Can Defined Contribution Health Insurance Reduce Cost Growth?

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Issue Brief

- This *Issue Brief* focuses on one key question: Can a widespread shift to defined contribution health plan arrangements (DC health) lower the growth rate of health care costs? The answer to this question is in two parts: (1) What are the root causes of health care cost inflation? (2) What will be the price responsiveness of workers with structured incentives to choose among health plans?

- There is widespread agreement (in the research community) that by far the most important source of cost growth (greater than 50 percent) has been technological advance, such as new surgical techniques, drug therapies, and diagnostic and treatment devices.

- National health expenditure experts are forecasting 7 percent–9 percent annual cost growth in health insurance premiums for the next 10 years. This is especially troubling to employers, who had hoped that tightly managed care had "solved" the cost growth problems of the late 1980s and early 1990s.

- There is evidence that health care cost growth never really declined, but instead was temporarily masked during the transition to managed care. Thus, while utilization management and price discounts represent real efficiencies, they may prove to be more of a "one-time shot" than a fundamental reduction in the rate of cost growth that is driven by the development and adoption of new medical technologies.

- Employment-based insurance pays for only approximately 27 percent of national health care expenditures. While employment-based health insurance can be a leader in developing techniques that may improve efficiencies in the public sector, Medicare and Medicaid purchasing strategies are likely to be more important than employment-based insurance in affecting market-wide rates of technical advance in medical care.

- DC health benefits can be part of a solution that enables workers to choose between health care cost and quality, and thereby enforce a discipline on health plans and providers that has not been present before. But DC health benefits cannot force this choice upon an unwilling work force/patient base; it is likely that Americans would do this, collectively, only if the foregone quality and outcomes are acceptably close, on average, to what could be obtained at higher cost. Whether such a tradeoff is either truly attainable or can be measured with enough precision to be persuasive is the crucial empirical question.

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Introduction

Despite the fact that more individuals than ever are covered today through employment-based health plans, serious policy debate about the future structure and viability of employment-based health insurance has intensified in recent years (U.S. Census, 2000; Holahan and Kim, 2000; Fronstin, 2001b; Salisbury, 1999). Defined contribution (DC) health plan arrangements—characterized broadly as those which shift choice of and responsibility for the details of health insurance arrangements from employers to employees—have recently been the focus of much attention (PriceWaterhouseCoopers, 2000; Fronstin, 2001a, Center for Studying Health System Change, 2001).

Following the growth in popularity of defined contribution *retirement* benefits, some see defined contribution *health* benefits as a promising tool for controlling employers' benefit costs. Defined contribution retirement plans allow employers to exercise more control over most or all of the costs associated with providing retirement benefits to employees. Employers assume all of the investment risks and administrative costs for providing a defined benefit pension, whereas all of the investment risks and all or most of the administrative costs are transferred to workers in a defined contribution retirement plan. In the same way, through defined contribution health plans employers could accelerate the drive toward a more individual-based and "efficient" health care system and gain more control over their contributions to the costs of health care by transferring to employees the authority to control the terms of their own health insurance.

It is clear that the term "DC health" means quite

different things to different people (Fronstin 2001a). Some have in mind the employer playing the role of sponsoring "managed competition" among the health plans it chooses (such as the federal government does in the Federal Employees Health Benefits Plan), based on a set of defined criteria, including quality. In these cases, the employer contribution is predetermined and uniform across multiple plans so that employees pay more out of their own pocket for more expensive plans. In this version of "DC health," all plans would still have benefit levels *that are determined by the employer,* but may cost more in total than the employer's contribution.

For others, "DC health" evokes images of individuals selecting their preferred plan among the range of products available in the non-group market, with a fixed-dollar contribution from their employer, to help defray the costs of health insurance. Still others use the term quite specifically to mean something else.

This report focuses on one key question: Can a widespread shift to defined contribution health plan arrangements lower the growth rate of health care costs? In order to answer this question, two other questions must be answered first: (1) What are the root causes of health care cost inflation? (2) What will be the price responsiveness of workers with structured incentives to choose among health plans?

The first section of this *Issue Brief* describes recent trends that have intensified employer interest in DC health plans, followed by an explanation of how employers came to embrace managed care and how interest in DC health flows from the subsequent disappointment over managed care. The following section outlines how certain kinds of DC plans could—theoretically—help contain health care cost growth; this section also identifies the necessary conditions, including institutional development, for DC health plan effectiveness. The final section explains the limits on DC plans' ability to constrain cost growth over time, and the additional research that is needed.

Recent Trends

Employers continue to be the main source of health insurance for most Americans (Fronstin, 2001b), and currently provide coverage to over 67 percent of those under age 65. This is true for four important reasons: (1) The administrative loads for employment-based group health insurance arrangements are about 25–35 percent lower than the individual insurance market. (2) The employment-based group offers a "natural selection" of people covered for health insurance. Workers and their families are drawn together for a purpose other than health insurance. This minimizes adverse selection for larger employment-based groups. (3) The tax preference for employer premium payments in lieu of cash wages is a substantial subsidy for the employee. (4) Offering employees health insurance allows employers to compete for skilled labor that can obtain health insurance offers from other employers. Indeed, in tight labor markets like the United States has had since about 1995, employers compete for workers so intensely that the majority of the work force would find it difficult to obtain a job offer that did not include health insurance coverage. Thus, it is not surprising that most working Americans (and their families) under age 65 receive health insurance coverage through employment arrangements. In addition to all these efficiencies flowing to workers, employers may gain as well, from fewer lost workdays and higher productivity (Fronstin and Holtmann, 2000). In recent years the percentage of Americans covered by employment-based health insurance coverage has risen (Fronstin, 2001b; Holahan and Kim, 2000) (figure 1). Most recently, "offer rates" (the percentage of workers who are offered insurance by their employer), even among small firms, have been higher than they were in the 1980s and early 1990s (Cooper and Schone, 1997; Gabel et al., 2000, Fronstin, 2002). This

