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Why We Should Bend the Cost Curve and How We Could Do It

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Introduction

Conferences, symposia, and meetings on the “health-care cost explosion” and the need to “bend the cost curve in health care” have been held in advanced industrial countries for close to half a century now. The tone at these gatherings has invariably been ominous, regardless of the level of health spending, either absolutely or as a percentage of gross domestic product (GDP).

My first encounter with the topic of health-care cost control occurred in the late 1970s, when I was asked to offer an economist’s perspective on the topic at a large, nationwide conference held in Washington, DC. At the time, the United States was allocating about 8 per cent of its GDP to health care, triggering the fear that before long that ratio might rise to an inconceivable 10 per cent (it is now close to 18 per cent). Taking it as an axiom that “something” had to be done about this impending threat lest the 10 per cent threshold be pierced, I had prepared a sober opus with numerous suggestions on how to avoid the impending disaster.

Upon reading my prepared speech at my request, Tsung-Mei Cheng, a fellow author in this volume, took issue with the thrust of my talk and asked me to explain why rising expenditures on health care are a major social and economic problem, when no one runs cost-containment conferences about spending on automobiles, on fast food, on entertainment, on tobacco, or on alcohol. In those years the United States was still spending more on entertainment, including sports, alcohol, and tobacco, than on hospital care. Remarkably, spending growth in these other sectors in the economy was and still is routinely celebrated as a manifestation of economic growth and job creation.

Although the criticism was blunt and trashed my prepared speech, it was entirely warranted. Health-policy makers, health-services researchers, and the pundits who regularly call for cost control in health care actually can make a good case for their position, but they do owe to the public—and especially to the providers of health care who book health spending as revenue—a thorough explanation of why the trajectory of health spending

must be bent down through policy if it does not bend down by itself, as it actually seems to be doing at the time of this writing (Hartman et al. 2013; OECD 2012a). One objective of this essay is to provide the rationale.

After all, one must have some sympathy for the usually hard-working providers of health care, who see their oft-maligned enterprise in an entirely different light. They see in it a vibrant sector of the economy that adds immense value by ameliorating the suffering of fellow human beings and often prolonging life. They see all around them unmet needs for health care. They see on the horizon the enormous potential of technological improvements that can further enhance human well-being. They even see economists who, while they talk a good game about benefit-cost analysis and the need to ration health care when they are standing vertical and healthy, routinely check those prescriptions at the door when they enter a clinic or hospital room, there to seek succor from the health-care system.

Furthermore, physicians and other health professionals see their former college classmates now working in finance richly rewarded in return for merely outwitting other people with money (other speculators or the managers of pension funds), whether or not in the process they have made a positive contribution to society. Beyond finance, they see dubious spending and waste all around them in the economy—in defence, in the administration of law, in education at all levels, and even in the commercial sector, where executives must be paid enormous sums just to perform the duties one would expect managers to perform.

To acknowledge these divergent views on health spending, this essay begins by offering a broader perspective on the theme “Bending the Cost Curve in Health Care,” which properly means “bending down the future time path of national and per capita health spending.” Next the discussion turns to the several economic and demographic factors that have brought nations to a pass at which more vigilant control over health spending, including the rationing of some health care, seems unavoidable. Thereafter some thought is given to the various approaches one might take to bending down the future health-spending trajectory. The essay concludes with some speculation on future trends in health spending.

Health care in the economy

Like any other economic sector, the health-care sector plays a dual role in the economy. With its output it bestows value on the rest of society. At the same time, it offers individuals and owners of capital an opportunity to deploy their resources gainfully. A question often raised is whether the latter role adds social value in addition to the value of the output produced by

the health-care sector, as politicians and labour leaders commonly assume. This question is explored further on.

The value of the health sector's output

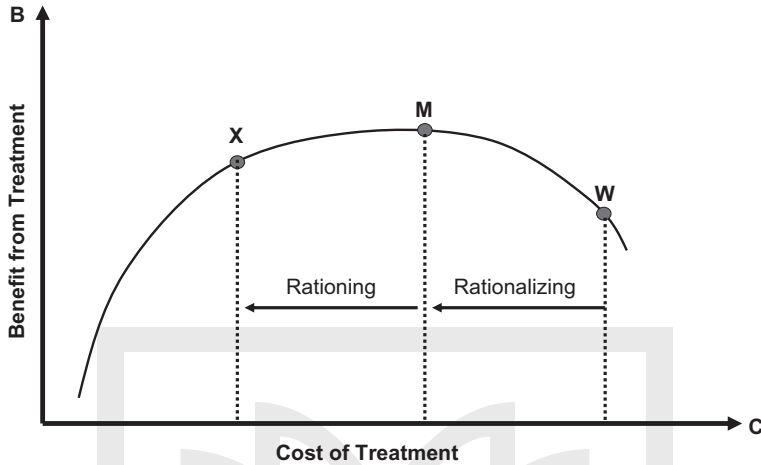
In the introduction to an edited volume of essays by distinguished economists titled *Measuring the Gains from Medical Research*, the editors note that the “growth in longevity since 1950 has been as valuable as growth in all other forms of consumption combined.” Although the researchers could not be sure how much of that decline in mortality was attributable to health care and how much to other factors such as sanitation, nutrition, control of pollution, and so on, the editors observe that “medical advances producing 10% reductions in mortality from cancer and heart disease alone would add roughly \$10 trillion—a year’s GDP—to the national wealth” and that “the average new drug approved by the U.S. Food and Drug Administration yields benefits worth many times its cost of development” (Murphy and Topel 2003, 2).

Much the same message was conveyed in a paper by David Cutler and Mark McClellan (2001, 24) and in Cutler’s subsequent book *Your Money or Your Life* (2005), where he raises the following question:

In 1950 medical spending was about \$500 per person (adjusted for inflation). Today [2005] it is nearly \$5,000. Suppose you were offered that \$4,500 increase back, but in exchange you could only have medical care at the 1950s level—doctors trained at that level, hospitals with 1950s equipment, medicines from around that time, and so on? Would you accept the money? My suspicion is that most would not; we value the things medicine can do for us more than \$4,500. But does that means that increases in medical costs are worth it? (Cutler 2005, xi–xii)

Seemingly inconsistently, while economists extol the average benefit-cost ratio in health care, they also routinely lament that there is enormous waste in health care. For example, in his “The Simple Economics of Health Reform,” none other than Cutler estimates that “anywhere from 30 to 50 percent of medical spending is not needed to realize the outcomes we achieve—a waste of about \$1 trillion annually” (2010, 3).

