.8	3.8	3.8	3.8	3.9	4.3	4.4	4.4	4.5	4.9	5.0	5.2	5.3	5.5	5.6	5.8
United States	5.3	5.5	5.6	5.7	5.8	5.9	5.8	6.2	6.5	6.7	7.2	7.6	7.8	7.7	7.8	8.4	8.6
Finland	4.2	4.3	4.6	4.7	4.9	5.2	5.4	5.7	6.0	6.0	5.9	6.2	6.2	7.4	6.1	6.8	7.2

creases in the proportion of their GNP devoted to health care, their position remained stable in relation to those of the other countries studied.

Although the data do not permit sweeping comparisons of expenditures in one country with those in another, some trends in overall expenditures are evident. The costs of health care have been continually increasing, generally at a more rapid rate than the rise in the GNP. The annual rate of increase in health care expenditures for all the countries studied except Canada have been at least 20 percent higher than their annual GNP growth rate since 1960. In some of the countries, the annual rate of growth in health care expenditures has exceeded the annual rate of growth in GNP by 50 percent.

The findings of Brian Abel-Smith led many analysts in the early 1960's to expect that the continual increase in health care expenditures in industrialized countries would typically absorb an additional 1 percent of GNP for health care every 10 years. This estimate, however, now appears to have been overconservative.[7] All the countries studied except Australia and the United Kingdom exceeded this rate in the 1960's. In the 1970's the rate of increase has on balance accelerated. If the rates prevailing through 1975 continued unabated through 1979, only Canada would have closed out the decade with less than an additional 1 percent of GNP expended on health care. Furthermore, at the prevailing rates, the average for the nine countries would be more than an additional 2.5 percent of GNP absorbed by health costs over the decade. The increases in the 1960's ranged from 0.6 percentage points (for Australia) to 3.7 percentage points (for Sweden) and those from 1970 through 1975 alone ranged from 0.7 percentage points (for the United Kingdom) to 3.6 percentage points (for the Federal Republic of Germany). All the countries but Canada registered larger rate increases in 1970–75 than in the 1960's.

[7] See "Cost Trends, Causes, and Possible Cost Containment Measures," a discussion paper prepared by the Social Security Department, ILO, for a Meeting of Experts on the Rising Costs of Medical Care Under Social Security, Geneva, May 17–20, 1977, and Robert Maxwell, "International Health Costs and Expenditures—An Hors D'Oeuvre" in **International Health Costs and Expenditures,** Proceedings of an International Conference on Health Costs and Expenditures, the John E. Fogarty International Center for Advanced Study in the Health Sciences, National Institutes of Health, Bethesda, Md., June 2–4, 1975.

Actual Expenditures

When health care expenditures themselves are examined, rather than expenditures as a share of GNP, the change in the rankings is significant (table 2). For the period 1969–76, Australia ranked first on that basis, with an average annual increase of 20.46 percent. For all the countries studied except the United States, Canada, and Sweden, health care expenditures increased by more than 15 percent per year during that period. The lowest average percentage change in expenditures for health care (12.64 percent) was registered by the United States. During the entire 15-year period since 1960, the Netherlands experienced the highest average annual increase (17.35 percent), followed by Finland (16.58 percent) and France (14.84 percent). Again, the United States had the lowest ranking, registering an average annual increase of only 10.86 percent.

For all the countries studied, the annual rates of increase in the consumer price index (CPI) were smaller than those for health care expenditures. Except in the United Kingdom, the latter expenditures rose at more than twice the annual rate of growth for the CPI during the period 1960-76. In Australia, Canada, West Germany, and the Netherlands, the annual growth rate for health care expenditures was twice that for the CPI during 1969-76.

Expenditures Adjusted for Inflation

When the annual rate of growth in health care expenditures is adjusted for changes in the CPI, a new sequence emerges. For the period under review, West Germany took first place with a yearly increase of 11.30 percent, followed by the Netherlands (9.69 percent) and Australia (9.55 percent). The United States remained low on the list with an increase of only 5.93 percent. The United Kingdom had the lowest rate of growth—5.13 percent—despite registering a CPI increase of 13.77 percent per year since 1969, a rate higher than that of any other country. The reductions in the annual growth rate figures for health care expenditures caused by adjustments for changes in the CPI range from a high of 72 percent for the United Kingdom (from 18.15 percent to 5.13 percent) to a low of 36 percent for West Germany (from 17.74 percent to 11.30 percent).

