

## **Technology, Competition and Costs of Medical Care: Some Emerging Issues and Policy Imperatives in India**

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### **Abstract:**

The private sector plays a significant role in meeting the health care needs of the people of India. With increasing international drive for privatization, scholars and policymakers have been debating the efficacy of market forces in financing and delivering health care in developing countries. Containing costs of care has been an important concern in devising appropriate health care policy all over the world.

In this essay, we first summarize a body of evidence (drawn from the US) that addresses the question whether competition will contain costs of medical care, and improve access and outcome (Section II). We then raise certain issues and questions that need to be examined empirically alongside issues that require explicit value judgment on the part of those involved in the production, distribution and consumption of health care. In Section III, we present an argument for technology management and health promotion as two essential public policy measures, whether or not one believes in the efficacy of market mechanisms, to contain costs of care.

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# Technology, Competition and Costs of Medical Care: Some Emerging Issues and Policy Imperatives in India\*

V.R.Muraleedharan

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## I

THE PRIVATE SECTOR plays a significant role in meeting the health care needs of the people of India.[1] With increasing international drive for privatization, particularly since the publication of the 1993 World Bank Development Report on health, scholars and policy makers have been debating the efficacy of “market forces” in delivering health care in developing economies. In India, the Government is yet to explore the relative efficacy and costs of regulation and competition with specific reference to health care. To determine the appropriate mix of private and public sectors in financing and delivery of health care, we must address the following two questions:

1. Is there evidence in support of the argument that a competitive environment would force (or even encourage) for-profit health care providers to reduce the costs of care without compromising quality?;

and

2. Do we have evidence on the efficiency of the public sector and other not-for-profit health care institutions in India, and how do they compare with for-profit private health care organizations?

Ideally, answers to these two questions should provide a basis for the policy makers in designing an appropriate health care policy. The debate on privatization of health care market depends crucially on answers to these two questions. *There is no known study as yet in the Indian context to throw any*

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\* This essay was revised during my stay at Harvard School of Public Health as a Takemi Fellow in International Health during 1995-96, supported by a Ford Foundation fellowship. I have benefited immensely from many people. I wish to thank Peter Berman, Michael R.Reich, Anne Mills, Barbara Harriss-White, S.Subramaniam, S.Ambirajan and D.Veeraraghavan for their helpful critical comments on earlier drafts. I however am responsible for the views expressed here and any error that may be found in this essay.

*light on the above issues.* Given this fact, this essay seeks to answer the following question: Can we anticipate the likely impacts of policies that promote for-profit corporate hospitals on costs, quality and outcome of medical care, and thus be able to devise mechanisms to contain possible adverse effects of privatization in India? We begin with a universal fact that the costs of medical care have been going up rather rapidly during the recent past -- as mentioned above, there is no empirical estimate of the increases in costs of care in India, but we have no basis on which to question this either. In fact, it is difficult to contest this common impression. Besides, there is a mounting body of evidence (as we shall see later in this essay) that under certain market conditions such as those found in India, costs of care is likely to increase due to intense non-price competition amongst providers. Given this common observation, we face two interrelated questions: (a) what are the causes for the increasing costs of care, and (b) what can we do to contain costs of care?

There is a general consensus among scholars that technological change substantially contributes to the increasing costs of medical care.[2] What is not so readily agreed upon is the extent to which new medical technologies in a competitive market environment have influenced physicians' behavior against the interests of their patients, and how far this has resulted in higher costs of care. The general debate on whether and to what extent we should rely on market forces in delivering medical care is bound to continue, perhaps more intensely so in future. In the meanwhile, corporatisation of the health care industry and joint-venture facilities have begun to attract the attention of the policy makers and providers of health care in India as the most "efficient" mode of delivering health care. While investor-owned (for-profit) hospitals are increasing in numbers, physicians are also increasingly becoming the owners of health care facilities (we have no official figures on how many of the private hospitals are owned by physicians in India, but it is safe to say that the number is

very substantial). Thus, on the one hand, questions have been raised from various quarters that cast doubts on the physicians' role in increasing costs of care, while on the other hand it has become more and more difficult to evaluate medical technologies.