There is really no logical inconsistency here. The production of a person’s or a population’s “health” is a complicated, nonlinear function of the use of health care and of many other economic, environmental, and behavioural factors. Holding all these other factors constant, the

Figure 1.1 Hypothetical benefit-cost curve in health care

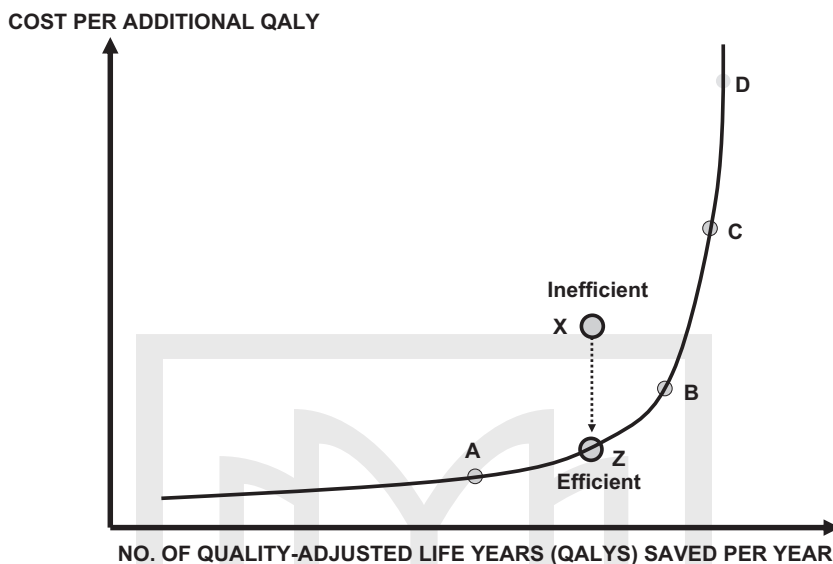
Source: Laugesen and Glied 2011, Exhibit 3.

incremental contribution that added use of health care makes to health tends to diminish fairly rapidly with greater use. In that circumstance, the *average* health benefit achieved from health care at a given level of health-care use can easily exceed in value the *average* opportunity cost of that care, even though the last few *increments* in the use of health care cost much more than the incremental value in terms of better health achieved.

Figure 1.1 illustrates this point. The graph depicts a hypothetical relationship between the cost of alternative treatments of a given medical condition and an imputed monetary value of the health benefits yielded by the alternative treatments. The graph incorporates the hypothesis that successively more resource-intensive treatments yield successively diminishing incremental health benefits and conceivably may actually harm the patient (e.g., through unnecessary surgery or radiation from excessive imaging). It is easy to see that at point M on this input-output curve the average benefit-cost ratio far exceeds the corresponding marginal benefit-cost ratio, which is 0 at that point.

Not performing procedures that add negative marginal benefits (on segment M–W)—for example, unnecessary surgery or imaging or prescription of antibiotics without compelling clinical rationale—may be called “rationalizing” health care. In general there is no disagreement on the desirability of rationalizing health care (although those who book health-care spending as revenue might be tempted to disagree). There is controversy, however,

Figure 1.2 Cost-effective supply curve for quality-adjusted life years



Source: Reinhardt 2012.

over segment M–X of the line in the graph: the withholding of medical interventions that do have a modest positive expected marginal health benefit *ex ante* (although not necessarily *ex post*) but whose opportunity costs exceed the value of that expected marginal health benefit. It involves what is widely decried—certainly in the United States—as “rationing” health care.

One way to reach decisions concerning the rationing of health care is to estimate the cost–effectiveness ratio associated with a proposed medical intervention, defined as the ratio of the incremental cost to the achieved incremental units of some one-dimensional index of clinical health outcome from the medical intervention in question—for example, the quality-adjusted life year (QALY) (Phillips 2009). If clinical outcome is measured by QALYs, this cost–effectiveness ratio can be viewed as the price per QALY that society has to pay when it asks the health-care sector to wrest one additional QALY from nature, given the lifestyle that members of society have chosen to adopt. One can then ask whether that price is worth paying for the value of the associated incremental benefits. Figure 1.2 can be used to illustrate this process.

The horizontal axis in Figure 1.2 presents additional QALYs “purchased” by society through the health-care sector in a given period, in increasing

incremental cost per QALY from left to right. The vertical axis represents the incremental cost per incremental QALY, or the price per additional QALY.

A point such as X is inefficient in the sense that it incorporates pure waste. In an efficiently managed health system, the incremental QALY associated with point X should be attainable at a price of only Z. The distance X–Z on the vertical axis thus measures pure waste. The first task of any campaign to bend down the cost curve in health care is to drive the entire health-care system down towards the efficient QALY supply curve represented by the solid line in Figure 1.2, before the rationing of beneficial interventions is even contemplated.

But even in an efficiently run health system, with every QALY bought sitting on the efficient QALY supply curve, policymakers cannot avoid the following two troublesome questions:

1. Is there a maximum “price” above which additional QALYs will not be “bought” through health care—at least, not when the purchase would be financed from a collective pool of funds (either taxes or the premium pools of private health insurers)?
2. If there is such a maximum price, should it be the same for everyone in society, or can that price vary, perhaps by the individual patient’s ability to pay?

In the United States these questions cannot even be openly broached. They are politically incorrect. Merely raising them can have one branded as a “Nazi” (Neumann 2004; *Washington Times* 2009), even though the frequently voiced demand that individuals should take greater responsibility for financing their own health care tacitly leans towards letting the maximum price to be paid for QALYs vary with the patient’s ability to pay—that is, to ration even efficiently produced QALYs by price and ability to pay.

Other countries also face these two questions, explicitly but inconsistently. For example, the probability that the National Institute for Clinical Excellence (NICE) recommends against coverage of a product or procedure by the British National Health Service (NHS) decreases as the estimated cost per QALY increases. But other factors, even political considerations, also influence the decision (Parkin 2004; Rafferty 2009; Towse 2009). In other words, the judgments on which NICE bases its recommendations to the NHS depend in part on context.

While previous generations have “kicked the can down the road” on these troublesome two questions, future generations probably cannot avoid

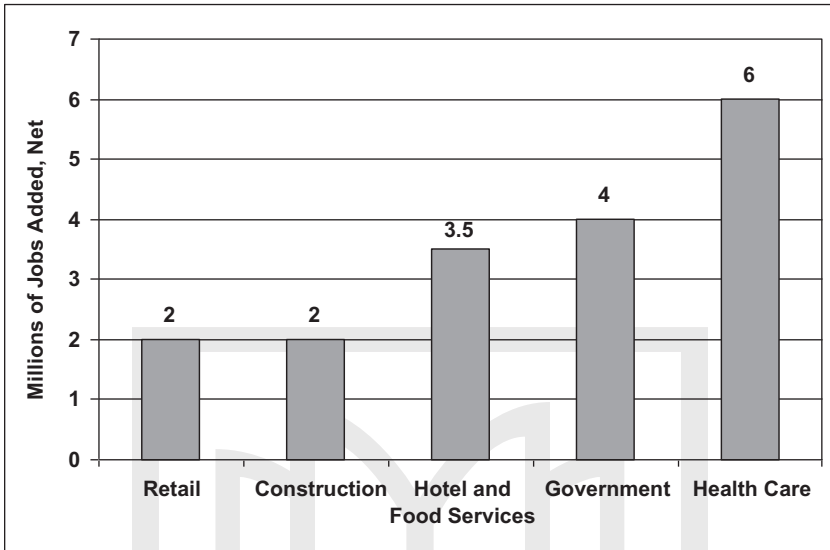
them, as economic growth in the developed nations has slowed and may continue to do so (Gordon 2012) as the distribution of income in the developed economies becomes ever more unequal, as the prevalence of obesity and its consequent illnesses continue to increase worldwide, as the number of elderly as a fraction of the population increases, and as new medical technologies, such as biological specialty drugs aimed at end-of-life care, become ever more expensive, especially for procedures aimed at saving QALYs at the end of life.

