Painful Versus Painless Cost Control

Dr. Joshua Worthy is chief of neurology at a large staff model health maintenance organization (HMO) and serves as the physician representative to the HMO’s executive committee. Other members of the executive committee include the hospital and HMO plan chief executive officers (CEOs), representatives of nursing and other staff, and members of the HMO’s consumer board of directors. A national health plan has just been enacted that imposes mandatory cost controls. The HMO’s budget for the coming year will be frozen at the current year’s level. In past years, the annual growth in the HMO’s budget has averaged 12%.

The health plan CEO begins the committee meeting by groaning, “These cuts are draconian! To meet these new budget limits we’ll have to cut staff and ration life-saving technologies. Patients will suffer.” A consumer member responds, “We all know there’s fat in the system. Why, in the newspaper just the other day there was an article about how rates of back surgery in our city are twice the national average. And if we’re going to talk about cuts, maybe we should start by looking at your salary and the number of administrators working here. I’m not so sure patients have to suffer just because we’re adopting the kind of reasonable spending limits that they have in most countries.”

Dr. Worthy remains silent for much of the meeting. He wonders to himself, “Is the CEO right? Is cost containment inevitably a painful process that will deprive our patients of valuable health services? Or could we be doing a better job with the resources we’re already spending? Is there a way that our HMO could implement these cost controls in a relatively painless fashion as far as our patients’ health is concerned?” Interpreting Dr. Worthy’s silence as an indication of great wisdom and judgment, the committee assigns him to chair the HMO’s task force charged with developing a cost control strategy to meet the new budgetary realities.

Concerns about the rise of health care costs dominate the health policy agenda in the United States. The other most pressing health policy concern—lack of adequate insurance and access to care for tens of millions of people—is in part attributable to the problem of rising costs. Health care inflation has made health insurance and health services unaffordable to many families and employers.

In recent years, private and public payers in the United States have taken aim at health care inflation and discharged volleys of innovative strategies attempting to curb expenditure growth, such as creating new approaches to utilization review, encouraging HMO enrollment, devising diagnosis-related group (DRG) systems and other reforms of payments to providers (see Chapter 4), and a multitude of other measures. Until recently, these approaches had little noticeable impact on the rate of growth of health care costs in the United States. National health expenditures per capita increased fourfold between 1980 and 1999, rising from about $1000 per capita to over $4000 per capita (Figure 8-1). Viewed as a percentage of gross domestic product (GDP), U.S. health expenditures increased from 8.9% in 1980 to 13.0% in 1999 (Figure 8-2). The rate of health care inflation did cool down somewhat in the late 1990s. Health care expenditures as a percentage of GDP even decreased between 1995 and 1999. However, this decrease was largely attributable to the remarkable U.S. economic boom during this period that created rapid growth in overall GDP that exceeded the more modest growth in health care expenditures per capita. By the year 2000, it was evident that serious health care inflation had returned; national health expenditures rose by over 8% from 1999 to 2000 and health expenditures as a percentage of gross domestic product are projected to rise to 14% by 2002 (Hefler et al, 2001).

Health care providers are discovering that they have to adjust to the prospect of practicing in an era of finite resources. Like Dr. Worthy, physicians and other health caregivers need to deliberate about how constraints on expenditure growth may affect patients’ health. Must cost control necessarily be “painful,” leading to rationing of beneficial services? Or is there a “painless” route to containing costs, reached by eliminating unnecessary medical treatments and administrative expenses?
**Figure 8-1.** United States per capita health care expenditures. (Data extracted from Heffler et al, 2001.)

**Figure 8-2.** United States health care expenditures as a percentage of the gross domestic product. (Data extracted from Heffler et al, 2001.)
In this chapter, the painful–painless cost control debate will be explored. First, a model will be constructed describing the relationship between health care costs and benefits in terms of improved health outcomes. Then, different general approaches to cost containment and their potential for achieving painless cost control will be discussed. Chapter 9 will describe specific cost control measures in more detail.

HEALTH CARE COSTS & HEALTH OUTCOMES

Before entering medical school, Dr. Worthy worked in the Peace Corps in a remote area in Central America. At the time he first arrived in the region, the infant mortality rate was quite high, with many deaths due to infectious gastroenteritis. Dr. Worthy participated in the creation of a sewage treatment system and clean well-water sources for the region, as well as a program for implementing oral rehydration techniques for infants. By the end of Dr. Worthy’s 2-year stay, the infant mortality rate had dropped by nearly 25%. The cost for the entire program amounted to 15 cents per capita, paid for by the World Health Organization.

Conditions have been very different for Dr. Worthy as a practicing neurologist in the United States. In the past 5 years, over a dozen new MRI scanners have been installed in the city in which his HMO is located, an urban area with a population of 800,000.

Dr. Worthy has found that MRI scans provide images that are better than those of CT scans, allowing him to more accurately diagnose conditions such as multiple sclerosis in earlier stages. He is less certain about the extent to which these superior images always make for superior outcomes for his patients.