In this essay I first present a brief survey of studies that question the belief that competition will contain costs of medical care as well as improve access and outcome (Section II). The survey covers only the experience in the United States of America, where much empirical work on this issue has been carried out in the recent past. I then raise certain issues and questions that need to be examined empirically alongside issues that require explicit value judgment on the part of all those involved in the production, distribution and consumption of health care. Many recent empirical studies support the view that technologies under certain competitive market conditions, because of the inherent difficulties in assessing their benefits and costs, provide scope for physicians to overuse medical procedures and thus contribute to increases in the costs of medical care. While it is extremely important but difficult to come to a definite conclusion on this issue, we should ask ourselves as to what we can possibly do in order to contain costs of medical care, from the point of view of the individuals, various providers, and policy makers. In Section III, I argue for technology management and health promotion as two essential public policy measures, whether or not one believes in the efficacy of market mechanisms, to contain costs of care.

## II

An important question that economists in general, and policy makers in India in particular, should address themselves to is: what is the economic behavior of investor-owned (for-profit) hospitals in India? More specifically, we can pose the following questions: How do investor-owned and not-for-profit public sector hospitals compare in terms of costs of care per admission? How do

they compare in their use of the various medical procedures? To what extent are their use of various medical procedures influenced by financial incentives? Does ownership have any direct effect on the costs of care obtained? Are there differences in quality of care obtained?. In essence we are asking, can we account for the differences in costs, quality and outcomes of medical care obtained in various types of hospitals in India? With the existing data base on health care in India, it is not possible to answer with any reasonable certainty any of the above mentioned complex questions. However, a number of empirical studies conducted in the United States of America in the recent past provide a basis for us to speculate on what we may expect in the Indian medical market. Our response to the above questions is therefore tentative, and should be considered as hypotheses for further research for scholars concerned with designing better health care system for India.

Recent studies on the behavior of for-profit hospitals add to the growing body of evidence that "self-referrals" lead to overuse of services and excessive cost. ("Self-referral is the term used to describe a physician's referral of patients to an outside facility in which he or she has a financial interest but no professional responsibility." [3]) Mitchell and Sunshine, based on their comparative study of joint-ventures with other facilities providing radiation-therapy services in Florida State in the USA, report that 40 per cent of all practicing physicians are involved in some kind of self-referral.[4] They observed that self-referral in radiation-therapy was associated with increased use and costs. Swedlow et al's study on workers in California also found that self-referral increased the rate of use and cost per case of physiotherapy and increased the cost per case of psychiatric evaluation.[5] Further, they observed that inappropriate use of magnetic resonance imaging was more frequent among the patients cared for by self-referring physicians, although there was no difference in the cost per case. Hillman et al's study on differences in physicians' practices with respect to diagnostic imaging compared the

frequency and cost of imaging examinations as performed by primary physicians who used imaging equipment in their offices (self-referring), and as ordered by physicians who always referred patients to radiologists (“radiologist-referring”)[6]. Their study also led to the conclusion that for all clinical representations "the self-referring physicians obtained imaging examinations 4.0 to 4.5 times more often than the radiologist-referring physicians." Further, they observed that self-referring physicians charged significantly more than the radiologist for imaging examinations of similar complexity. The combination of more frequent imaging and higher charges resulted in mean imaging charges per episode of care that were 4.4 to 7.5 times higher for the self-referring physicians. Pattison and Katz in their attempt to explain the rapid growth of investor-owned hospitals found that (a) both costs and charges were higher in for-profit than in not-for-profit hospitals; and (b) the for-profit hospitals have used "aggressive marketing and pricing strategies" to generate high rates of profitability and growth.[7] To put it differently, the for-profit hospitals have been successful in generating higher net income for their owners, not by operating less expensively but by virtue of charging more per admission. Similar conclusions were reached by Watt et al based on a comparative study of the economic performance of 80 matched pairs of investor-owned chain and not-for-profit hospitals in eight different states in the USA, during 1978 and 1980.[8]

