

HEALTH SERVICES IN A LAND OF PLENTY

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FOREWORD

HEALTH SERVICES IN A LAND OF PLENTY expresses the credo of the author, a long-time and wise student of the health field. His philosophy suggests that there should be generous financing of health services and that the public must be prepared to pay the cost if they wish good service. The implications are particularly important in current policy determinations.

When health services were purchased by the individual patient, the high cost of serious illness could be financially catastrophic to the family. Further, inability to pay at the time service was rendered often inhibited seeking necessary care. However, the system had the merit of continuously reflecting consumer decisions in aggregate. Expenditures rose as the consumer more often sought physician care and followed his prescription for use of services. Thus were determined increased use of hospitals, drugs, and other medical appurtenances. Voluntary health insurance too has been a mass demonstration of this favorable attitude toward medical care voiced through the economy.

The value placed on an adequate supply of high quality medical care by the public, forcefully demonstrated by increased expenditures, motivated appropriations by government for research, education, and for health insurance for those over age 65 and for the underprivileged through Medicaid. A not unanticipated result, however, has been a gradual shift from an individual expression of attitude by each consumer as he purchased services to purchase by third parties: government, Blue Cross, Blue Shield, and insurance companies.

Collecting and spending large sums of money and functioning as buyers for the public, Government and the Blues, having guaranteed to provide certain hospital and physician services, now must determine the amount of money which will be provided to those who supply the services. A major "countervailing force" has been created which, under the circumstances and with a concomitant of rapidly rising costs, is inevitable and needed.

Consumers are, of course, interested in receiving as much high quality care as possible for their money and are opposed to inefficiency

or needless inflation in costs. But third party negotiators have a dominant motivation to restrain expenditures in order to conserve their resources. While quality is of concern to these large buyers, it will require wisdom on the part of Government and the Blues to function in the best interests of the public at the bargaining table. Unless the public is advised of the implications of restricting expenditures, it will be possible to stimulate support for arbitrary limitations by implying widespread extravagance to physicians and hospitals. It is a situation in which it would be easy to fool all of the people for a time.

The author points out that large additional sums of money can be justified if the comprehensive high quality medical care now possible is to be made universally available. He is too sophisticated an observer of the field to believe that this objective is ever wholly attainable for so complex an assignment as perfect health care for the public. On the other hand, and clearly inherent in his predictions for the future, is the warning which now must be addressed to third party purchasers that any major improvement will come only as expenditures are increased. Arbitrary restriction of funds will not necessarily bring efficiency nor a more perfect health system.

Fortunately, at this time, all power to control funds is not in the hands of a single large buyer. The voluntary health insurance agencies are now acting as government intermediaries for Medicare. Whether they should be the bargaining agency for hospital budget review for all hospital insurance is a major policy issue now moving toward decision. Progress in health will very much depend on the "looseness" of our system, with funds provided directly not only by the consumer but from a multiplicity of private and governmental agencies.

GEORGE BUGBEE, *Director*

Center for Health Administration Studies

October, 1968

PREFACE

THIS ESSAY was the result of an invitation from the American Institute of Planners to contribute a position paper on the health field and its future for the next fifty years together with a number of papers by other authors on other topics. These papers were part of a project sponsored by the American Institute of Planners in connection with the fiftieth anniversary of its founding in 1917 and were discussed and debated at a conference held in Washington, D.C., in October, 1967. Agreements were made with the authors as to deadlines and length of the papers, but the content was left entirely to their discretion within the general framework of the interests of the Institute. Publication was guaranteed. All position papers were published by Indiana University Press in the fall of 1968 under the title, *Environment and Policy: The Next Fifty Years*, William R. Ewald, Jr., editor. The Indiana University Press has graciously permitted publication of the position paper in the Perspective Series, Center for Health Administration Studies, simultaneously with the publication of the entire compilation.

The general content desired by the American Institute of Planners was as follows:

This paper was commissioned to weigh our choices for the good life, to examine the costs and rewards of physical and mental health for all people of all ages. At which point is man's ability to adapt to his man-made environment too costly in human health terms? Can we afford good health for all? Which priority should there be for research? What are the great innovations to be made? What institutional changes will be required? Does health for all mean bureaucracy for all? Is that a price we *have* to pay? Are the aged to exist or live, and how? How can public health practices catch up to the foreseeable needs? What sort of deliberate genetic control do we want or need?

Obviously, the foregoing gave wide scope, even the possibility of questioning the very premises of a society being able to weigh choices consciously. This paper was tempered and burnished, however, by the ingenious arrangement proposed by the Institute of appointing a "Committee on Correspondence" of ten members who would read the proposed draft of the author and submit critiques. The author could then revise the paper as he saw fit and resubmit it to the members of the Committee on Correspondence who had made rejoinders. This was the author's last chance, as it were, since the members of the Committee on Correspondence were then privileged to eliminate or revise their rejoinders. The remarks of those who still felt at odds with the author or wanted some elaboration are included in footnotes and appendices of the position paper.

The members of the Committee on Correspondence were as follows:

James P. Dixon, M.D., President, Antioch College; James C. McGilvray, Medical Secretary, World Council of Churches; Herman Somers, Woodrow Wilson School of Public and International Affairs, Princeton University; Arthur Weissman, Director of Medical Economics, Kaiser Foundation Health Plan, Inc.; Jack R. Ewalt, M.D., Department of Psychiatry, Harvard Medical School; Paul J. Sanazaro, M.D., American Association of Medical Colleges; William H. Stewart, M.D., Surgeon General of the United States; Ray E. Brown, Director, Graduate Program in Hospital Administration, Duke University Medical Center, (now Executive Vice President, Affiliated Hospitals Center, Harvard University); W. Benson Harer, M.D.; John M. Weir, M.D., Director, The Rockefeller Foundation. The Chairman representing the American Institute of Planners was Jerome W. Lubin, Chief, California Health Information for Planning Services. Critiques by two readers were also requested, which the author was not given the opportunity to rebut: Leona Baumgartner, M.D., Visiting Professor of Social Medicine, Harvard Medical School, and Donald C. Riedel, Ph.D., Associate Professor of Public Health, Department of Epidemiology and Public Health, Yale School of Medicine.

I wish to thank the members of this Committee for their conscientiousness in submitting critical remarks. It was not possible to resolve all disagreements with those who had them, but crossing swords with a committee of this calibre was a heady experience. Further, Surgeon General William H. Stewart invited the author and the members of the

Committee on Correspondence together with a few members of the U.S. Public Health Service staff for a day of discussion of the paper in Washington, D.C., on May 4, 1967. This was also a strenuous but rewarding experience and thanks are extended to Dr. Stewart for arranging the meeting. Throughout there were spirited and fruitful exchanges with the Chairman of the Committee, Jerome W. Lubin, and the Consultant and Program Chairman for the American Institute of Planners, William R. Ewald, Jr., responsible for expediting all position papers.

Within the staff of the Center for Health Administration Studies I wish to thank George Bugbee, Director, for critical readings of several drafts of the position paper. Mrs. Joanna Kravits, my assistant, deserves high praise as a dependable organizer of statistical data. To Elaine Meetze I am grateful for expediting the typing of the several drafts of my paper.

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NOTE

THIS MONOGRAPH consists of a reprint from *Environment and Policy: The Next Fifty Years*, William R. Ewald, Jr., editor, Indiana University Press, Bloomington, 1968. The page numbers are reprinted exactly as they appeared in the original publication.

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Health Services in a Land of Plenty

This essay is an attempt to assess the future development of our health services system. If public policy objectives are to assure the population of relatively equal access to preventive, curative, rehabilitative, and custodial services, we are faced with basic philosophic and pragmatic questions that I should like to pose and attempt to answer in a context of facts and personal assumptions stemming from experience. Hence, this is not so much a prediction of what will take place as it is a statement concerning the nature of the process and the social and political methodology needed to attain desired objectives. It is also a statement of guidelines on emphasis and some estimates of expenditures, facilities, and personnel.

Ends and means are reciprocals, and the ambitious ends envisioned

here perforce affect and limit the range of means. I subscribe to the premise that this country has potential resources to come within reasonable approximation of equal access for all to the desired range of services, and without competing unduly for resources required by other enterprises such as the construction of highways, the improvement of education, going to the moon, reducing poverty, or maintaining a military establishment. Since I assume that scarcity in the usual pre-1930 and pre-Keynesian sense no longer exists, this premise naturally influences my observations and generalizations. A health service system in such a context will be relatively loose and expansive. I am sure some observers will regard my concept as wasteful and inefficient. I feel, however, that there is need for a great deal of room in which to maneuver, particularly to facilitate humaneness in such matters as the mitigation of waiting time for patients and the reduction of pressures on physicians and others who provide care. If affluence has any advantages, it seems that one of them should be a health service system based on generous proportions.

From the foregoing, then, flows my quite emphatic assumption that—to attain our objectives—we can and should allocate considerably more resources to the health services system than we now do, from both the public and private sectors of the economy, in order to maintain and accelerate the impressive gains of the past. The public policy should be pervaded by a sense of expansiveness in order to fill out our developing health services, an enterprise in which it has been inordinately difficult, so far, to establish criteria of performance other than of a very gross nature. I would stress organizational patterns secondarily because the relative abundance or scarcity of personnel and facilities directly influences the methods of delivering services. I would prefer to experiment with methods of delivery in a context of abundance rather than scarcity. If abundance is not manifest, then, of course, my proposed plan of action fails, and I must rearrange my thinking to adjust to scarcity. This would probably be a much simpler task, because solutions in a context of scarcity seem to be self-evident. This is perhaps why there is a tendency among many in the health field today to approach problems primarily in terms of shortages, deficits, and gaps in the health services establishment.

Personal Values: Refractions from Facts and Events

Since policy flows from the value system of a particular society and of every observer, I feel a need to state mine. It is a truism that each of

us sees objects, events, and facts through a system of values more or less predictable. Thus, a Marxist's view of society will be very different from that of a Christian mystic. In the American context we share many common values regarding political rights, but diverge in degree regarding the role of government, and, in this context, its responsibilities for the provision of health services. The social scientist, in order to gain perspective, must be able to detach himself from the social environment to a high degree, an ability that should grow with training and practice although it is never totally attainable. This does not mean that social scientists have no personal values but should mean that they are able to identify values in terms of explicit means and ends and that they can make clear the consequences of alternative means of attaining certain social ends.

A premise of the social scientist is that all social systems function according to a central value system which gives a society meaning to its participants. Cultures vary widely. Some are incapable of developing an industrial type of society, given the value-premises industrialized societies live by, even though resources may be available. Others, like our own, develop into full-scale industrial systems because of a desire to manipulate the natural resources in the interests of comfort and aggrandizement. Important byproducts of our scientific and industrial development are the health services whereby we attempt to lengthen the life span, prevent and cure disease, and reduce pain. Other means of reaching for these goals are improved housing, nutrition, and education, but health services are the most direct means.

We take it for granted that the development of an extensive and high quality health service is virtually an end in itself. Hence, we believe that one of the marks of a humane and good society is reasonably equal access to health services for all people regardless of ability to pay and, to some degree, even regardless of residence, as in sparsely populated areas. This value has come to be considered a basic human right, beyond dispute in principle, in the same sense that a person has a right to be free of bodily harm from others as he walks on the street. Such "rights" are not 100 percent achievable, but their single most important aspect is that the values they represent are omnipresent motivations.

