How Our Health Care System Works

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Executive Summary

A new model of the medical marketplace shows that U.S. health care costs are rising because Americans are overinsured and that government policies are the primary reason.

The most important change in health care finance in the past 30 years is the increased opportunity to spend other people's money:

- In 1965, patients paid about one-half of their medical bills out-of-pocket and the remainder was paid by a third party (employer, insurance company or government).

- Today, only one dollar in five of health care spending is paid out-of-pocket.

Evidence suggests that when we are spending our own money, we are conservative, prudent shoppers in the medical marketplace. When we are using someone else's money, we consume much more.

- Over the past thirty years, the share of our income spent out-of-pocket on health care has actually declined — falling from 4 percent of total consumption expenditures in 1960 to 3.6 percent in 1990.

- Over the same period, the amount spent from all sources has more than tripled — rising from 4.2 percent of consumption in 1960 to 13.3 percent in 1990.

We over-rely on third-party payers because, through generous tax subsidies, government "pays" up to one-half of the cost of employer-provided health insurance and, through Medicaid and Medicare, government directly pays more of the bill for more people. A comparison between the private and public sectors is revealing:

- Over the past three decades, the share of private health care spending in total U.S. consumption grew at an annual rate of 1.3 percent.

- The share of government health care spending in total U.S. consumption grew at three times that rate.

The bulk of government health care subsidies go not to the poor but to middle- and upper-income families. In return for these subsidies, the economy pays a heavy price:

- Each additional dollar spent on health care buys 43 cents of real services and 57 cents in higher prices.

- In return for each additional $1 of health care services, the economy gives up between $3 and $4 of other goods and services.

Introduction: Understanding the Complexity of the Medical Marketplace

Until recently, most people didn't think of the medical marketplace as a real market. The demand for health care was supposed to be determined by the amount of sickness. The supply of health care was supposed to be determined by the degree of altruism and public support. Rarely did people use such terms as "prices" and "incentives."

Today, health policy analysts recognize that the old view is wrong. People respond to costs and benefits — in deciding both how much health care to demand and how much to supply. The problem for policymakers is that most of the analysts do not yet acknowledge that the new way of thinking demands a new set of forecasting tools.

Why Government Forecasts Are So Wrong. Because government forecasts of health policy changes have been based on the old way of thinking, they almost always have seriously underestimated the future costs of new health spending programs. For example:[1]

"Governments almost always underestimate the cost of health care programs by large margins."

- Within the first eight years, the payroll tax rates needed to finance Medicare hospital insurance were double what the Congress had anticipated.

- After Medicare was expanded in 1972 to include coverage for all people suffering from end-stage renal disease, first-year costs were 233 percent greater than expected[2] and the number of participants quadrupled from 16,000 in 1974 to 64,100 in 1981.[3]

- Only eight months after the enactment of the Medicare Catastrophic Coverage Act (subsequently repealed), the Congressional Budget Office had to raise its five-year cost estimates by amounts ranging from 50 percent to 100 percent.[4]

These faulty forecasts occurred because of a failure to realize that reducing the price people are charged would lead to higher demand for medical services and that higher demand would make health care increasingly

expensive. The combination of higher volume and higher per-unit costs led to ever-escalating health spending for both government and the private sector.

Now that federal budget deficits exceed $400 billion and the United States spends $1 out of every $7 of gross domestic product (GDP) on health care, we can no longer afford such errors. Not only will forecasting mistakes such as those described above harm government budgets and the U.S. economy, but the damage also will occur more quickly and be harder to repair.

A New Health Care Model. The key concept behind the National Center for Policy Analysis/Fiscal Associates Health Care Model is that individual behavior in the medical marketplace can be explained in terms of personal costs and personal benefits. But because of the huge role played by government and third-party payers, it is often very difficult to measure these personal costs and distinguish them from social costs. A new econometric model designed to make those measurements is required.

The development of the NCPA/Fiscal Associates Health Care Model is a continuing process. We use a top-down approach that starts at the highest levels of aggregation and proceeds to smaller, component markets. Our initial database consists of 470 time series covering 18 health care expenditure categories and 41 payment sources from 1960 through 1990.[5]

We have integrated our model of the health care sector with the Fiscal Associates tax model and its core model of the U.S. economy. This allows us to accurately measure aftertax costs and benefits to the participants in the medical marketplace as well as the impact of health care policy changes on the rest of the economy.

This approach is proving successful. At a reasonable level of aggregation, we can explain 98 percent of changes in health care demand in terms of personal out-of-pocket costs, without reference to the degree of sickness or other "institutional" variables alleged to be important. We can explain 98 percent of changes in the supply of health care services in terms of revenues and the cost of inputs, without reference to the amount of altruism in society.

Above all, these results show that although decisions are often radically distorted in the medical marketplace, the laws of economics can accurately describe them.

"The model can explain 98 percent of changes in the supply and demand for major health care services over the past 30 years."

How Our Health Care System Works

PRINCIPLE NO. 1:   **Prices matter.**

PRINCIPLE NO. 2:   **Health care spending has been rising
because prices paid by patients have been falling.**

PRINCIPLE NO. 3:   **Most Americans are overinsured because of
government policies.**

PRINCIPLE NO. 4:   **Because the supply of health care is inelastic, increases
in health care demand result mainly in higher prices
rather than more services.**

PRINCIPLE NO. 5:   **The main cause of rising health care spending is
government policy, which now accounts for the spend-
ing of more than half of our health care dollars.**

PRINCIPLE NO. 6:   **Because of third-party insurance and government
subsidies, the cost of health care is largely hidden from
most American families.**

PRINCIPLE NO. 7:   **Because of third-party insurance and government
subsidies, the most costly services are often the
cheapest to patients and vice versa.**

PRINCIPLE NO. 8:   **Because of government policy, many Americans are
uninsured.**

PRINCIPLE NO. 9:   **On the average, government spends about $2 to obtain
$1 of real health care services.**

PRINCIPLE NO. 10:   **Increases in government health care spending have a
significant negative impact on the rest of the economy.**

Ten Principles

What follows is a brief description of some of the findings made possible by the NCPA/Fiscal Associates Health Care Model. [See the sidebar on How Our Health Care System Works.] Future NCPA reports will elaborate on the findings.

PRINCIPLE NO. 1:   Prices matter.

Many people believe that prices don't matter in health care. Under this view, people see doctors when they are sick, regardless of the physicians' fees. And they get treatment based on the doctor's advice. They don't ask how much the treatment costs.

If this view were correct, hospitals would never go out of business. If short of funds, they could simply raise their prices and collect more revenue — since higher prices would not deter demand. And new government programs that make health care available for free (Medicaid in the United States, national health insurance in other countries) would not cause a surge in utilization — since lowering prices (in some cases, to zero) would not increase demand.

"People consume more health care when prices are lower and less when prices are higher."

In fact, prices *do* matter. People are not as price sensitive in the market for health care as they are in markets for most other goods and services. But numerous economic studies confirm that the law of demand applies: people consume more health care when prices are lower and less when prices are higher.[6] Indeed, as we shall see below, one reason why every developed country is experiencing a problem of rising health care spending is precisely because health care prices affect patient behavior. For the United States, the NCPA/Fiscal Associates Health Care Model shows that:[7]

- A 10 percent drop in the out-of-pocket price of medical services causes a 4 percent increase in demand.

- A 10 percent drop in the price of health insurance — after adjusting for tax subsidies to employer-provided coverage — causes a 6.5 percent increase in demand.

Other health economists offer similar estimates, which are averages for the nation as a whole.[8] Different consumers may face very different prices, as the following examples show.

Case Study: Medicare. Over the past several decades, this government medical program for the elderly has increased the level of benefits and reduced required out-of-pocket cost sharing. As out-of-pocket "prices" paid by Medicare beneficiaries have fallen, people age 65 and over have increased their rate of medical care consumption faster than people under age 65. Specifically:

● In 1977, the elderly spent 3.3 times as much per capita on health care as the nonelderly ($1,785 versus $543).

● By 1987 — the most recent year available — elderly per capita spending was 4.1 times as much as that of the nonelderly ($5,360 versus $1,310).[9]

Case Study: The Uninsured. People who have no health insurance must pay the entire cost of their health care out-of-pocket.[10] As a result, we would expect them to spend less on health care than insured people — and they do. After adjusting for such other factors as age, income, health status, sex, marital status, education, employment status and residence, one study found that the uninsured consume about half as much health care as people who have health insurance. Specifically:[11]

"The uninsured consume about half as much health care as people who have health insurance."

● The uninsured are about half as likely to enter a hospital and about 25 percent as likely to see a physician as are people who have employer-provided health insurance.

● Once in the health care system, the uninsured see physicians about 16 percent less often and spend one-third as much time in the hospital.

PRINCIPLE NO. 2:　**Health care spending has been rising because prices paid by patients have been falling.**

One of the most serious health policy problems we face is rising health care spending.[12] Over the past decade, health care spending grew about twice as fast as our gross national product. If that trend were to continue — which it cannot — we would be spending 100 percent of our income on health care by the year 2062.[13]

A primary reason why health care spending is out of control is that most of the time when we enter the medical marketplace as patients we are spending someone else's money. Economic studies — and common sense — confirm that we are less likely to be prudent, careful shoppers if someone else is paying the bill.

- Over the past thirty years, the share of our income spent out-of-pocket on health care has actually declined — falling from 4 percent of total consumption expenditures in 1960 to 3.6 percent in 1990.

- Over the same period, the amount spent from all sources has more than tripled — rising from 4.2 percent of consumption in 1960 to 13.3 percent in 1990.

These numbers suggest that when we are spending our own money we are conservative consumers in the medical marketplace. The explosion in spending has occurred because someone else is paying the bill.

The Extent of Third-Party Payment of Medical Bills. Although polls show that most people fear they will not be able to pay their medical bills from their own resources, the reality is that most of us pay for only a small portion of our medical care. Figure I shows that, on the average:[14]

- Every time we spend $1 in a hospital, we pay only 5 cents out-of-pocket, and 95 cents is paid by a third party (employer, insurance company or government).

- Every time we spend $1 on physicians' fees, we pay less than 17 cents out-of-pocket.

- For the health care system as a whole, every time we consume $1 in services,we pay only 21 cents out-of-pocket.