None of the studies cited above can claim to be comprehensive or definitive, but taken together they seem to provide a coherent and persuasive description of the average economic behavior of investor-owned vis-à-vis not-for-profit hospitals and the consequences of physicians' ownership of health facilities. As a result, they also form a reasonable basis for questioning the claim that investor-owned/joint ventures hospitals would improve access to care and also would lead to greater economic efficiency.[9]

It is interesting to know how the American Medical Association (AMA) reacted to this mounting evidence of excessive costs and rates of use in jointly-owned for-profit facilities. In tracing briefly the response of the AMA, I believe, there is a lesson for the counterpart institutions in India. In December 1991 at its annual meeting, the AMA officially acknowledged the negative consequences of physicians' practice of self-referrals to facilities in which they have financial interests. The AMA as a result strongly advised physicians to avoid self-referrals, "except when there is a demonstrated need in the community for the facility and alternative financing is not available." The following words of the Council on Ethical and Judicial Affairs of AMA, reflect their stand in this regard:

At the heart of the Council's view of this issue is its conviction that, however others may see the profession, physicians are not simply business people with high standards. Physicians are engaged in the special calling of healing, and in that calling, they are the fiduciaries of their patients. They have different and higher duties than even the most ethical business person .... There are some activities involving their patients that physicians should avoid whether or not there is evidence of abuse.[10]

But within the next six months, by the middle of 1992, the AMA operating under different pressure groups passed a new resolution declaring self-referral to be ethical as long as the patient is fully informed about the physician's financial interest in the facility.[11] The AMA justified its change of stand by saying that a policy that prohibits self-referrals would limit access for many patients to necessary health services. The proponents of the new resolution also claimed that "the great majority of self-referring physicians, who do not abuse their patients' trust, were being penalized because of concern over the few who did." [12] The following comments of Relman on the adoption of the new resolution by the AMA, reflect the growing dissatisfaction over the prevailing practices within the medical community in the US, a large section of which strongly believes in the efficacy of the free-market approach to delivering health care:

As for distinguishing between physicians who abuse self-referral and those who do not, there would be no way to do that without prohibitively expensive and intrusive surveillance of the private practices of all physicians who practice self-referral. Besides, the argument that self-referring physicians should be trusted unless they can be proved to have abused that trust misses an essential point about fiduciary responsibility: people in important positions of trust should not put themselves in situations that inevitably raise questions about their motives and priorities, regardless of whether they actually behave in accordance with that trust.[13]

In fact, in addition to self-referrals, there is also a need to have a close look at the “deals” between physicians and the manufacturers of medical devices, and a wide variety of other kinds of joint ventures between physicians and the facilities in which they treat their patients. It is common knowledge in India, particularly in metropolitan cities, that private (small and large) hospitals give a part of their fees collected from the patients to the physicians who refer them to their facilities. It is difficult to establish the extent to which it is being practiced, but an estimate of it would certainly be useful to the policy makers in judging more accurately the nature of measures required to regulate the private sector.

The subject of industrial marketing and medical ethics has always worried health policy makers. It is said that the relationship between medicine and industry is a "marriage of convenience and necessity." As marketing is an essential part of the industrial process, physicians (because they determine the use of medical products in the care of patients) thus become the direct marketing target of medical-service companies which are competing actively to sell their products. While medical-service companies may have their own ethical guidelines, they often tend to go beyond the ethical boundaries of physicians. As Relman puts it, "physicians have an obligation to preserve their patients' trust. It is an obligation quite different from, and often incompatible with, the relation between sellers and buyers in a commercial market." [14]

But the practice of “kick-backs” and active involvement of the medical profession in promotional exercises of the products of the industries will continue, and perhaps become common in the future. The enticements and bonuses offered to the medical profession by the competing companies can no longer be said to be free of any motives. They in the long run add to the costs that are passed on to the consumers, namely the patients. As Rawlins noted in 1984:

Few doctors would accept that they themselves have been corrupted. Most doctors believe that they are quite untouched by the seductive ways of the industry's marketing men; that they are uninfluenced by the promotional propaganda they receive; that they can enjoy a company's "generosity" in the form of gifts and hospitality without prescribing its products. The degree to which the profession, mainly composed of honorable and decent people, can practice such self deceit is quite extraordinary. No drug company gives away its shareholders' money in an act of disinterested generosity[15]

Several factors have been identified as being responsible for the tendency among physicians to offer medical care more intensely than warranted. These are plausible explanations. In the Indian context, each requires an empirical verification of the extent of their influence. Let us consider some of them briefly.