The public policy debate is over means, not ends. Health services have become a social enterprise essentially removed from the free market method of allocating goods and services. Our pervasive value orientation, therefore, focuses on the needs of the population rather than on demand and the problems of supply, although it is evident that we have

not succeeded in keeping up with demand. It follows that subsidizing those who are unable to pay the going prices of health services is a vital part of public policy. Once we accept this policy, the debate over means remains within definable limits. It becomes inadmissible then to argue, for example, that if a person is too poor to afford a lifesaving health measure he should die. By definition there are no unworthy patients. Only the means vary. The end is constant.

For life to be worthwhile I believe we must subscribe to dogmas such as the inviolability of the person, the dignity of man, and equal opportunity for "life, liberty, and the pursuit of happiness." A most specific dogma is equal access to health services regardless of income, although it must be recognized that such an objective, among others, is only approximately attainable. Equal access, like "absolute" health or a universally accepted definition of "happiness," outruns human capacity. We must live only partially fulfilled because absolute equality of access to health services is, in practice, impossible, even though it is an acknowledged goal for which we should constantly strive. I entertain essentially unattainable objectives in order to lash myself to struggle for them, but I am not blind to reality. In the same way, we must be realistic with respect to availability of personnel, quality or quantity of care, facilities, finances, and degree of acceptance by the health professions and by the public. Hence, I have come to regard methods of attaining essentially utopian objectives as a process rather than as an "only" or "best" way. Living, too, is a process. And it is perhaps just as well. We would not be content for long with attainable absolutes.

There is no "best" method because each method of providing health services has inherent advantages and disadvantages. Each depends upon what is regarded as the best composite of advantages in time and place, hence is viable and never static. We have to work, then, toward a balance of conflicting desires through bargaining, the net result being totally satisfying to no one, but partially satisfying to nearly all. Various types of bargaining characterize our social and political system. I believe that this system results in the greatest net freedom of action for most people and most interest groups.

Much as I feel constrained by the early training and current objective circumstances that limit my freedom, I am not a fatalist nor a complete determinist. However, I assume a very thin, and therefore most important, margin (perhaps as little as 5 percent) of indeterminism wherein novelty and creativity have some play. Because I regard these forces and circumstances as impersonal, I do not need to subscribe to a devil

(or angel) theory of human behavior, though at times I have wished for that human luxury.

All the foregoing, I feel, has relevance to what we can reasonably expect of nurses and physicians in delivering optimum service day after day in various contexts. One environment may be more conducive to "tender loving care" than another, a fact to be lived with. Only compulsive idealists and geniuses claim to transcend their daily environments; hence a system of delivering health services must be geared to what can be reasonably expected of rank and file personnel who can be recruited and trained with such available resources and standards as can be mustered and instilled with a degree of intelligent reciprocity from the public. Methods of delivery must have some relationship to the tolerance levels of personnel and patients. Such tolerance levels are difficult to determine; again, therefore, at the risk of belaboring the point, I foresee a health system which is generously proportioned.

As for planning, a process which is by its very nature future-oriented, I believe there are severe limitations on the extent to which we can "invent the future." At the same time, there must be bold, but tentative thrusts into the world of tomorrow to provide us with a sense of direction, even though it is necessary that we modify pace and details of specific programs toward a comprehensive goal, i.e., equalizing access to preventive, curative, rehabilitative, and custodial services. Some social endeavors lend themselves to relatively more detailed planning than others. Results depend on the planners' ability to determine and measure variables. Hence, it would seem that a network of highways—with such variable components as miles, cement, application of the laws of eminent domain, speed of traffic, and cost—can be more easily planned than a health service system in which the input, and particularly the output, variables are by comparison elusive, and exceedingly unstable over time—disease patterns, for example, or new preventive and therapeutic measures, or a host of other factors. Then there are variations within the health system. Medical schools, to cite but one example, need to be projected at least ten years ahead for completion in order to realize an appropriate output of professional manpower; yet other human components of the health team, such as ward orderlies, call for much shorter projections as a result of lesser training needs. Each element requires relatively long or short periods for feedback, and thus, we must live tentatively and uncertainly. We must acknowledge a constant state of tension between the past and the emerging future, knowing that never will there be a static or perfect solution. Inherently,

there are no absolute solutions and no totally adequate health service because there are scarcely any scientifically derived criteria. If such criteria were developed, then planning would become easier. Under present circumstances we must rely largely on best judgment, a tenuous basis for public policy formulations when experts disagree in good faith.

Components of a Health Service System

It is apparently useful to regard all groupings of human beings and organizations as systems that may be dissected by operations research and the computer. Actually, the factor analysis concept is old in sociology and in the physical and natural sciences; it does, therefore, seem to have useful applications for health services. The systems analysis approach is, in fact, now being considered and will be a severe test of the level of sophistication of systems analysts.

The literature characteristically sets up health services as a conglomerate of seemingly disparate parts. At best an "ideal" model is visualized; at worst, a simple classification of objects and functions is presented. Generally, the interrelationships of the various components and the essentially dynamic nature of the system do not emerge. Hence the plethora of concepts and principles of medical care administration provide no convenient levers with which to grasp some comprehension of the functioning of a health services system in a particular social and political environment. There seems to be no concept of alternative approaches in various contexts and with regard for their consequences. Somehow there is always implicit an ideal model wherein it is projected that all patients are wise, physicians and nurses all dedicated, and money in plentiful supply. Obviously, such an elaborate fantasy is of little value for realistic current appraisals or for future planning. I shall therefore attempt a theory of a health services system on the basis of our knowledge today and possible transformations for tomorrow.

I shall assume that the health services endeavor can be treated as a totality and that it lends itself to the kind of analysis applicable to other large human endeavors such as the military establishment, the automobile industry, or the educational system. The health services system encompasses a range of personnel, facilities, and central human problems of disease, disability, and death. Industrially developed countries have built an elaborate health services edifice based on the scientific and medical discoveries of the last hundred years or so. It can be shown that the health services represent a more or less closed system with a hierarchy of personnel who are recruited and trained and re-

warded in certain ways. It can be shown that patients enter and exit at certain portals and that they are sorted, managed, and "disposed of" in various ways. From country to country in the Western world there are variations, from a central core of similarity, of such key elements as the types of facilities and personnel, sources of funds, portals of entry and exit for patients.

In the United States the self-evident service units and organizational structure include the physician; the general hospital; clinics; the nurse; auxiliary or paramedical personnel; the pharmacist and pharmacies; nursing and convalescent homes; home care programs; and goods such as hearing aids, braces, crutches, wheelchairs, and other devices associated with maintaining the maximum functioning of the body. Then there are various methods of finance—general taxation, insurance, direct pay from patients, and so on.

A parallel structure is observable in dentistry, which is more or less separate from the services that are the concern of physicians. Another parallel structure which for social-historical reasons and also for reasons of therapeutic methods and milieus exists as an entity is the complex of mental hospitals and psychiatric services in psychiatrists' offices. In the past decade or so there has been an increasing but slow fusion of the health services for so-called somatic disease and mental disease, exemplified in large part by the establishment of psychiatric units in general hospitals for short-term assessment and treatment. Further, there has been the development of community mental health clinics for patients living at home. Finally, another large segment or system within the health services establishment is the official public health department supported by federal, state, and local funds and charged mainly with sanitary environmental control, communicable disease control, preventive services for mothers and children, and health education. Sometimes official health agencies are also charged with medical programs for the indigent, programs for special diseases such as cancer, and the disbursement at the state level of Hill-Burton hospital construction funds. Finally, another segment that cannot be ignored in terms of its effect on health and on legitimized health services is that of practitioners such as chiropractors, naturopaths, and faith healers.

In the main, tax funds support the services for special groups such as veterans, for maternal and child care, for those with communicable diseases, for long-term care of the mentally ill and the tubercular, and for health services for those with low incomes. Recently, the segment of the population 65 years of age and over has been added, financed by a pay-

roll tax through the Social Security system. Federal funds assist in the capital financing of voluntary and public hospitals, in grants for medical research, training grants for researchers, nurses, and public health workers, and in loans for medical students. The total expenditures for all health and related activities in 1966 exceeded \$40 billion or about \$200 per person. The split between the public and private expenditures is roughly 25 percent and 75 percent, respectively. The health services system in this country resides, therefore, largely in the private sector, which provides and pays for the great bulk of services for acute and somatic diseases.

There are many interrelationships between the private and public sectors of American society, but government is largely a buyer of services from the private sector, a rather classic pattern for filling governmental needs ranging from missiles to medical care. As a prominent example, ownership of the great bulk of hospital facilities resides in the private sector in voluntary institutions, as does ownership or rental of offices by physicians, dentists, and pharmacists. Voluntary hospitals are increasingly regarded as a quasi-public resource, however. Physicians, dentists, and pharmacists are still, in effect, private entrepreneurs with professional constraints, a role ambivalence which is presumed to cause many strains.

I have mentioned that about 75 percent of the funds for health services comes from private sources. Within the private sector approximately one-third of all funds comes from private insurance agencies, which have been a steadily growing influence. Within insurance a large proportion of premium or subscription cost is paid by employers through payroll deductions and as a result of collective bargaining with organized labor. Thus, the ownership, financing, and operation of the health services system in the United States is diffused, with a wide dispersion of sources of funds and decision-making units. The system is essentially pluralistic with the various sectors negotiating with and accommodating to one another.

The various components of services—hospitals, physicians, pharmacists, dentists, etc.—are relatively autonomous units that maintain an implicit and continuous contractual relationship with one another. Physicians negotiate for privileges to admit patients to a hospital; physicians refer patients to one another; prescriptions written by physicians are filled at pharmacies; and, therefore, with few exceptions, the gatekeeper of this system is the physician. The patient enters the system via the general practitioner, the obstetrician, ophthalmologist, otolaryngologist,

psychiatrist, pediatrician, or internist. He is much less likely to enter through referral by the other specialties. The system is an "open" one, and the bulk of the medical care in this country is provided within and among its components. The patient may go to a solo-practitioner or a physician in group practice. He may join a fee-for-service and free choice type of health insurance plan utilizing the prevailing system, or join a closed group-practice prepayment system if there is one in his area. At first glance the structure seems very complex, and some knowledge is required if patients are to use the system well. It is regarded as highly desirable, although the principle continues to be debated, that a person have a stable relationship with a personal physician who will marshal other medical resources in the community on the patient's behalf as they are needed. Those who favor a "rational" system play down the concept of a personal physician; those who are less concerned with a rational system are likely to emphasize the merits of a personal physician for everyone.

The health services are presently utilized a great deal. Use has doubled and tripled for hospital and physicians' services respectively during the past thirty years. Today there are about 130 hospital admissions per 1000 population, five physician visits per person per year, and 60 surgical operations per 1000 population. This means that annually there are over 25 million hospital admissions, 1 billion physician visits and 12 million surgical operations. At least 130 million people see a physician at least once in a given year. About 80 million people see a dentist at least once. By any standard, then, the health service enterprise is enormous and touches the lives of the great majority of the population. It is regarded as expensive, although so far it absorbs only 6 percent of the gross national product and 6 percent of annual family income. The latter is highly variable according to income level and use. Despite the impressiveness of use statistics, however, and a gratifying increase in utilization of services, especially in recent decades, there are many criticisms of the prevailing system as described.