Moreover, the explosion in health care spending over the past three decades parallels the rapid expansion of third-party payment of medical bills. The patient's share of the bill has declined from 48 percent in 1960 to 21 percent today.
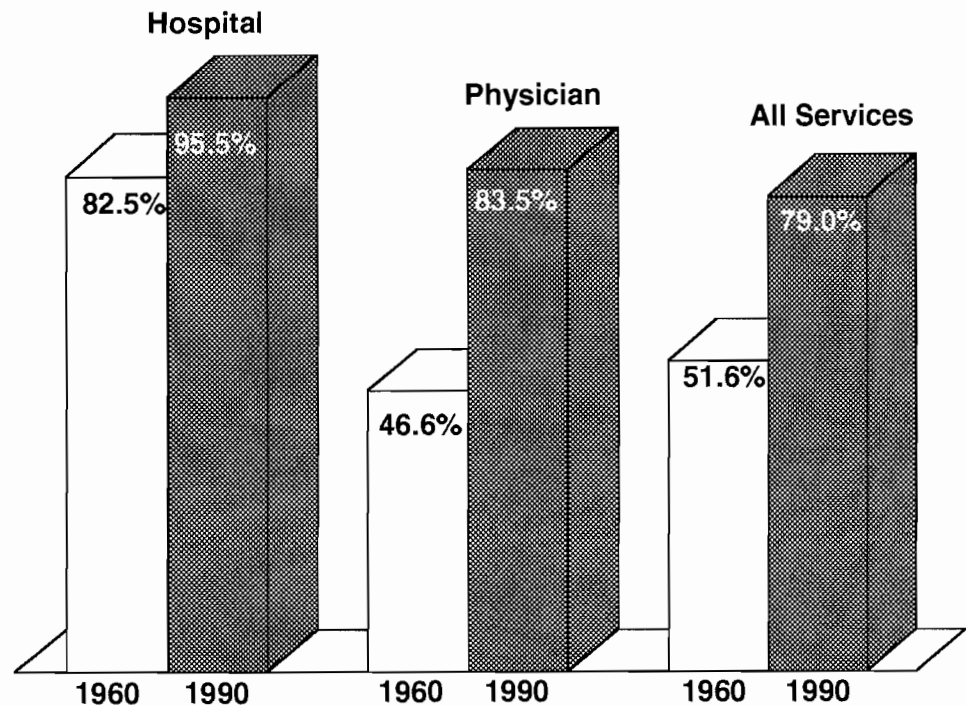
The Wastefulness of Third-Party Insurance. A great deal of the waste in our health care system is caused by people who have too much insurance. For example, Rand Corporation studies imply that families with a $2,500 deductible consume 30 percent less health care than families with no

deductible — with no adverse effects on health.[15] Market prices for health insurance also provide powerful evidence of how wasteful low deductibles can be:[16]

- If a family in a city with average health care costs increases its deductible from $250 to $1,000, its premium savings will be $1,315 — almost twice the amount of the increase in the deductible.[17]

- If the family increases its deductible from $250 to $2,500, it will save $1,749 on premiums — roughly the amount of coverage the family would forego, considering the effects of the deductibles and copayments.[18]

Low-deductible health insurance is usually wasteful for three reasons. First, the lower immediate cost of additional care encourages some people with low-deductible insurance, or first-dollar coverage, to consume services

"Every time we consume $1 in services, we pay only 21 cents out-of-pocket."

FIGURE I

Percent of Personal Health Expenses Paid by Third Parties, 1960 and 1990

Hospital

Physician

All Services

95.5%

82.5%

83.5%

79.0%

51.6%

46.6%

| 1960 | 1990 | | 1960 | 1990 | | 1960 | 1990 |

Source: NCPA/Fiscal Associates Health Care Model. Data adjusted for tax subsidies.

they do not really need. That ultimately causes costs and premiums to rise for all policyholders. Second, low-deductible insurance discourages people from avoiding unnecessary procedures and seeking out low prices. Third, using insurance to pay small medical bills leads to wasteful administrative expenses. For example, a $25 physician's fee can easily become $50 in total costs after an insurer monitors and processes the claim — thus doubling the cost of medical care.[19]

PRINCIPLE NO. 3:   Most Americans are overinsured because of government policies.

Why do most Americans have too much health insurance? The answer is that government policies encourage overinsurance.

First-Dollar Coverage in Government Health Care Programs. One-fourth of all Americans are insured directly through government programs such as Medicare and Medicaid.[20] In these programs, deductibles and copayments are either very low or nonexistent. For example, Medicare pays all inpatient hospital bills after the patient pays a deductible of $676 and pays 80 percent of all doctor bills, outpatient hospital services, diagnostic tests and other related services after a $100 deductible.[21] The federal Medicaid law also restricts the ability of states to charge patients even for low-cost items.[22]

Since these programs are mainly funded by taxes collected from the general public, participants pay little, if any, premium.[23] Yet most Medicare patients could afford to pay their smaller medical bills as well as substantially higher premiums. The elderly have more aftertax income than the nonelderly and own 40 percent of the nation's capital stock.[24] Thus the program encourages overconsumption of health care and is a wasteful way to achieve one of Medicare's original goals: to subsidize the medical care of the low-income elderly.[25]
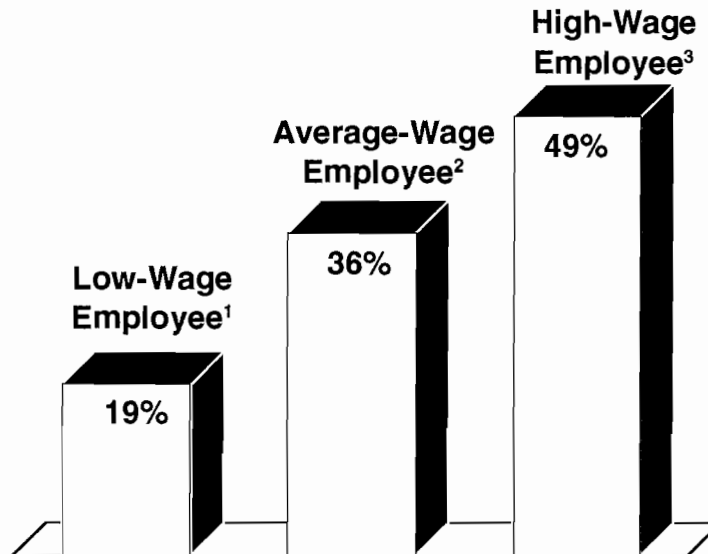
Tax Subsidies for Third-Party Insurance. Under current law, every dollar of health insurance premiums paid by an employer escapes, say, a 28 percent income tax, a 15.3 percent Social Security (FICA) tax and a 4, 5 or 6 percent state and local income tax, depending on where the employee lives. The government is effectively paying half the premiums — a generous subsidy that encourages employees to overinsure.

As noted above, most individuals and families would be much better off if they had the opportunity to choose high deductibles and place the

"Because of the tax law, government pays up to half of the premiums for employer-provided insurance."

FIGURE II

How Much Waste Can Be Present and Still Leave Health Insurance as Valuable as Wages?

[1]Employee faces a 15.3 percent FICA tax and a 4 percent state and local income tax.

[2]Employee faces a 15.3 percent FICA tax, a 15 percent federal income tax and a 6 percent state and local income tax.

[3]Employee faces a 15.3 percent FICA tax, a 28 percent federal income tax and a 6 percent state and local income tax.

premium savings in a bank account — to use for small medical bills. Yet while the federal government generously subsidizes third-party insurance by excluding it from taxable income, it discourages self-insurance by taxing income that individuals try to save for future medical expenses.[26]

Because of federal tax policy, employees tend to prefer health insurance to taxable wages. [See Figure II.] For example, if an employer attempted to give a higher paid employee $1.97 in wages, the employee would take home only $1.00 after taxes. As a result:[27]

● For a highly paid employee, $1.97 spent on health insurance need be worth only $1.01 to be preferable to $1.97 of gross wages.

● Thus, 96 cents of $1.97 (or 49 percent of the premium) can represent pure waste and still leave health insurance preferable to wages for the employee.

This is one reason why private health insurance often pays for routine checkups, diagnostic tests, etc., and why low deductibles are common. The NCPA/Fiscal Associates Heath Care Model shows that:[28]

- On the average, tax subsidies for employer-provided health insurance lower the net price of health insurance by 28 percent.

- As a result of this subsidy, people purchase 18.2 percent more insurance.[29]

PRINCIPLE NO. 4:   Because the supply of health care is inelastic, increases in health care demand result mainly in higher prices rather than more services.

"In the medical marketplace, increasing the supply is very expensive."

As people increase their demand for medical care, providers attempt to meet that increased demand by supplying more services. In the medical marketplace, however, increasing the supply is very expensive. Supplying more medical services requires more trained labor (e.g., doctors, nurses and technicians) and more specialized capital (e.g., MRIs and CT scanners). The capital and labor resources must be bid away from other markets.

In general, expanding the supply of medical services causes production costs to go up much more rapidly than expanding the supply of most other goods and services. Estimates from the NCPA/Fiscal Associates Health Care model show that:

- Moving capital and labor from other sectors requires a price increase for medical services that is six times higher than that needed to expand other goods and services.[30]

- As a result, higher medical care prices eat away about 57 cents of each extra dollar spent on health care.[31] [See Figure III.]

Most people readily concede that it is costly to train doctors and build hospitals. But some argue that these costs are avoidable because there is excess capacity to meet a higher demand. For example, the occupancy rates in community hospitals fell from 75.2 percent in 1980 to 65.7 percent in 1988, suggesting that more than one out of three beds is empty at any one time. Over the same period, the total number of beds per capita fell by 13 percent.[32]

The answer to this puzzle seems to be that the constraint on supplying more medical care is labor, not capital. Medical care is labor-intensive and the "laborers" must be highly trained. Most of the cost of filling an empty hospital bed is made up of the salaries of doctors, nurses and technicians who manage the drugs and other patient treatments. That is why it is so much more expensive to produce one more unit of medical care than, say, an additional automobile, refrigerator or house — even though there is apparent excess capacity in the market for hospital services. Consider that:

● Although wages constitute 71 percent of hospital costs,[33] they are only 54 percent of production costs for the economy as a whole.[34]

● Whereas capital costs are only 8.6 percent of operating expenses for the average (median) U.S. hospital,[35] capital costs are about one-third of operating expenses for the economy as a whole.[36]

● Moreover, the hospital sector is becoming more labor-intensive — from 1980 to 1988, the number of employees per patient increased by 34 percent.[37]

FIGURE III

What an Extra Dollar of Health Spending Buys
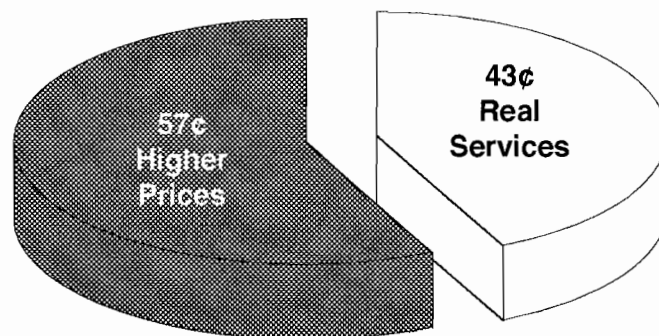
"Higher medical care prices eat away about 57 cents of each extra dollar spent on health care."


57¢
Higher
Prices

43¢
Real
Services

Source: NCPA/Fiscal Associates Health Care Model.

PRINCIPLE NO. 5:   The main cause of rising health care spending is government policy, which now accounts for the spending of more than half of our health care dollars.

As previously stated, U.S. health care costs have been rising because Americans are usually spending someone else's money when they consume medical care. And out-of-pocket spending has been falling because government health insurance and tax subsidies for private health insurance have soared.

Government Spending vs. Private Spending. The United States has been devoting more and more of total consumption to health care. Between 1960 and 1990, personal health care as a fraction of total consumption grew at

FIGURE IV

Annual Growth Rate of Health Care Spending As a Share of Total Consumption

(1960 – 1990)
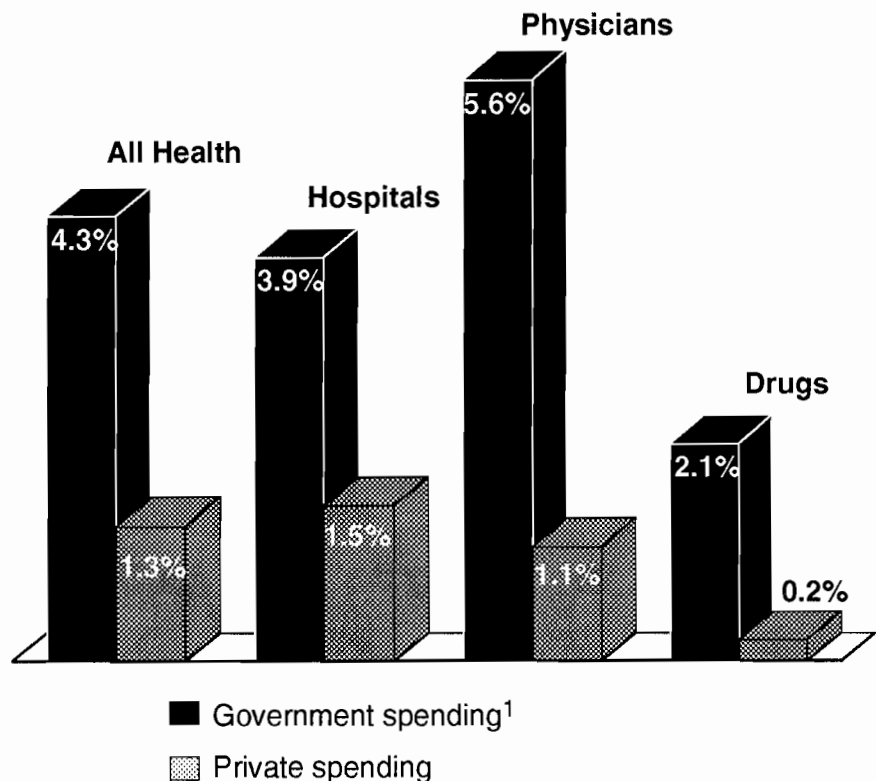
"The share of government health care spending in total consumption grew three times as fast as the share of private spending."