Figure 1

NONELDERLY AMERICANS WITH SELECTED SOURCES OF HEALTH INSURANCE COVERAGE, 1987–2000

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
							(millions)							
Total Population	214.4	216.6	218.5	220.6	222.9	225.5	228.0	229.9	231.9	234.0	236.2	238.6	240.7	242.8
Employment-Based Coverage	150.3	151.2	151.7	149.6	149.5	147.8	146.7	148.1	149.7	151.7	153.6	156.7	160.3	163.4
Own name	73.5	74.5	75.1	74.1	74.1	72.7	76.0	76.3	76.9	78.0	78.5	80.2	81.4	83.7
Dependent coverage	76.8	76.7	76.6	75.5	75.4	75.0	70.7	71.9	72.8	73.7	75.1	76.5	78.9	79.7
Individually Purchased	15.0	14.3	15.2	15.1	14.3	15.3	17.5	17.3	16.8	16.8	16.6	16.3	16.6	16.1
Public	28.8	29.1	29.1	32.2	34.8	36.4	38.5	39.4	38.8	37.8	35.3	34.6	34.5	34.3
Medicare	3.1	3.2	3.2	3.5	3.5	4.0	3.7	3.7	4.1	4.6	4.7	4.8	4.9	5.3
Medicaid	18.6	19.1	19.5	22.7	25.2	26.9	29.4	29.1	29.4	28.6	26.4	25.2	25.3	25.3
Tricare/CHAMPVA[a]	8.6	8.2	7.9	7.9	7.9	7.5	7.5	8.7	7.5	6.9	6.6	6.9	6.6	6.2
No Health Insurance	29.5	31.1	31.7	32.9	33.6	35.4	36.4	36.5	37.3	38.3	39.9	40.7	39.0	38.4
							(percentage)							
Total Population	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Employment-Based Coverage	70.1	69.8	69.4	67.8	67.1	65.5	64.3	64.4	64.6	64.8	65.0	65.7	66.6	67.3
Own name	34.3	34.4	34.4	33.6	33.2	32.2	33.3	33.2	33.2	33.3	33.2	33.6	33.8	34.5
Dependent coverage	35.8	35.4	35.1	34.2	33.8	33.3	31.0	31.3	31.4	31.5	31.8	32.1	32.8	32.8
Individually Purchased	7.0	6.6	7.0	6.8	6.4	6.8	7.7	7.5	7.2	7.2	7.0	6.8	6.9	6.6
Public	13.4	13.4	13.3	14.6	15.6	16.1	16.9	17.1	16.7	16.2	15.0	14.5	14.3	14.1
Medicare	1.5	1.5	1.5	1.6	1.6	1.8	1.6	1.6	1.8	2.0	2.0	2.0	2.0	2.2
Medicaid	8.7	8.8	8.9	10.3	11.3	11.9	12.9	12.7	12.7	12.2	11.2	10.6	10.5	10.4
Tricare/CHAMPVA[a]	4.0	3.8	3.6	3.6	3.5	3.3	3.3	3.8	3.2	2.9	2.8	2.9	2.7	2.5
No Health Insurance	13.7	14.4	14.5	14.9	15.1	15.7	16.0	15.9	16.1	16.4	16.9	17.0	16.2	15.8

Source: Employee Benefit Research Institute estimates from the March Current Population Survey, 1988–2001 Supplements.
Note: Details may not add to totals because individuals may receive coverage from more than one source.
[a]TRICARE (formerly known as CHAMPUS) is a program administered by the Department of Defense for military retirees as well as families of active duty, retired, and deceased service members. CHAMPVA, the Civilian Health and Medical Program for the Department of Veterans Affairs, is a health care benefits program for disabled dependents of veterans and certain survivors of veterans.

expansion has been driven by competition over increasingly scarce labor. It appears that low unemployment has more influence over the extent of employment-based health insurance than the recently countervailing pressure of increasing health care costs. But clearly, frustration with the costs of employment-based insurance combined with the prospects for softening labor markets in conjunction with an economic downturn has piqued interest in more aggressive cost containment measures (Salisbury, 1998; PriceWaterhouseCoopers, 2000; Fronstin, 2001b).

Widely accepted economic theory contends that, at least in the long-term, all health insurance costs are borne by workers. In other words, as "employer-paid" health insurance costs per worker rise, cash wages for workers are reduced relative to what they otherwise would have been. The employer does not, in the long-term, absorb increases in health care costs, but passes them through to the employee.