Past and Current Disease Patterns

In any time and place a combination of circumstances and factors generates certain disease and death patterns and methods of coping with disease and death within the life cycle. The biological, social, and cultural factors are so interrelated that life styles affect health levels both favorably and detrimentally, regardless of the ignorance and poverty or knowledge and affluence of particular countries. There is a rough but

nonetheless real relationship between disease and death patterns and certain social and technological conditions. Looking back at the history of Europe during the past thousand years, we can see five patterns of disease. These are not exclusive in any one period, of course, but can serve as outstanding features distinguishing the different centuries in terms of primary health problems. The traceable stages of disease are as follows:

1. *Leprosy and plague.* These diseases seem to have characterized the period between 1000 and 1500 A.D., although Europe was then ravaged by outbreaks of many other diseases as well.

2. *Louse-borne diseases and syphilis.* Toward the end of the fifteenth century, diseases carried by lice became increasingly widespread. From that time until the second half of the nineteenth century, the louse pursued a triumphant course, and typhus fever and other louse-borne diseases became the dreaded companions of wars and famines. As cotton and soap won over wool and dirt, typhus virtually disappeared from western Europe. Syphilis also characterized the period from the sixteenth to the eighteenth century but became gradually less virulent and prevalent.

3. *Gastrointestinal diseases.* During the nineteenth century in Europe the major health problems of communities were diseases spread through the gastrointestinal tract. Those that had the greatest impact were cholera and typhoid fever, closely linked to the urban expansion which followed the industrial revolution. The lack of environmental sanitation permitted gastrointestinal excretions to spread freely and transmit disease. Toward the end of the century these diseases began to decline as cities benefited from proper sewage disposal and the purifying of water and milk.

4. *Tuberculosis and the communicable diseases of childhood.* The impact on European populations of nineteenth century developments in sanitation, microbiology, and nutrition did not become grossly evident until the latter part of the century. Reductions in the adult death rate prior to the introduction of immunization and better hygiene came about apparently as a result of general improvements in living conditions, particularly the stabilization of the annual food supply. During the late nineteenth century and continuing into the twentieth century, a number of diseases of the respiratory tract which had been leading causes of death began to decline, for example, tuberculosis. Concurrently, beginning in most countries about 1880, the communicable diseases of childhood gradually declined as causes of death, and progress

in combating them accelerated during the twentieth century as a result of immunization and more effective therapies.

5. *Cardiovascular-renal diseases, malignant neoplasms, and accidents.* With the twentieth century decline in morbidity and mortality from gastrointestinal and respiratory diseases, particularly among children and young adults, many more individuals now survive into the age groups associated with such non-communicable diseases as cancer, arthritis, and cardiovascular and renal diseases. In fact, reductions in deaths from all other causes have exposed accidents as the third cause of death today.

Perhaps increasing concern with conditions such as asthma, peptic ulcers, ulcerative colitis, and others that are less specific symptomatically—the psychosomatic diseases—characterizes the present period. We have been becoming increasingly aware of psychosomatic disorders as causes of illness and ill-being, and it is felt that a positive approach to health services must deal with these qualitative aspects of life. Indeed, it can be said that when a nation can report that heart disease is the leading cause of death and that there is increasing concern with psychosomatic diseases, a high level of health and health consciousness has been achieved in terms of current knowledge. Disease and illness are never eliminated, but patterns change, and, as a consequence, so do perceptions of goals.

Evaluation of the Current Structure and Functioning of the Health Services

The health services systems of all industrialized countries are experiencing tremendous strain because of increasing specialization, concomitant rising costs, growing demand, and changing morbidity patterns. The intensity of the strain varies only in degree; its cause seems to be embodied in two major factors. (1) With the trend toward specialization and consequently greater complexity, increasingly more formal organization is apparently necessary. (2) The system geared to acute and short-term episodes of illness is besieged by the increasing prevalence of long-term illness, thus straining the facilities and procedures designed primarily for short-term care. The system is required to develop facilities and personnel for long-term care from a tradition of short-term and acute care patterns. This is not easy and may even be impossible given the desire for standards, because personnel are much more interested in patients with short and acute episodes of illness than those with long, drawn-out illnesses who are likely to be elderly.

Compounding these problems is an inherent inability to define an adequate health service. The health services system of a country faces essentially the same fundamental difficulties as its military establishment in determining what are adequate facilities, personnel, and finances. Both are charged with utopian goals—maximum health or maximum military security for all. Health services systems or military systems are the ultimate expressions of social policy arrived at partly by accretion and partly by directed planning (and in my opinion, mostly by accretion) in relation to ends that inherently have no logical limits set by objective criteria.

Underlying the two causes of strain on the health services system mentioned earlier, it would seem that there are two fundamental characteristics that condition the operation of the entire structure and underlie the many frustrations and discomfitures in social and administrative policy. These two exceedingly elastic elements in the core of the health services system make discussions of a range of alternatives very difficult. One is the variability of the perception of illness and what people do about illness; and the other is the necessary discretionary judgment and responsibility (together with the authority) that is required of physicians, the chief gate-keepers of the system. These crucial elements are usually ignored or overlooked. I would like to believe that if they were recognized and acknowledged, the endless and frenetic debates over such issues as adequacy, proper and improper use of services, and high costs of services would cease and we could advance to a level of discussion concerned with a range of alternatives. Hence, again, my reason for emphasis on generous proportions to allow these two elements maximum play. Both force an uncomfortable degree of necessary flexibility on the range of methods of delivering services if the total system is to be responsive to the needs of patients and of physicians.

Use of services and price have gone up in all countries, and all countries complain about relative shortages of various types of personnel. These problems will persist. Consequently, there is a great deal of indeterminacy in the range and amount of personnel and services—not to mention expenditures—that can be justified in the interest of a good health service. The current expenditure for health services, comprising 6 percent of the gross national product, could conceivably be tripled, in other words increased to \$120 billion or \$600 per person per year, if the public policy were adopted to allocate our resources to cure, ameliorate, and prevent illness, and to rehabilitate all people who could benefit from the tremendous technology and knowhow we have today. Rather than

embark on such a course, we develop an over-concern for “efficiency,” that is, for running a tight system with waiting lists, high occupancy rates, and other personal inconveniences. This is paradoxical. With all of our affluence and technology we choose restriction instead of a public policy directed to a “loose,” convenient, and humane system. A loose system would be considered expensive and presumably wasteful even in an economy with the largest discretionary income in the history of the world and an income that is growing.

I suggest that the current seemingly conglomerate and unwieldy structure of the health services system has an intrinsic ability to change, an ability that flows out of the bargaining and challenge and response activities of the various groups at interest, government included. It seems to me that this ability is the source of initiative and motivation among all of the interest groups, as long as there is a shared consensus on ends. This is in keeping with my understanding of the American temperament. The system is characterized by inducements and persuasion rather than directives and force, although a judicious mix of the two kinds of interrelationship is always present in negotiations.

I emphasize increases in finance in order to assure concomitant increases in personnel and facilities to keep pace with the needs of our growing population and even to exceed them. I emphasize quantity, given the prevailing minimum standards; reorganization of services is a subsidiary, although an important, issue. Our resources and our medical pluralism can enable continuing demonstration of a range of methods of delivering services. These methods already exist in this country; they have been virtually inhibited in other countries with centralized financing and direction. I argue that the several methods should be free to develop as far as they are inherently able without artificial supports or constraints of legislation and without arbitrary controls on quantity and quality from any source. We can afford this pluralism and looseness. There is no best method, and this country need not be stifled by a single pattern.

The whole field of computer technology is in a trial and testing stage in relation to its use in medical diagnosis and therapy. The extent to which computers can someday replace or supplement the services of nurses and physicians is unknown. My own intuition is to doubt the general application of computer technology, contrary to the belief of many. It would seem, however, that mass physical examinations can be facilitated along the lines of some demonstrations now taking place that apparently are efficient and relatively inexpensive. It would also seem

that computers can assist immeasurably in diagnosis and consequently better therapy. Such technology should be conceived of as helpful to the physician and not as a replacement for him.

Many suggestions are currently being made for increasing the type of supporting personnel for physicians so that "routine" work can be delegated. This concept is hardly new and has been variously considered since modern medicine was established at the turn of the century. What may be new is the concept that in certain episodes of illness the physician should be the last rather than first person to see the patient in a spectrum of individuals responsible for care. It is also held that the physician should be shielded from the possibly trivial blandishments of patients who are not satisfied with seeing only auxiliary personnel. There is danger here that teamwork can become a protection for the physician from his patient rather than providing protection for the one who is ill. The medical fortresses are emerging with moats of auxiliary personnel and office receptionists. I believe we are bedazzled by the organizational model of modern industry, which is product-oriented, and are uncritically applying many of its management principles to the delivery of health services, which are service-oriented and personal. While recognizing the growth of specialization and the need for teamwork, I believe that emphasis should be placed on giving the patient direct access to the physician rather than on minimizing that access. The difference in emphasis, however, results in different teamwork structures. I grant that so valuable a resource as a physician should be used efficiently in order to stretch the short supply, but I would rather see a very serious emphasis on training more physicians than on bolstering the medical profession with multiple ranks of auxiliary personnel. I regard the issue as mainly a social engineering problem. There are many more qualified applicants to medical schools than there are openings for students in medical schools. An eventual increase of 25 to 50 percent over the current supply, and in relation to population, would be salutary for medical care in this country.

Finally, I feel that the benefit structures of health insurance need to be expanded to eliminate the economic catastrophes to families of people with high-cost episodes of illness. There has been steady improvement in benefits for many years, but the uninsured or uncovered portion of medical expense is still too large. This is not to argue for first dollar payment and "comprehensive" coverage, which are in my mind essentially administrative issues relating to cost and volume controls, but to

urge that health insurance approximate the near total reimbursement of high-cost episodes.

I would not wish to see the sources of payment and the providers of service in a tight contractual bind (necessitated by the pure service benefit type of insurance) because the providers of service, particularly hospitals, would have too little room in which to maneuver and maintain financial soundness. Other areas of the health economy must likewise remain flexible, although the medical profession needs increasingly to set up and follow fee norms so that physicians' fees can be reasonably predicted over time. Also, a larger supply of physicians would increase the bargaining power of the big buyers of service and the general public. Certainly it would be likely to ease recruitment of physicians into salaried group practice units. I stress the need to permit the providers of service, the public, and the big buyers of service room in which to negotiate since all three parties must find an equilibrium for the benefit of the total structure. Until recently, the providers of service called the tune in terms of price and methods of delivery. Now the big buyers are beginning to call the tune. But no group should remain in a dominant position indefinitely to dictate to the others. This principle is the essence of our social and political system. Centralization of finance, controls over cost and volume of services, as well as controls over personnel and facilities do not encourage looseness and abundance. While this may seem to be a rather dogmatic assertion, I believe it can be supported by experience. It has great implications for planning the health services establishment.

Current Mortality and Morbidity Patterns and Potentials for Change

For the first time in the history of mankind, a reduction in mortality from the leading cause of death is up to the individual assisted by the health services and the social system. It is no longer simply a function of relatively simple social controls such as the provision of pure water or vaccine to entire communities. The leading cause of death, heart disease and its related disorders, is also a great cause of disability, although to an increasing extent, many of the deaths and much of the morbidity stem from unhealthy habits, which, if changed, would result in fewer deaths and less disability. Apparently, knowledge in itself is not a sufficient motivating force. And perhaps we have much to learn about what can be more effective. In the meanwhile, in a society which prides itself on the freedom of the individual, I suppose people should

be permitted "to dig their graves with their teeth" or to die gradually from cigarette smoking, even if they do so with full knowledge. We are ethically bound, simultaneously, to repair the results no matter how they are caused by providing expensive personnel and technology as expressions of social compassion.