Physicians

All Health

5.6%

Hospitals

4.3%

3.9%

Drugs

2.1%

1.3%

1.5%

1.1%

0.2%

■ Government spending[1]

▒ Private spending

[1] Includes direct government purchases (e.g., Medicare and Medicaid), tax subsidies for employer-provided insurance and tax subsidies for out-of-pocket spending.

Source: NCPA/Fiscal Associates Health Care Model.

a rate of 2.6 percent *per year*. The portion of health care paid by the private sector — out-of-pocket costs plus private insurance, net of tax subsidies — grew much more slowly. As Figure IV shows:

- Over the past three decades, the share of private health care spending in total U.S. consumption grew at an annual rate of 1.3 percent.

- The share of *government* health care spending in total U.S. consumption grew at three times that rate.

Similar patterns exist for specific types of medical services. Figure IV shows that in some cases government spending has been growing at five to 10 times the rate of private spending.

- Government spending (as a share of total consumption) in the hospital sector has been growing 2-1/2 times faster than private sector spending.

- Government spending on doctors has been growing five times faster than private spending.

- For pharmaceuticals, government spending has been growing ten times faster than private spending.

The Size of the Public Sector. People who look to government to solve our health policy problems may be unaware of how large a role the government already plays. When federal tax subsidies for health insurance are combined with direct spending, government at all levels (federal, state and local) spends more than half of all health care dollars. Overall:[38]

- Direct government spending has increased from 24 percent of all health care spending in 1960 to 42 percent in 1990.

- When tax subsidies for health insurance are included, the government's share of health care spending has increased from 34 percent in 1960 to 53 percent today. [See Figure V.]

Government is *the* major player in the health care market. It influences the market through direct spending programs, tax subsidies and regulation.

Direct Spending Programs. The two largest programs — Medicare and Medicaid — subsidize hospital and physician services for the elderly, the disabled and those on welfare. They are financed through general revenues and earmarked payroll taxes. In 1990, Medicare and Medicaid accounted for 67 percent of total government health expenditures. Other programs include

"The government's share of health care spending has risen from 34 percent in 1960 to 53 percent today."

FIGURE V

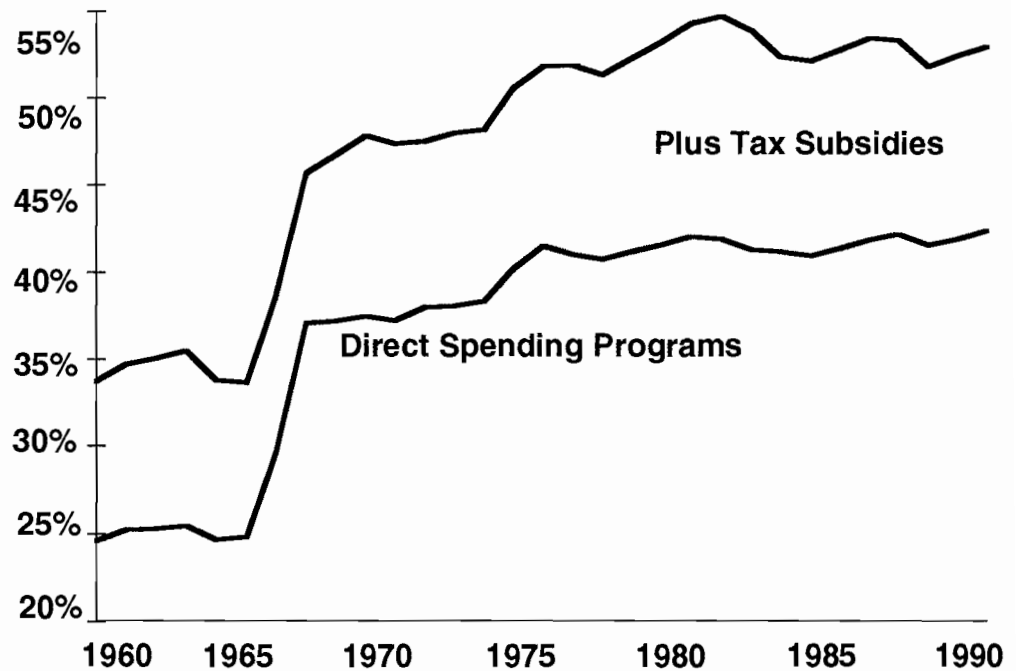# Government Spending as a Share of All Health Care Spending

Source: NCPA/Fiscal Associates Health Care Model.

health care provided to veterans and military personnel, public health measures and support for research and construction.

As noted above, direct government spending programs reduce the cost of medical care for those eligible. This is the primary reason the cost of these programs has grown so dramatically over the last three decades. Moreover, as the Medicare and Medicaid programs expanded, health care spending in the United States ballooned:

● Between 1940 and 1960, health care spending rose modestly, from 4 percent of GNP to 5.2 percent.[39]

● Since 1960, however, the percent of GDP spent on health care has almost tripled — rising to 14.1 percent in 1992.

● Spending on Medicare and Medicaid has skyrocketed from 5.9 percent of total health care spending in 1967 (the first full year of Medicare and Medicaid expenditures) to 28 percent of total health care spending in 1990.[40]

Tax subsidies. As noted above, the primary tax subsidy goes to employer-provided health insurance. Workers exclude the value of health benefits they get through their employers from taxable income, paying neither income taxes nor Social Security payroll taxes on the coverage.[41] The other tax subsidy allows taxpayers who itemize on their federal income tax returns to deduct extraordinary medical expenses. Taxpayers today can deduct medical expenses in excess of 7.5 percent of their adjusted gross income (AGI). These two tax subsidies are very valuable:

- In 1990, the exclusion of employer-provided health benefits from income reduced federal income and Social Security taxes $57.3 billion and lowered state income taxes $6.7 billion.

- The medical deduction reduced federal income taxes $5.3 billion and state income taxes $1.2 billion.

- Thus, total tax subsidies in 1990 equaled $70.5 billion.

Overall Effect of Government Subsidies. Tax subsidies lower the private cost of health care and raise the public cost. Over the last thirty years, health care tax subsidies lowered the private sector's share of health care spending by 10 to 15 percent and raised the public sector's share by 25 to 40 percent. Including these subsidies, federal, state and local governments have accounted for more than 50 percent of U.S. health care spending since 1973.

PRINCIPLE NO. 6:   Because of third-party insurance and government subsidies, the cost of health care is largely hidden from American families.

"We are spending $8,821 per household per year."

One consequence of the rise in third-party payment of medical bills is that most people have no idea how much they personally are contributing to cover the nation's health care costs. As Table I shows, in 1992 national health care spending was equal to $8,821 for every U.S. household. This burden was largely disguised, however:

- For an average working-age family, the visible outlays in 1992 were $1,715 for out-of-pocket expenses and $574 for health insurance premiums.[42]

- These direct expenses amounted to only about one-fourth of total health care spending per family. [See Figure VI.]

- The remainder of the $8,821 burden was hidden in taxes and reduced wages.

TABLE I

How We Pay for Health Care[1]

Method of Payment	Average per Household[2]	Percent of GDP	Percent of Personal Income
Visible:			
Private health insurance premiums[3]	$ 574	0.9%	1.1%
Out-of-pocket payments[4]	1,715	2.7%	3.2%
Medicare premiums	152	0.2%	0.3%
Hidden:			
Medicare payroll taxes	954	5.0%	1.8%
Other federal, state and local taxes	2,636	4.2%	5.0%
Tax subsidies for health[5]	934	1.5%	1.8%
Employer-provided insurance[6]	1,450	2.3%	2.7%
Other[7]	406	0.6%	0.8%
Total	**$8,821**	**14.1%**	**16.6%**

Note: Columns may not add to totals due to rounding.

[1] Based on the U.S. Department of Commerce estimate of $838.5 billion in total health care spending for calendar year 1992. This total was allocated using the distribution of health care spending in 1990. Tax subsidies were calculated using appropriate economy-wide weighted average marginal tax rates based on federal, state and local government taxes. Medicare payroll taxes are the estimate contained in the *1992 Social Security Board of Trustees Report.*

[2] Average household size in the United States is 2.63 persons.

[3] Includes employee contributions to private group health insurance plans as well as individual policy premiums.

[4] Less government tax subsidies.

[5] The amount that general taxes must be raised to compensate for revenue lost owing to special tax treatment of certain health-related income.

[6] Employer contributions for health insurance, less government tax subsidies.

[7] Nonpatient revenue for the health care industry, including charitable donations, interest income, hospital parking and gift shops.

Source: NCPA/Fiscal Associates Health Care Model.

PRINCIPLE NO. 7:   **Because of third-party insurance and government subsidies, the most costly services are often the cheapest to patients and vice versa.**

As Table II shows, government does not subsidize all health care services equally. On the average, government spends about 63 cents of every dollar spent on hospital care but only 19 cents of every dollar spent on pharmaceuticals. When government subsidies are combined with other third-party payments, out-of-pocket prices faced by consumers present a distorted picture of the true social costs. For example:
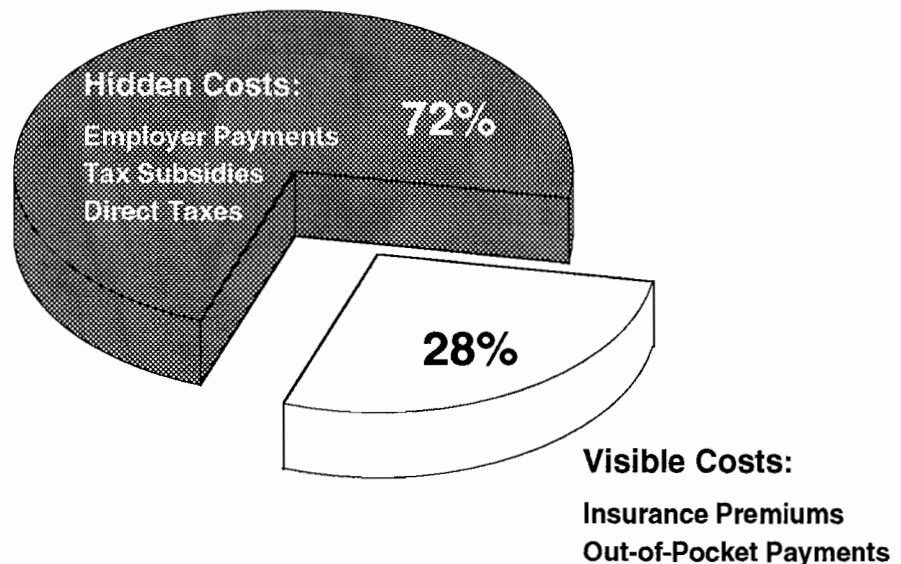
● On the average, patients pay only 4.5 cents out of every dollar they spend on hospitals, but they pay 68 cents of every dollar they spend on pharmaceuticals.