In concluding this discussion on the value of the output produced by the health-care sector, it must be conceded forthrightly that when economists talk or write about *value* in health care, they work abstractly. At the level of applied policy, there simply does not exist a consensus, even among economists and even at a conceptual level, on what the dollar value of a life-year or a quality-adjusted life year (QALY) or any clinical outcome should be. In their applied practical work, economists therefore merely assume a monetary value vaguely related to prior research—for example, \$100,000 per life-year saved or per QALY (Cutler, Rosen, and Vijan 2006). The implicit assumptions here are that society is perfectly egalitarian and that taxpayers would not shrink from paying added taxes to purchase, through health care (even for the poorest person), an additional life-year, at least as long as the treatment costs fell below \$100,000 per life-year (or QALY) so purchased. Economists, just like everybody else, muddle through more or less elegantly on this issue.

Health care as a creator of jobs

In many modern economies—certainly in the United States—the health-care sector has by now become a major economic locomotive and source of jobs in the economy, as is shown in Figure 1.3. These data come from a study of the employment structure of the US economy by Michael Spence and Sandile Hlatshwayo, who explored in detail the sources of the roughly 27 million net jobs added to the US economy between 1990 and 2008 (Spence and Hlatshwayo 2011).

The question is whether the jobs created by health care should be viewed as an additional value added to the economy, on top of the value of the output the health sector delivers. Politicians and unions of hospital workers seem to think so. They routinely protest the closing of hospitals or clinics in their communities, as health care has become the economic mainstay of many communities (Vladeck 1999). In this regard, these defenders of health spending are in good company, because the same argument is made whenever it is proposed to cut defence spending

Figure 1.3 Net jobs added by sector, United States, 1990–2008

Source: Adapted from Spence and Hlatshwayo 2011, Fig. 6.

(Armbruster 2012; Schmitt and Donnelly 2011) or to close a military base—ironically, sometimes by the same commentators who favour cuts in public spending on health care or on other “entitlements” (Saletan 2012).

Sociologists also would probably impute additional social value to jobs in the health sector, because gainful employment provides the economic foundation for families and they have significant positive social spillover effects. These include reduced crime, reduced depression and alcoholism, reduced violence within families, and reduced suicides, along with superior opportunities for developing the human capital of offspring through better health care and education.

Using a narrower focus, economists are troubled by the idea of treating job creation per se as a social value on top of the value of the output produced by an economic sector. In the end, that line of reasoning might lead one to justify digging the proverbial ditches and filling them in again. Economists do recognize the positive social spillover effects of gainful employment, but they implicitly assume in their analyses that over the longer run, if someone could not find gainful employment in health care, they would find a job in some economic activity that would have roughly the same spillover effects.

Rationale for cost containment in health care

Given the high value bestowed by health care on society, along with the economic opportunities it presents to labour and capital, the question is why that sector is routinely picked on as a target for constraining spending on its output, when that imperative is never raised in connection with most other sectors in the economy. It is a fair question, although there are good reasons for singling out health care in this way, among them that much of it in the industrialized world is tax-financed. Even in the United States, over half of all health spending is now tax-financed (Woolhandler and Himmelstein 2002). Whenever public financing is involved, concern over the use of those funds and the secular growth of the financing arises naturally.

Many experts on health care also doubt, however, that the benefit-cost calculus that constrains spending in other sectors of the economy can ever work properly in health care, even if it were purely privately financed. For many goods and services produced in the economy, society is willing to let individual potential buyers do the requisite benefit-cost analysis for the decision whether or not to acquire a particular good or service, no matter how foolish the outcome of that calculus may appear to others. Furthermore, society is willing to let that decision be constrained by the individual potential buyer's ability to pay, that is, to ration goods and services among individuals by price and the individual's ability to pay.

Modern societies are manifestly unwilling to apply this thinking to health care, and not only for reasons of equity and social solidarity. There is the question of how well patients could even undertake this benefit-cost calculus. Some health economists—notably in the United States—believe that with reliable information on the prices of health-care goods and services and on their quality, individuals could function like ordinary consumers, which is why they refer to patients as “consumers.” With appeal to the so-called Second Optimality Theorem, it can then be assumed that any degree of equity that society seeks in the distribution of health care can be achieved simply by redistributing purchasing power among households, as the Nobel Prize-winning economist Kenneth Arrow observed in passing but did not advocate in his seminal paper (Arrow 1963, 943).

The dominant view among health policymakers, and probably among most economists as well, is that even with modern electronic information systems, the asymmetry of technical competence and of access to information between patient and provider of health care, along with the often fragile condition of patients, severely limits the patient's ability to perform requisite benefit-cost calculus in health care for all but very simple medical interventions. This is a point that Arrow (1963) also emphasized.

Consequently there is room for supplier-induced demand (SID), by which economists mean persuading patients to accept services that a properly informed patient would not based on his or her own demand.

Furthermore, because redistribution of purchasing power to achieve equity in the use of health care typically is not politically feasible in the amounts modern health care would require, societies everywhere have made this redistribution through either a public or a private health insurance system. Insurance coverage, however, relieves patients of the need to perform the requisite benefit-cost analyses, even if they were technically capable of it. It provides the supply side of health care with even more opportunities to profitably induce demand for their services.

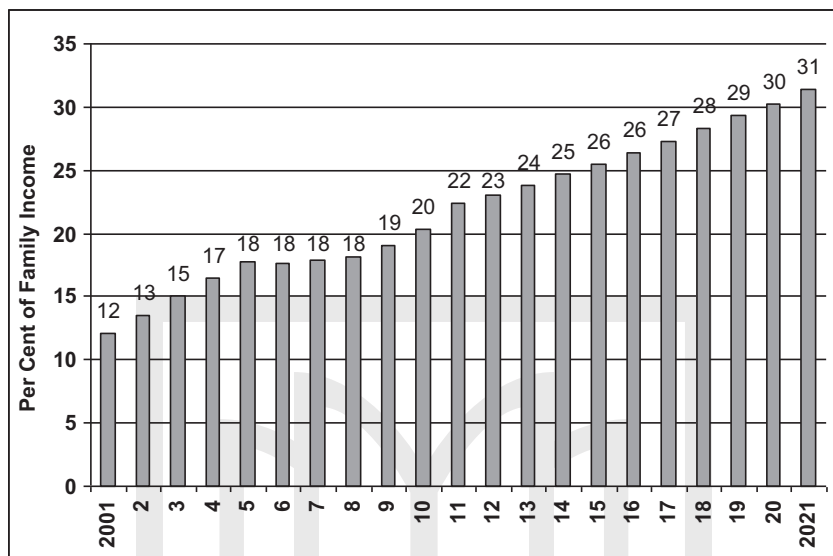
The growth of health spending has outpaced the growth of GDP for decades now in most developed countries, in part because the market for health care lacks adequate countervailing power on the part of the demand side. The social opportunity cost of those spending increases has become glaringly apparent. The United States, which spends almost twice as much per capita in purchase power parity (PPP) US dollars than do most other national health systems in the developed world, can serve as an illustration of these opportunity costs.