In prevention and treatment it seems that we are running out of specifics unless, for example, it is found that there is a specific cure for cancer. But all of the other prevailing ills such as arthritis, heart disease, diseases which seem to be of metabolic origin, and mental diseases of neurological origin or tied to social stress need a great deal of management and patience. As the number of diseases that can be handled in terms of specifics decreases even further—and the remaining margin is small—we are increasingly faced with the management of long-term chronic diseases associated with survival and wear and tear. Certain disabilities may respond in varying degree to deliberate rehabilitation measures; others can only be palliated and managed. Increasingly, we must teach people how to live gracefully with inevitable disabilities. In many instances we may also have to learn to view death with dignity and fortitude as a benevolent aspect of our destiny rather than to resort compulsively to kidney, heart, and other organ transplantations with their concomitant stresses on medical personnel, facilities, and society in general.

If present trends continue, society may find itself accommodating a growing number of ill people who will tyrannize the well with their constant needs for batteries for heart pacemakers, for example, or cans of regularly delivered oxygen, or dialysis equipment that can be used in the home. The public policy implications are frightening to contemplate, but it seems that this type of medicated survival (as distinct from medicated comfort for the arthritic, for example) is theoretically possible on a large scale. We have not yet developed the ethical and institutional structure to deal with such horrendous policy decisions, nor do I have any easy suggestions. Yet, such developments are the inevitable end products of a highly technical, research-oriented society.

The future pattern of disease is quite unpredictable, but optimism for the immediate future is unfounded and not very helpful. Our modern environment is new in the history of mankind, and it is impossible to foretell what the new ecological relationships will mean to human health. We are told that there is continuous genetic pollution of the human bloodstream, as it were, which can result in a debilitated population. But some authorities, perhaps as well qualified, say this is not so. We are

discovering that the social system itself generates disease and that only by changing the social system and human behavior patterns quite drastically can we hope to reduce the incidence of certain diseases. In certain instances, however, new social controls and a radical change in habits are seemingly worse than the presence of disease. Highly restrictive patterns may, in fact, be even less desirable than some diseases and may usher in fresh symptoms unheard of in the past. Heart disease and overeating or syphilis and promiscuity may be ineluctably associated; however, their prevention is not as simple as one might hope. Changes in human behavior are not easily come by, and rarely do they follow a prescribed course.

The Matrix of Future Alternatives

As I review the development of the health services structure in Western countries since the advent of modern medicine, beginning with the latter part of the nineteenth century, I am struck by its seeming spontaneity and leisureliness. Various groups of private citizens founded and financed hospitals; the practitioners of medicine were already recognized and accepted and began to make arrangements with the hospitals. In this country initiative by the private sector preceded action by the public sector; and the private sector continues to be the leader in health services development and innovation, aided and abetted and prodded by public forces. The services for low-income families were and continue to be a subsidiary aspect of the total system.

In Great Britain the private sector also assumed leadership through its famous voluntary hospitals, but with charity as central to the system rather than subsidiary. In Sweden, the public sector assumed leadership, as was also true with a few exceptions everywhere on the continent. The forms taken by various health services systems seemed to be conditioned by needs as interpreted by the health professions in dialogue with those who had money, whether private or public. Later, payment mechanisms to finance the daily operations of the systems were grafted on to the organizational forms that had evolved more or less by the spontaneous interplay of forces and interests. Voluntary health insurance agencies simply accepted the prevailing structure of the health services. In Great Britain, the National Health Service through its centralized financing embraced the prevailing organizational form and "rationalized" it into hospital service regions of some sort, filled out the hospital staffing structure, and used the currently existing hospitals. The same happened elsewhere in Europe.

Even so brief a review shows, particularly in this country, that developments have been predominantly local; that initiative has been local. The federal government has entered the picture to support and nurture this form of creativeness, the Hill-Burton Hospital Survey and Construction Act being a prime example. Now the intent within the health field seems to be to fuse local initiative and central guidance. I use the word guidance rather than control because there is as yet little central control. As long as local areas retain their prerogative to participate in the federal largesse or to turn it down, as in the case of Title XIX of Medicare, control cannot be considered centralized. Another example is seen in the decentralized administration of payments to the providers of services under Title XVIII of the same act. The federal government, then, must remain in a negotiating capacity with the private health sector, unless it elects to build its own facilities—a most unlikely event.

Our tremendous and imposing and capable health services structure is now entering a period characterized by such planning jargon as coordination, integration, cooperation, cost-benefit analysis, and cost, volume, and quality controls. The many relatively autonomous units are now nudging each other at every turn, and hospital planning councils have sprung up in many major cities. The agencies that administered the Hill-Burton Hospital Survey and Construction Act are turning more toward a deliberate overall planning function than they envisioned at the inception of the law. Now we are hoping to fuse the creativity of local initiative and pride (which presumably are diminishing in the face of more central financing, guidance, and possibly control) with regional plans in order to eliminate overlapping of facilities and personnel and to assure a more even distribution of expensive and complicated medical hardware. Undoubtedly, this development was inevitable, and now we face the problem of “planned” spontaneity, initiative, guidance, and control.

The United States Public Health Service, the National Institutes of Health, and the Social Security Administration have been exceedingly salutary forces in challenging the health services establishment to put forth its best efforts and to accelerate its pace. I believe there is a constant need for a balancing of power, finance, and interest, and such balancing is certainly still characteristic of the current system. The federal government will continue to buy most of the health services it needs to fulfill its programs and provide them only in exceptional instances; the federal government will subsidize research as well as conduct much research under its own auspices. The federal government

is a salutary force as long as the private sector I have described meets it head-on. It is salutary because the health services establishment needs a goad in addition to the pressure which can come from patients only. Until now the private health establishment has determined the structure, range, and location of services, and the form of capital funding and daily maintenance, as well as the forms of health insurance. It is then in exceedingly good shape to debate the questions of methodology with a powerful force, the federal government, the official custodian of the general welfare. Like all power centers, the federal government needs to be watched and balanced, as do also the health insurance agencies and all of the professional health associations. This is the nature of pluralism.

I believe there is a consensus that the currently developing structure provides a matrix for innovation, efficiency, creativity, and quality, and for maximum freedom for individual groups to maneuver toward constant improvement and the highest degree of excellence of which they are capable. The prevailing public policy assumption seems to be one of “beefing up” the system rather than changing it in substance. However, changes in the system will emerge from the negotiating and bargaining process rather than through preconceived blueprints. The current heart disease, cancer, and stroke program exemplifies this policy.

The chief disadvantage of this system—in terms of the felt urgency of the medical problems around us—is that it is unable to move very fast; and even when the system does move, the final resolutions to problems seem often to be far from ideal because the interests of many groups must be accommodated. It seems that the only way to move fast, at least to achieve short range goals, is to delegate authority to a central body; the various groups involved then subordinate their own immediate interests for the larger whole in order to attain specific objectives. I believe this is the central dilemma in formulating public policy for the health field currently and for the long-range future.

Instead of the relatively deliberate and, to many, maddeningly slow development of the health services to serve fully current and future needs, it seems to me that we may be gearing ourselves to a protracted series of crash programs under the umbrella of an overall public policy of extreme urgency. To a certain extent this may indeed be necessary if the many perplexing medical problems facing us are going to be solved adequately and quickly. We must marshal the resources of the country in a semi-military, although democratic, manner to keep pace with, if not to exceed, the growth of the population and the endless

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proliferation of medical discoveries and technology. We need to be backed by much more money than is now being spent to increase and spread the health resources of the country, and to fill out the range of services and goods necessary for full-scale prevention, rehabilitation, and management of many intractable diseases.

This prescription has serious implications for our usual way of solving problems, but I see no other way to attain the very high objectives we seem to have set for ourselves, and I suggest a semi-crash method to attain them, although I fear the consequences. For some time to come the main stimulus will be the federal government. The questions we must face, then, are difficult: Are the means worthy of the end? Can we catalyze the forces within our social and health system to meet a constant state of urgency or semi-urgency? Or shall we settle for lesser objectives, or fewer objectives, or work more slowly and carefully for the long haul? At the very least we probably can settle for something between our current evolutionary and pragmatic approach and one of faster pace and bolder innovations. It seems to me that the latter would bring the risk of wrecking the existing structure and its variants, a structure I believe to be fundamentally sound in terms of what I consider the possible and in terms of promise for continuing innovations in delivery of service.

Recommendations Dictated by the Objectives and Circumstances

My recommendations for the present and future are dictated by the public policy objective in this country that all people should have relatively equal access to high quality health services of all types needed for the prevention, diagnosis, and treatment of illness; for rehabilitation, and for the management of long-term illnesses. The emphasis is on prevention when possible, cure if prevention fails or is not possible, rehabilitation when indicated, and management and custodial care when everything else has been done with the maximum cooperation of the health services system and the public.

Although this is a very lofty objective, I assume that as individuals and as a social system we are capable of doing more than we believe is possible and at a faster pace than deemed endurable. I am, therefore not necessarily assuming that it is possible to carry out these recommendations to their fullest, but I am assuming we have not yet tested our system completely to determine how near the stated goals we can get. Perhaps the fundamental test is to see how long we can sustain the level of intense activity and pressure necessary to attain these objectives. War, hurricanes, and similar emergencies seem to bring out the heroic (or

demonic) qualities in man, but after each challenge we lapse into less intense daily routines. A health or social system cannot be incandescent constantly. But this is a matter of judgment, and we probably do not yet know to what extent we can improve our performance and still live a tolerable daily life with manageable personal stress created by the strain to attain our objectives.

I must then assume that we need to engage in at least a semi-crash kind of planning and development for health services during the next ten years to keep pace with, or better still, to outpace the social, economic, and medical forces swirling about us. Perhaps thereafter we can assume flying altitude, so to speak. In a rough order of importance, the following are the factors that will condition our activities:

1. Population increase and both absolute and relative increases in the aged.
2. Absolute and relative increase in long-term illness, and particularly of patients who are unable to help themselves in their most elementary needs.
3. Environmental pollution, especially air and concomitant respiratory illnesses.
4. Increasing urbanization and concurrently increasing social and technical complexity.
5. Increasing division of labor and concurrently increasing specialization in medicine and continuing fragmentation.
6. Unabated developments in medical technology, particularly in body repair and organ transplantation.
7. Increasing labor market alternatives that will lessen the relative attractiveness of helping services, particularly services requiring direct body care and serving of patients. Some types of such services cannot be bought in terms of caring for long-term patients with dignity. Only the dregs of the labor market seem to be available now and in the future. The truly dedicated element is dwindling.

It would seem self-evident that the most pervasive force is the continuing increase in population. Current estimates are:

1965	195,000,000
1970	209,000,000
1980	240,000,000
2000	320,000,000
2020	420,000,000

At this very moment we are passing the 200 million mark. There will be an average annual increase of 3 million people from now until 1980, 4 million from 1980 to 2000, and 5 million from 2000 to 2020. Concurrently, it is predicted that the gross national product will double, quadruple, and so on, as will disposable personal income. Hence, as the economic pie gets bigger, a constant percentage allocation for health services will result in more money; if the percentage allocated for health increases, as seems likely, even greater financial resources will become available. Obviously, the civilian labor force will increase more or less in relation to the total population, from 78 million in 1965, 83 million in 1970, 100 million in 1980, 140 million in 2000, and 180 million in 2020. The hours of work per worker will decrease, but I assume this cannot be true for managerial, professional, and related personnel. They will continue to work long hours to keep the system functioning. The others can presumably and metaphorically go fishing, or assist in their off-hours in manning the tremendous helping service establishment that will be necessary to care for long-term illnesses.