● Thus, to patients, hospital therapy may appear cheaper than drug therapy, although for society as a whole the opposite may be true.

Because out-of-pocket costs faced by patients do not reflect real costs, consumers sometimes choose medical services that deliver less bang for the buck. The choice leans heavily toward those treatments with the lowest out-of-pocket costs, even though they may be the most expensive from society's perspective and no more effective than cheaper alternatives.

International Consumption of Pharmaceuticals. In many other developed countries, health care is free at the point of consumption. Although this distortion creates problems of its own, when all health care is subsidized to the same degree, people are not encouraged to choose one therapy over another based on out-of-pocket price distortions. This fact may help explain why other developed countries spend less than the U.S. on health care but use pharmaceuticals more. As Table III shows, OECD countries, on the average, devote 37 percent less of their GNP to health care than does the United States. Yet these countries devote 64 percent more of their health resources to drugs.

"For the average family, direct expenses amount to little more than one-fourth of total health care spending."

FIGURE VI

The Hidden Cost of Health Care

Source: NCPA/Fiscal Associates Health Care Model.

TABLE II

Spending on Health Care by Payer

Service	Out-of-Pocket	Private Insurance	Other Private[1]	Government[2]
Hospitals	**4.5%**	**27.1%**	**5.1%**	**63.3%**
Home Care	**11.4%**	**5.9%**	**7.0%**	**75.7%**
Physicians	**16.5%**	**35.3%**	**0.0%**	**48.1%**
Other Health Prof.	**24.7%**	**31.1%**	**10.8%**	**33.4%**
Nursing Homes	**42.7%**	**0.9%**	**1.9%**	**54.5%**
Dentists	**47.0%**	**34.1%**	**0.0%**	**19.0%**
Vision Products	**63.0%**	**8.4%**	**0.0%**	**28.6%**
Drugs	**68.3%**	**12.2%**	**0.0%**	**19.4%**

[1]Includes philanthrophy.

[2]Includes direct government purchases (e.g., Medicare and Medicaid), tax subsidies for employer-provided insurance and tax subsidies for out-of-pocket spending.

Source: NCPA/Fiscal Associates Health Care Model.

Implications for Managed Care. Preliminary evidence produced by the NCPA/Fiscal Associates Health Care Model suggests that equalizing the out-of-pocket price distortion across all medical services could produce cost savings on the order of 15 percent, while maintaining the same general level of health care.[43] In the medical marketplace, people are already putting these implications into practice. Our savings estimates are consistent with the experience of health maintenance organizations (HMOs), which tend to allocate health resources based upon their actual costs rather than on out-of-pocket charges to patients. HMOs save money by practicing arbitrage — substituting less expensive therapies (e.g., drugs) for more expensive therapies (e.g., hospital and physician services). This arbitrage produces a one-time cost savings, however. HMOs face the same rate of cost increases as other payment schemes because patients still have strong incentives to overconsume health care.

TABLE III
Health Expenditures of OECD Countries 1988

	Health as a % of GNP	Drugs as a % of Health
Australia	4.6%	8.3%
Austria	8.2%	11.6%
Belgium	7.2%	17.4%
Canada	8.7%	11.6%
Denmark	6.3%	9.3%
Finland	7.1%	9.5%
France	8.7%	16.7%
Germany	8.2%	20.7%
Greece	5.1%	26.3%
Iceland	8.6%	12.9%
Ireland	7.3%	11.2%
Italy	7.6%	18.2%
Japan	6.7%	18.4%
Luxembourg	7.4%	15.5%
Netherlands	8.3%	9.6%
New Zealand	7.1%	14.3%
Norway	7.6%	5.3%
Portugal	6.3%	18.2%
Spain	6.3%	18.8%
Sweden	8.8%	6.7%
Switzerland	7.8%	12.3%
United Kingdom	5.8%	11.3%
United States	11.8%	8.3%
Average	7.5%	13.6%

"OECD countries, on the average, devote 64 percent more of their health resources to drugs."

Source: George J. Schieber, Jean-Pierre Poullier and Leslie M. Greenwald, "Health Care Systems in Twenty-Four Countries," *Health Affairs*, Fall 1991, pp. 22-38, Exhibits 1, 7.

PRINCIPLE NO. 8:   Because of government policy, many Americans are uninsured.

As noted above, in 1990 government "spent" about $64 billion subsidizing private health insurance through the tax system. These tax subsidies are very costly to government and very valuable to the people who receive them. Ostensibly, they exist in order to encourage private health insurance coverage. However, they probably do more harm than good for four reasons.

First, the largest subsidies go to those who need them least — people who probably would purchase health insurance without any tax encouragement. Second, current tax law penalizes people who purchase their own health insurance — encouraging them to postpone becoming insured until they can do so through an employer. Third, tax law encourages an employer-based system under which people who switch jobs can lose their coverage — and become uninsurable — after they get sick. Finally, the current system shelters the largest employers while leaving individuals and small businesses vulnerable to the cost-increasing effects of state regulations.

"Tax subsidies are supposed to encourage private health insurance coverage, but they probably do more harm then good."

Subsidizing the Rich. The ability to exclude employer-provided health insurance from taxable wages is more valuable to employees in higher tax brackets. And, by restricting this tax subsidy to employer-provided insurance, the law favors people who work for larger firms. The result is a highly regressive tax subsidy. As Figure VII shows:[44]

- Families in the bottom fifth of the income distribution get an average benefit of $270 a year from federal tax subsidies for health insurance.

- Families in the highest fifth get an average annual benefit of $1,560.

- Thus the tax law benefits high-income families six times more than low-income families.

Penalizing the Nonrich. Under the current system, well-paid employees in the auto industry have some of the most lavish health insurance plans in the world — with government footing as much as half of the bill. At the same time, the self-employed, the unemployed and employees of small companies that do not provide health insurance must pay taxes first and buy health insurance with what's left over.[45] As Figure VIII shows, this makes health

FIGURE VII

Average Benefit for a Family from Tax Subsidies for Health Insurance[1]
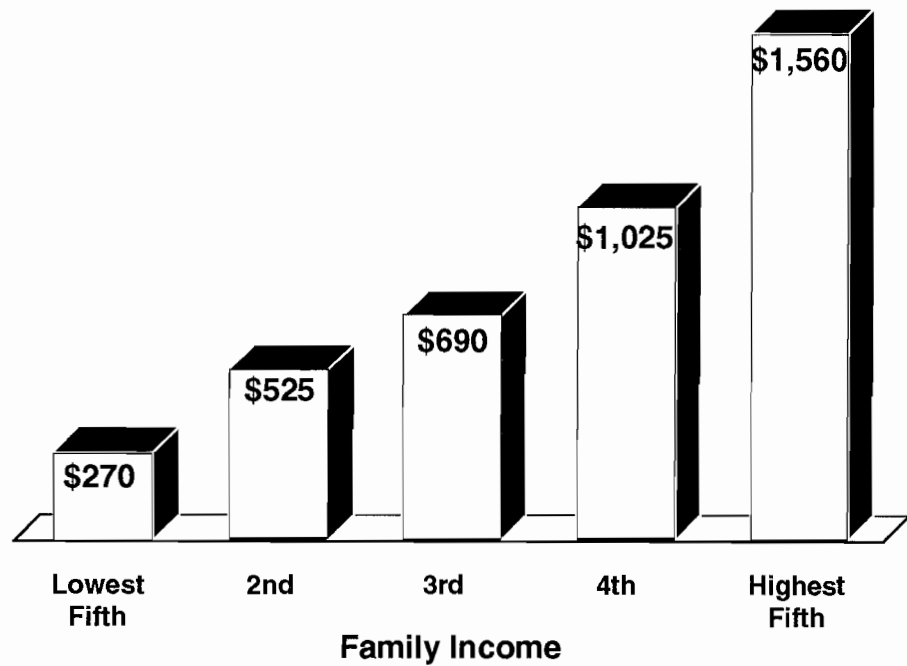
"High-income families get six times as much help from government as low-income families."

$1,560

$1,025

$690

$525

$270

| Lowest Fifth | 2nd | 3rd | 4th | Highest Fifth |

Family Income

[1]Subsidies include reduced Social Security (FICA) and income taxes.

Source: C. Eugene Steuerle, "Finance-Based Reform: The Search for Adaptable Health Policy," paper presented at an American Enterprise Institute conference on American Health Policy, Washington, DC, October 3-4, 1991.

insurance twice as expensive for the second group. Small wonder that almost 90 percent of the population under 65 years of age with health insurance is insured through an employer — and that 81 percent of uninsured workers are self-employed, unemployed or working for small companies![46]

Encouraging Employer-Based Insurance. The kind of health insurance most of us have is determined by what the federal tax law subsidizes. This has led to an employer-based system under which people eventually lose their health insurance when they switch jobs.[47] If they are already sick when they lose their coverage, they may be deemed uninsurable.

Subjecting Marginal Buyers to State Regulations. Contrary to widespread impressions, most of the 36 million uninsured are healthy, not sick. Sixty percent of them are under age 30 — in the healthiest age groups.[48] Since they have below-average incomes and few assets, they tend to be very sensitive to premium prices. Moreover, the primary reason why most of them
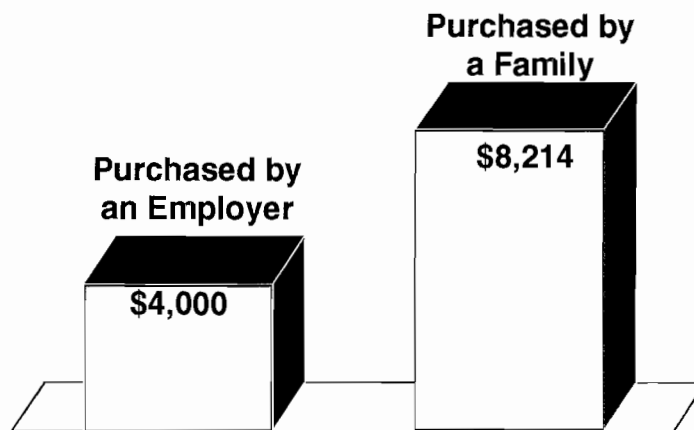
lack health coverage is that they have judged the price too high relative to the benefits. That is why the artificial premium increases caused by state regulations have substantially increased the number of employers who fail to provide coverage for their employees and the number of individuals who are uninsured by choice.

One way in which state governments have contributed to the number of uninsured is through health insurance benefit mandates. These laws tell insurers what services and providers they must cover if they issue policies within a state. The mandates cover health conditions ranging from mental illness to alcoholism and drug abuse. They cover services ranging from acupuncture to in vitro fertilization. They cover everything from the serious to the trivial: heart transplants in Georgia, liver transplants in Illinois, hairpieces in Minnesota, marriage counseling in California, pastoral counseling in Vermont and sperm bank deposits in Massachusetts.[49]

Currently, there are 240 health-related occupations. Lobbyists representing these groups descend on state legislatures each year to demand still more special-interest legislation. Their efforts are having an effect. By one estimate:[50]

"People who purchase their own health insurance pay up to twice as much because of federal tax law."

FIGURE VIII

Effective Cost of a $4,000 Health Insurance Policy[1]

Purchased by a Family

Purchased by an Employer

$8,214

$4,000

[1] Figures show the amount of additional pretax income that must be earned in order to purchase the policy. The family is assumed to have an adjusted gross income of $35,000 and to face a 28 percent federal income tax rate, a 15.3 percent Social Security (FICA) tax rate and an 8 percent combined state and local income tax rate.

● As many as one out of every four people who lack health insurance has been priced out of the market by the cost-increasing effects of state-mandated benefits.

● Thus state regulations are directly responsible for as many as 9 million people being uninsured.