(a) It is a generally observed phenomenon that the fear of malpractice tends to increase the intensity of medical care offered by the physicians. In fact, in economies where patients have easy access to Consumer Fora and Courts, the physicians have learned to practice expensive defensive medicine fearing law suits. As yet this has not become a major problem in India. But with Consumer Protection Groups increasingly playing an active role in protecting the interest of the consumers, and the prospects of private insurance companies protecting the providers from malpractice claims, defensive practice could become common in India. Increases in malpractice claims are also likely to increase the costs of malpractice insurance[16]. This in turn tends to push costs of medical care. Thus while malpractice claims on the one hand may at least partially compensate patients' loss of life or well-

being caused by inappropriate medical interventions, they are on the other hand likely to escalate costs of care and bring about certain undesirable systemic changes in the provision and financing of medical care. This is very much a likely scenario to be witnessed in India too, if corporate, for-profit hospitals continue to grow unregulated as they are now.

(b) Another important contributor to the increasing costs of medical care has been the aggressive medical culture itself. This refers to the narrow, mechanistic, technologically and biomedically defined version of medical science. Several scholars have written extensively on this subject. This has led to significant behavioral changes among the physicians to such an extent that, as Kassirer puts it,

physicians no longer tolerate uncertainty and thus pursue diagnostic certainty beyond clinical usefulness....Some tests do provide some what different data, and certainly not all duplicate testing is redundant, but many tests are carried out merely to confirm a diagnosis that is virtually certain. Because of this, duplicate testing has been described as "belt and suspenders" approach --- namely, one in which both are worn at the same time.[17]

(c) Finally, in explaining the increasing costs of medical care, we come to consider an issue which is perhaps the most controversial. This relates to the role of specialists, and the extent to which their services could effectively be offered by primary care physicians. It is worthwhile mentioning here some of the important studies that ought to be considered by policy makers, particularly during a period when we are passing through an era of severe budgetary constraints. Manu and Schwartz[18], and Garg, Mulligan, Gliebe and Parekh [19], among many others, have observed that primary care physicians tend to deliver less intense care for specific conditions than specialists. Franks, Clancy and Nutting in their review of studies comparing primary care physicians with specialists in the US observed no difference in quality of care or outcome.[20] The literature on the effects of physicians'

practice style on the outcomes of care is limited. It is extremely difficult to conduct studies large enough to detect small but clinically important differences in outcomes or to control adequately for the confounding factors. But the available studies seem to support the view that "the primary care physicians are more likely than specialists to provide continuity and comprehensiveness", resulting in improved outcome in patients at all ages:

The improved outcome include higher birth weight in newborns; more preventive care, a reduced risk of hospitalization, and reduced morbidity in children; a reduced risk of hospitalization in the elderly.[21]

While Lurie et al's study suggests that patients who lost access to primary care physicians had measurable declines in their health [22], other studies suggest that the quality of care provided by specialists outside their specialties declines.[23] It is estimated that in the US nearly 20 percent of primary care is delivered by specialists. It is likely to be higher in India. The moot point is whether specialists tend to offer care more intensely than necessary, as compared to primary care physicians. Some results suggest that the "primary care physicians may identify patients who are not appropriate candidates for a procedure more effectively than the specialists who performs the procedure." [24] The implication of these studies is again obvious: that the increasing number of specialists, if left uncontrolled, would tend to raise the costs of care more than necessary, and that it is therefore necessary to increase the number and role of primary care physicians in order to contain costs of care. To put it differently, existing studies suggest that more specialists in the medical market would lead to the risk of overtreatment. Paradoxically, as Frank, Clancy and Nutting observe, "the poor, whose access to care is limited, may have more to gain from health than others", since it is the rich who have greater access to medical care. The rich are more likely to receive the more intensive care offered by

specialists, and are therefore more likely to undergo invasive procedures!.[25] Some scholars, in fact, have found a direct correlation between income and rates of surgical procedures in the US medical market.[26] While higher income may improve access to care, it may also increase the risk of receiving excessive care.