Received theory notwithstanding, many employers act as if they do bear some costs of health insurance. This may be because, in the absence of perfect information in such a complex market, some employers fear that other employers are more efficient at managing health care costs, and can therefore offer higher wages and comparable benefits. Thus, employers who are unable to manage health care costs fear that they might lose a competitive advantage in their labor and product markets for reasons unrelated to their core business competence. Four trends described below help explain why employers have become interested in different benefit models that may allow them to stabilize *their* costs and to put some distance between them and care decisions made by their employees.

Return to Rapid Growth in Health Benefit Costs

Health premium cost growth slowed in the mid-1990s, but is rising again at double-digit annual rates for many employers (Hogan, et al., 2000; Strunk et al., 2001). National health expenditure experts at the Centers for Medicare and Medicaid Services (formerly the Health Care Financing Administration) are forecasting 7–9 percent cost growth in health insurance premiums for the next 10 years (Heffler, et al., 2001). This is especially troubling to employers who had hoped that more tightly managed care, along with forceful bargaining with insurers and service providers, had "solved" the cost growth problems of the late 1980s and early 1990s.

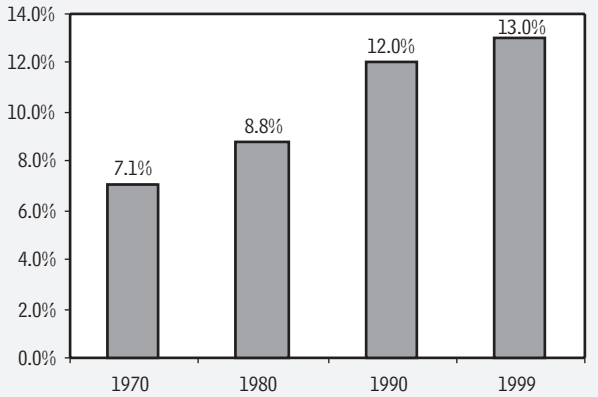
Rising Complexity of Health Care Purchasing

In the "good old days" of unmanaged fee-for-service health insurance, the employer-employee bargain regarding health insurance was simply about money: how much to reduce wages to finance employer payments, what premium share employers would pay, and what level of co-payments would be required with the chosen insurance plan. Under this financial arrangement, the employee had choice of providers, and by exercising that choice, the worker explicitly selected the desired level of health service quality.

Today, managed care complicates this simple bargain. Under managed care, the employer, or more likely, its insurer (i.e., the managed care organization) selects and negotiates with health care providers directly. Instead of the employee controlling the selection of providers and the expected level of service quality as in the fee-for-service arrangement, now the employer or its insurer selects providers and monitors services rendered through utilization management and selective contracting techniques. The open-ended choice available to workers in the fee-for-service plan no longer exists in the managed care plan, with the result that many workers feel a loss of control over the ultimate point chosen on the inevitable cost-quality tradeoff.

Frustration from this loss of control has made workers willing co-conspirators with health care providers in the backlash against managed care, which has shown itself most dramatically in the various "patient's

Figure 2
NATIONAL HEALTH SPENDING AS A PERCENTAGE OF GROSS DOMESTIC PRODUCT



Source: Centers for Medicare and Medicaid Services (formerly Health Care Financing Administration), Office of the Actuary.

bill of rights" (PBOR) legislation at the state and federal levels. Some employers are tired of arguing with employees about the constraints on choice with respect to providers and services that are perceived as negative attributes of managed care. This fatigue is due largely to the current difficulty in making persuasive arguments about quality in the present context of restricted provider choices. In the absence of compelling quality measurement and information dissemination techniques, some workers have come to fear that employers and managed care plans choose affordability over quality. This choice implies a new role for employers that some did not seek and do not want to fulfill, for it reaches far beyond the mere financial sponsorship role it had in the old fee-for-service environment. Employer discomfort with the quality-tradeoff role is exacerbated by health plan liability provisions enacted in some states and proposed in PBOR legislation in Congress.

Declining Employer Share and "Rising Decliners"

Despite the perception that employers are reducing the share of premiums they pay in the face of premium inflation, hard data do not support this conclusion. In fact, recent data suggest that the employer share has been constant or increasing (Fronstin, 2001c). However, even if the employer share of health insurance costs on average have been constant, if premiums rise faster than wages then there has been a *relative* price increase of health insurance compared with other consumer goods—and this relative price change, though small in any one year, can still induce a larger fraction of workers to decline health insurance. This does appear to have occurred over the last 15 years (Cooper and Schone, 1997: Farber and Levy, 2000, Fronstin, 2002).

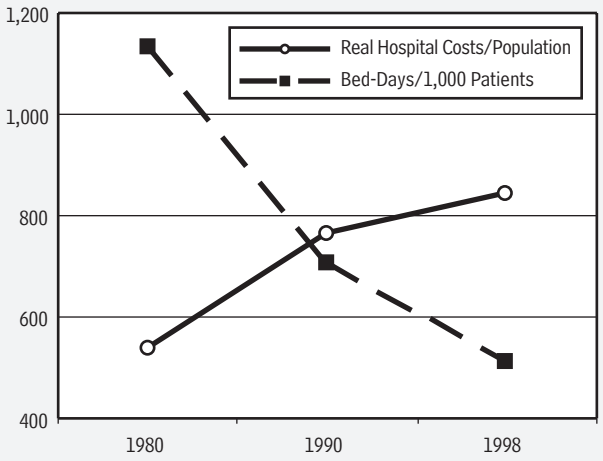
More workers declining employment-based health insurance even in the face of rising health care costs implies that something fundamental may be misunderstood about employer premium-wage tradeoffs. A puzzle for traditional economic theory on this issue is, why would any worker willingly take a job that offers health insurance and forego wages equal to 75–80 percent of the premium, and then decline that employer's offer for insurance when the marginal cost of insurance to the worker at that point is so low? Basic research about the employer-employee tradeoff is necessary.[1] The increase in the proportion of workers who decline employment-based health insurance offers is also consistent with the possibility that workers have increased confidence in access to free care (Herring, 2000), as well as confidence in their ability to purchase health insurance in the future when their health care needs might be greater.[2] But the immediate point is that with all the difficulties entailed by employer sponsorship of health insurance, if increasing fractions of workers are declining health insurance when it is offered, why should employers do more than contribute some tax-free, fixed-dollar amount and then get out of workers' way?