State mandates have forced many workers either to purchase a plan bloated with extra benefits or to remain uninsured. As a result, more than half of the nation's labor force now works for a company that self-insures, under a provision in the Employee Retirement Income Security Act (ERISA).[51] And the trend toward corporate self-insurance is gaining momentum as companies look for ways to provide basic health insurance at affordable prices.

State regulations also penalize potential health insurance buyers in other ways. In some states, community rating requirements force insurers to overcharge healthy people in order to artificially lower the price for sick people. In other states, anti-managed care laws prevent third-party payers from holding down costs. In 1991, for example, 195 pieces of state legislation were introduced to stop or cripple managed care and other cost-control techniques.[52] Among laws currently on the books, one in Indiana requires that preferred provider organizations (PPOs) accept any physician willing to join. Thus Indiana Bell's PPO includes every physician in the state. Montana and Oklahoma have adopted similar measures. Texas and other states restrict the discount that insurers can give to patients who choose PPO doctors.

"As many as one of every four people with no health insurance has been priced out of the market by state-mandated benefits."

PRINCIPLE NO. 9: On the average, government spends about $2 to obtain $1 of real health care services.

To say that government "spends" more than half of our health care dollars is in one sense misleading. For the most part, patients actually do the spending. But since government pays all or part of the bill, the cost to government rises or falls on the consumption decisions patients make. Viewed in this way, government *subsidizes* patients' spending decisions by paying about 53 cents of every dollar they spend. How much difference does this subsidy make? To find out, we used the NCPA/Fiscal Associates Health Care Model to perform some simulations. In each case, we hypothetically changed the subsidy rate, beginning in 1967, and then examined the effects of that change for the years 1970 through 1990.

Using the Health Care Model to Produce Simulations. To under-
stand how these simulations were performed, it is important to note that
government subsidies for the consumption of medical care have two distinct
effects. First, when government takes money from us in the form of taxes and
agrees to give it back to the extent that we consume medical care, it encour-
ages us to consume more medical care and less of other goods and services.
This is the *substitution effect.* Second, the very practice of rewarding people
based on their health care consumption tends to redistribute resources from
those who use less health care to those who use more. This is the *redistribu-
tion effect.*

The computer simulations reported in this study focus exclusively on
the substitution effect. They ask what would happen if government increased
or reduced its current subsidy in the same proportion for every citizen.[53]
Future NCPA reports will consider the distribution effect of such changes.

**Simulation: Reducing the Government's Subsidy Rate to 34
Percent.** Suppose that beginning in 1967 we had maintained government's
subsidy rate at about 34 percent.[54] This would be equivalent to maintaining
government's share of health care spending at its pre-Medicare/Medicaid level
— although it is not equivalent to hypothetically abolishing Medicare and
Medicaid.[55] There would be three effects. Because of the lower subsidy rate,
government would spend less for each unit of health care it purchased. Be-
cause of a higher out-of-pocket price, patients would buy fewer units of health
care, causing the market price to fall. And because of the inelastic demand
curve, the reduction in the number of units purchased would be proportion-
ately less than the fall in price. The net result of these changes is reported in
Appendix A for the period 1970 to 1990. As Tables A-I and A-III show:[56]

● In 1990, government spending on health care would have been
  reduced by $131 billion— an amount equal to almost one-fourth of
  total health care spending that year.

● Real health care services, however, would fall by only $55 billion.

● This simulation implies that for each $1 reduction in government
  subsidies, real health care services would be reduced by only 42
  cents.

The simulation also can be reversed. The last $131 billion in govern-
ment health care subsidies induced the private sector to increase its spending
as well. *Yet each $1 the government spends on health care buys only 42 cents
of health care services.*

*"Currently, each $1 of
government spending buys
only 42 cents of real health
care services."*

These findings are consistent with our actual experience under Medicare. Although its backers thought the program would reduce the burden of private health care spending for the elderly, the reverse has been true:

● In 1962, for example, the elderly spent less than 8 percent of their own income for health care.

● Today they spend 15 percent, and the extra dollars they spend buy less real health care because of the price inflation which Medicare produces.

Simulation: Increasing the Government's Subsidy Rate to 75 Percent. Suppose we increased the government's subsidy to 75 percent, beginning in 1967.[57] This would be equivalent to increasing the share of government spending to the level of Canada's health care system — although it is not the same as hypothetically adopting the Canadian system. [See the discussion below.] This simulation would produce three effects opposite to those described above. The net result of these changes is reported in Appendix A for the period 1970 through 1990. As Tables B-I and B-III show:

"The elderly spend more of their income on health care today than they did before Medicare was started."

● In 1990, government spending on health care would have been $220 billion higher than otherwise — an amount equal to about 40 percent of total health care spending that year.

● Real health care services, however, would be only $105 billion higher.

● This simulation implies that for each $1 increase in government subsidies, real health care services would increase by only 48 cents.

Comparing the Simulations to the Canadian Experience. Canada's system differs in important ways from the previous simulation. For the most part, the Canadian government tends to subsidize some services completely, while leaving others unsubsidized. Also, all Canadian citizens are subsidized the same way. In our simulation, we took the existing system of U.S. subsidies and simply expanded them by 50 percent.

A more fundamental difference is that Canada employs a system of global budgets that prevents the emergence of market prices and forces doctors and hospitals to ration health care.[58] According to the General Accounting Office (GAO), for example:[59]

- In the province of Ontario, of the 1,029 patients waiting for cardio-vascular surgery, 124 "urgent" patients waited up to a month, while the remaining "elective" patients waited one week to six months.

- Cataract surgery waits ranged between one month and one year.

- Patients needing urgent orthopedic surgery, such as hip replacements, waited between two weeks and one month, while "elective" patients waited between two months and a year.

- Patients waited up to six months for CT scans and up to 15 months for MRI tests.

"Under a Canadian-type system, people could be denied access to care about one time in five because of health care rationing."

The United States has not rationed its health care in this manner. If the government were to pay for 75 percent of all U.S. health care consumption, the model tells us how much resulting extra demand (volume) and subsequent increase in medical inflation (prices) would occur. *To avoid an escalation in health spending as a percent of GDP from the current 14 percent to a projected 18 percent would require rationing on the order of $300 billion each year — or about one in every five health care dollars.*[60]

Principle No. 10: Increases in government health care spending have a significant negative impact on the rest of the economy.

Government spending on health care hurts the rest of the economy in two ways. First, in order to fund the spending government must raise marginal tax rates — an act that depresses the economy and results in less total output. Second, government spending on health care causes resources to be bid away from the nonhealth care sector, and consumers pay a heavy price in terms of other consumption that they must forego. To get a sense of the size of these effects, let us return to the simulations discussed above.

Simulation: Reducing the Government Subsidy Rate to 34 Percent. Maintaining the government subsidy rate at 34 percent from 1967 forward would have reduced long-run annual government health spending. Savings would increase with each successive year because the actual government subsidy rate continued to increase over time. Cumulatively, government spending on health care would have been $1.7 trillion lower over the period 1970 to 1990.

This reduced government spending would have allowed tax reductions on labor of 1.3 percent to 2.7 percent, and reductions in capital taxes would have lowered the cost of U.S. capital between 3 percent and 5 percent. Lower taxes on labor and capital would have enabled the economy to expand faster than it actually did. As Table A-II in the Appendix shows:

- By 1990, the economic benefits from a lower subsidy rate would have raised the aftertax wage rate by 7.3 percent and increased the capital stock by 8.7 percent.

- GDP would have increased by 4.8 percent — an amount equal to $1,141 (in 1992 dollars) for every man, woman and child in the country.

With lower taxes and less government spending on health care, people would be free to make their own decisions about how to spend their disposable incomes. What choices would they make? Faced with higher out-of pocket costs, consumers would have cut back on their demand for medical services. Resources used to produce those medical services would have gone elsewhere in the economy. The capital and labor inputs that produced one dollar of health services would have yielded three to four dollars in other goods and services. Overall:

"For each $1 of health care services we give up $3 to $4 in other goods and services."

- By 1990, total health care spending would have been about $55 billion lower than it actually was, and health care spending as a percent of GDP would have been 10.4 percent instead of 12.1 percent.

- That same year, consumption of other goods and services would have been $281.4 billion higher than it actually was.

- Although people would have paid $303 more out-of-pocket for health care per person, we would have been able to consume $1,126 of other goods and services.

- In general, each $1 of health care given up would have allowed people to enjoy an additional $3.72 of nonhealth goods and services.

Note that when government withdraws some of its health care subsidies, people experience both a burden and a benefit. In this example, by paying more out-of-pocket for health care, each could enjoy three or four times as much in nonhealth goods and services. [See Table A-III.]

Simulation: Increasing the Government Subsidy Rate to 75 Percent. A health care subsidy rate roughly comparable to that of Canada would have had opposite effects. Cumulatively, government spending on health care would have been $2.8 trillion higher over the period 1970 to 1990.

Paying for this increased spending would have required government to raise taxes on labor by up to 3.3 percent and boost the cost of capital by up to 8 percent.

- By 1990, the economic harm from a higher government subsidy rate would have lowered the aftertax wage rate by 9.5 percent and reduced the capital stock by 10.9 percent. [See Table B-II.]

- GDP would have been 6.5 percent lower in 1990 — an amount equal to $1,544 (in 1992 dollars) for every man, woman and child in the country.

"With a 75 percent subsidy, annual GDP would have been $1,544 lower for every man, woman and child by 1990."

A 75 percent government subsidy rate would have led to more total spending on health care. Because of lower out-of-pocket costs, consumers would have increased their demand for medical services. Resources would have been diverted from elsewhere in the economy to supply more medical services. Capital and labor inputs that had produced about $3 in other goods and services would have yielded only $1 in health services. The decrease in per capita consumption of nonhealth goods and services would have been three to four times greater than the decrease in out-of-pocket health care costs. [See Table B-III.]

- The higher subsidy rate would have increased total health care spending by $104.7 billion in 1990.

- Consumption of other goods and services would have been reduced by $345.1 billion that year.

- Health care spending as a percent of GDP would have increased from 12.1 percent to 15.2 percent.

- Although per capita annual out-of-pocket health care costs would have been $461 lower, per capita consumption of other goods and services would have been $1,380 lower.

- Each additional $1 of health care would have caused a loss of $3 in nonhealth goods and services.

Conclusion

Our preliminary simulations using the NCPA/Fiscal Associates Health Care Model suggest that there are ways to reform the health care system that promise considerable benefits to people in both their roles: as consumers of medical care and as participants in the nonhealth care sector of the economy.

TABLE IV

Changing the Government
Health Care Subsidy Rate

Effect on the Medical Market in 1990	**Increase to 75%**	**Reduce to 34%**
Annual Government Health Care Costs (bil $ 1987)	+ $219.8	- $130.6
Annual National Health Care Spending (bil $ 1987)	+ $104.7	- $54.9
Change in Health Care as a Percent of GDP	+ 25.6%	- 14.0%
Per Capita Out-Of-Pocket Health Spending	- $461	+ $303

Effect on the U.S. Economy in 1990		
The Tax On Labor	+ 3.3%	- 2.7%
The Cost Of Capital	+ 8.0%	- 5.0%
Capital Formation	- 10.9%	+ 8.7%
Gross Domestic Product	- 6.5%	+ 4.8%
Per Capita Spending On Other Consumption	- $1,380	+ $1,126
Trade-Off Between Health And Nonhealth	- $3.00	+ $3.72

Source: Tables A-I through A-IV, and B-I through B-IV in the appendix.

The primary cause of increasing health care spending, as we have shown, is increasing government subsidies — which have expanded government "spending" on health care from 25 percent of all spending in 1960 to 53 percent today. Since the vast majority of the subsidies go to people who are not poor, we could reduce government subsidies for health care without creating greater burdens for low-income families. Since studies show that people can voluntarily cut their consumption of medical care by as much as 30 percent — with no adverse effects on health — given new incentives, we would expect individuals to eliminate a great deal of waste in the health care system without serious risk to their own health and safety.