I have been asked to estimate needed health personnel, facilities, and money for the present, and for 1970, 1980, 2000, and 2020. I would like to indicate at least the direction the health field should take and the general style in which the "planning" should be conducted. However, a detailed table showing growth by stages is given in Appendix A.

As I have already indicated, I believe that the main style of planning should be one of expansiveness, erring on the side of generosity rather than scarcity. Basically, I believe that this is "realistic" because our economy is expanding, with resulting increases in social and personal discretionary incomes; our disease problems are becoming more serious because of increases in chronic illness associated with survival into the upper age groups, and because we are increasingly able through such measures as organ transplantation to sustain the lives of the disabled, handicapped, and physically dependent. Moreover, our standards of needs are changing in accord with our expanding standard of living and our broadening perceptions of health. Finally, integral to all the foregoing, are the questions of prevention of illness, rehabilitation, and the wide range of activities that fall within the purview of mental health. To these ends, there are some who believe that the medical schools should assume a larger service function for the community, as is now envisioned by the heart disease, cancer, and stroke program. But the schools have to look to their main functions of training and research with, in my view, priority on training. It is possible that the residents in vari-

ous medical specialties could be used to advantage in staffing health centers for the poor or in other community functions, but I certainly do not see this resource as very substantial unless there is an increase in the number of students in medicine.¹

At worst, then, we can assume only a life saving and emergency type of service and allow our health services system to fall back to half of the facilities and personnel we have today simply by not increasing their number and by maintaining current absolute ratios. However, if we are going to follow the trends and wishes of our implicit public policy, we must increase the ratio of the health resources to population for the next fifty years, and greatly increase the facilities and personnel, now in dangerously short supply, that are associated with long-term illness.

The simplest and the most simple-minded approach would be to assume a constant ratio of current facilities, personnel, and finance to population and use this as the rock-bottom base for the next fifty years. I would plead for nothing less, certainly, and seriously work for a relative increase in personnel and finance, plus additional types of facilities and personnel including nursing homes, rehabilitation services, physiotherapists, nurses' aides, various types of psychiatric personnel, and home care services. Our policy makers in and out of government need to be sensitized to a philosophy of expansion and they should not be presented with neat stacks of figures other than as illustrations of what should be done. It is less than candid, and unprofessional, to promise tidiness.

On another important aspect, there is a pervasive conventional wisdom that reorganization, efficiency expertise, good cost accounting and other managerial devices will enable the system to perform at a much higher level of efficiency than it does currently. This "wisdom" assumes that it is possible to provide care for many more patients at a higher level of quality—in other words, that there is considerable slack in the present system. As a member of a university faculty engaged in research in the social, economic, and administrative aspects of the health services and in the training of future administrators, I certainly subscribe to the belief that the health services system can benefit from the strengthening of the managerial corps and managerial concepts. Tremendous resources are at stake that require the attention of a managerial elite. It is my observation, however, that the emerging managerial elite and the elite of the recent past do not understand the applicability to a health service system of the managerial techniques and concepts characteristic of modern industry. I refer here to the administration of professionals,

patients, and a social system, and not to the cut and dried bookkeeping and hotel aspects of the system. The latter can certainly benefit by tidy administration with respect to billing, food service, management of non-professional personnel and so on. I would hope, however, that we are moving in the direction of management concepts that are peculiar to the health services system and that are more analogous to concepts familiar to universities and research organizations than to industry. Sophisticated managerial theory reflects a growing realization that there is a range of managerial styles related to types of enterprise. This is relatively new to the health field. Hence, I tend to fear the premature and naive application of managerial concepts appropriate in industry to health services. If this were not so, there would be no need for the programs in hospital and medical administration that have proliferated during the past twenty years.

I quite simply make the judgment that there is not much slack in the present system, particularly if we wish to accomplish the goals envisioned. Nor do we know the consequences of what it would mean to the system if we tried to take up the slack, rationalized delivery sufficiently to ration resources, set tight priorities, and established queues for so-called non-urgent conditions. I refer to currently popular suggestions of weekend surgery in order to utilize surgical resources seven days a week; utilization review committees; and other suggestions which essentially represent a tinkering approach to slow the pace of rising cost. I would not suggest a directed, drastic, and long-range reorganization of methods of delivering services either, other than what can emerge from the bargaining process between providers of services and big buyers.

I do not see any inherent reason, for example, why industry and organized labor could not bring about changes in the delivery of services if they really desired them. I do not believe that the force of law should be used to dictate methods of delivery; changes should result from bargaining over different methods of delivery. The methodology of change I suggest probably seems untidy and irrational given today's planning propensities, but in view of my skepticism regarding our ability to spell out who should get what, when, and where for how much, I can only suggest the bargaining process and an insistence on an abundant supply of health personnel and facilities. Government should be the principal stimulus for personnel and facilities, and the private sector can deliver the services as ingeniously as constraining conditions permit.

Unless we think and act in expansive terms, our approach to the health services and their delivery will be like fighting a cheap war.

In this arena of relatively equal power centers, who watches over the public interest? The federal government, particularly with its vast taxing power and its increasingly sophisticated bureaucracy, should be the constant and goading presence in the health field. Also, various groups with direct consumer interests such as labor unions and church organizations can establish the medical equivalent of the ombudsman to assist the average citizen to cope with the medical establishment. The government should remain essentially a buyer of services and a stimulus to increasing their supply. It should not be an owner of services.

In a viable pluralistic system, leadership may emerge at any time from any segment of society. The evolution of our health services is replete with examples of shifting stimuli, of challenge and response. One has but to recall Blue Cross and the concept of prepayment in the thirties; delayed response by Blue Shield in the early forties; even further delayed response, but eventually a tremendous surge of activity by private insurance companies after 1945, and especially their innovation of major medical coverage; and the establishment of group-practice prepayment plans in the latter thirties and during the forties. All of these now historic movements occurred in the private sector of the health field and in large part were reactions to the imminence of universal compulsory health insurance from 1939 to 1952. The private sector blunted the drive for compulsory coverage and drove the movement in 1965 into legislation covering those 65 years of age and over in the sweeping act known as Medicare. Until that year the American Medical Association seemed to consider bargaining in the American political arena beneath its dignity. But Medicare forced it into a bargaining stance and greatly weakened the traditional AMA appeals to "private enterprise." Today, federal legislation is pushing the private sector to more serious consideration of how it will meet a complex of problems. It should be remembered that the federal government is the representative of the collective majority. It is the ultimate expression of our national policy and power within which the various groups at interest work out their destiny in relation to the public interest.

If we assume constant ratios to population, we will need to produce annually the following numbers of health personnel and facilities and, in addition, many new categories of personnel now emerging (for example, physiotherapists, inhalation therapists, and cytotechnologists) and

perhaps new ones not yet known or dreamed of (see appendix for additional detail):

1. Currently there are 287,000 physicians in practice. By 1980 we will need to graduate 11,000 a year in order to maintain a constant ratio of physicians to population. We are currently graduating 7,400 physicians a year, although the number is increasing. In the future there will also be an indeterminate number of physicians from foreign countries, but as a matter of public policy we should probably not gear our supply to this source. By 2020 we will need to produce 19,000 physicians to keep up with projected population growth.

2. Currently there are 100,000 dentists in practice. By 1980 we will need to graduate 3,900 dentists a year to maintain a constant ratio of dentists to population. We are currently graduating 3,000 dentists. Perhaps more extensive fluoridation will reduce the need for a constant ratio.

3. Currently there are 532,000 registered and active nurses (and 316,000 inactive ones). We will need to graduate about 65,000 nurses a year by 1980 to sustain the high attrition and to keep up with the increase in population. Currently we are graduating 35,000 nurses. There is the possibility of activating many inactive nurses. There is also the question of nurses' aides and similar auxiliary personnel which are increasing.

4. Currently there are 100,000 registered pharmacists. By 1980 we will need to graduate 6,000 a year to maintain the present ratio of pharmacists to population. We are graduating 3,000. I believe, however, that we could sustain a decrease by having fewer pharmacies (drug stores) that are staffed by full-time pharmacists.

5. Currently there are 740,000 general hospital beds. To maintain the present bed-population ratio we will have to add only 11,000 beds per year by 1980. According to current trends, we are actually adding 20,000 beds. We can, therefore, diminish the rate of increase, a trend that is probably taking place already. The current consensus in the health field seems to support a constant ratio, but not an increasing one. Long-term facilities are now to be increased.

6. Currently there are 685,000 mental hospital beds. We would need to add 10,000 beds a year by 1980 to keep pace with population growth. We can probably allow this figure to drop because of increasing outpatient care of the mentally ill. We are, in fact, experiencing a net loss in beds for care of the mentally ill.

7. Currently there are 37,000 tuberculosis hospital beds. We can allow this figure to decrease on the strength of past trends in incidence of tuberculosis and the decline in use of tuberculosis hospitals for treatment. There is in fact a net loss of beds in these hospitals.

8. Currently there are 400,000 beds in nursing homes and similar facilities. Considerable expansion is indicated here, as well as improvement in existing facilities. Estimates of needs for any type of facility and personnel are at best guesswork, but for nursing homes we can only assume that there should probably be a ratio of 3 beds per 1000 population. The current ratio is about 2 per 1000. Accordingly, there should be an immediate increase to 600,000 beds. By 1980 there should be a total of 720,000 beds or a ratio of 3 beds per 1000 population in our extended care facilities.

It is not my intent that these estimates be precise. They do provide an opportunity for projections on the basis of alternative assumptions of more, less, or the same numbers of personnel and facilities. To engage in gross estimates is better, it seems to me, than not to attempt any projection, as long as there is basic agreement on trends and direction.

The American Institute of Planners also asked that I make parallel estimates for regions of the United States. In these, I was also asked to take into account urban-rural differentials and, finally, to consider this country in relation to world needs over the next fifty years. However, I do not believe it is practical or valuable to make such estimates; I can only assume, on a regional basis, variants of plus or minus the national estimates. I have been impressed with the similarities of expenditure, facilities, and personnel patterns among states and regions. The rank order and patterns of expenditures and use by types of service will doubtlessly remain much the same and will vary mainly in degree. As for world obligations, I can only say that if we are able to produce personnel in abundance, they should be funnelled through our various foreign policy programs to assist other countries. The "brain drain" to the United States from other countries is manifestly ridiculous, but I do not advocate legislation to stop the entry of foreign professionals to the United States. On the other hand, we should not conduct recruitment campaigns in other countries. We should admit those who come on their initiative without organized or official inducement.

In these projections of facilities and personnel, I have dealt mainly with conventional types. There will be new types of professional and technical specialization, and specialized types of personnel for simple

custodial care. The entire health services system will be strengthened by an increasing number and range of managerial personnel with recourse to economists, behavioral scientists, computer technologists, and other specialists in an increasingly managerial society.² There will necessarily be a great increase in the production of information in order that personnel may comprehend and operate the health system. There should be little excuse for managerial failures due to lack of necessary information. Such information can be provided by the research and development divisions of the health services, hospital planning councils, and routine indicators increasingly produced by the professional associations, operating agencies, and governmental reporting services.

I repeat that I offer no blueprint of methods for delivering services. I prefer to see various methods of delivery and finance in this country develop as a result of the bargaining process. Government, perforce, has to bargain because it does not, in substance, own the facilities nor hire the personnel. Government again, perforce, needs to make choices of economical and efficient ways to buy the services for which it has been given responsibility, in other words for providing for the various segments of society that have become its charge.