For all the countries studied, the annual rates of increase

Table 2.—Annual percentage increase in consumer price index (CPI), wage index (WI), health care expenditures, gross national product (GNP), and population, 1960–76

Country (ranked) by 1969–76 health care expenditures	Percentage increase													
	CPI		WI		Health care expenditures						GNP		Population	
					Actual		Adjusted for—							
							CPI		WI					
	1960–76	1969–76	1960–76	1969–76	1960–76	1969–76	1960–76	1969–76	1960–76	1969–76	1960–76	1969–76	1960–76	1969–76
Australia	5.62	9.87	9.03	13.74	14.15	20.46	7.99	9.55	4.69	5.89	11.18	15.37	1.78	1.54
Finland	7.72	10.90	11.90	16.48	16.58	18.92	8.30	7.31	4.28	2.12	12.81	15.79	.41	.34
Netherlands	5.80	7.94	10.57	12.46	17.35	18.37	10.35	9.69	8.26	5.25	11.33	12.73	1.14	.97
United Kingdom	7.63	13.77	10.60	15.72	13.00	18.15	5.12	5.13	2.90	2.28	10.42	15.00	.41	.17
Federal Republic of Germany[1]	3.81	5.78	8.90	10.53	14.45	17.74	10.23	11.30	5.11	6.59	9.15	11.00	.73	.50
France	5.89	8.51	11.12	15.08	14.84	16.53	7.91	7.39	3.41	1.25	11.30	12.43	.92	.72
Sweden[2]	6.21	7.82	10.20	11.59	14.42	14.63	7.75	6.29	3.77	2.60	9.71	10.98	.58	.45
Canada	4.46	6.76	7.67	10.95	12.18	14.29	7.39	6.65	4.23	2.66	10.58	13.25	1.61	1.37
United States	4.21	6.52	5.34	7.11	10.86	12.64	6.46	5.93	5.24	5.18	7.92	8.99	1.10	.86

[1] Data for 1960–75 and 1969–75.

[2] Data for 1965–75 and 1969–75.

in the consumer price index (CPI) were smaller than those for health care expenditures. Except in the United Kingdom, the latter expenditures rose at more than twice the annual rate of growth for the CPI during the period 1960–76. In Australia, Canada, West Germany, and the Netherlands, the annual growth rate for health care expenditures was twice that for the CPI during the period 1969–76.

Because the health care industry is extremely labor-intensive—wages and earnings represent more than 50 percent of costs and, in some countries, as much as 70 percent—consideration should be given to the role played by annual growth rates in wages and earnings in the medical sector of the economy. When health care expenditures are deflated by widely varied annual growth rates in wages, still another pattern emerges. The annual rate of growth in wages ranged from 5.34 percent to 11.90 percent from 1960 through 1976 and from 7.11 percent to 16.48 percent from 1969 through 1976. During both time periods, the average annual growth rate in wages exceeded the rise in the CPI.

As table 2 shows, when an adjustment was made for wage increases, West Germany had the highest annual rate of growth in expenditures for health care from 1969 through 1976 (6.59 percent). During this period, France had the lowest annual rate of growth (1.25 percent). Canada, Finland, Sweden, and the United Kingdom also had low growth rates—2.66 percent, 2.12 percent, 2.60 percent, and 2.28 percent, respectively. Similar changes in sequence emerge for health care expenditures when they are examined over the period 1960–76.

Public Expenditures for Health Care

A recent OECD study revealed that the public expenditures of its member countries have risen 25 percent more rapidly than their GNP since 1960 and that more than 20 percent of this growth can be attributed to health care expenditures alone.[8] In the mid-1970's, average public expenditures for health purposes by OECD countries were estimated at 4.5 percent of gross domestic product (GDP).[9] This proportion represents somewhat less than 80 percent of total expenditures, reflecting the continuing significance of private spending in some countries. An analysis of per capita income and shares of GNP devoted to health expenditures by the member countries revealed that the wealthier countries, as expected, spend relatively more on health care than do the poorer ones.