If we had lowered government's share of the nation's health care bill over the last two decades, we would have lowered total government spending. Rebating these savings through lower taxes would have reduced the cost of labor and capital, enabling the economy to grow faster. Total spending on health care would be lower today because the higher out-of-pocket costs to consumers would have dampened the demand for medical services. Medical inflation would have slowed because resources that had been used to produce medical services could have been put to more efficient use elsewhere in the economy. The increase in out-of-pocket health care costs would have been more than offset by greater consumption of other goods and services. On net, consumers would have been three to four times better off.

"Studies show that people can voluntarily cut their medical care consumption by 30 percent without any adverse effects on health."

Notes

1 Aldona Robbins and Gary Robbins, "Challenging Official Health Cost Estimates: An Alternative View That Incorporates the Behavioral and Economic Effects of Policy Changes," *PharmacoEconomics*, Vol. 1, Supplement, pp. 1-76, Auckland, New Zealand, 1992.

2 Paul Craig Roberts and Aldona Robbins, "At the Heart of Medicare's Woes," *Wall Street Journal*, November 22, 1985.

3 First-year costs for kidney dialysis and transplants were $233 million, compared to a budget of $100 million. See Paul Eggers, "Trends in Medicare Reimbursement for End-Stage Renal Disease: 1974-1979," *Health Care Financing Review*, Vol. 6, No. 1, Fall 1984, p. 33.

4 U.S. Congress, Congressional Budget Office, "The Medicare Catastrophic Coverage Act of 1988," Staff Working Paper, August 1, 1988, Table B-2.

5 These are from the National Health Accounts. In addition we use National Income and Product Account price deflators for the various components of health care such as hospitals, doctors, drugs, etc., and other data such as personal consumption expenditures and population.

6 For a survey of economic studies of the demand for medical care, see Paul Feldstein, *Healthcare Economics* (New York: Wiley, 1988); and Michael A. Morrisey, *Price Sensitivity in Health Care: Implications for Health Care Policy* (Washington, DC: NFIB Foundation, 1992).

7 These are prices paid by consumers, net of third-party payment and all tax subsidies.

8 Typically, the price elasticity estimates have been in the range of -0.2, less than our estimate of -0.4. These studies produced partial equilibrium estimates, however. They focused on a specific type of medical service or geographical area and the elasticities were not estimated within a general equilibrium system.

9 Daniel R. Waldo, Sally T. Sonnefield, David R. McKusick and Ross H. Arnett III, "Health Expenditures by Age Group, 1977 and 1987," *Health Care Financing Review*, Vol. 10, No. 4, Summer 1989, pp. 111-20.

10 Rather than pay the full price, they may have to exhaust all of their resources before the care they receive becomes free.

11 Stephen H. Long and Jack Rodgers, "The Effects of Being Uninsured on Health Service Use: Estimates from the Survey of Income and Programs Participation," Congressional Budget Office, unpublished, Table 3, p. 11.

12 This problem is often described as the problem of rising costs. However, it is not clear that costs in the sense of average cost of treatment are rising. More importantly, the term costs encourages people to focus solely on the supply side of the market, when the initial source of the problem is on the demand side.

13 See John C. Goodman and Gerald L. Musgrave, *Patient Power: Solving America's Health Care Crisis* (Washington, DC: Cato Institute, 1992), p. 76.

14 These estimates are based on National Health Accounts data for personal health expenditures adjusted for tax subsidies and include the administrative costs for private health insurance.

15 The Rand Corporation, in a study conducted from 1974 to 1982, found that people who had access to free care spent about 50 percent more than those who had to pay 95 percent of the bills out-of-pocket up to a maximum of $1,000. A $1,000 deductible over that period would be equivalent to a deductible between $1,380 and $2,482 today. See Robert Brook et al., *The Effect of Coinsurance on the Health of Adults* (Santa Monica, CA: Rand, 1984); and Willard Manning et al., "Health Insurance and the Demand for Health Care: Evidence from a Randomized Experiment," *American Economic Review*, June 1987. The Rand study found no significant differences in the health status of people who had high and low deductibles. The one exception was vision care. See Joseph Newhouse et al., "Some Interim Results from a Controlled Trial of Cost Sharing in Health Insurance," *New England Journal of Medicine*, Vol. 305, No. 25, December 17, 1981, pp. 1501-07; and Robert Brook et al., "Does Free Care Improve Adults Health?" *New England Journal of Medicine*, Vol. 309, No. 23, December 8, 1983, pp. 1426-34.

16 Source: Golden Rule Insurance Company. Figures are for two adults and two children in a city with average health care costs.

17 For deductibles less than $2,500, policyholders face a 20 percent copayment up to $1,000. Thus the foregone coverage is 80 percent x ($1,000 - $250) = $600. The savings from a higher deductible are even greater considering that more than one family member can incur expenses. Under the low-deductible policy, the deductible is $250 per person, with a $500 maximum for the entire family. Under the high-deductible policies, the deductible indicated is for the entire family.

18 The foregone coverage is 80 percent x ($2,500 - $250) = $1,800.

19 See the discussion in John C. Goodman and Gerald L. Musgrave, "Controlling Health Care Costs With Medical Savings Accounts," National Center for Policy Analysis, NCPA Policy Report No. 168, January 1992.

20 Employee Benefit Research Institute, "Source of Health Insurance and Characteristics of the Uninsured," *Special Report and Issue Brief Number 133*, January 1993, Table 1.

21 The 1993 Part A inpatient hospital deductible is $676. The Part B deductible for doctor and other services has increased only three times in Medicare's history — from $50 in 1966 to $100 today.

22 See the discussion in Lucy Johns and Gerald S. Adler, "Evaluation of Recent Changes in Medicaid," *Health Affairs,* Spring 1989, p. 179.

23 For example, people eligible for Medicaid and Medicare Part A pay nothing for coverage. Those participating in Medicare Part B pay a premium equal to about 25 percent of costs. A 2.9 percent payroll tax on wages up to $135,000 (in 1993) finances Medicare Part A. General revenues pay for Medicaid and 75 percent of Medicare Part B expenses.

24 Aldona Robbins and Gary Robbins, "Taxing the Savings of Elderly Americans," National Center for Policy Analysis, NCPA Policy Report No. 141, September 1989.

25 Although Medicare's original stated intent was to reduce elderly health care spending, the elderly now spend a larger share of their income on health care than they did before Medicare existed. See Timothy M. Smeedling and Lavonne Straub, "Health Care Financing Among the Elderly: Who Really Pays the Bills?" *Journal of Health Politics, Policy and Law,* Vol. 12, No. 1, Spring 1987, p. 37.

26 One exception to this general rule is that federal tax law permits employees to make pretax deposits to Flexible Spending Accounts (FSAs) from which to pay for medical expenses not covered by employer-provided health insurance. These accounts are governed by a use-it-or-lose-it rule, however. Within a certain time period, usually a year, employees must spend all funds in the account or forfeit them. FSAs, then, are designed to encourage spending, not restraint. See Alain Enthoven, "Health Tax Policy Mismatch," *Health Affairs,* Winter 1985, pp. 5-13.

27 The value of the benefit equals $1/(1-t)$, where t is the marginal federal income tax rate plus the combined employer-employee Social Security payroll tax rate. For a worker in the 15 percent bracket, $t = 0.15 + 0.153$. For a worker in the 28 percent bracket, $t = 0.28 + 0.153$.

28 The elasticity of demand for health insurance is about -0.65, and the tax subsidy reduces the price of health insurance by about 28 percent.

29 Specifically, the demand elasticity -0.65 multiplied by the 28 percent reduction in price.

30 The system follows the same structure as those for joint production processes found in standard microeconomic textbooks. Using Full Information Maximum Likelihood, we estimate a trans-log production function, which is a second-order approximation in logs to *any* arbitrary production process. The estimated supply elasticity on medical services is one versus six to seven for other sectors of the economy. In other words, a 10 percent increase in price brings about a 60 to 70 percent increase in the amount of nonhealth goods supplied but only a 10 percent increase in the amount of health supplied.

31 The Health Care Financing Administration has made a similar estimate using a different method. HCFA estimates that, between 1960 and 1988, 57 percent of the growth in personal health expenditures was due to price, 10 percent to population and 34 percent to the use of medical supplies and services. See National Center for Health Statistics, *Health, United States, 1990* (Hyattsville, MD: Public Health Services, 1991), Table 106.

32 *Health, United States*, Tables 99 and 100.

33 This figure is implied by the Medicare reimbursement formula. See Prospective Payment Commission, *Report and Recommendations to the Congress,* March 1, 1991, p. 18.

34 Wages are 54 percent of gross domestic product (GDP).

35 See Deloitte & Touche, *The Sourcebook: The Comparative Performance of U.S. Hospitals* (Chicago: Deloitte & Touche, 1989).

36 Capital income was 31 percent of national income in 1990.

37 *Health, United States*, Table 101.

38 Source: NCPA/Fiscal Associates Health Care Model.

[39] Health One, *The Trauma of Transformation in the 1990s* (Minneapolis: Health One Corporation, 1989), p. 11.

[40] Calculated from data in the National Health Accounts/Health Care Financing Administration.

[41] Some confuse the employers' exclusion with some special concession that the Internal Revenue Services grants employers. IRS allows companies to deduct all expenses of hiring workers. The exclusion from *employees'* income is the tax break.

[42] These amounts are net of government tax subsidies.

[43] There are of course differences in supply and demand conditions and rates of substitutability among different sectors that must be taken into account. Estimates of these factors are incorporated into the full medical model.

[44] One reason for this pattern is that higher-wage workers tend to be older, and health care consumption goes up with age.

[45] Unemployed people and employees of firms that do not provide health insurance receive no tax subsidy for the health insurance they purchase. Until July 1992, self-employed individuals were allowed to deduct 25 percent of their health insurance premiums. The deduction, which had been periodically renewed by Congress, was allowed to expire.

[46] About 89 percent of nonelderly Americans who have health insurance acquired it through an employer. Of the 20.5 million workers without health insurance, 12.7 percent are self-employed, 51.2 percent work for companies with less than 100 employees and 16.6 percent were unemployed for 13 weeks or more during 1991. A majority of the remaining 15.8 million uninsured Americans are children or spouses dependent on workers and also are affected by the current tax treatment of health insurance. See *EBRI Special Report and Issue Brief,* No. 133, January 1993, Tables 1, 7 and 28.

[47] Under the provisions of the Consolidated Budget Reconciliation Act (COBRA), employees are entitled to continue coverage for a limited time after they leave an employer if they pay the full premium.

[48] Employee Benefit Research Institute, "Sources of Health Insurance and Characteristics of the Uninsured, Analysis of the March 1991 Current Population Survey," *EBRI Issue Brief,* No. 123, February 1992. See also Katherine Swartz and Timothy D. McBride, "Spells Without Health Insurance: Distribution and Their Link to Point-in-Time Estimates of the Uninsureed," *Inquiry,* Vol. 27, Fall 1990, pp. 281-88.

[49] See John C. Goodman and Gerald L. Musgrave, "Freedom of Choice in Health Insurance," National Center for Policy Analysis, NCPA Policy Report No. 134, November 1988.

[50] Ibid.

[51] See John Gabel and Gail Jensen, "The Price of State-Mandated Benefits," *Inquiry,* Vol. 26, No. 4, Winter 1989, pp. 419-31.

[52] The Wyatt Co., "Cost Analysis of State Legislative Mandates on Six Managed Care Practices," produced by the Health Insurance Association of America, July 1991, and reported in *Medical Benefits,* Vol. 8. No. 17, September 15, 1991, pp. 9-10. See also "Utilization Review Laws: 'Hassle Factor' Inspires Provider Push for Restrictions," *Health Benefits Letter,* Vol. 1, No. 14, August 22, 1991.