Patient Protection Backlash and Fears

Inevitably, the explosion of managed care restrictions and patient protection acts in state legislatures (Bovbjerg and Marsteller, 1998) and the continued debate at the federal level over health plan and self-insured employer liability for denial of necessary care has frightened a growing number of employers. To control costs driven by the availability of, and demand for, innovative and expensive diagnostics, treatments and devices, and liability for care decisions with adverse outcomes, health-plan sponsors are considering the risks of continuing to determine or select plan benefit provisions for their employees. It may be more affordable and safer to simply define the *amount contributed* toward health insurance—and leave it at that.

Cost Growth and Interest in DC Health

Figure 3
HOSPITAL DAYS AND BED DAY COST, 1980–1998



Source: Centers for Medicare and Medicaid Services (formerly Health Care Financing Administration), National Center for Health Statistics, and Economic Report of the President.

Health care costs in the United States have grown faster than gross domestic product (GDP), on a per capita basis, since 1929 (Newhouse, 1992; Centers for Medicare and Medicaid Services, 2001) (Figure 2). After years of confusion and fairly sterile debates, the key causes of health care cost growth in the United States are becoming increasingly clear.

Sources of Cost Growth

Technically, health care cost growth can be broken down into medical price inflation, growth in the volume of services, and growth in the intensity of services. The vast majority of cost growth is accounted for by increasing intensity (Figure 3). Bed days per thousand persons have fallen by more than half since 1980, but aggregate real hospital costs per person have risen in the same time period by almost 60 percent. Thus, more intensive services per bed day are clearly being delivered to hospital patients over time. While this basic point about the importance of health service intensity is true, the breakdown of cost growth in this way is overly simplistic, since the measurement of medical price inflation is flawed by its failure to account for productivity increases (Newhouse, 1992; Cutler and Berndt, 2001). Interest in the causes of health care cost growth has intensified as the share of U.S. gross domestic product (GDP) claimed by health care has grown from 5 percent to more than 13 percent in the last 40 years (Newhouse, 1992; Cutler, 1995; Chernew et al., 1998; Smith et al., 2000; Mohr et al., 2001; Technical Review Panel for the Medicare Trustees Reports, 2000). Each of these recent reports has examined hypotheses and data about alternative sources of cost growth over the long term—the aging of the population, the spread of ever more comprehensive insurance, the growth in disposable income, medical price inflation (properly measured), the rise of defensive medicine, and the adoption and diffusion of new medical technologies of diagnosis and treatment. There is widespread agreement that by far the most important source of cost growth (greater than 50 percent) has been technological advance (Figure 4). This advance spans new surgical techniques, new drug therapies, and new diagnostic and treatment devices. Other countries have had similar cost growth experience despite having very different health delivery and financing systems (Figure 5). This is consistent with technological improvement as the underlying cause of medical cost inflation—the one feature all health systems have in common.

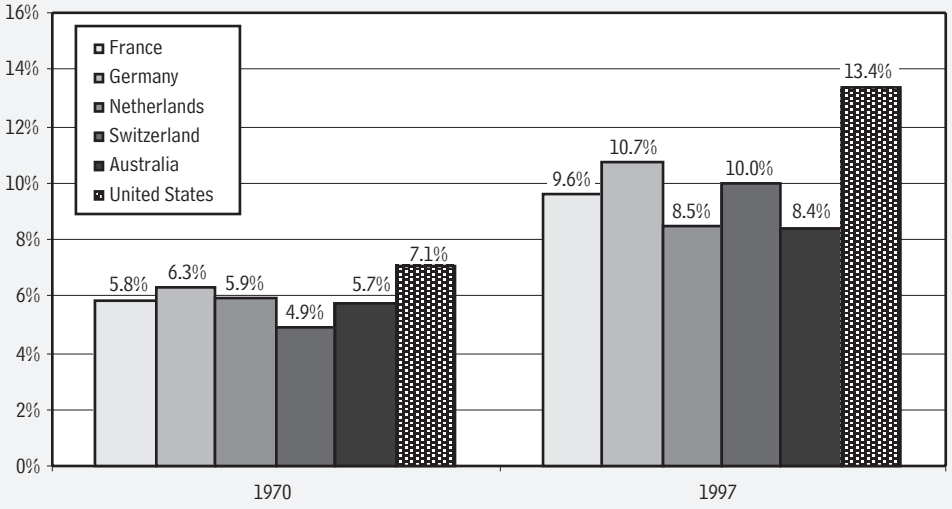
Technology drives cost growth so much because

Figure 4
HEALTH COST DRIVERS

Aging	2%
Insurance	10%–13%
Income Growth	5%–13%
Medical Price Inflation	0%–20%
Defensive Medicine	0%
Technology	50%–66+%

Sources: Joseph P. Newhouse, "Medical Care Costs: How Much Welfare Loss?" *Journal of Economic Perspectives*, Vol. 6, no. 3 (summer 1992): 3–21; and David M. Cutler, "Technology, Health Costs and the NIH," paper prepared for the National Institutes of Health Economics Roundtable on Biomedical Research (Cambridget MA, Septmber 1995).