Is it possible to approximate these goals in the general style which I am suggesting? Well, apparently with little effort we increased national total health expenditures from about \$3 billion in 1929³ to \$43 billion in 1966, 37 years later—almost a fifteen-fold increase—and per capita yearly expenditure for medical care from about \$25 to \$200—an eight-fold increase. The facilities and personnel during those years remained relatively constant in relation to population, and the health services system was able to absorb a doubling of use. It is unlikely that the same ratio of resources to population can absorb much of an increase in use in the future unless resources are at least kept constant. However, it is desirable that resources be increased, particularly with the development of new types of facilities and personnel. Since I subscribe to the concept that a patient should see a physician first during a disease episode rather than last, I do not feel that reorganization of physicians' services could be of much assistance in economizing on physician manpower. I find it mysterious that some would presume to increase physician productivity by decreasing the time physicians spend with their patients.

There will be proportionate shifts among the sources of funds. As long as the various levels of government do not enlarge their responsibilities to include the general population now cared for through voluntary

health insurance, it seems reasonable and likely that the governmental share of the health dollar may rise from the current 25 percent to 45 percent. Medicare alone is likely to increase the governmental share to, say, 30 or 35 percent. In fact, if Medicare and the other government programs now in effect are to be carried out with even minimum adequacy, the government proportion must be increased. Within the private sector, the voluntary insurance portion will also increase and, it would seem, eventually become the source of 80 percent of non-governmental expenditures for health services. This portion is subject to a great deal of negotiation between the providers and the big buyers of service, and will continue to constitute the most dynamic portion of the health services enterprise, assuming that the framework of the present system is not radically changed.

If we are not willing or able to carry out the foregoing recommendations, we are likely to regress to an essentially emergency care type of system, dazzling as it may be, for crises such as heart failure, lung cancer, and organ transplantation. End-product activities rather than prevention, rehabilitation, and management of long-term illness will be the keynote. As a nation we love the dramatic and the visible; the painstaking, long-range activities tax our patience quickly. The arthritic and the mentally ill can suffer in silence while the heart surgery patient makes front page news, is whisked away by helicopter, and provides *Life* with color photos of virtuoso surgical performances. The question is: does this concept of health services suit our appetite for the dramatic or our true health needs?

It might well be asked if the tremendous direct expenditures for services (indirect expenditures being loss of income and productivity as a result of illness or death) could not be reduced considerably by preventive measures, early diagnosis, and rehabilitation. In answer to this question, it has become fashionable to apply cost-benefit analyses to the health field. A recent and well-designed study showed that the direct annual cost of illness in 1963 was \$34 billion and the indirect cost, \$24 billion, a total of \$58 billion. The study report showed cost classifications by disease and by age, and quick estimates could then be made of how much money might be "saved" if specific diseases were cured early enough or eliminated altogether. However, no estimates have been made of how much might be "saved" if current know-how were applied optimally. It is unlikely that the overall social cost would be reduced appreciably, if at all, for in order to optimize the application of health

services, we would have to spend or invest more money than we now do, not less. Moreover, the eventual "return" on the investment would be—is—very difficult to calculate, and patients would have to seek care earlier and more frequently than they do now, a form of behavior not known to result in economies, at least not necessarily. I feel that it is inappropriate to apply cost-benefit analysis to a health service because the primary public policy interest should be aimed at alleviating pain and suffering and reducing the number of premature deaths. A *cost* analysis, then, is appropriate for determining what is entailed, and not a *cost-benefit* analysis. The "benefit" aspect of a cost-benefit analysis is meaningless in economic terms if my premise is accepted, and irrelevant in a society which regards the individual as inviolable. Cost-benefit analysis may be appropriate for countries that may be described as developing, particularly in the setting of long-term priorities. But in as highly developed and affluent a society as ours priorities need not be set on the basis of cost-benefit. The overriding purpose of a health system should be humanitarian; if it is not, we must be prepared to assume the risk of separating "worthy" patients from the "unworthy," and "interesting" patients from the "uninteresting." If cost-benefit analysis had been used to set priorities, Medicare would never have been passed. There is a place for cost *effectiveness* analysis, however, providing good measurements of effectiveness exist. Unfortunately, they do not at present. We need, therefore, to work toward measures of effectiveness and to include as crucial components of effectiveness the attitudes of patients and health personnel. "Effectiveness" tends today to be defined in narrow economic terms and masquerades in algebra.

We pride ourselves on our pragmatism, and mistakenly assume that we are able to set social objectives without the benefit of fixed doctrines. We do have fixed doctrines, however, as expressed in our liberal and democratic dogma, that all individuals stand equal before the law, that all individuals should be able to fulfill themselves to the extent of their capacities, that all individuals should have equal access to health services. Our methodology is pragmatic, not our utopian objectives, and we can draw on the resources and organizational genius of the nation in a pluralistic society to carry out those objectives. This is why I am reluctant to impose specificity onto my projections for facilities, personnel, and money. My emphasis is on the methodology of bargaining for an activity which has no logical limits. The setting is our expanding economy.

In essence, I believe that the nature of the current thrust of the federal government is congenial to the American social, economic, and political system. Measures such as the program for heart disease, cancer, stroke, and related diseases, the public law to stimulate comprehensive health planning, and Titles XVIII and XIX of Medicare are challenging the private sector in a manner in which it could not possibly challenge itself. If the challenge of Title XIX can result in an acceleration of the usually sluggish medical programs for those with low incomes, if Title XVIII can be restrained to assist those 65 years of age and over (or those receiving Social Security disability pensions), the private sector of the health services system can continue to improve health insurance benefits, aided and abetted by government for bricks and mortar and the training of personnel in increasing numbers. Eventually government may become the chief source of income for the daily delivery of services and for facilities and personnel in the total system. A single source of income will tend to freeze whatever pattern of delivery of services exists at the time. It seems reasonable to predict, however, that if government does become the chief source of funds, the private sector will still be a relatively influential force because of the apparent propensity of the American middle class (families with annual incomes of \$10,000 or more, currently comprising 20 percent of the population and due to become larger) to make choices. It may well be that a governmental health insurance system could focus exclusively on those with low incomes and the private sector (including private insurance) represent those with higher incomes, and, accordingly, the mainstream of American medicine. In a dynamic health service system it would seem salutary that an uneasy equilibrium continue to exist between the private and public sectors without implying that these sectors be clear-cut. The many interrelationships and dimensions create an unmatched vitality.

The extent to which we can continue to wind up our social system like a steel spring without at the same time living in a constant state of seeming crisis in order to care for sick people and to delay death remains to be seen and tested. In our society the choices can be made quite consciously through an explicit public policy. Individual choices within the system will continue to center on spending money and effort to achieve one objective or another. But the constant balancing of group interests and individual needs represents a continuum and goes on indefinitely.

Appendix A

Projections of manpower and hospital bed needs
1965 to 1970, 1980, 2000, and 2020

1965 population—200 million

Medical resource	Current rate per 1,000 population	Number needed at current rate	Attrition per year ^a	Total number to be added to stay even with current rate	To be added per year	Total graduates required ^b this year
MD's (active)	1.44	287,000	5,740			
Dentists (active)	.49	97,500	1,950			
RN's (active)	2.66	532,118	21,285			
Pharmacists (active)	.50	100,000	4,000			
General hospital beds	3.71	741,292	—			
Mental hospital beds	3.43	685,175	—			
TB hospital beds	.18	37,196	—			
Nursing home beds	2.00	400,000	—			

1970 population—209 million

Medical resource	Current rate per 1,000 population	Number needed at current rate	Attrition per year ^a	Total number to be added to stay even with current rate	To be added per year	Total graduates required ^b this year
MD's (active)	1.44	300,960	6,019	13,960	2,792	8,811
Dentists (active)	.49	102,410	2,048	4,910	982	3,030
RN's (active)	2.66	555,940	22,238	23,822	4,764	54,004 ^c
Pharmacists (active)	.50	104,500	4,180	4,500	900	5,080
General hospital beds	3.71	775,390	—	34,098	6,819	6,819
Mental hospital beds	3.43	716,870	—	31,695	6,339	6,339
TB hospital beds	.18	37,620	—	424	85	85
Nursing home beds						
at current rate	2.00	418,000	—	18,000	3,600	3,600
at optimal rate	3.00	627,000	—	227,000	45,400	45,400

1980 population—240 million

Medical resource	Current rate per 1,000 population	Number needed at current rate	Attrition per year ^a	Total number to be added to stay even with current rate	To be added per year	Total graduates required ^b this year
MD's (active)	1.44	345,600	6,912	44,640	4,464	11,376
Dentists (active)	.49	117,600	2,352	15,190	1,519	3,871

1980 population—240 million (Continued)

Medical resource	Current rate per 1,000 population	Number needed at current rate	Attrition per year ^a	Total number to be added to stay even with current rate	To be added per year	Total graduates required ^b this year
RN's (active)	2.66	638,400	25,536	82,460	8,246	67,564 ^c
Pharmacists (active)	.50	120,000	4,800	15,500	1,550	6,350
General hospital beds	3.71	890,400	—	115,010	11,501	11,501
Mental hospital beds	3.43	823,200	—	106,330	10,633	10,633
TB hospital beds	.18	43,200	—	5,580	558	558
Nursing home beds						
at current rate	2.00	480,000	—	62,000	6,200	6,200
at optimal rate	3.00	720,000	—	320,000 ^d	21,333	21,333

2000 population—320 million

Medical resource	Current rate per 1,000 population	Number needed at current rate	Attrition per year ^a	Total number to be added to stay even with current rate	To be added per year	Total graduates required ^b this year
MD's (active)	1.44	460,800	9,216	115,200	5,750	14,966
Dentists (active)	.49	156,800	3,136	39,200	1,960	5,096
RN's (active)	2.66	851,200	34,048	212,800	10,640	89,356 ^c
Pharmacists (active)	.50	160,000	6,400	40,000	2,000	8,400
General hospital beds	3.71	1,187,200	—	296,800	14,800	14,800
Mental hospital beds	3.43	1,097,600	—	274,400	13,700	13,700
TB hospital beds	.18	57,600	—	14,400	700	700
Nursing home beds						
at current rate	2.00	640,000	—	160,000	8,000	8,000
at optimal rate	3.00	960,000	—	560,000 ^d	16,000	16,000

2020 population—420 million

Medical resource	Current rate per 1,000 population	Number needed at current rate	Attrition per year ^a	Total number to be added to stay even with current rate	To be added per year	Total graduates required ^b this year
MD's (active)	1.44	604,800	12,096	144,000	7,200	19,296
Dentists (active)	.49	205,800	4,116	49,000	2,450	6,566
RN's (active)	2.66	1,117,200	44,688	266,000	13,300	115,976 ^c
Pharmacists (active)	.50	210,000	8,400	50,000	2,500	10,900
General hospital beds	3.71	1,558,200	—	371,000	18,500	18,500
Mental hospital beds	3.43	1,440,600	—	343,000	17,150	17,150
TB hospital beds	.18	75,600	—	18,000	900	900
Nursing home beds						
at current rate	2.00	840,000	—	200,000	10,000	10,000
at optimal rate	3.00	1,260,000	—	860,000 ^d	15,000	15,000

a. Attrition rates are figured as follows:

MD's and dentists: 2 percent per year, based on unpublished studies and educated guesses by the American Medical Association and American Dental Association.