From society’s point of view, the value of health care expenditures lies in purchasing better health for the population. The concept of “better health” is a broad one, encompassing improved longevity and quality of life, reduced mortality and morbidity rates from specific diseases, relief of pain and suffering, enhanced ability to function independently for those with chronic illnesses, and reduction in fear of illness and death. It is important, then, to know whether investing more resources in health care buys improved health outcomes for society and, if so, what the magnitude of the improvement in outcomes may be relative to the amount of resources invested.

Figure 8–3, drawn from the work of Robert Evans (1984), illustrates a theoretic relationship between health care resource input and health care outcomes. Initially, as health care resources increase, these outcomes improve, but above a certain level, the slope of the curve diminishes, signifying that increasing investments in health care yield more marginal benefits. In terms of Dr. Worthy’s experiences, the Central American region in which he worked lay on the steep slope of this cost–benefit curve: A small investment of resources to create more sanitary water supplies and to administer inexpensive hydration therapy yielded dramatic improvements in health. On the other hand, purchasing MRI scanners to supplement CT

![Figure 8–3. A theoretic model of costs and health outcomes. Moving from point A to point B on the curve is associated with both higher costs and better health outcomes.](image-url)
scanners represents a health care system operating on the flatter portion of the curve: Large investments of resources in new technologies may produce more marginal and difficult-to-measure improvements in the overall health of a population.

Naturally, different medical interventions lie on steeper (childhood immunizations) or on flatter (the costly prolongation of life for an anencephalic infant) portions of the curve. The curve in Figure 8–3 may be viewed as an aggregate cost–benefit curve for the functioning of a health care system as a whole. The system may be an entire nation or a smaller entity such as an HMO, with its defined population of enrollees.

Overall, the United States health care system currently operates somewhere along the flatter portion of the curve. Let us assume that Dr. Worthy’s HMO system lies at point A on the curve in Figure 8–3, with average total health care expenditures per HMO enrollee being the same as the average overall per capita health care cost in the United States (roughly $4400 in 1999). If stringent new cost containment policies forced the HMO to virtually freeze spending at point A rather than increasing annual expenditures at their usual clip to move to point B, then Figure 8–3 implies that the HMO would sacrifice improving the health of its enrollees by an amount equal to the distance between points A and B on the vertical axis.

Such an analysis would confirm the opinion of those who argue that cost containment requires painful choices that affect the health of the population. Among the most forceful proponents of this view are Aaron and Schwartz (1984 and 1990), who have described cost containment as a “painful prescription” requiring rationing of beneficial care. In Figure 8–3, the distance between points A and B on the y axis measures how much health “pain” accompanies the decision to limit spending at point A instead of advancing to point B. Some degree of pain is inherent in the curve. As Evans (1984) observes, “if its slope is everywhere positive, then in a world of finite resources, unmet needs are inevitable.” No matter where we sit on the curve, it will always be true that if we spent more we could do a little better.

In Figure 8–3, the distance between points A and B on the y axis is small, given the relatively flat slope of the curve at these points. But reassurances about relatively mild cost containment pain bring to mind the physician, scalpel in hand, hovering over a patient and declaring that “it will only hurt a little bit.” A little pain, necessary as it may be, is not the same as no pain; or as Fuchs (1993) puts it, “low yield medicine is not ‘no yield’ medicine.”

Before allowing ourselves (and Dr. Worthy) to become overly chagrined at the inevitable painfulness of cost containment, let us add the new dimension of efficiency. We can picture a point C (Figure 8–4) at which spending is the same as that at point A but outcomes improve. How does the model account for point C, a point off the curve?

The move to point C requires a shifting of the curve (Figure 8–5), signifying a new, more efficient (or productive) relationship between costs and health outcomes (Donabedian, 1988). There are numerous possible routes to greater efficiency. For example, almost one in four births in the United States occurs by cesarean delivery, a rate nearly twice that of most other Western industrialized nations. Many studies have suggested that the high rates of cesarean section in the U.S. add to the costs of care.
without improving overall neonatal or maternal birth outcomes. Reducing the number of unnecessary cesarean sections could save over $1 billion from averted surgical costs and prolonged postpartum hospital stays while simultaneously improving the quality of obstetric care (Stafford, 1990). In the remainder of this chapter, we will examine in greater detail the various possible methods that Dr. Worthy's cost control task force could consider, such as reducing unnecessary surgery, in order to achieve more health "bang" for the health care "buck." Before turning to this discussion, however, it is necessary to make explicit three assumptions about this model of costs and outcomes.

1. Implicit in the model is the notion that the relevant outcome of interest is the overall health of a population rather than of any one individual patient. A number of authors have recently emphasized the need for physicians to broaden their perspective to encompass the health of a general population as well as their narrower traditional focus on providing the best possible care for each of their patients (Eddy, 1991; Greenlick, 1992). The population-oriented model of costs and outcomes depicted in Figures 8–3 to 8–5 may not fit easily with many physicians' experiences of caring for a particular patient. At the level of the individual patient, the outcome may be all or nothing (eg, the patient will almost certainly live if he or she receives an operation and die without it) and not easily thought about in terms of curves and slopes. Rather than focusing on any one particular intervention or patient, the curve attempts to represent the overall functioning of a health care system in the aggregate for the population under its care. (The ethical issues of the population health perspective are discussed in Chapter 13.)