Figure 5
WORLDWIDE HEALTH CARE COST GROWTH
(NATIONAL HEALTH EXPENSE AS A PERCENTAGE OF GDP)



Source: National Center for Health Statistics.

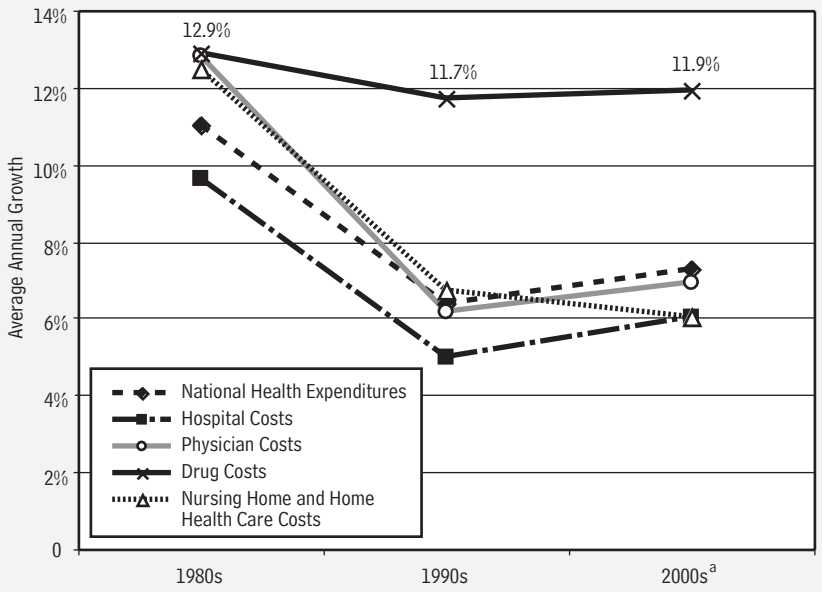
it affects both volume and intensity. Providers must charge higher prices for more complex and resource-intensive technologies (e.g., bypass surgery). At the same time, less invasive technological advances that lower price may nonetheless be shared with many more patients and thus increase costs overall (e.g., laparoscopic cholecystectomy). Perhaps one example sums up the role of technological diffusion: in 1984, 11 percent of Medicare patients with a heart attack received some kind of surgical treatment; by 1994, 47 percent of Medicare patients with a heart attack received a surgical intervention (Cutler, McClellan, et al., 1998, 2000). Many of these patients were clearly helped by the spread of effective surgical techniques, but almost 60 percent more is now being spent per case, in real terms. In addition to higher costs per service for a given health problem, the application of new technology often necessitates more both "upstream" and "downstream" complementary service use. For example, before either angioplasty or bypass surgery can be performed, heart patients must receive cardiac catherization. And naturally post-acute rehabilitation services for surgical patients are greater than for those who are being managed medically. Finally, and perhaps most importantly, much of new technology improves outcomes and prolongs and/or improves the quality of life. At the same time, prolonged life increases the likelihood that other diseases will manifest themselves, and thus total health care costs per capita rise still more.

New technology increases diagnostic and treatment options and may improve outcomes in many cases. Thus, some technological advance is clearly worth the extra cost. Indeed, one recent analysis concluded that in the aggregate, medical technology research is very likely to generate benefits that far exceed the costs of that research (Murphy and Topel, 2000). Given the generally enhanced chance of a better clinical outcome, the individualistic impulse to try heroically against the odds (and sometimes the better judgment of disinterested experts) intensifies the demand for use of the latest diagnostic, surgical, and pharmaceutical applications. Inculcating a social ethic of balance—so that private and public third-party payers finance cost-effective efforts, but no more than that—may be particularly difficult in the American context. Denying services with low probabilities of success may require a higher burden of proof in the U.S. than in northern Europe or Japan, and sufficient proof has proven to be largely elusive in the American context. Tempering the demand for technological advancement is key to long-run cost containment, a point elaborated on later in this report.

Cost Growth and DC Health

The uninterrupted historical fact of U.S. health care cost growth—from 5.1 percent of GDP in 1960 to 13.2 percent in 2000 without a commensurate rise in population health status measures—demonstrated to most policy

Figure 6
GROWTH OF NATIONAL HEALTH SPENDING COMPONENTS



Source: Author's calculations from CMS data, 2000.
[a] Projected

makers that fee-for-service delivery and indemnity insurance systems were incapable of balancing costs and the clinical value of medical advances. Extensive research has shown that the primary failures of unfettered fee-for-service coverage were poor incentives for providers to control costs and inadequate information systems and bargaining power on the part of most insurers and patients. In the face of these failures, managed care came to be seen as a way to prevent providers from "over-supplying" health care while preserving and even enhancing health care quality as well. The responsiveness of patients to out-of-pocket health care costs, while present, was never great enough (elasticities are in the –0.2 to –0.6 range) (Newhouse, 1993) to be able to curtail demand for services as effectively as managed care could by changing the incentives on the supply side.