How do investors in health care industry in India make decisions about how much to invest, on what to invest, and when to invest? In the light of the findings of the above mentioned studies on the consequences of investor-owned hospitals on the costs and (questionable) utility of certain medical procedures, one wonders what must be happening in countries like India where corporate enterprises have slowly begun to play a significant role in the medical care industry. This issue assumes greater importance, given the fact that private (both corporate and non-corporate) hospitals are *practically unregulated in India*. [27]

There is a vast literature on the decision-making process in hospitals, highlighting the role of both financial and non-financial factors in determining the level of investment. Essentially, they point out that both the changes taking place at the macroeconomic level as well as within the health care system determine the investment behavior of hospitals.[28] Sukanya's study on the investment behavior of private (corporate and non-corporate) hospitals in the city of Madras reveals that investment on medical equipment alone constitutes about 50 to 60 percent of their total investment on various fixed assets.[29] She observes that while there is a certain uniformity in the capital investment pattern of many hospitals (in the sense that they allocate a major portion of their resources to medical equipment), there are differences in the distribution of resources allocated to various medical equipment. This is explained by the size, competitive strength and ownership pattern of hospitals (i.e. whether it is a sole proprietor, or partnership or corporate hospital). Sukanya's study

also reveals an interesting pattern of investment behavior over time of private hospitals in Madras city: "all non-corporate hospitals start with investing in surgical equipment. As they grow, they begin to invest in laboratory equipment or imaging equipment and later invest in intensive care and therapy investment." [30]

While the investors may explain variously why they invested as much as they did in different medical equipment and its sequencing, what is of importance to policy makers, as already noted, is to assess and account for the extent to which the cost of care varies across regions and types of providers. In explaining the variations, we may hopefully be able to identify the "culprits" for the inappropriate and excessive use of facilities and medical procedures.

For many people, to question the increasing role of technology in medical care is blasphemy. The popularity of medical innovations is so immense, as Russell observes, "that in the emotionally charged atmosphere of medical care, the momentum of a new technology often puts the burden of proof on those who question the evidence for it, rather than on those who propose it." [31]

What I would like to argue here is that it is not as important to estimate accurately the extent of overtreatment or excess use of medical procedures, as it is to realize the existence of such phenomena under certain economic environments, in order to devise certain regulatory mechanisms to curb such practices. To control the increasing costs of medical care delivered to the people (and therefore contain expenses incurred by the state in the long run), I shall outline two important public policy measures that have become part of the health policy making process in many developed and developing countries. They relate to (1) making technology evaluation an integral part of the health policy making process, and (2) according a high priority for health education programs as a strategy for promoting good health. These are dealt with in the next section.

### III

(1) Assessing medical technologies poses a number of difficulties, particularly at a time when costs of medical care have become the most serious concern of the policy makers in the government. In a competitive market economy, where insurance companies and employers are likely to pay increasingly for costs of medical care, technologies are being evaluated for the extent to which they can restore the functional ability of patients.

It should be noted at the outset that medical technology assessment does not stop with performing only a randomized, controlled clinical trial. The range of outcomes of interventions has been expanded to include, apart from safety and efficacy, the functional status, emotional health, social interaction, cognitive function, degree of disability, etc. To put it differently, technology assessment now "encompass the measurement of effectiveness, consideration of quality of life and patients' preferences, and especially the evaluation of costs and benefits." [32] The randomized controlled trials have not provided information on all of the above aspects of medical care. It is also not clear whether it can potentially handle such diverse range of dimensions of medical care evaluation.

Evaluating health technology in a broader framework as mentioned above poses a number of difficult methodological problems. Perhaps, the most difficult one is imputing value to various outcome status.

As Fuchs and Garber put it,

even a well executed assessment may not resolve whether a form of technology is worth using, because they stop short of assessing what a change in health is worth in dollar terms.

From a payer's point of view, an intervention must be cost effective, meaning that its health benefits are commensurate with the benefits from interventions of equal or lower cost.