2. The model assumes that it is possible to quantitate health at a population level. Traditionally, health status at this level has been measured relatively crudely, using vital statistics such as life expectancy and infant mortality rates. While an index such as infant mortality rates may be a sensitive, meaningful way of evaluating the impact of health care and public health programs in rural Central America, many analysts have questioned whether such crude indicators accurately gauge the impact of health care services in wealthier industrialized nations. In these latter nations, much of health care focuses on "softer" health outcomes such as enhancement of functional status and quality of life in individuals with chronic diseases—aspects more difficult to monitor at the population level than death rates and related vital statistics. In other words, it may be difficult to conceptualize a scale on the y-axis of Figures 8–3 to 8–5 that can register both the effects of managing gastroenteritis in a poor nation and the addition of MRI scanners in a U.S. city.

3. When evaluating population health, it is difficult to disentangle the effects of health care on health from the effects of such basic social factors as poverty, education, lifestyle, and social cohesiveness (see Chapter 3). Susser
(1993) has offered a taxonomy in which he defines medical care as "clinical and therapeutic measures that health professionals and medical systems provide for sick people." Health care consists of medical care plus "preventive measures and public health." Ultimately, the health status of a population is determined not only by health care, including its medical care component, but by such other powerful influences as standard of living and culture. For the purpose of our discussion of cost control, we view the curves depicted in Figures 8–3 to 8–5 as representing the workings of the health care system (including public health) per se rather than of the broader economic and social milieu. We therefore use the term health outcomes to describe the y axis, a term intended to suggest that we are evaluating those aspects of health status directly under the influence of health care. The x axis correspondsingly represents expenditures for formal health care services.

Prices & Quantities

We have shown that painless cost control is theoretically possible. But can efficiency be improved in the real world? What strategies could Dr. Worthy's task force propose to move the HMO from point A to point C on the curve? An answer to these questions requires further scrutiny of resource costs in the health care sector.

Costs may be described by the equation

\[ \text{Cost} = \text{Price} \times \text{Quantity} \]

Price refers to such items as the hospital daily room charge or the physician fee for a routine office visit. Quantity represents the volume and intensity of health service use (e.g., the length of stay in an intensive care unit, or the number and types of major diagnostic tests performed during a hospitalization). Lomas and colleagues (1989), noting this distinction between prices (Ps) and quantities (Qs), refer to cost containment as "minding the Ps and Qs" of health care costs.

Let us look at an example of the \( C = P \times Q \) equation:

*Blue Shield pays Dr. Morton \$400 for 10 office visits at a fee of \$40 per visit. The next year, the insurer pays Dr. Morton \$480 for 10 visits at \$48 per visit.*

*Prudential pays Dr. Norton \$400 for 10 office visits, and the next year pays \$480 for 12 visits at the same \$40 fee. An identical cost increase is a price rise for Dr. Norton but an increase in quantity of care for Dr. Norton.*

Changes in prices and quantities have different implications for patients and providers (Reinhardt, 1987). In the example above, both physicians increase their income (and both insurance plans increase their expenditures) by \$80, though in the case of the price increase, the additional income does not require a higher volume of work. To the patient, however, only the additional \$80 spent on a greater number of visits purchases more health care services. (For simplicity's sake, we assume that all visits are identical and that the price rise does not reflect increased quality of service but simply a higher price for the same product.)

A cost increase that merely represents higher prices without additional quantities of health care is an inefficient use of resources from the patient's point of view. Returning to the diagrams in Figures 8–3 and 8–4, if real costs in a health care system were rising only because medical price inflation was exceeding general price inflation while the quantity of care per capita remained static, then increased health costs would not bring about improved health outcomes, and the overall curve would become absolutely flat.

COST CONTROL STRATEGIES

Controlling Price Inflation

After intense deliberation, Dr. Worthy's task force submits a plan for "painless cost containment" to the HMO executive committee. The first proposal calls for the HMO to aggressively seek discounts on the prices paid for supplies, equipment, and pharmaceuticals by having the HMO selectively contract with suppliers for bulk purchases and stock a more limited variety of product lines and drugs within the same therapeutic class. The proposal also calls for a 10% reduction in salaries for all HMO employees earning over \$100,000 per year, as well as a 10% reduction in the capitation fee paid to the HMO's physician group. The executive committee never gets beyond this part of the plan, as furious argument erupts over the proposed income cuts.

Price inflation has been a major contributor to the rise of health care costs in recent decades. Between 1947 and 1987, United States health care costs rose 2.5% per year faster than the growth in the overall economy. Two-thirds of this higher growth rate, or 1.6%, was due to health care prices rising more rapidly than prices in the overall economy. The remaining 0.9% differential was due to differences in the rate of increase of quantities of health care relative to increases in the overall quantity of goods and services (Fuchs, 1990).