But managed care fell from grace despite reducing costs when its utilization management and selective contracting techniques managed to infuriate enough patients and health care providers to form a powerful coalition against a common enemy. The fact that high rates of cost growth are now coming back, despite managed care's spread in recent years, makes many people seriously question whether managed care is such a bargain after all. If it infuriates providers and annoys patients and still cannot contain costs, what is its value?

There are many answers to this question, most of which are beyond the scope of this paper, but two salient points are worth noting. First, Figure 6 shows that national health care cost growth slowed considerably in the 1990s (precisely when managed care was spreading rapidly among U.S. employers), so there was some recent success against cost growth. Perhaps managed care did what was asked of it, but patients and providers did not like the methods employed—and now that cost growth has returned, managed care has few steadfast friends and many highly motivated (and some self-interested) enemies.

The second and more subtle point is that, perhaps, health care cost growth never really declined, but instead "hid" for a while. After all, managed care mostly reduced hospital admissions and provider prices; once admissions per enrollee were down to the minimum, and provider prices were as low as local conditions would allow, managed care plans were subject to the same cost pressures from technology adoption as any other type of health plan. Consider the following illustrative example: Suppose an employer offers two health plans and pays 90 percent of the premium regardless of which one the employee selects. One plan has a premium 10 percent higher than the other. The high-cost plan might not restrict providers, but both plans have the same underlying growth rate of health costs—say 10 percent per year—since they have identical technology adoption strategies. Suppose that each of the last 10 years, half the employees chose each plan, but that this year 25 percent of the employees switch from the high-cost plan to the low-cost plan due to changes in the employer's premium contribution policy. The average premium reduction from the employee shift to the lower-cost plan partially offsets the cost inflation in the low-cost plan. Thus, the measured "per worker" premium

inflation would be only about 7.5 percent—not the 10 percent that is the fundamental underlying growth rate in both plans by construction in the example.

Now relax the conditions of the example, and imagine similar plan-switching occurring not immediately but over a few years. During this time, the inpatient utilization reductions and price discounts of the "first generation" of managed care also take some time to reach their zenith. There can then be a series of years wherein the measured growth in per enrollee cost is less than 10 percent, even though all plans have the same underlying growth rate. But ultimately, when all employees are in the managed care plan, managed care cost containment over time will not be able to conceal the real growth of health care costs. Thus, while utilization management and price discounts represent real efficiencies, they may prove to be more of a "one-time shot" than a fundamental reduction in the rate of cost growth that is driven by the development and adoption of new medical technologies.

The major point here is that employers who had come to rely on managed care are having second thoughts, and so the search is underway for another device that will allow employers to contain *their* costs, whether or not it controls *total* health care costs. Thus, DC health plan arrangements, at least in some forms, appear to hold considerable promise, and they are now getting a serious look (Fronstin, 2001a; Center for Studying Health System Change, 2001).

How DC Health Plans Could Reduce Cost Growth

As has been pointed out, DC health benefits take many different forms and indeed the term means different things to different people (Fronstin 2001a). But a unifying theme behind the concept is to shift responsibility and choice for specific health care and health insurance arrangements from the employer to the employee. The theory of "managed competition" (Enthoven, 1978, 1988, 1993; Enthoven and Kronick, 1989) articulates a workable vision of health plan competition that would promote efficiency and that could be implemented by employers and/or governments as purchasers. At its core, managed competition has a DC element, in that employers and other plan sponsors are expected to set their contribution limits in such a way that employees would be fully responsible for any higher premiums above the benchmark plan determined by the purchaser. Surveys report that while examples of the managed competition model are alive and well (e.g., Meyer et al., 1997; Maxwell et al., 1998), it has not been widely adopted despite its considerable promise (Marquis and Long, 1999). As a result, the empirical economic literature of health plan choice has been limited to somewhat special cases. Furthermore, it has not been able to test alternative models of DC health benefits against each other, but the literature has focused on the conditions under which price sensitivity of employees is enhanced, and has tried to estimate just how price-sensitive workers can be (Feldman et al., 1989; Short and Taylor, 1989; Feldstein and Buchmeuller, 1996; Royalty and Solomon, 1998; Cutler and Reber, 1998; Nichols et al., 1998).

The consensus answer is that workers choosing health plans can become quite price sensitive, indeed. Whereas in general the demand for health insurance is considered to be fairly price-*in*elastic—most estimates are in the –0.4 to –0.6 range (Gleid, 2001)—plan switching elasticities are much higher, with a consensus range between –2.0 and –5.0. Thus, whereas a 10 percent premium increase might induce only a 5 percent reduction in the probability of purchasing health insurance at all, a 10 percent premium differential—or differential growth rate over time—might engender as much as a 50 percent reduction in the market share of the high-cost plan. This price sensitivity is the key to any potential success DC health benefits may have in lowering cost growth over time.