Although technology assessment often includes an analysis of cost-effectiveness, it cannot tell us *how much we should be willing to pay* for a given health effect. That would require *explicit value judgments*, which are eschewed in both the old type of technology assessment and much of the new. [33]

Another demanding aspect of the technology assessment process has been the need to incorporate patients' preferences as well into medical decisions. Over the recent past there has been a tendency among the policy makers to develop standardized and codified guidelines for making clinical decisions. It is well known that different patients view outcomes differently. Also, their preferences change over time and they do not always behave "rationally". Some scholars view that, even though it is difficult to capture the true state of patients' attitudes toward outcomes, "a policy that explicitly considered how patients viewed outcomes would probably be better than one based on the implicit assumptions of a consensus panel."<sup>[34]</sup> Because medical decisions have to be often individualized, "it is essential to identify decisions in which it is especially important to consider patients' values and to protect such decisions from intrusive external decision making."<sup>[35]</sup> Assessing patients' preferences and also identifying which decisions require the most patients' preferences acquire importance in the light of increasing costs of care.

This essay is not a commentary on the methodologies for assessing medical technology. The above brief comments are made only to underscore the fact that technology assessment in medicine has and will become more complex and more demanding as a result of several socio-economic factors, including the increasing expectations of the people on what medical science can and should accomplish. Also, from policy makers' point of view it is essential to keep in mind the significant changes in the ways in which health technologies are being evaluated. Such an awareness of new developments will hopefully guard them from offering inappropriate policy prescriptions for containing costs and for improving access to care. While malpractice and other socio-economic factors may make it difficult for the policy makers to contain costs of care, it can be argued that through a

regulatory body (an Office of Health Technology Assessment), *it is possible to exert influence at the point of introduction of technologies.* It is useful to make a clear distinction between controlling acquisition of new technologies and controlling their use. They require rather different approaches. In this essay, my purpose is to highlight only some of the fuzzy areas in medical technology management that should be of concern to health policy makers. It is naive to assume that the rational diffusion of new forms of technology will be easier to achieve under a monolithic state health care system. A study of medical technology management in Canada led Linton and Naylor to conclude that,

Powerful interest groups legitimately promote the continuing diffusion of new procedures and programs, and tension increasingly develops between the competing imperatives of controlling costs and providing high-quality health care. Incomplete data, the absence of clearly defined objectives for health care, and philosophical differences within the medical profession all contribute to the difficulties of technology management....

In this arena, medical organizations that participate in decision making run the risk of generating division in the profession; in particular, academic physicians in subspecialties may feel both offended and threatened by the issuance of guidelines for medical practice.[36]

Many studies have also shown that transfer of technologies from the developed to developing countries have often yielded disappointing results, largely due to failure on the part of the decision makers to recognize unfavorable factors or other deficiencies in advance.[37] In fact many recent studies (some of which we referred to in Section II) have questioned the usefulness of many medical procedures/technologies developed in the West, even after they have been tested for their safety and efficacy. This is largely explained by the increasing concern for costs containment. [It is also not uncommon in the Western countries to hear about medical procedures of unproven effectiveness being practiced widely]. In most developed countries, as a part of cost-containment strategies, there is already in place or efforts are being made to establish a body for technology assessment and to regulate

use of expensive medical equipment (in public and private sector).[38] In India, as in many other poor countries, due to lack of any regulatory mechanism to assess health technologies, policy makers have no means to assess their contribution to overall increase in costs of care, and also their utility and cost-effectiveness. As a result of the liberalization policy in India, we may soon see an increase in the import of modern high cost medical technologies. There is thus a *prima facie* case for health technology assessment in India.