[53] Specifically, the model assumes a hypothetical "average" consumer who is subsidized at different rates and is taxed (on the basis of his labor and capital income) in order to pay for the subsidy.

[54] Specifically, in this simulation the subsidy rate is maintained at 34 percent from 1967 forward.

[55] Instead of abolishing Medicare and Medicaid, the simulation reduces government subsidies to the whole population in proportion to their current level.

[56] All amounts shown are in 1987 dollars.

[57] Specifically, in this simulation the government subsidy rate is increased to 75 percent from 1967 forward.

[58] For an extensive analysis of health care rationing in Canada and in other countries with national health insurance, see John C. Goodman and Gerald L. Musgrave, "Twenty Myths about National Health Insurance," National Center for Policy Analysis, NCPA Policy Report No. 166, December 1991.

[59] United States General Accounting Office, "Canadian Health Insurance: Lessons for the United States," Washington, DC, June 1991.

[60] The latest Commerce Department figures estimate that U.S. health spending in 1992 amounted to $838.5 billion or 14 percent of GDP. The model simulation estimates that increasing the government subsidy rate to 75 percent would increase personal health care as a percent of private GDP by 34 percent. That would imply total health care spending on the order of $1,051 billion or 17.7 percent of GDP.

Technical Appendix

The National Center for Policy Analysis/Fiscal Associates Health Care Model is a quantitative model of the U.S. health care system. It is designed to correctly measure prices facing consumers, providers and third-party payers. Once prices are accurately measured, traditional supply and demand relationships can be estimated as in any other sector of the economy. We will use the model to analyze a wide range of health care issues.

The basic model consists of separate relations describing the use and total cost for eight major components of health care (e.g., hospitals, doctors, drugs.) The demand sector includes (1) household demand for all nonhealth consumer goods and (2) household health care spending on insurance and out-of-pocket expenses.[1] The primary determinants of the demand for medical services are the prices facing consumers, prices of other goods, income and demographic factors. Prices of medical care facing consumers depend upon such government programs as Medicare and Medicaid and on tax subsidies for employer-provided health insurance. Demographic factors such as age are proxies for the general health of the population.

A simplified production system links labor and capital inputs to the joint production of health and nonhealth goods and services.[2] The primary determinants of long-run medical prices are the costs of the individual factors of production used in providing medical services. Factor costs are determined by the willingness of people to supply the necessary labor and capital. Estimating the supply of a medical service requires a technological function relating output to inputs and a relationship that links input supply to its compensation and other relevant variables. This supply system allows us to measure how demand influences the cost of producing more health care.

The NCPA/Fiscal Associates model integrates the medical market with the rest of the economy. For example, increases in health care demand mean less demand for other goods and services. Increases in the supply of medical services mean less capital and labor available to produce other goods and services. Thus the medical model measures trade-offs between health care and other types of economic activities.

In using the model, our initial objective is to provide a consistent framework for analyzing medical costs and their components. The model also will enable us to analyze how the medical marketplace adjusts to institutional changes over time. For example, as consumer behavior has changed, other important institutions, such as the insurance contract, have changed to accommodate consumer requirements. Finally, the model will support systematic predictions of the effects of public policy on the medical marketplace and the U.S. economy.

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[1] We have estimated an expanded system of demand equations for individual types of medical services consistent with the total demand for health care broken down by out-of-pocket and insurance coverage.

[2] We have estimated an expanded set of supply equations for individual types of services and the price of insurance coverage for each.

TABLE A-I

Savings from Reducing
Government Health Subsidies to 34 Percent

Year	Change in Government Subsidy[1] ($ bils)	Tax on Labor	Cost of Capital
1970	-36.3	-1.3%	-3.0%
1971	-37.4	-1.3%	-3.1%
1972	-39.8	-1.3%	-2.8%
1973	-42.0	-1.3%	-2.8%
1974	-52.5	-1.6%	-3.4%
1975	-58.1	-1.8%	-4.2%
1976	-62.0	-1.9%	-4.0%
1977	-59.6	-1.7%	-3.4%
1978	-64.5	-1.8%	-3.3%
1979	-71.8	-1.9%	-3.6%
1980	-84.1	-2.2%	-4.0%
1981	-91.1	-2.4%	-4.1%
1982	-93.4	-2.5%	-4.6%
1983	-91.0	-2.4%	-4.3%
1984	-90.4	-2.3%	-4.1%
1985	-96.2	-2.3%	-4.2%
1986	-107.4	-2.5%	-4.5%
1987	-116.8	-2.6%	-4.7%
1988	-113.3	-2.4%	-4.8%
1989	-119.9	-2.6%	-4.7%
1990	-130.6	-2.7%	-5.0%
1970-90	-1,740.9		

Note: Policy simulation assumes that the rate of government subsidy is kept at 34 percent for the period 1967 to 1990. Seventy-five percent of the savings from reduced government spending are used to reduce the tax on labor and the remainder to reduce taxes on capital. Reduced taxes on capital, in turn, reduce the cost of capital.

[1]Revalued using the implicit GDP deflator to reflect 1987 prices.

Economic Effects from Reducing
Government Health Subsidies to 34 Percent

Year	Aftertax Wage Rate	Capital Stock	GDP	Personal Health as a Percent of Private GDP[1]
1970	2.9%	3.7%	1.6%	-6.1%
1971	3.2%	4.6%	2.1%	-6.1%
1972	3.4%	4.8%	2.3%	-6.3%
1973	3.3%	4.8%	2.3%	-6.3%
1974	3.6%	4.5%	2.1%	-8.0%
1975	4.1%	5.0%	2.4%	-9.0%
1976	4.5%	5.7%	2.7%	-9.1%
1977	4.5%	6.2%	3.0%	-8.5%
1978	4.6%	6.1%	3.0%	-8.8%
1979	4.6%	5.8%	2.9%	-9.5%
1980	5.0%	5.5%	2.7%	-11.3%
1981	5.5%	5.8%	2.9%	-12.1%
1982	5.6%	6.1%	3.1%	-12.8%
1983	5.9%	7.0%	3.6%	-12.1%
1984	5.9%	7.5%	3.9%	-11.3%
1985	6.1%	7.5%	3.9%	-11.7%
1986	6.4%	7.5%	4.0%	-12.6%
1987	6.6%	7.7%	4.2%	-13.2%
1988	6.4%	8.1%	4.4%	-12.5%
1989	6.9%	8.6%	4.7%	-12.9%
1990	7.3%	8.7%	4.8%	-14.0%

Note: Policy simulation assumes that the rate of government subsidy is kept at 34 percent for the period 1967 to 1990. Seventy-five percent of the savings from reduced government spending are used to reduce the tax on labor and the remainder to reduce taxes on capital. Reduced taxes on capital, in turn, reduce the cost of capital.

[1]References to this column in the text express the results in terms of total health care spending as a percent of total GDP.

TABLE A-III

Effects on Health and Other Spending from Reducing Government Health Subsidies to 34 percent

Year	Change in Health Spending[1] ($ bils)	Change in Health Spending[1] %	Out-of-Pocket per Capita Health[2]	Spending on Other Consumption: bils $1987	Spending on Other Consumption: %	Spending on Other Consumption: Per Capita	Trade-off between Health & Nonhealth[3]
1970	- 15.7	- 8.5%	$ 101	67.1	4.2%	$ 327	$ 3.25
1971	- 15.9	- 8.2%	$ 103	77.6	4.7%	$ 374	$ 3.61
1972	- 17.0	- 8.1%	$ 109	85.3	4.9%	$ 406	$ 3.74
1973	- 18.0	- 8.1%	$ 113	90.3	5.0%	$ 426	3.77
1974	- 23.4	- 10.1%	$ 136	97.2	5.4%	$ 454	$ 3.33
1975	- 26.0	- 10.8%	$ 148	106.5	5.9%	$ 493	$ 3.33
1976	- 27.5	- 10.5%	$ 158	122.0	6.4%	$ 559	$ 3.54
1977	- 26.1	- 9.4%	$ 152	128.6	6.5%	$ 584	$ 3.83
1978	- 28.5	- 9.9%	$ 161	136.2	6.7%	$ 612	$ 3.79
1979	- 32.4	- 10.8%	$ 175	142.9	6.8%	$ 635	$ 3.62
1980	- 38.8	- 12.4%	$ 199	152.5	7.3%	$ 670	$ 3.36
1981	- 42.6	- 12.9%	$ 211	165.7	8.0%	$ 721	$ 3.42
1982	- 43.5	- 12.3%	$ 215	170.2	8.2%	$ 733	$ 3.41
1983	- 40.9	- 10.9%	$ 214	180.9	8.2%	$ 772	$ 3.62
1984	- 39.7	- 10.1%	$ 215	193.9	8.5%	$ 820	$ 3.82
1985	- 42.0	- 10.2%	$ 227	205.4	8.5%	$ 861	$ 3.79
1986	- 47.1	- 10.9%	$ 251	224.4	9.0%	$ 932	$ 3.72
1987	- 51.2	- 11.2%	$ 270	240.9	9.3%	$ 992	$ 3.68
1988	- 48.5	- 10.0%	$ 265	246.3	9.1%	$1,005	$ 3.80
1989	- 50.5	- 9.8%	$ 280	264.9	9.7%	$1,071	$ 3.82
1990	- 54.9	- 10.0%	$ 303	281.4	10.1%	$1,126	$ 3.72
1970-90	-730.2			3,380.1			

Note: Policy simulation assumes that the rate of government subsidy is kept at 34 percent for the period 1967 to 1990. Seventy-five percent of the savings from reduced government spending are used to reduce the tax on labor and the remainder to reduce taxes on capital. Reduced taxes on capital, in turn, reduce the cost of capital.

[1]Total change in spending on health care — subsidized and unsubsidized. The column reflects nominal spending, which has been revalued using the medical price deflator. The values have been further adjusted using the implicit GDP deflator to reflect 1987 prices.

[2]The change in out-of-pocket spending per person.

[3]The reduction in spending on other goods and services that results from a $1 increase in health spending.

TABLE A-IV

Real Budget Effects from Reducing Government Health Subsidies to 34 Percent

Percent Change in
Government Spending on Health

Year	Static Estimate	Dynamic Estimate	Estimation Error[1]
1970	- 37.9%	- 43.2%	13.9%
1971	- 37.4%	- 42.5%	13.7%
1972	- 37.0%	- 42.1%	13.7%
1973	- 37.1%	- 42.2%	13.8%
1974	- 41.4%	- 47.4%	14.4%
1975	- 42.7%	- 48.9%	14.5%
1976	- 42.4%	- 48.5%	14.3%
1977	- 40.0%	- 45.6%	14.1%
1978	- 40.9%	- 46.7%	14.3%
1979	- 42.7%	- 48.9%	14.6%
1980	- 45.3%	- 52.0%	15.0%
1981	- 45.8%	- 52.8%	15.2%
1982	- 44.9%	- 51.7%	15.1%
1983	- 42.9%	- 49.1%	14.5%
1984	- 41.7%	- 47.6%	14.1%
1985	- 42.1%	- 48.0%	14.1%
1986	- 43.5%	- 49.6%	14.1%
1987	- 44.2%	- 50.5%	14.1%
1988	- 42.1%	- 47.9%	13.7%
1989	- 42.1%	- 47.8%	13.5%
1990	- 42.7%	- 48.4%	13.5%

Note: Policy simulation assumes that the rate of government subsidy is kept at 34 percent for the period 1970 to 1990. Seventy-five percent of the savings from reduced government spending are used to reduce the tax on labor and the remainder to reduce taxes on capital. Reduced taxes on capital, in turn, reduce the cost of capital.

[1]Shows the magnitude of the error that would be produced by static forecasting techniques.