The natural experiments studied in the literature largely relate to specific settings—typically, university faculty behavior after a new employer contribution policy is implemented—although Feldman et al.,

Figure 7
EXAMPLE OF DC HEALTH EFFECT ON MARKET SHARE AND PREMIUM GROWTH RATE

	Market Share of Inefficient Plan		Per Enrollee Premium Growth Rate	
Year	If no defined contribution plan	With defined contribution	If no defined contribution plan	With defined contribution
0	80.0%	80.0%	5.4%	5.4%
1	74.8	48.8	5.2	4.5
2	69.9	29.8	5.1	3.9
3	65.4	18.2	5.0	3.5
4	61.1	11.1	4.8	3.3
5	57.2	6.8	4.7	3.2
6	53.5	4.1	4.6	3.1
7	50.0	2.5	4.5	3.1
8	46.7	1.5	4.4	3.0
9	43.7	0.9	4.3	3.0
10	40.9	0.6	4.2	3.0

Source: Author's example.

(1989), and Nichols et al., (1998), looked at private-sector enrollees, and Short and Taylor (1989), used a nationally representative sample of workers. Given the specialized nature of the populations and settings, it is persuasive to find such consistency among the elasticity estimates, with all studies finding a degree of price responsiveness considerably larger than the take-up or non-group purchase elasticities generally associated with the decision to purchase health insurance at all. Nichols et al. (1998) also included a specific test for whether price sensitivity was enhanced by the presence of a "fixed-dollar" or defined contribution rule—controlling for the level of the employer contribution—and generally found this to be the case.

The following example illustrates the types of effects on cost growth that DC health benefit arrangements could have under the best conditions. Parameters are drawn from the economic literature.

Suppose the plan-switching elasticity with DC health benefits is –3.0, but –0.5 without a DC health structure. Let there be two plans, one unfettered fee-for-service and inefficient, with a 10 percent higher premium than the more efficient managed care plan; however, the fee-for-service plan has been around a long time and has every local provider in its "network" and therefore has an 80 percent market share due to inertia. Furthermore, assume the inefficient plan has a cost growth rate of 6 percent, while the efficient plan grows at only 3 percent per year because it only pays for new technology that is proven to be cost-effective. Given these premium and growth rate differentials, and the assumed plan switching elasticities, Figure 7 shows how the inefficient plan's market share and employer-wide premium cost growth will change if a defined contribution plan is in effect versus if it is not.

The example merely shows that even under the best of conditions, DC health benefits will merely get to the growth rate of the most efficient plan faster, and then only *if* workers accept the technology/quality package embedded within that more-conservative approach to medical practice. American workers' acceptance may or may not be forthcoming in the long run—but in any event, DC health plan price incentives are best considered as necessary but not sufficient conditions for systemwide reductions in health cost growth.

So, despite the slowness with which the principles of managed competition are being implemented nationwide, the research question is not whether workers can be induced to select low-cost health plans, but whether the lowest-cost plan can reduce the diffusion and development of new medical devices and techniques, and thereby lower the rate of cost growth for all plans. The answer is "potentially yes," but only if lower-tech health care is perceived to be a viable quality health care strategy by patients and a critical mass of providers alike. This will require either: (a) that all plans and delivery systems adopt identical technology strategies; or (b) that patients are willing to trade some technological sophistication for lower costs. This will make it possible for plans that follow a conservative (frugal) technology implementation strategy to compete successfully on price. Of these two preconditions, option (b) seems more likely than (a), at least in the short run, but (b) will work only if plans with lower-tech delivery patterns can prove their outcomes are as good or better than those achieved by other approaches to health care delivery.

The difficulty of proving equal-quality outcomes will be addressed later, but note that the evidence is mixed on whether markets with the highest managed care penetration rates have slower technology adoption rates (Chernew et al., 1998). There is considerable

evidence that health maintenance organizations (HMOs) and fee-for-service plans tend to adopt specific technologies at similar rates, but studies looking at the health services market as a whole do find lower adoption rates where managed care penetration is higher. There is recent evidence that HMO penetration does indeed lower the rate of cost growth, but not by enough to reduce the share of GDP devoted to health care; i.e., premium growth in the best cases still exceeds the rate of growth in GDP per capita. Plus, the studies reviewed by Chernew et al. have all been conducted in a period of fairly rapid transition to managed care and new technology, and the resulting cost growth estimates may be lower-bound estimates for long-run purposes if the gains turn out to be due to "one shot" factors that were described above.

Finally, this entire discussion has presumed a set of preconditions is in place—a kind of DC health plan infrastructure—in order to reach maximum effectiveness. First, an effective risk-adjustment mechanism will have to be implemented to negate the major consequences of risk selection among plans. Some organizations have had reasonable (though not perfect) success with this, but a standard benefit package is clearly a prerequisite for doing this well. As a result, employers—or other health plan sponsors, be they employer groups or agents of employer groups—will need to define such a package for bidding purposes (this does not mean that insurers cannot offer supplements to the standard package and charge separately for them, just that they cannot offer less generous benefits than the standard package). Next, the purpose of employee choice is to provide valid plan comparison information to workers and their families; therefore, some entity—again, the employer or a sub-contractor—will need to negotiate with and select plans, and then collect and disseminate plan performance information on a variety of agreed-upon measures. This is an "active sponsors" role, and these functions must be performed in any DC health plan context—whether employment-based or not (see Fronstin, 2001a, for the range of options)—if fully empowered individual choice is to be channeled to produce more efficient health plan outcomes. For this to ultimately be effective in reducing cost growth, technology developers are going to have to see that they can profit from cost-saving as well as from cost-enhancing technologies, and redirect their investments accordingly.