The roughly two-thirds of the American population with private insurance coverage typically obtain that coverage at their place of work. Although employers ostensibly pay the bulk of the premiums for that coverage out of company resources, economists are convinced that those outlays are recovered by employers over the longer run through lower take-home pay for employees (Summers 1989). In this connection, David Auerbach and Arthur Kellerman have reported in the health policy journal *Health Affairs* (Auerbach and Kellerman 2011, 1630) that

[a]lthough a median-income US family of four with employer-based health insurance saw its gross annual income increase from \$76,000 in 1999 to \$99,000 in 2009 (in current dollars), this gain was largely offset by increased spending to pay for health care. Monthly spending increases occurred in the family's health insurance premiums (from \$490 to \$1,115), out-of-pocket health spending (from \$135 to \$235), and taxes devoted to health care (from \$345 to \$440). After accounting for price increases in other goods and services, the family had \$95 more in monthly income to devote to non-health spending in 2009 than in 1999.

A recent research study projected the full cost of the premiums for employment-based private health insurance in the United States as a

Figure 1.4 Projected average family health insurance premiums as percentage of median income, 2013–2021



Source: Commonwealth Fund 2013.

percentage of projected median family income, implicitly assuming a full backward shift of ostensibly employer-paid premiums (Commonwealth Fund 2013). Figure 1.4 is based on Exhibit 3 of that report.

Clearly, if health insurance alone absorbed 30 per cent of the median income of an American family, the households would have to make painful trade-offs in their budgets. The opportunity cost of health spending in terms of the family's well-being and ability to educate their offspring would be high.

Although private health insurers cover about two-thirds of the American population, outlays by insurers along with out-of-pocket payments by patients account for close to only half of all personal health spending in the United States. The other half is financed by government budgets, which are increasingly constrained in size in the face of voters' unwillingness to countenance further tax increases. It is within these constrained public budgets at all levels of government that health care is now forcing troublesome trade-offs on society. It is probably so in many other developed countries as well, even with less dramatic health-spending projections.

The proper way to think of the value proposition of health care, therefore, is not the *gross value* the sector adds, which, as was noted earlier, can

be considerable. Instead, one should think of the health sector's *net social value* after deducting the opportunity costs incurred to produce the gross value. These opportunity costs rise in magnitude the more constrained the budgets are from which health care and everything else is financed. They include neglect of human-capital development (education at all levels), of investments in research and development and productivity-enhancing public infrastructure, of security and national defence, and of a general standard of living.

While economists and health policymakers should have sympathy for the misgivings that health-care providers have over the push for tighter cost control in health care, providers should also understand that, from the larger macroeconomic perspective, the case for tighter cost control is compelling. It is all the more so if economist Robert Gordon (2012) is right in his previously cited conclusion that for the foreseeable future—and perhaps in the long run—the United States and, by implication, the rest of the developed economies face a permanent slowdown in economic growth, even though that hypothesis naturally is challenged by optimists (Bailey 2012; *The Economist* 2012) who see in 3-D printing, for example, a major industrial innovation that will usher in a whole new way of life for humankind, along with economic growth (Hart 2013).

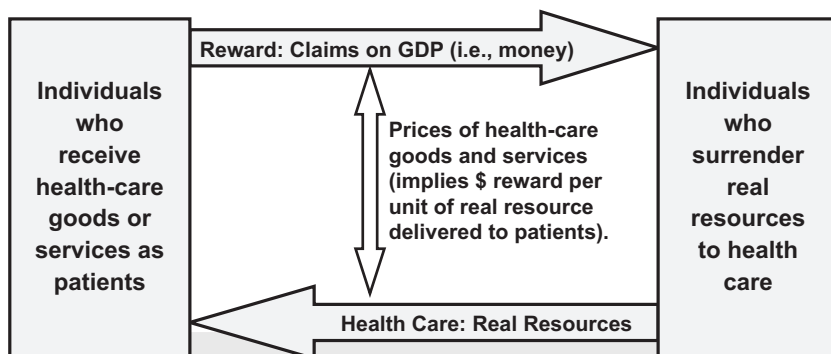
Approaches to health-care cost containment

The terms *cost* and *spending* have triggered no small amount of confusion in the debate on health care. Usually one thinks of *cost* in economics as an amount per unit of something, be it a finished good or service, an entire medical treatment, or an hour of labour. By *expenditure* economists usually mean an amount per unit of time—say, a month or a year. Furthermore, economists make a distinction between the “real resource” costs and “dollar spending,” which are not at all the same thing. Figure 1.5 illustrates this point.

The *real resource costs* in the lower part of the loop in Figure 1.5 include the time of health professionals, the capital equipment, and the supplies and other real resources (e.g., land) used in the production and delivery of health care. Many policies to bend the cost curve—notably in the United States—have been aimed at reducing the utilization of health care, that is, the flow of real resource costs going into health care, through greater cost sharing by patients or direct controls on utilization.

The upper part of the loop in the sketch represents generalized claims (money) on any kind of good or service produced somewhere in the world and available in the provider's locale. It does not measure what patients

Figure 1.5 Resource flows in health care: “real” vs. “financial”



Source: Reinhardt 2012.

receive. Rather, it is the reward that the providers of real resources are paid for surrendering those resources to health care. The expenditure figures are usually expressed on a per capita basis or as a percentage of GDP. It is this *financial resource flow* whose annual growth is to be reduced by “bending the cost curve” downwards. Obviously, the real resource flow and the monetary expenditure flow are linked by the monetary rewards paid per unit of real resource surrendered (e.g., hourly reward per physician-hour worked), which express themselves to patients as *prices* for health care.

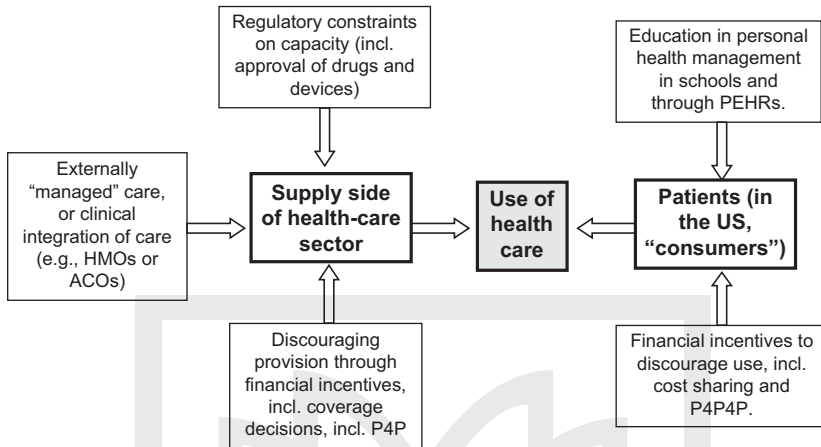
These are not pedantic distinctions. Conceptually, two health systems could bestow the same real health-care resources per capita on their population but grant their providers of health care quite different allocations of GDP as a reward. It is therefore advisable to break down the task of “bending the cost curve” into these two components: the use of real resources and the prices paid per unit of real resource.