TABLE B-I

Cost of Increasing Government Health Subsidies to 75 percent

Year	Change in Government Subsidy[1] ($ bils)	Tax on Labor	Cost of Capital
1970	62.1	2.2%	6.2%
1971	69.6	2.3%	6.7%
1972	79.1	2.4%	6.1%
1973	84.6	2.4%	6.0%
1974	78.1	2.2%	5.4%
1975	80.7	2.3%	6.2%
1976	91.8	2.4%	6.0%
1977	110.7	2.6%	6.2%
1978	112.5	2.5%	5.6%
1979	108.8	2.4%	5.3%
1980	104.9	2.3%	4.8%
1981	113.3	2.3%	4.7%
1982	130.7	2.6%	5.8%
1983	150.9	2.9%	6.4%
1984	164.0	3.0%	6.7%
1985	168.1	3.0%	6.6%
1986	165.3	2.9%	6.4%
1987	169.2	2.9%	6.4%
1988	198.0	3.1%	7.8%
1989	210.6	3.3%	7.7%
1990	219.8	3.3%	8.0%
1970-90	2,791.6		

Note: Policy simulation assumes that the rate of government subsidy was raised to 75 percent beginning in 1967. Funding for 75 percent of the increased government spending comes from higher taxes on labor and the remainder from higher taxes on capital. Higher taxes on capital, in turn, raise the cost of capital.

[1]Revalued using the implicit GDP deflator to reflect 1987 prices.

TABLE B-II

Economic Effects from Having Increased the Government Health Subsidy Rate to 75 Percent

Year	Aftertax Wage Rate	Capital Stock	GDP	Personal Health as a Percent of Private GDP[1]
1970	-5.7%	-9.1%	-4.3%	5.2%
1971	-6.3%	-10.1%	-4.9%	7.5%
1972	-6.5%	-9.9%	-4.9%	9.6%
1973	-6.3%	-9.6%	-4.8%	10.3%
1974	-5.8%	-9.2%	-4.5%	9.5%
1975	-5.9%	-9.1%	-4.5%	11.1%
1976	-6.1%	-8.9%	-4.4%	13.2%
1977	-6.6%	-8.7%	-4.4%	17.0%
1978	-6.5%	-8.7%	-4.4%	16.5%
1979	-6.2%	-8.5%	-4.3%	15.3%
1980	-5.8%	-7.8%	-3.9%	15.1%
1981	-5.8%	-7.2%	-3.7%	17.4%
1982	-5.9%	-6.5%	-3.4%	22.0%
1983	-6.8%	-7.0%	-3.8%	25.3%
1984	-7.4%	-7.9%	-4.4%	26.5%
1985	-7.8%	-8.8%	-4.9%	26.4%
1986	-7.9%	-9.4%	-5.3%	25.1%
1987	-7.9%	-9.5%	-5.4%	25.1%
1988	-8.4%	-9.7%	-5.6%	29.5%
1989	-9.2%	-10.4%	-6.2%	31.8%
1990	-9.5%	-10.9%	-6.5%	33.8%

Note: Policy simulation assumes that the rate of government subsidy was raised to 75 percent beginning in 1967. Funding for 75 percent of the increased government spending comes from higher taxes on labor and the remainder from higher taxes on capital. Higher taxes on capital, in turn, raise the cost of capital.

[1]References to this column in the text express the results in terms of total health care spending as a percent of total GDP.

TABLE B-III

Effects on Health and Other Spending from Increasing Government Health Subsidies To 75 Percent

Year	Change in Health Spending[1] ($ bils)	%	Out-of-Pocket per Capita Health[2]	Spending on Other Consumption: bils $1987	%	Per Capita	Trade-off between Health & Nonhealth[3]
1970	9.9	5.3%	-$255	-125.0	-7.8%	-$609	$2.39
1971	14.8	7.5%	-$264	-143.0	-8.6%	-$688	$2.61
1972	20.8	9.9%	-$278	-153.9	-8.8%	-$733	$2.64
1973	23.8	10.8%	-$287	-160.6	-8.8%	-$758	$2.64
1974	21.7	9.4%	-$263	-147.2	-8.1%	-$688	$2.61
1975	25.0	10.4%	-$258	-144.9	-8.0%	-$671	$2.60
1976	31.9	12.2%	-$275	-158.4	-8.3%	-$726	$2.64
1977	44.0	15.8%	-$303	-174.2	-8.8%	-$791	$2.61
1978	44.7	15.5%	-$304	-179.6	-8.8%	-$807	$2.65
1979	42.5	14.2%	-$295	-176.6	-8.4%	-$784	$2.66
1980	41.9	13.4%	-$277	-163.9	-7.8%	-$720	$2.60
1981	49.9	15.1%	-$276	-163.8	-7.9%	-$712	$2.58
1982	62.5	17.7%	-$294	-164.1	-7.9%	-$707	$2.41
1983	73.3	19.5%	-$331	-190.2	-8.7%	-$812	$2.45
1984	79.7	20.3%	-$356	-221.4	-9.7%	-$937	$2.63
1985	79.7	19.3%	-$371	-242.0	-10.1%	-$1,015	$2.74
1986	75.7	17.5%	-$372	-256.9	-10.3%	-$1,067	$2.87
1987	77.1	16.9%	-$379	-267.3	-10.3%	-$1,101	$2.90
1988	93.9	19.3%	-$425	-297.7	-11.1%	-$1,215	$2.86
1989	100.4	19.5%	-$446	-327.6	-12.0%	-$1,324	$2.97
1990	104.7	19.1%	-$461	-345.1	-12.4%	-$1,380	$3.00
1970-90	1,117.8			4,203.2			

Note: Policy simulation assumes that the rate of government subsidy was raised to 75 percent beginning in 1967. Funding for 75 percent of the increased government spending comes from higher taxes on labor and the remainder from higher taxes on capital. Higher taxes on capital, in turn, raise the cost of capital.

[1] Total change in spending on health care — subsidized and unsubsidized. The column reflects nominal spending, which has been revalued using the medical price deflator. The values have been further adjusted using the implicit GDP deflator to reflect 1987 prices.

[2] The change in unsubsidized spending per person.

[3] The change in spending on other goods and services that results from a $1 change in health spending.

TABLE B-IV

Real Budget Effects from Increasing Government Health Subsidies to 75 Percent

	Percent Change in Government Spending on Health		
Year	Static Estimate	Dynamic Estimate	Estimation Error[1]
1970	65.0%	73.5%	13.0%
1971	66.4%	78.8%	18.6%
1972	67.3%	84.1%	24.9%
1973	67.1%	85.6%	27.5%
1974	55.7%	71.3%	28.0%
1975	52.2%	68.3%	30.9%
1976	53.1%	72.1%	35.8%
1977	59.5%	84.8%	42.5%
1978	57.2%	82.1%	43.6%
1979	52.4%	74.9%	43.1%
1980	45.5%	66.0%	45.1%
1981	44.0%	66.5%	51.3%
1982	46.4%	72.2%	55.6%
1983	51.8%	80.6%	55.6%
1984	54.9%	85.4%	55.7%
1985	54.0%	83.4%	54.5%
1986	50.1%	76.7%	53.0%
1987	48.2%	73.6%	52.8%
1988	53.9%	82.9%	53.9%
1989	53.9%	83.3%	54.6%
1990	52.4%	81.1%	54.9%

Note: Policy simulation assumes that the rate of government subsidy is raised to 75 percent beginning in 1970. Funding for 75 percent of the increased government spending comes from higher taxes on labor and the remainder from higher taxes on capital. Higher taxes on capital, in turn, raise the cost of capital.

[1]Shows the magnitude of the error that would be produced by static forecasting techniques.

About the Authors

Gary Robbins is a Senior Fellow of the NCPA and President of Fiscal Associates. He has developed a general equilibrium model of the U.S. economy that specifically incorporates the effects of taxes and government spending. Before joining the private sector, he was Chief of the Applied Econometrics Staff at the U.S. Department of Treasury from 1982 to 1985, Assistant to the Under Secretary for Tax and Economic Affairs from 1981 to 1982, and Assistant to the Director of the Office of Tax Analysis from 1976 to 1981. Recent publications include NCPA Reports entitled "Taxes, Deficits and the Current Recession," "A Pro-Growth Budget Strategy: Vision for the 1990s" and "Elderly Taxpayers and the Capital Gains Tax Debate"; an IPI Report entitled "Will Raising Taxes Reduce the Deficit"; and a report for the U.S. Chamber of Commerce entitled "Adding to the S&L Solution: A Case for Lower Capital Gains Taxes." His articles on various tax policy issues have appeared in the *Wall Street Journal*.

Aldona Robbins, a Senior Fellow of the NCPA and Vice President of Fiscal Associates, has extensive experience with public and private retirement programs. She served as senior economist in the Office of Economic Policy, U.S. Department of the Treasury from 1979 to 1985 and has developed a model to project Social Security benefits and tax revenues. Recent publications include NCPA Reports entitled "What A Canadian-Style Health Care System Would Cost U.S. Employers and Employees" and "Taxing the Savings of Elderly Americans"; an NCPA and Institute for Policy Innovation Report entitled "Paying People Not To Work: The Economic Cost of the Social Security Retirement Earnings Limit"; a book entitled *The ABCs of Social Security,* published by the Institute for Research on the Economics of Taxation Economic Report; and an article entitled "Encouraging Private Provision for Long-Term Care" in *Compensation and Benefits Management.* Her articles on Individual Retirement Accounts and Medicare have appeared in the *Wall Street Journal.*

John C. Goodman is president of the National Center for Policy Analysis. Dr. Goodman earned his Ph.D. in economics at Columbia University and has engaged in teaching and research at six colleges and universities, including Columbia University, Stanford University, Dartmouth College, Sarah Lawrence College and Southern Methodist University. Dr. Goodman has written widely on health care, Social Security, privatization, the welfare state and other public policy issues. He is the author of six books and numerous scholarly articles. His published works include *National Health Care in Great Britain; Regulation of Medical Care: Is the Price Too High?; Economics of Public Policy; Social Security in the United Kingdom*; and *Patient Power: Solving America's Health Care Crisis.*

The National Center for Policy Analysis

The National Center for Policy Analysis is a nonprofit, nonpartisan research institute, funded exclusively by private contributions. The NCPA originated the concept of the Medical IRA (which has bipartisan support in Congress) and merit pay for school districts (adopted in South Carolina and Texas). Many credit NCPA studies of the Medicare surtax as the main factor leading to the 1989 repeal of the Medicare Catastrophic Coverage Act.

NCPA forecasts show that repeal of the Social Security earnings test would cause no loss of federal revenue, that a capital gains tax cut would increase federal revenue and that the federal government gets virtually all the money back from the current child care tax credit. These forecasts are an alternative to the forecasts of the Congressional Budget Office and the Joint Committee on Taxation and are frequently used by Republicans and Democrats in Congress. The NCPA also has produced a first-of-its-kind, pro-free-enterprise health care task force report, written by 40 representatives of think tanks and research institutes, and a first-of-its-kind, pro-free enterprise environmental task force report, written by 76 representatives of think tanks and research institutes.

The NCPA is the source of numerous discoveries that have been reported in the national news. According to NCPA reports:

- Blacks and other minorities are severely disadvantaged under Social Security, Medicare and other age-based entitlement programs;

- Special taxes on the elderly have destroyed the value of tax-deferred savings (IRAs, employee pensions, etc.) for a large portion of young workers; and

- Man-made food additives, pesticides and airborne pollutants are much less of a health risk than carcinogens that exist naturally in our environment.

What Others Say About the NCPA

"...influencing the national debate with studies, reports and seminars."

— *TIME*

"...steadily thrusting such ideas as 'privatization' of social services into the intellectual marketplace."

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"Increasingly influential."

— *EVANS AND NOVAK*