Limits to Affecting Cost Growth

Even under the best of circumstances, there are serious limits on the ability of employment-based DC health benefit arrangements to actually affect overall health care cost growth. First, employment-based insurance pays only for about 27 percent of national health care expenditures (NHE).[3] The share of health care services paid for by the largest public programs combined, Medicare (20 percent) and Medicaid (17 percent), is larger than that purchased by employment-based insurance. These public programs may be even more important for technology development, adoption, and diffusion than their overall share might imply, since Medicare plus Medicaid account for 48 percent of all hospital spending. So while employment-based health insurance can be a leader in developing techniques that may improve efficiencies in the public sector, Medicare and Medicaid purchasing strategies are likely to be more important than employment-based insurance in affecting marketwide rates of technical advance in medical care. Another limit on the ultimate scope of DC health plans is the lack of health plan choice for many workers. Slightly more than half of all workers (57 percent) are offered a choice of health plans by their employer (Medical Expenditure Panel Survey, 1998). Without a choice of plans, there is no context for a DC health structure incentive. Thus, only about 15 percent of national health expenditures could be affected by DC health plan structures at the present time.

And of those employers that do offer a choice of health plans, only about 27 percent currently use some type of fixed contribution scheme that is consistent with DC health benefits theory (Fronstin, 2001a). Thus today, on net, only about 4 percent of national health expenditures are potentially under the sway of DC health benefit techniques. This is obviously not enough to make a big difference in overall health care system costs or technology adoption rates.

More organized and consumer-choice-oriented purchasing by Medicare and Medicaid—i.e., fundamental public-sector health insurance purchasing reform—is possible, and could certainly expand the range of national health expenditures that DC health benefits could influence, thereby improving the likelihood of changing the cost-benefit calculus of technology developers within the health sector. But the fundamental limitation on the ability of DC health benefits arrangements to reduce technology adoption and health care cost growth is and will remain the acceptance by workers, families, and patients. Will cost-effective styles of health care delivery ever be viewed as "good enough" or of equal or greater quality than more expensive and interventionist systems—especially in the American context of individual rights and extensive third party payments?

Enthoven and Vorhaus (1997) lay out a vision of how this type of health care system could come into being. In its final form, this vision is self-sustaining, since individuals would be choosing the level of technology and health plan options they are willing to pay for. But as McGlynn (1997), Lohr (1997), Gosfield (1997), and the IOM (2000) make clear, implementing anything like this vision will take time and resources, both private and public. Not only must quality measures be developed and improved while data collection and dissemination are institutionalized, but workers, patients, and citizens must all be educated about the nature of the real cost-quality tradeoffs they are facing. And a critical mass of participating workers must come to choose lower-cost plan options. DC health benefits can be part of a solution that enables workers to make these choices—and thereby enforces a discipline on health plans and providers that has not been present before.

But DC health benefits cannot force this choice upon an unwilling work force/patient base. The most challenging education is to learn the art of self-restraint, but that is the ultimate prerequisite for health care cost-containment in the U.S. context. Given our cultural emphasis on individual freedom, Americans must *choose* a lower health-cost growth trajectory if they are to *experience* one. It is likely that Americans would do this, collectively, only if the foregone quality and outcomes are acceptably close, on average, to what could be obtained at higher cost. Whether such a tradeoff is either truly attainable or can be measured with enough precision to be persuasive is the crucial empirical question. Note there are two steps: First the basic research into quality measurement, followed by the development of an information infrastructure that will usher in an era in which evidence-based medicine is the norm in all settings. The cost of not taking these two steps, which would depend heavily on federal funding to be credible, may be to consign the nation to spending 25 percent of its annual gross domestic product on health care by 2050. Perhaps that will seem like a bargain then, given the potential for medical and pharmaceutical technology seemingly just around the corner. But perhaps 25 percent of GDP will not seem like such a bargain—and if not, then stronger price incentives and steeper quality tradeoffs are both likely to be part of the future, whether or not Americans are happy about it and fully informed about their implications.

Endnotes

[1] See papers presented at the Department of Labor, Pension and Welfare Benefits Administration conference, "Why Do Employers Do What They Do?" April 27, 2001,

published in a recent issue of *The International Journal of Health Finance and Economics,* for an example of an emerging basic research paradigm. The Robert Wood Johnson Foundation has also begun a major initiative by creating an Economic Research Initiative on the Uninsured at the University of Michigan.

[2] For competing views about the likelihood of doing this in the non-group market, see Pollitz et al. (2001), and Pauly and Herring (1999).

[3] Private health insurance paid for 33.6 percent of national health care expenditures in 1999 (Centers for Medicare and Medicaid Services, 2001). This includes payments by Medicare supplemental policies as well as by non-group insurers for the non-elderly population. Approximately 14 percent of private health insurance was for Medicare supplemental polices (Cohen, et al., 2000), and approximately 94 percent of nonelderly private insurance enrollment is in group vs. non-group plans (Pauly and Percy, 2000; Chollet, 2000; U.S. Census, 2000). Assuming expenditures are proportional to enrollment, employment-based health insurance then accounts for .336 x .86 x .94 = 27 percent of NHE.

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