Controlling the real resource flow into health care

Figure 1.6 summarizes, in a rough-and-ready fashion, the various tools that can be used to control the diversion of real resources from other potential uses into health care. The sketch is not exhaustive, but it presents the major tools and approaches—with some examples drawn from the United States—that can be or have been used to that end.

Policies aimed at the supply side: One time-honoured method of constraining the utilization of health care is simply to limit the physical capacity of the health-care system through regulatory means. It is the aim of classic

Figure 1.6 Alternative methods of controlling the use of real health-care resources



Source: Reinhardt 2012.

health-sector planning used in several countries, including Canada. In the United States, this effort finds expression through the “certificate of need” legislation that many state governments have imposed on their hospital sector (National Conference of State Legislators 2012), although rarely on other sectors of the health system. They did so in response to the federal *Health Planning Resources Development Act* (Public Law 93-641) signed into law by Republican president Gerald R. Ford in 1974.

Regulatory constraints on health-sector capacity are politically controversial—certainly in the United States—because they tend to trigger queues to resources that patients and their physicians desire access to, and thus lead to highly noticeable and sometimes irksome non-price rationing according to the queue or other administrative rules. Precisely because these constraints create an artificially limited supply, it is imperative to accompany them with regulatory constraints on the prices charged for limited-capacity services (e.g., magnetic resonance imaging machines or hospital beds). Regulatory restriction of the physical capacity of the health system in the absence of price controls combines the worst of government regulation and a free-market approach to health care.

Although some US states abandoned their “certificate of need” (CON) laws after the deregulation of health care under President Reagan, many states retain the laws to this day, with the apparent acquiescence of the politically powerful hospital lobby. The latter is understandable because, with

the exception of the state of Maryland, these constraints are not accompanied by regulatory constraints on the prices for health care. The CON laws, therefore, in effect bestow on existing hospitals local monopolies that are much cherished by those hospitals. Typically, existing hospitals fight the threat of the potential entry of new hospitals with appeals to the CON laws.

Furthermore, while in most states the CON laws impose constraints on hospital capacity—for example, the number of MRIs or open-heart surgery units in hospitals—the constraints do not extend to the ambulatory sector. The result in many states has been the mushrooming of free-standing imaging centres or ambulatory surgery centres owned by physicians. If the intent of the CON laws was to constrain health-care spending, it must be doubted that this goal has been met. In any event, state hospital associations remain staunch defenders of the policy, which suggests that the revenues of existing hospitals have not suffered from this government intervention (Robeznieks 2009).

The main thrust of policies to discourage excessive use of real health-care resources that are aimed directly at the decisions of the providers of health care are financial incentives, with the triple objective of (1) improving clinical integration of the provision of health care, (2) achieving greater economy in the use of real resources in treating patients, and (3) improving in each of its many dimensions the quality of health care rendered. From a global perspective, the major alternatives to compensating the providers of health care can be summarized as in Figure 1.7, in which a distinction is

Figure 1.7 Alternative payment systems for health care

METHOD OF DETERMINING LEVEL OF PAYMENT	- BASE FOR PAYMENT -				
	Fee-for-Service (FFS)	BUNDLED PAYMENTS:		Annual Capitation per Patient at Risk	Budgets (Institutions) or Salary (Personnel, including Physicians)
		Hospital Care Only (DRGs)	Fully Bundled for Entire Episodes of Care		
Free-Market Price Setting between Individual Providers and Payers	A	B	E	H	K
Negotiations between Associations of Payers and Providers	E	C	F	I	L
Unilateral Administrative Price Setting (usually by Government)	I	D	G	J	M

Source: Reinhardt 2012.

made between the base that defines the units of health care that are priced (the columns) and the method of setting the levels of prices per unit of the base (the rows).

The method of determining the levels of compensation (the rows) depends, of course, on the political and institutional setting in which health care is embedded. The first row in the table, for example, describes the approach used in the American private commercial sector, while the third row describes the US approach for its main public insurance programs, the federal Medicare program for the elderly and federal-state Medicaid programs for the poor—an approach that has been described as Soviet pricing (Antos 2010). Ironically, that allegedly Soviet approach was imposed in 1983 on hospitals paid under the federal Medicare program by none other than that self-professed free-market devotee President Ronald Reagan, followed by President George H. W. Bush (the elder) in 1992 for physicians (Reinhardt 2010).

Regarding the base of compensating the providers of health care, current efforts among policymakers worldwide are aimed at shifting away from the time-honoured fee-for-service basis to bundled payments for entire, time-limited episodes of care across both inpatient and ambulatory procedures (Health Care Improvements Institute 2012). If episodes are not time-limited (e.g., care of chronically ill patients with multiple medical conditions or special needs patients), the preference now is for risk-adjusted annual capitation payments. More and more physicians formerly in independent practice in the United States have moved to salaried employment with larger entities such as large group practices or hospitals. Thus, for physicians salary has increasingly become the base of payment.

To safeguard the quality of care under any of these payment methods, it is proposed to make the size of the bundled payments or capitation payments a function of measurable quality indicators, the so-called pay-for-performance idea widely known as P4P. Getting these performance metrics right from a scientific basis, and getting them to be accepted as fair by providers, also remains a challenge. At the moment, it is a work in progress.

Traditional health maintenance organizations (HMOs), such as the fully integrated Kaiser Permanente health plan in California, are the ideal setting for applying any of these ideas. Because that model has had only modest success outside California, the *Affordable Care Act* signed into law by President Obama on 23 March 2010 also envisages more loosely structured organizations called “accountable care organizations” (ACOs). Any health-care delivery system that can integrate inpatient and ambulatory treatments clinically and economically through contractual arrangements can function as an ACO. The hope is that eventually they can deliver health care in return for bundled

payments, although parcelling out money from the bundled payments to the various contractual partners may prove difficult and cumbersome.

How well the innovations urged by the *Affordable Care Act* will succeed remains an open question. First, determining bundled prices for entire episodes of medical care is easier said than done. There has to be some agreement among clinicians on the best evidence-based bundle of services that ought to go into the treatment of particular conditions. Even if that agreement can be reached—something not to be taken for granted—the individual components of the treatment need to be priced out to arrive at an overall bundled payment (Hussey, Ridgely, and Rosenthal 2011). Furthermore, although accountable care organizations may be able to economize on the use of real resources in treating patients, at the local level they could easily amass monopolistic power and use that power to drive up the price for whatever bundle of services is packaged for a specific clinical condition (Richman and Schulman 2011).

Even if some of the experimentation with these novel ideas in the United States ultimately fails, they bear watching from the outside. Indeed, one major contribution of US health care to the rest of the world is that it is a veritable laboratory for trying out new ideas in health care. The now widely copied bundled payment called “diagnosis-related group” (DRG) is a case in point; these groups emerged from government-funded research and demonstrations during the 1970s (Mayes 2007).

Based on my limited knowledge base, I do not think that the provincial single-payer health insurance systems in Canada have been notably innovative in reforming payment methods or health-care delivery systems. Perhaps the thought is to let other nations do the research and development and experimentation with alternative approaches and then to adopt what is suitable in Canada. If I am correct, this is disappointing, as it represents a great opportunity missed—the opportunity to show the world how to run a more efficient yet equitable health-care system.