Pharmacists: 4 percent per year, based on a study done by the Illinois Pharmaceutical Association. Rates for pharmacists are higher than those for MD's and dentists because registered pharmacists sometimes go into other lines of work while this is quite rare for MD's and dentists.

RN's: The only good data available on current attrition is that half of the current graduates are inactive within one year of graduation. Attrition is arbitrarily placed at 4 per cent in addition to the large loss from the graduating class.

Hospitals and nursing homes: attrition is assumed to be minimal.

b. This is the sum of losses through attrition which must be made up plus the number needed to stay even with population growth.

c. This is double the number of graduates needed in order to allow for the high attrition rate of new graduates.

d. Based on 1965.

Sources: Physicians: American Medical Association; Dentists: American Dental Association; Nurses: Illinois League for Nursing; Pharmacists: Illinois Pharmaceutical Association; Hospitals: American Hospital Association (JAHA Guide Issue, August, 1966); Nursing Homes: U.S. Department of Health, Education, and Welfare (Characteristics of Nursing Homes, 1961).

Appendix B

Projection of percentages of expenditures for all health and health related goods and services by source of funds for selected years, from 1965 to 2020, United States

Year	Percent of GNP	Federal, state and local governments	Private		
			Direct pay by patients	Voluntary insurance	Other
1965	6%	25%	45%	25%	5%
1970	7	30	33	33	4
1980	9	45	11	42	2
2000	9	45	11	42	2
2020	9	45	11	42	2

Note: The percentage of the total labor force related to health services, professional and non-professional, should increase from the current 5 percent to 6 percent in 1970, and 10 percent by 1980 and thereafter. This is in line with the increasing orientation of our economy to the service industries. The health services will always be very labor intensive.

Notes

1. The thought is not for the poor in health centers but for the community around the hospital.

2. It has been suggested that I include consideration of environmental health personnel such as are needed in air and water pollution control. Certainly there should be some linkage with the health system through the official public health departments. I simply do not feel competent to deal with this essentially engineering problem, but I do wish to indicate that it requires serious attention. Unless it is solved, personal health services may become relatively useless.

3. Expenditures dropped to \$2 billion in 1933, however, during the early stages of the Depression, a natural consequence although contrary to public trends.

Committee of Correspondence: Notes

Jack R. Ewalt, M.D.

(See page 65.) The federal government has joined private and state resources in subsidizing community mental health centers. New grants for construction and for staffing in the initial years are available on a matching formula basis. These centers will provide part-time care (day hospital and night hospital) as envisioned on page 65, but also in-patient service, out-patient service, rehabilitation service, and emergency service to all age groups and all diagnostic categories. It is anticipated that these community-based centers will be able to care for all but long-term mental patients requiring permanent hospitalization.

(See page 69.) Perhaps we are now in the sixth era—the era of concern over well-being. Much health effort is now directed toward the positive aspects of health, i.e., a stimulating, satisfying existence with attention to diet, exercise, environmental and personal safety, and the constructive use of leisure time.

(See pages 84-85.) We are experiencing a net drop in the number of patients hospitalized for long-term mental illness on any day. This is in part due to better care of the patients in the mental hospitals and in part due to the fact that large numbers of patients are now being cared for in community general hospitals, and an ever increasing number in the newly established community mental health centers. Long-term hospital beds will not need expansion at the rate heretofore described except places for retarded children who are so severely retarded that they require 24-hour nursing care. The construction of the in-patient portions of community mental health centers, however, will probably need to proceed at about the rate described in Item 6. Many of the centers will be part of the community general hospitals. It is estimated that approximately 2,000 community mental health centers are needed to provide adequate coverage of the population. If 2,000 such centers are added over the next ten years and if they average 40 beds each (some will be larger and some will be smaller) a figure of 8,000 to 10,000 additional beds per year is approximately correct.

Paul J. Sanazaro, M.D.

(See page 65.) It is my prediction that the greatest advances in health services research will stem from advances in behavioral science and the understanding they generate of the social determinants of disease and of non-utilization of preventive and remedial measures now available. The trap to avoid is the assumption that continued expansion of the health service system as presently constituted will continue to yield commensurate benefits. It is more than likely that the result will be an even wider chasm between what can be done and what is done by professionals and patients alike.

(See pages 82-83.) Two legitimate domains of directed medical care require more concerted planning, delineation, and organization. Both are subsystems which should be built with a clearly determined obsolescence so that neither will at great public cost outlive its social purpose. The first subsystem is for the delivery of quality medical care to that large population of Americans who cannot or do not utilize available services, largely because of social, economic, and cultural factors. Prepackaged comprehensive care must be brought to these millions of people, but must also be discontinued as the barriers to care are removed and utilization of the private system does, in fact, occur. The second subsystem is for the provision of the very expensive technology (in machines, men, and medicines) which private sources cannot provide equitably across our nation for all citizens. As successive discoveries eliminate the need for these (e.g., massive radiation units almost predictably will be supplanted), the public administrative machinery that brought these into being must not be allowed to propagate itself in the absence of a clearly defined national need for successor technologic complexes.

By dissecting out these two major strands of legitimate government subsidy and treating them openhandedly, we reduce a growing hazard: the continued blurring of

public and private responsibility for improving the medical care required in order to fulfill our expressed commitment to the physical and mental well-being of all citizens.

(See page 86.) The health services system has attained the economic size and technologic complexity which invoke national planning and public subsidy for continued orderly growth and development. A clear decision is called for. Either the present bargaining on the basis of individual interests will continue to determine the nature of the interaction between government and the multiple private sectors, or a viable nationally representative organization must be created through which to channel and focus the public and professional concerns that must be advanced in all health service bargaining with the government.

Comments on Anderson

HERMAN M. SOMERS

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I fully agree with Dr. Anderson's plea for a generously proportioned health system and that this will call for large inputs of additional resources in the future. However, he appears to believe that "efficiency" standards are contrary to that objective. This seems to derive from his noneconomic use of the term which suggests to him "running a tight system of waiting lists, high occupancy rates, and other personal inconveniences."

Efficiency means maximizing productivity, or high output relative to input. Productivity includes quality. Quality includes the morale and satisfaction of the consumer. Waiting lists and personal inconveniences, therefore, detract from efficiency.

Dr. Anderson assumes there is very little slack in the current organization of health services. I believe the evidence is contrary. He appears to say that a "loose" system tends to promote quality. I know of no evidence to support that view. Those of us who argue for greater efficiency do so in the belief that it is conducive to improved quality, even when efficiency does not represent a money saving.

Group practice, for example, probably does not deliver care more cheaply than solo practice, but it is more efficient in that it is conducive to better care and makes more effective use of medical manpower. Preventive medicine does not appear to reduce costs. It is efficient because it appears to result in better health.

In terms of long-range planning it appears improbable that we can achieve the generously proportioned health system that Dr. Anderson and I agree is necessary, without more effective use of resources, particularly manpower.

In the light of competing urgencies, we must contemplate skilled manpower as a scarce resource for a long time ahead. Cost-benefit and cost-efficiency concerns are not necessarily devices to save money. They can be important means for determining the most effective use of given resources and for making more informed choices among alternative ways of organizing our resources. I do not believe the present system has sufficient automatic regulators giving it inherent capacity to maximize effectiveness. Planning and purposeful action are required.

In short, concern for efficiency is not at odds with Dr. Anderson's objective of a generously proportioned system. It is more likely to contribute to the goal by making it more practicable and attainable.

ARTHUR WEISSMAN

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I, too, favor a flexible medical care environment in which alternative methods of delivery of health care services should coexist. Yet there is serious doubt whether we in the medical care field will be permitted the luxury of building the "abundance" Dr. Anderson seeks without better justification and rationale than the simplistic arguments that (1) we live in an affluent society, and (2) we have shortages of medical care personnel and facilities which are being aggravated by our expanding population. The increasing pressure for more effective organization of health care services will give this facet of our problem equal if not greater importance than that of achieving abundance of health care personnel and facilities. Furthermore, a more effective organization of health care services and delivery system could be the best guarantee of sufficient resource allocation to permit a generously proportioned health care system.

In a given community with eight general hospitals and a population which can be effectively served by two cardiac surgery teams, the existence of six cardiac teams would truly represent abundance. It also represents a situation in which the thinning out of the experience for each team would militate against optimal skill. Although trite, it appears to need repeating that more does not necessarily mean better in medical care. The literature documenting unnecessary surgery is clearly a case in point. From the experience of our medical groups in recruiting physicians we would question whether more general surgeons are needed and whether more in this category correlates positively with good medical care.

Just as the equation more = better must be rejected, the equation less = better must also be rejected. This latter equation still may be offered as a justification for medical care for the indigent in our country. I mention this

because a great gulf separates Dr. Anderson's conception of a broad consensus favoring the utopian objectives of adequate medical care for all our people and the actual behavior of decision makers in our states and local communities who are clearly not tuned in to this consensus. A review of Title XIX programs in actual operation would, I believe, support this contention.

Dr. Anderson identifies major changes in the next fifty years in population size and composition and in patterns of morbidity. He also identifies major shifts in the requirements for medical care—shifts toward greater and greater need for services for chronically ill who require some form of custodial, domiciliary, or substitute home care. He recognizes that great changes can be expected in medical technology. He is, however, most reluctant to anticipate or suggest change in the organization and delivery of health care services. In fact, change in these aspects of the medical care scene is dismissed with derision when he refers to "tinkering" with delivery systems. If I did not know Dr. Anderson I would believe that he had—with eyes focused on the rear view mirror—deliberately backed himself into the status quo corner.

There is another type of appraisal. Dr. Anderson is saying that he does not contemplate substantial change in the organization and delivery of health care in the next fifty years. He is challenging the advocates of change to make explicit the reasons for change and the desirability of specific forms of change. Moreover, he does not want us to get bogged down with issues which slow down the drive toward his primary target of abundance, i.e., a loose fitting, generously proportioned system.

He is unimpressed with the efforts to date in health services planning, in cost-benefit analysis, in the contributions to direct patient care of computerization of functions, and in the organization of health care services. He views these efforts in much the same way that we frequently view campaign promises before an election. Although I agree with his lively skepticism, we need to press for commitment through effective demonstration to show that these efforts are not empty promises. We need demonstrations of patterns for effective use of resources, and we need serious discussion of alternatives available to us in establishing and revising these patterns.

Dr. Anderson needles us with other challenges. He expects us to behave in mountain goat fashion—to leap from one health care system crisis to another in our unsuccessful effort to reach and maintain as yet unquantified levels of health care personnel and facilities. Again it seems to me that if we develop mechanisms for the assumption of responsibility for developing rationale systems for organizing and delivering health care services, we will in time reduce the need for the crisis approach to this problem. We should not toss in the sponge at this time. We must not assume that the health care system has to be either exclusively free-wheeling, or exclusively controlled from centralized sources.

LEONA BAUMGARTNER

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Each individual, as Dr. Anderson wisely points out, approaches a problem from his own particular set of values and so, as he attempts to predict what the future holds, each has his own crystal ball. Trained in the laboratories of the fairly exact science of immunology and in medicine but with years of experience as a physician and health administrator, my crystal ball inevitably holds somewhat different pictures from that of the skilled social scientist, Dr. Anderson. What is similar or dissimilar in our views of the future of health services in this country?

I agree with three main points made by Dr. Anderson.