Public expenditures for health care as a share of national resources have been increasing for the past 20 years because the central governments of industrialized countries have long embraced the goals of reducing inequality in the access to and use of medical care and of improving the quality of life of the population as a whole. Recent data indicate, however, that these goals are being achieved at higher costs than expected.

Accurate yearly data are not yet available on public expenditures for health care over any extended period for the countries included in this study.[10] Expenditure data for medical care under social security programs, however, have

[8] "Public Health Expenditures: Towards a Better Utilisation of Resources," **OECD Observer,** May 1977, pages 9-14.

[9] Organization for Economic Cooperation and Development, **op. cit.,** page 10. For most countries, gross domestic product and gross national product differ only minimally and the two can generally be used interchangeably.

[10] The World Health Organization publishes annual statistics on Government expenditures for health care that, in most cases, are drawn from the **United Nations Statistical Yearbook** or the statistical annual of the relevant country. Some countries are not included and, for those that are, occasional gaps occur in the years covered. Data for different years are sometimes drawn from different sources, raising questions of comparability. Each country also has a different approach toward dividing health care costs between the public and private sectors.

been provided by the International Labor Organization for some countries in certain years.[11] Although several studies[12] have demonstrated that countries differ in how much of their medical care is provided under social security, the expenditure data compiled by the ILO can be useful, not so much for intercountry analysis, but for observing some of the recent trends in public expenditure levels within the countries themselves.

Table 3 contains relevant ILO data on social security expenditures for medical care as a percentage of gross domestic product (GDP) and on a per capita basis for most of the countries studied. An examination of the data reveals that social security expenditures for medical care, as measured in shares of GDP, have about doubled since 1960 in France, the Federal Republic of Germany, Sweden, and the United States. In the same period, they have more than tripled in Canada and the Netherlands. In contrast, these expenditures have increased by only 15 percent in the Uni-

[11] These data are derived from answers to periodic ILO questionnaires requesting expenditure and income figures for social security programs. The countries total their figures according to ILO specifications to achieve the most nearly comparable data available. The ILO publishes these data periodically in the **Cost of Social Security.**

[12] International Labor Organization, **The Cost of Medical Care** (Studies and Reports, New Series, No. 51), 1959; Dr. Milton I. Roemer, **The Organization of Medical Care Under Social Security** (Studies and Reports, New Series, No. 73), 1969; and Derick Fulcher, **Medical Care Systems,** 1974.

Table 3.—Social security medical care benefit expenditures:[1] Expenditures as percent of gross domestic product (GDP) and index of expenditures as percent of GDP and of per capita expenditures, 1960–75

Country and year	Social security medical care benefit expenditures		
	As percent of GDP	Index, 1960 = 100	
		Expenditures as percent of GDP	Per capita expenditures (in constant prices)[2]
France:			
1960	2.4	100.0	100.0
1965	3.5	145.8	184.8
1966	3.5	145.8	198.3
1967	...	...	...
1968	...	...	...
1969	3.6	150.0	238.3
1970	3.8	158.3	265.9
1971	4.0	166.7	291.4
1972	4.4	183.3	322.2
1973	4.5	187.5	344.5
1974	4.6	191.7	356.5
1975	...	...	409.9
Federal Republic of Germany:			
1960	2.7	100.0	100.0
1965	3.2	118.5	146.1
1966	3.5	129.6	160.5
1967	3.9	144.4	176.4
1968	3.8	140.7	186.0
1969	3.8	140.7	197.5
1970	3.9	144.4	224.5
1971	4.4	163.0	261.9
1972	4.8	177.8	294.2
1973	5.1	188.9	325.4
1974	5.7	211.1	368.3

(See footnotes at end of table.)