Policies aimed at patients: Policies that may yield more economic use of real health care resources *aimed at patients* can work through several channels, including: (1) better education on personal health management in schools and universities, (2) the use of personal electronic health records (PEHRs) to provide patients with continuing education on health management and on making proper use of available health-care resources, and (3) financial incentives to discourage use of health care.

Research during the past half-century has shown convincingly that health care proper is only one of many factors driving the health status of populations and individuals, and not even the dominant one. Aside from genetic endowment, the individual’s physical and socioeconomic

environment and personal lifestyle weigh far more heavily (Deaton 2003; Evans, Barer, and Marmor 1994; Lalonde 1974).

During the past several decades the lifestyles typical in most advanced industrial countries have visited on future generations a mortgage, so to speak, whose full implications have yet to be understood, namely an epidemic of obesity and consequent diabetes, along with other cost-driving illnesses (Cawley and Meyerhoefer 2010; Quesenberry, Caan, and Jacobson 1998). Interactive mapping of obesity prevalence rates by US state maintained by the Centers for Disease Control presents a vivid and alarming picture of the growth in obesity in the United States (Centers for Disease Control 2010). This veritable epidemic is likely to contribute significantly to future increases in health spending (Trust for America's Health 2012).

Other nations in the OECD are not immune to these ominous trends, but so far the prevalence rates in other countries have been lower—and in some countries, much lower. In 2009, for example, the prevalence of obesity was 33.8 per cent of the population in the United States, 24.4 per cent in Canada, 14.7 per cent in Germany, 10.3 per cent in Italy, and 8.1 per cent in Switzerland, but only 3.8 and 3.9 per cent in Korea and Japan, respectively (OECD 2012b, Appendix). The relatively high prevalence in the United States can undoubtedly partially explain the paradoxical phenomenon recently reported by the US National Research Council and the Institute of Medicine in an authoritative study. It shows that life expectancy for all classes in the country is lower than it is in most other OECD countries, in spite of the much higher spending on health care in the United States (Institute of Medicine of the National Academies 2013).

Given the evident effect of lifestyle on the health of populations, it is remarkable (but, I would argue, not at all surprising) how much emphasis and money the developed nations have showered on health care proper, and how little on management consulting-style education—on personal health maintenance—given that schools and universities are ideal settings for providing that information efficiently. One reason may be that no “complex” has yet discovered a huge income flow for that endeavour, in comparison with the money flow that the health care–industrial complex has discovered in health care, just as the military-industrial complex discovered in national defence and in wars.

In connection with electronic health records, a distinction must be made between *personal* electronic health records (PEHRs), maintained and written as a link between patients and the health-care system, and those aimed at medical colleagues, which are typically referred to as “electronic health records” (EHRs) or “electronic medical records” (EMRs). It has long been dogma that EHRs can both enhance the quality of health care and

lower the costs at which it is delivered. So far, however, the performance of EHRs for clinicians has been mixed and disappointing, as was found in a recent study by the RAND Corporation (Kellerman and Jones 2013). According to the RAND researchers, providers have not yet exploited the potential of that tool, and too few of such systems are interoperable within the components of larger health systems, let alone across systems.

Personal electronic health records (PEHRs) linking providers to patients would seem to be the ideal tool for engaging patients more actively and continuously in the prudent management of their own health. While they too are still a work in progress, it is clear that numerous countries in Europe and Asia are well ahead of the United States and Canada in this area. Canada in particular appears to be lagging (Schoen et al. 2012, Exhibit 1, 2808).

The final policy aimed at patients shown in Figure 1.6 is financial incentives that either discourage the use of health care of any kind or are targeted specifically at particular health-care goods and services deemed of low net value. In the United States, the latter set of incentives has come to be known as “value-based health insurance” or “value-based purchasing” (Chernew, Rosen, and Fendrick 2007). The idea here is to lower the patients’ out-of-pocket cost-sharing if they seek health care from cost-effective providers or care.

A less targeted approach to financial incentives aimed at patients is what is known in the United States as “consumer-directed health care” (CDHC), a distant cousin of the medical savings accounts (MSAs) long used in Singapore (Hangvoravongchai 2002). The approach is based on private health insurance policies that impose very high annual deductibles, co-insurance, and maximum annual risk exposures for patients—often up to \$10,000 a year per family. These policies are intended to provide incentives for patients to “shop around” for cost-effective health care, although so far it has been more like forcing them to act as if they were blindfolded customers pushed into a department store and asked to shop prudently for merchandise. User-friendly databases on the prices and quality of health care delivered by competing providers are the exception rather than the rule. In the United States, the significant out-of-pocket spending occasioned by these high-deductible policies can be defrayed by “health savings accounts” (HSAs), into which households can make tax-deductible deposits or employers can make deposits on behalf of employees without having it count as taxable compensation.

The structure of CDHC plans, coupled with tax-preferred HSAs in the United States, naturally favours high-income families. First, standard economic theory suggests that the self-rationing by price and ability to pay it is apt to restrict the use of health care by low-income families more than by high-income families. In effect, the CDHC model delegates the task of self-rationing health care mainly to families in the bottom half of the nation’s

income distribution. Second, the tax-preferred HSAs have the embedded effect of lowering the after-tax prices of health care paid for out of pocket more for high-income families than it lowers them for low-income families. As a distributive ethic, this mechanism is not easily defended. Policymakers in a political arena must be mindful of these ethical implications of the approach.

A recent study by the RAND Corporation found that, on average, high-deductible health plans cut spending for individuals, but they also reduce the use of preventive care (Beeuwkes-Buntin et al. 2011). What effect they have on the overall quality of health care received by patients is an open question, as is the question of how effectively patients can actually shop around for cost-effective health care (Ginsburg 2007). A survey of such insurance designs in several nations around the world also yielded mixed results (Hsu 2010).

In Figure 1.6, the acronym P4P4P stands for “pay for performance for patients,” but it actually means “by patients.” In part, the so-called value-based health insurance designs are pay-for-performance—in this case, the choice of cost-effective health-care providers (assuming that the requisite information is available to prospective patients). Charging smokers higher insurance premiums is another application of the idea. There are experiments now to extend the idea to other forms of health behaviour. For example, the insured may be offered access to lotteries with sizeable prizes for reaching certain targets for blood pressure, biomass, or exercising regularly. They may also be offered discounts on healthy foods at grocery stores that insurers have negotiated with in return for channelling customers there (Vitality Group 2013).

Whether or not improved health management through changes in lifestyle and the use of preventive health care can actually lower the growth path of annual health spending remains as yet an open question. Because so much is spent to ward off death near the end of life, it may well turn out that over the long run these measures will merely enhance the yield of health spending in terms of longer life expectancy and better quality of life (Cohen, Neumann, and Weinstein 2008; Russell 2009) but not cut overall annual health spending. But these measures could potentially be part of any strategy to bend the cost curve in health care.