The broad aim of health technology assessment is to indicate the conditions under which a technology can be purchased, used and maintained. As Perry and Marx argue, "in order to decide whether a health technology is suitable for introduction into a developing country it is first necessary to assess both it and the infrastructural conditions in which it would have to function." [39] But merely assessing technologies alone will not do; "the major challenge is to develop a policy structure that can control technology". [40] It is a well known fact that often technologies are acquired without giving much thought to operating and maintenance costs. In many of the government hospitals in India, it is not uncommon to see medical equipment lying out of order or unutilised due to lack of proper maintenance, or used in unexpected ways. K.P.Mathur's (1988) report on three government hospitals in Delhi is replete with examples in support of the above observation.[41] Due to difficulties in maintaining medical equipment in public hospitals, the government of Tamil Nadu has allowed the Electronic Corporation of Tamil Nadu to operate and maintain certain modern diagnostic facilities in five hospitals in the State.[42]

Several kinds of uncertainties are associated with evaluating medical technologies (particularly the new ones) as they are introduced into the marketplace. They relate to production process, performance characteristics, estimated rates of change in component technologies, clinical effects for

specific conditions, costs and size of market, etc.[43] Ultimately they determine "the size and composition of current and potential market and thus about the expected rate of market penetration and the probable return on investment." [44] These factors in turn influence pricing policies.

Of late, there has been a growing recognition of the need to conduct economic evaluation alongside potentially influential trials or new procedure or a new medicine at the premarketing stage. This is due to the fact that often new technologies diffuse widely through the health care system before systematic evidence on costs and benefits is available. As a result, it becomes more difficult to devise effective measures for a more rational diffusion and use of health technology.[45]

In fact, as Bryan Jennet foresees, technology assessment itself may soon come to be considered a competitor for restricted resources available for health services.[46] This is so because of the fact that they are very costly to carry out. Longitudinal clinical trials are costly to conduct. Economic evaluations which go beyond clinical evaluations therefore cost a lot more. But they are essential. To put it in Bryan Jennet's words:

Someone, somewhere has to face up to comparing hernias with hips and kidneys with hearts, to making value judgments that cannot be undertaken by computers or bureaucratic machinery. There is no other way to judge the wisdom of a value judgment than by awaiting the outcome of decisions based on it and then making a value judgment about this.[47]

It is thus suggested that *a periodic evaluation* of health technologies in terms of safety, efficacy, effectiveness, and cost-effectiveness should be of value to policy makers to make decisions on the allocation of resources, and also to understand the capacities and needs of their health care system. The Health Policy of India (1983) does refer to the need for developing appropriate health technologies, but it does not spell out how such an objective can be achieved. All over the world there is now a growing concern for developing methodologies for evaluating medical technologies, in order

to help public policy makers in allocating scarce resources among competing medical care interventions. Indicators such as Disability Adjusted Life Years (DALY) and Quality Adjusted Life Years (QALY) are two examples of the recent developments in evaluating the relative cost-effectiveness of various health care technologies/intervention strategies.[48]

(2) It has been observed by many scholars that the bulk of the burden of illness and the associated costs is accounted for by preventable illness. In a developed country like the USA, preventable illness accounts for about 70 percent of the total burden of illness and costs of care.[49] Even if one were to assume a corresponding figure of only 50 percent for India, the costs averted would still be enormous. There is hence a *prima facie* case for advocating health promotion programs.[50]

A large number of studies have recorded positive effects of advocating health promotion programs. It is a well recognized fact that lifetime medical costs are closely linked to health habits. For example, studies have shown a statistically significant association between smoking habits and overall morbidity; the overall morbidity was higher by 60 percent among the smokers.[51] Wennberg's study strongly supports health promotion programs that help educate consumers in making informed decisions.[52] He says when patients are given information and alternatives, they have shown, on average, to select less invasive (and less expensive) strategies than their physicians. In an earlier study he observed that admission rates in hospitals correlate with the number of hospital beds per capita rather than the incidence of illness.[53] Such observations should not surprise us, given the fact that investor-owned hospitals, and the consequent practice of self-referral are not regulated adequately.