Table 3.—Social security medical care benefit expenditures:[1] Expenditures as percent of gross domestic product (GDP) and index of expenditures as percent of GDP and of per capita expenditures, 1960–75—**Continued**

Country and year	Social security medical care benefit expenditures		
	As percent of GDP	Index, 1960 = 100	
		Expenditures as percent of GDP	Per capita expenditures (in constant prices)[2]
United Kingdom:[3]			
1960	3.3	100.0	100.0
1965	3.3	100.0	119.3
1966	3.4	103.0	125.6
1967	3.4	103.0	127.8
1968	3.5	106.1	135.2
1969	3.5	106.1	138.1
1970	3.5	106.1	137.7
1971	3.7	112.1	151.8
1972	3.8	115.2	155.8
1973	3.8	115.2	164.2
1974	3.8	115.2	168.8
United States:[3]			
1960	1.1	100.0	100.0
1965	1.1	100.0	123.9
1966	1.1	100.0	133.0
1967	1.6	145.5	197.4
1968	2.0	181.8	243.7
1969	2.1	190.9	264.5
1970	2.2	200.0	273.2
1971	2.3	209.1	293.3
1972	2.5	227.3	329.2
1973	2.5	227.3	341.6
1974	2.6	236.4	346.9
Netherlands:			
1960	1.7	100.0	100.0
1965	2.0	117.5	153.9
1966	2.3	135.3	173.9
1967	2.8	164.7	224.0
1968	3.4	200.0	291.8
1969	3.7	217.6	324.7
1970	3.9	229.4	368.2
1971	4.4	258.8	428.0
1972	4.6	270.6	465.6
1973	4.7	276.5	501.3
1974	5.1	300.0	542.1
Sweden:			
1960	2.9	100.0	100.0
1965	3.7	127.6	159.8
1966	4.1	141.4	181.8
1967	4.6	158.6	206.5
1968	5.1	175.9	239.8
1969	5.5	189.7	269.5
1970	6.2	213.8	315.8
1971	6.4	220.7	320.6
1972	6.5	224.1	336.5
1973	6.8	234.5	357.2
1974	7.3	251.7	395.0
Canada:[3]			
1960	2.3	100.0	100.0
1965	3.0	130.4	157.2
1966	3.0	130.4	164.3
1967	4.7	204.3	268.6
1968	5.2	226.1	307.1
1969	5.6	243.5	337.8
1970	6.4	278.3	399.8
1971	7.1	308.7	455.4

[1] Expenditures for health services provided beneficiaries (hospital care; physicians', dentists' and other professional and laboratory services; and prosthetic appliances; etc.). Excludes payments made by beneficiary for services received, except for those reimbursed under social security.

[2] Expenditures for total population, deflated by the consumer price index.

[3] Fiscal year data.

Source: Social Security Department, International Labor Organization, "Cost Trends, Causes and Possible Cost Containment Measures" (paper presented at the Meeting of Experts on the Rising Cost of Medical Care Under Social Security), Geneva, May 17–20, 1977.

ted Kingdom. Social security expenditures for medical care in the period 1960–65 involved smaller increases than expenditures after 1965. This finding is particularly true for countries with the greatest overall rate of growth—Canada, the Netherlands, Sweden, and the United States.

When per capita expenditures for medical care under social security programs are deflated by consumer prices, they show even greater variability among the countries studied. The per capita costs for the United Kingdom, of course, registered the smallest increase from 1960—68.8 percent. The per capita costs for the Netherlands increased more than 400 percent. The increase for Canada and France exceeded 300 percent.

Several factors have contributed to the growth in public expenditures for health care. High cost and price inflation account for much of the rise. Other causes frequently cited that have generally been present in varying degrees in all the advanced industrialized countries are the increasingly labor-intensive nature of modern medicine, the growing role of expensive technology in diagnosis and treatment, and the increasing need for medical attention that comes with the aging of populations.[13]

List of References

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GNP, Wages, Prices, and Population

Data on GNP, the consumer price index, the wage index, and population growth for the various countries were derived from International Monetary Fund, **International Financial Statistics, 1978 Supplement, Annual Data 1953–1977,** Washington, D.C., May 1978.

[13] For a more detailed discussion of the causes of rapidly rising health care costs, see John R. Coleman and Joseph G. Simanis, "Rising Health Care Costs: A World Problem," **Appalachian Business Review,** No. 3, 1979, pages 4-16.