Controlling the prices paid for health care

In a fascinating paper by Mark Pauly (1993), he makes the point that if costs are defined as economists would define them—that is, the value of the real resources used to produce health care—then in cross-national comparisons the United States does not actually stand out as a high spender on health care; rather, it ranks at the low end. Other countries keep their health spending per capita low mainly through monopsonistic power on the payment side

of the health sector, Pauly points out, allowing them to depress prices below what they would be in a freely competitive market. The same point has been made by conservative economist John C. Goodman in his book *Priceless: Curing the Healthcare Crisis* (2012, 86). Finally, the point had been made in a much cited paper titled “It’s the Prices, Stupid: Why the United States Is So Different from Other Countries” (Anderson et al. 2003).

Most developed nations have long ceased to turn over determination of prices for health care to the invisible hand of the private market (the first row in Figure 1.7 above). This approach is used mainly in the United States, and only for roughly the half of total health spending transacted in the private part of the US health system. Instead, as Pauly notes, most nations have chosen to shift more of the weight of market power in health-care price determination to the payment side, by endowing it with monopsonistic market power. This is clearly so in single-payer insurance systems. They can set prices at a level just sufficient to elicit from providers the supply of health care the policymakers deem desirable and affordable. For example, exploiting hitherto untapped monopsony power, the Canadian provinces and territories recently reached an agreement to commence, on 1 April 2013, the purchase in bulk of six popular generic drugs (Lunn 2013). In Canada, prices of generic drugs have been higher than in most other countries, including the United States (Law 2012, 4).

But considerable market power rests on the payment side also, in so-called all-payer systems under the Bismarck model of social health insurance, for example, in Germany and Switzerland. In both countries, prices are negotiated between regional associations of health insurers and the corresponding regional associations of health-care providers in what are called “quasi-markets.” These negotiations are subject to overall budget constraints set by government with appeal to macroeconomic growth (the second row of Figure 1.7). These health systems control the level and growth of health spending as well as does Canada.

As already noted in connection with Figure 1.7, the United States has a bifurcated approach to price determination: unilateral price setting by government for public insurance programs, and negotiations between individual private insurers (or individual self-paying patients) and individual providers of health care in the private sector. The latter approach has had two consequences. First, the system is highly price-discriminatory. Prices for a given procedure or health-care good can vary by a factor of 10 within a state, even for a single health insurer (Reinhardt 2012, 49). In 2008, for example, the largest commercial insurer in New Jersey paid one hospital \$716 for a colonoscopy and another \$3,717, with others in a range between these extremes. For free-standing ambulatory surgery centres performing

Table 1.1 Fees for primary-care office visits and hip replacement

	Primary-Care Physician for Office Visit (\$)		Orthopedist's Fee for Hip Replacement (\$)	
	Public Payer	Private Payer	Public Payer	Private Payer
Australia	34	45	1,046	1,943
Canada	59	—	652	—
France	32	34	674	1,340
Germany	46	10	1,251	—
United Kingdom	66	129	1,181	2,160
United States	60	133	1,634	3,996

Note: Fees are calculated in purchase power parity (PPP) 2008 dollars.

Source: Laugesen and Glied 2011, Exhibit 3.

the procedure, the fee range was \$443 to \$1,396. For the physician component of the colonoscopy, the insurer paid a range from \$178 to \$431. In 2007 the largest insurer in California paid hospitals fees ranging from \$1,800 to \$13,700 for an appendectomy. The fees paid to hospitals for a coronary bypass graft with cardiac catheterization (DRG 107) ranged from \$33,000 to \$99,800. These enormous price variations appear to have no relationship to either quality or costs. The prices depend mainly on the relative market power in local markets where payers meet providers.

Second, the average prices for identical goods and services in US health care—be it a drug, a diagnostic test, an imaging service, or a particular surgery—is much higher than are comparable fees in other nations, often twice as high (International Federation of Health Plans 2011). Table 1.1, adapted from Laugesen and Glied (2011, Exhibit 3), illustrates this point.

The higher US physician fees may reflect in part the higher malpractice premiums that American physicians pay. They might also reflect higher incomes in other professions, which inevitably serve as benchmarks for physician incomes. Furthermore, they determine differential levels of national health spending per capita at a single point in time more than differential growth rates over time. But they may also include what economists call “rents,” that is, price levels higher than would be needed to elicit the proper supply of health care. To the extent that this holds true for providers other than physicians, tighter control on the secular growth of health-care prices could help bend the cost curve downward, other things being equal. One approach I have already suggested would be to shift from the current price-discriminatory system towards an all-payer system such as Germany's or Switzerland's (Reinhardt 2012).

Some economists (Pauly 1993) object to a monopsonistic approach to price determination in health care on two grounds, and even to negotiated all-payer systems. First, they question its fairness vis-à-vis the providers of health care. That question is based on the implicit notion that market prices are inherently fairer to both sides of the market than are monopsonistic prices. That notion, however, is debatable in a market as problematic as the health-care market, in which market power is so heavily allocated to the supply side.

Second, these critics of monopsony on the payment side (and, for that matter, most economists) see in monopsony power the potential for serious mischief, because prices might be set too low by the payment side to elicit the desired supply of health care, leading to undesired rationing of care. In Canada, for example, located next to the more generous US market, this is a constant possibility. Here too the implicit assumption is that free-market prices will always elicit the proper supply and utilization of health care. However, I find it difficult to see that felicitous effect in the highly price-discriminatory system of US health care.

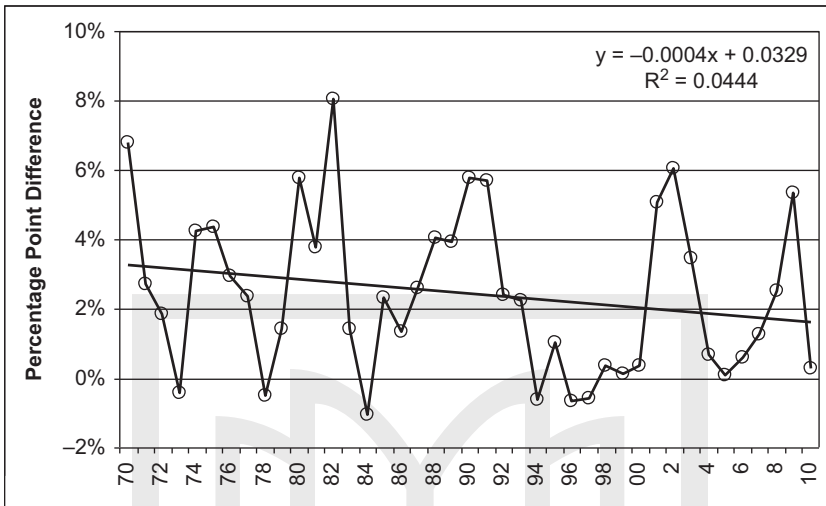
Health spending in the future

In the wake of the financial crisis and the deep recession it triggered in most developed countries, the annual growth in health spending declined drastically and even turned negative in parts of Europe (OECD 2012a). It slowed down somewhat in Canada but did not decline (CIHI 2011, Table A.3.3.1). It did not decline in the United States either, although there it slowed down noticeably, as well as attaining over 2011–12 its lowest growth rate in several decades (Hartman et al. 2013)—3.9 per cent, keeping the fraction of GDP absorbed by health care a stable 17.9 per cent of GDP. That fraction, of course, is substantially higher than comparable ratios in other developed countries. Among the three highest-spending nations in the OECD, in 2011 Canada spent an estimated 11.2 per cent of its GDP on health care, Germany 11.5 per cent, and Switzerland 11.6 per cent (OECD 2011, Table 1).