Health education programs have been shown by many studies to reduce the cost of care to the patients and other payers of health care. Through such programs self-management can be encouraged to a certain extent, which in turn can reduce use of (rather dependence on) health services, thus resulting in some savings.[54]

More particularly, there is a growing literature on the benefits of well-formulated health-promotion programs in terms of reducing health care costs in the workplace. The effects are seen in the substantial reduction in the number of sick days, outpatient costs, hospitalization costs, etc.[55] Some of these studies have used randomized control groups in similar plants or facilities for soundness of the experimental design. The savings made through such programs are confirmed through an analysis of claims data. There are also other ways of reducing costs of care to the society as a whole, and for the individuals as well. What the existing studies clearly show is the potential of the health-promotion programs to improve both physical and financial health. The central goal of these programs is the improvement in health habits. Of course, widespread dissemination of such programs will cost money, but in the long run these costs will not be as large as what we would end up spending ultimately for many curative services. Available data seem to suggest a lag of two to three years between improvement in health habits and signs of better health and reduced costs.[56]

As with any other program, the costs of such programs should be borne by those who benefit through savings. What is required, as Fries et al., put it:

is a widespread conviction that appropriately designed programs directed at reducing need and demand can actually save money. [But] advocates of health promotion have themselves caused delays, first by not making cost reduction a primary goal and second by neglecting rigorous economic evaluation.... [Also] it can be argued that academic conservatism has held preventive policy to a more stringent standard of proof than that generally applied in other areas of health policy.[57]

The ICMR-ICSSR joint report in 1981 also emphasized that many of the health problems of the poor can be solved to a large extent through health education.[58] They relate to messages on sanitary disposal of excreta and waste water, control of vectors, use of protected water, encouragement of breast feeding, maintenance of good personal hygiene, etc. The report argues that people can be taught to manage many debilitating infections such as tuberculosis, hookworm, malaria, filariasis, leprosy, etc. The report thus observes:

Simple health messages communicated effectively can produce excellent results in all such cases; and on the basis of cost-benefit considerations, health education can be a very effective input to raise their health status.[59]

In India, State Health Education Bureaux have been established with the responsibility of educating people on a number of health promoting activities. Besides, every national program concerned with control or eradication of communicable diseases and with family planning, has an education component as well. But "despite this enormous input and impressive administrative set up for health education, health attitude of the people have hardly changed and *the programme has hardly made any impact on the situation.*"[60]

Health education can no longer be justified purely on humanitarian grounds. They play a complementary role in the delivery of health services, be it curative or preventive. It is a part of preventive as well as promotive strategy. It is true that preventive medicine is not always cost-effective from the point of view of either the society as a whole or the individual. But, in many instances, as some of the studies noted above show preventive medicine is cost effective and more attractive in terms of its net benefits than many forms of rescue medicine.[61]

## CONCLUDING REMARKS

We began with an observation of the universal phenomenon that the costs of medical care have been going up rapidly over the last few decades. We thus are faced with two important questions: (a) what are the causes for the increasing costs of care?, and (b) what can we do to contain them? Many scholars have analyzed the question of why various cost-control strategies in market economies have not been successful in the past.[62] Some of the reasons are to be found in the nature of the market system that encouraged the transformation of physicians into a class of manager-physician-entrepreneurs. Some others have blamed the unholy alliance between the government and the medical profession in encouraging peoples' dependence on private medical services.[63] Some scholars suggest why blending market mechanisms with regulations is necessary in containing costs of care.[64] While studies in future will throw further details of physicians' behavior under different market conditions, it is necessary to reflect on the implications of what we are beginning to observe and how we may have to institute different mechanisms to develop a better health care system. I have attempted in this essay (a) to put together evidence that throws some light on the behavior of this new class of entrepreneurs, and how as a result we are facing certain basic issues, primarily ethical in nature, that restrict access to appropriate care; and (b) to indicate certain policy measures by which costs of medical care could be better contained.

It is important to mention here two widely prevalent "myths" (particularly among the policy makers): one is that greater access to better medical care and containing cost of care do not go together. To put it differently, if you are to have the finest medical care system, be prepared for high costs. The second myth (some would call it "public expectation") recognized by many scholars, is that high technology is essential for improved health and longevity. There are several examples (of

community-based health care projects in India as well as in other parts of the world) which explode these myths.[65]

Policy lessons emerge and can be learnt not only from our own past mistakes and achievements, but from the experiences of developed economies as well. The recent developments in the medical care market in the US have a clear lesson for the health policy makers in India. While there are forces that seem to be pushing up the costs of medical care beyond our control, there are also ways and means that are well within our reach and control that can be used effectively to reduce costs of care and thus effect some savings for the society.

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