At the time of writing, there is uncertainty throughout the OECD whether the recent slowdown in the growth of health spending everywhere is a temporary response to the sharp slowdown in the growth of GDP and employment, or whether it portends a permanent downward shift in the trajectory of future health spending. Figures 1.8 and 1.9 suggest that, in the United States at least, the trajectory was bent down years ago.

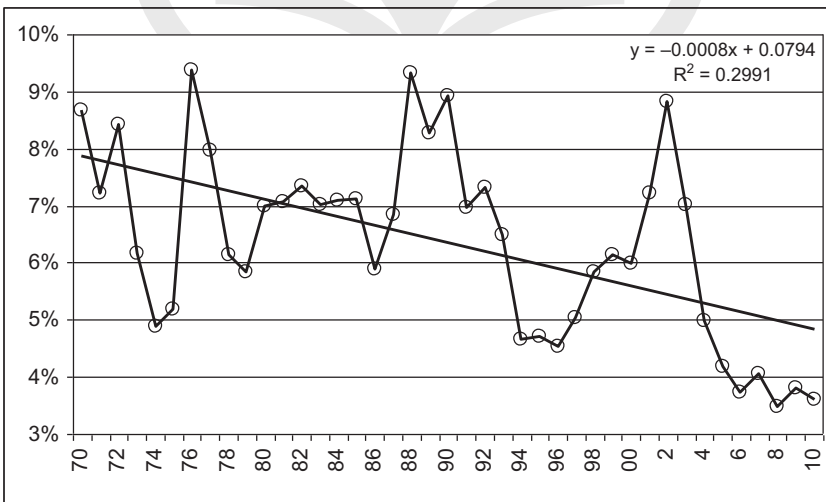
As Figures 1.8 and 1.9 show, the annual growth rate of US health spending had plummeted towards the annual growth of GDP many times before, albeit never for long. What is also apparent from past US health-spending

Figure 1.8 Difference in growth of US GDP and US national health spending (per cent), 1970–2010



Source: Based on Centers for Medicare and Medicaid Services 2012, Table 1.

Figure 1.9 Annual growth in US real (constant dollar) health spending per capita, 1970–2011



Source: Based on Centers for Medicare and Medicaid Services 2012, Table 1.

trends, however, is that the swings in short-run health-spending growth have dampened in amplitude over time and have been centred on a long-run downward-sloping trend line.

The question now is for how long that long-term trend line will extend downward in the future, and whether nations can patiently wait as the health-care sector lumbers along this gradual downward glide path towards lower spending growth or whether the mounting opportunity costs of health care in the shorter run will compel more forceful policy interventions to bend down the cost curve. As Hartman and his colleagues observe ominously about the lower growth of US health spending in 2010–11, “Overall, there was relatively slow growth in incomes, jobs, and GDP in 2011, which raises questions about whether US health care spending will rebound over the next few years as it typically has after past economic downturns” (Hartman et al. 2013, 87).

Conclusion

At the risk of oversimplifying, one can define the claim a nation’s health-care sector makes on its gross domestic product (GDP) in any given year—what we usually refer to as “annual national health spending” (NHE)—as

$$\text{NHE} = (\text{price/unit of health care}) \times (\text{units of health care used/capita}) \times (\text{size of population})$$

If one wants to track NHE per capita or as a percentage of GDP over time, or to compare the figure across nations at a similar stage of economic development, the population figure must be adjusted for morbidity patterns, which in turn are driven by demographic structure.

A public health policy seeking to constrain the growth of NHE over time should focus first on a careful consideration of the “units” of health care for which *price* is defined. Traditionally, in most developed economies, the unit has been the individual service. In the United States, for example, the fee-for-service schedule for physicians under the traditional government-run federal Medicare program for the elderly contains more than 9,000 service items. For hospitals, the “charge master” list of prices still used in parts of the private health insurance sector contains 20,000 items or more.

Current efforts around the world aim at redefining the “units of care” to higher levels of aggregation—the entire ambulatory and inpatient treatment of a finite episode of care, for example, such as a coronary bypass graft—or, for non-episodic chronic care, annual risk-adjusted capitation. For these measures to work, the bundles for episodic care must be carefully defined and

based on empirical evidence of best practices. Furthermore, there has to be an organization capable of accepting these aggregate payments and distributing the money to the various participants in the treatment. The “new, new” concept of affordable care organizations (ACOs) encouraged in President Obama’s *Affordable Care Act* of 2010 is thought of as such an organization. The ACOs are to integrate health care clinically across providers and settings in a cost-effective way. The Kaiser Permanente model, which originated in California during the Second World War, is the ultimate in ACOs.

The ACO movement in the United States may or may not be an overwhelming success, but it is worth trying. To my amazement, I do not detect even a tentative movement in this innovative direction in Canada. As hard as Canadians may try to belie it, sometimes things can be learned from the giant health-care laboratory south of the border.

There is little that policymakers can do about the size and demographic structure of the population, because it is driven by decisions made by people in the privacy of their bedrooms, as the late Senator Moynihan of New York once put it. The only marginal tweaking of population size and demography is brought about by immigration, but it has its limits.

The price for whatever unit of health care is chosen as the basis for pricing can be set unilaterally by government, as it is in the US federal Medicare system and Taiwan’s single-payer system. In social insurance systems with multiple insurance carriers—for example, Germany and Switzerland—associations of insurers and counterpart providers negotiate fees that are thereafter uniformly applied to all insurers and all providers. In general, I do favour negotiated fee schedules, to give providers whose income is being determined a seat at the table and a stake in the price schedules. In my view, the worst conceivable system involves negotiations over prices between each of multiple insurers and each provider, the system that rules in the private health insurance sector in the United States—I have routinely made sport of that dubious approach (Reinhardt 2006, 2012).

Finally, it is often argued that national health spending could be reduced by focusing more on the non-medical-care determinants of ill health, an idea first put out for discussion as early as 1974, by Canada’s then minister of national health and welfare Marc Lalonde, and subsequently by Robert G. Evans and colleagues (Evans et al. 1994; Lalonde 1974). By now a huge literature has emerged on that topic, whose content is beyond the scope of this paper. Suffice it to state my own view on the matter: focusing on the non-medical-care determinants of health is bound to increase both life-years and the quality of life lived, but it is unlikely to reduce NHE, other things being equal. People would live longer and healthier lives, but

eventually their bodies would depreciate anyhow, triggering expensive fights with health care proper to reduce the pace of depreciation.

Furthermore, in health care, society faces a huge income-seeking medical-industrial complex that is just as powerful and persuasive as the military-industrial complex lamented by none other than former general and president of the United States Dwight Eisenhower (Eisenhower 1961). The politically powerful medical-industrial complex will fight hard, just like the defence industry, to protect its claim on the nation's GDP, and even to grow it.

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