First, the concept of "looseness" in which the health system, if it can be dignified by this term, is likely to develop. In the past, we have accepted a laissez-faire posture in almost all its developments. Just one example, hospitals are not built necessarily where they are needed but may be built where land is given or is cheaper, built as a monument to a public figure, a donor, or to foster the political ambitions of an individual, or located for other reasons not related to the need of the area for a hospital. We are not a nation given to long-range planning, or plans on a large scale. In fact, planning has only recently lost its unsavory quality when used in the governmental arena. Health planning is a new practice, and health planners have only recently begun being trained. We are a pragmatic people. We try out new ideas; we rise to emergencies—but we also "let nature take her course" and "muddle through" many a crisis.

The situation in health affairs today is such that a more aggressive approach is certainly needed if the public is to gain from the postwar explosion of scientific and technological knowledge. The sophisticated techniques for prevention, diagnosis, and treatment of disease which that explosion has produced are being imposed on a health care system ill-equipped to absorb them and ill-adapted to change. The time for change is here.

Second, I also agree there is no best way to reorganize the system, and even if there were, it obviously could not be quickly imposed on or substituted for the present one. Changes will come through trying out a wide variety of approaches—but, hopefully, with some sense of urgency—the "semi-crash" programs Dr. Anderson mentions. In the cancer, heart, and stroke programs there may already be a beginning.

The innovations generated locally with local initiative but with some central or regional guidance seem most likely to produce socially useful solutions. Our past experience gives a good example. The crippled children's programs

supported by the federal Children's Bureau allowed for a variety of programs which took into account local interests, needs, and resources. But the central group supplied technical assistance, set standards, and otherwise helped the local community to develop new health services with a better quality of service than had previously existed. One of the tragedies of Medicaid and Medicare is that this noble example was overlooked.

It would seem wise in developing new approaches not to be utopian and strive for an ideal set-up but to gear the experiments to what may reasonably be expected to be viable. There have been enough demonstrations that prove health services are better if richly supported and manned by superior people! What is needed are different workable models which use more effectively what is available or can readily be made available. Dr. Anderson, I take it, agrees with this approach, although his emphasis on planned experiments is less than mine. In my opinion, he has not sufficiently emphasized the necessity and the opportunity for evaluating these different approaches. To be sure, measures of the adequacy of health care are almost totally lacking today. There is no reason why they should not be developed and used. The study and evaluation of the health service system in this country needs now to receive major emphasis in universities and research institutions, as well as by top administrators of the services themselves.

Third, I agree on the need for allocation of more resources to the health sector. To the several factors pushing in this direction, more emphasis might have been laid on the rising expectations of the people as to what modern medicine can produce for them. The miracles of wonder drugs, open-heart surgery, artificial kidneys or limbs, and the disappearance of polio and measles epidemics are all widely publicized through magazines, radio, and television. The people expect new wonders every week—and they want immediate access to them. Health as a human right for every citizen, regardless of his ability to pay for it, is now a political issue to which the Congress has responded, and probably will continue to respond if public demand is maintained. This may lead to the big buyer (i.e., government) laying down more restrictions, but it probably means, too, that greater allocation of resources in this affluent society will go to the health sector. Dr. Anderson's description of that sector might well have noted, in addition to the points he made, that the health business is already the third largest in the country measured in terms of money spent and people employed. Only agriculture and construction surpass it. He also did not mention the school health services, which constitute a real problem. With the new federal school-aid legislation these services are expanding. Begun at a time when the nature of health problems were those of filth and contagious diseases, they need critical reevaluation now that these conditions are largely conquered. As often organized, the school health services constitute one of the least efficient of our health services. They are so deeply entrenched, however, both in practice and even in legislation, that

change is difficult. As such, they are a good example of why our system will change slowly.

There are some points I would add to Dr. Anderson's paper. I feel he has greatly underestimated the ability of science and technology to come up with new solutions. There may well be specifics for various types of arthritis, heart and mental disease, as well as vastly improved ways of handling the handicapped and chronically ill. There have been developments in nonmedical fields of management, communication, et cetera. Potential improvements of the health care system can be expected through the appropriate application of these techniques. In other words, science and technology in the next few decades may come up with solutions for some of today's problems—even though in themselves they may create new ones.

I also believe the ethical problems of what Dr. Anderson so aptly calls "medicated survival" (through transplantation of artificial organs and other techniques) demand more attention than he has given them. These are problems the health professions cannot face alone. Fortunately, in a few places, lawyers, theologians, philosophers, economists, historians, and others are beginning to think through some of the implications of these scientific developments. The current dialogue on experiments on humans is often the chief focus of these discussions, but hopefully such groups will expand their discussions and continue to contribute to the solution of these problems jointly from many disciplines and backgrounds. To change moral and ethical codes takes time. Nothing less seems likely to be useful in this area of health care, and the problems are already upon us.

Dr. Anderson also trains the spotlight rather more on physicians than many others in the field might. The increasing specialization which has arisen out of greater knowledge has given rise to the disappearance of the family physician or general practitioner, and the increases in the numbers and kinds of medical specialists. It continues to do so. Organ replacement specialists are already here. The same force is also adding specialists other than physicians. It would seem likely that these allied health professionals will be of far more importance in the future than indicated in Dr. Anderson's paper. He has called for many more physicians but has dodged the important question of what they are being trained for. He seems enamored of the idea that patients will want to be seen and that physicians should "see patients first." Experience does not necessarily prove this point to be valid. For many years in New Zealand specially trained "nurses" took almost total medical care of infants, with pediatricians seeing only a few referred patients. Millions of American men and women of the United States Navy have seen the Navy Corpsman first without complaint or detriment to their medical care. Recently, a carefully controlled experiment at the University of Kansas Medical School has shown that public health nurses with additional training can give routine pediatric care to children. They use pediatricians as consultants. They over-

diagnosed only 5 percent of the cases—i.e., they were a little more cautious than physicians. They secured more complete histories from the mothers, who apparently felt freer to talk to them. When offered a choice later on, many mothers chose to stay with the nurse. Progress in the manpower field would seem more likely if we could break away from looking at the doctor and his traditional way of working and study the whole health job to be done. The total job can then be “de-skilled,” i.e., broken up into its component parts according to the skill needed to do that part. The work to be done by persons with different skills and training is then clear. This approach has worked in other industries. Why not in the health industry? Care should be taken to allow workers to move from one level to another without penalties. In today’s health scheme this is seldom possible. A greater mobility of personnel upward and more careful simultaneous analyses of the many jobs to be done in the health services could help solve the problem of shortages of physicians and nurses. The task cannot be done by any one group.

The healthy skepticism of those who believe that a cost *benefit* analysis holds the magic secret for dealing with current economic and manpower problems in the health field is refreshing—as is the idea that a cost *effectiveness* approach must be more vigorously applied. I would put somewhat more emphasis on organizational patterns, for the methods of delivering services influence the need for personnel and facilities, just as Dr. Anderson points out the latter influence the former.

There is also less in Dr. Anderson’s paper of the importance of prevention than seems indicated. The great gains made in increasing life expectancy and in controlling infectious diseases in the past half-century have been associated to only a limited extent with the delivery of more or better personal health services by private practitioners of medicine. They have come through efforts to prevent diseases, to eliminate the causes in the environment, to protect the individual from acquiring disease. More recently there is emphasis as well on earlier diagnosis to prevent later disability. As the nature of the ills to which man succumbs inevitably continues to change, the search for the primary causes and their elimination, so far as is possible, remains a most important aspect of health services. The recognition at birth of congenital malformations, for example, is an increasingly important aspect of orthopedic care. Treatment then will prevent adult crippling. Man-made hazards to health in air, water, surroundings, multiply as man’s ability to manipulate his environment grows. To acquire a balance that is favorable to the health of the population as well as to their enjoyment of the comforts that come through the rapidly expanding new technologies is a major problem. These developments all demand an emphasis on prevention that is not spelled out in Dr. Anderson’s paper.

It is good to have mention in the paper’s second paragraph of facilitating “humanness.” This may be a reason behind Dr. Anderson’s wish to have the patient see the doctor first. But for that the doctor and all the other members

of the “team” must have the time, the sensitivity, and will to re-humanize the practice of medicine. The trick is to get the new science and technology efficiently and widely applied with the same personal touch which is attributed to the family doctor and which other large personal service industries in our American culture have learned how to provide.

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The enormous complexity of our health services system and some of the many strains and constraints on it have been well outlined by Professor Anderson. There can be little quarrel with the assertion that health planning, either short-term or long-term, is difficult, that our theoretical framework is deficient, and that our techniques for analysis are in many ways primitive.

Health is assumed to be a basic human right, and the development of a high quality, accessible health service system to be the means for attainment of this goal. As pointed out, public policy debate centers around the methods appropriate for the development of the system, and not the goal.

Because of the great difficulty in foreseeing future configurations of need (i.e., morbidity and disability), demand, and effective demand, and because of the dearth of yardsticks by which to gauge the effectiveness of the components of the health service system, individually or in concert, Professor Anderson suggests adherence to a “relatively loose” system and the allocation of proportionately more resources to “maintain and accelerate the impressive gains of the past.” Individual groups should be assured maximum latitude to “maneuver” toward improvement. Under such an arrangement, changes in the system will “emerge from the negotiating and bargaining process rather than by preconceived blueprints.” Thus, progress would emanate from a series of (hopefully) interrelated thrusts and parries by providers, consumer groups, financing agencies, and planning agencies.

It can be argued that in the future there will be a decreasing probability of pumping proportionately more monies into the health services system to make it “looser” than it is at the present. The demands for “efficiency” and “effectiveness” are becoming more persistent and better articulated. In fact, the “abundance” specified by Professor Anderson as the basis for his thesis might very well be short-lived without meaningful program evaluation in all sectors of the health services enterprise.

Reliance on the “bargaining” process assumes that the individuals or agencies involved have rational and accurate assessments of alternative courses of action, that is, the ability to weigh the direct and indirect costs of programs vis-à-vis the anticipated benefits. Furthermore, the influence of “big business”

and "big labor" as goads usually operates through the payment mechanism, an imperfect arrangement at best.

Experimentation with new forms of delivery of health services and the accompanying payment mechanisms would create the frame of reference necessary for sound decision-making. If this cannot be accomplished within the confines of an existing program, then purposive experimental programs with the appropriate manipulative techniques must be conducted outside the "natural" system. The results of such experimental programs in delivery should help to develop, or at least identify the elements of, the criteria for adequate health services Professor Anderson specified as essential for successful planning. Evaluation under experimental conditions is not the same as "tinkering."

Professor Anderson is quite correct in pointing out the importance of perception of illness on the part of the (prospective) patient and the necessary discretionary judgment of the physician as factors conditioning the operation of the health services structure. One might disagree, however, with the assumption that they should be given maximum play because there is a certain amount of variability inherent in them. Knowledge of the direction and degree of influence of *determinants* of variation could serve as the basis for programs of planning and/or action. For example, effective programs of health education, built upon studies of the factors determining perception of illness, should in fact reduce the hiatus between "true" need for health care, "recognized" need, and demand. Residual variation in perception could conceivably be accommodated in the planning process.

Similarly, we have the capacity to gain better knowledge of the judgment process on the part of the physician. Various studies have demonstrated the feasibility of establishing professional criteria for the "need" for health services, appropriate use of diagnostic and therapeutic services and facilities, and patient management. The first large-scale study in this area was conducted over thirty years ago, under the sponsorship of the Committee on the Costs of Medical Care. Recent advances in techniques of medical audit and utilization review now make it possible to establish standards that could very well be used in the planning process.

With estimates of need derived from professional criteria and a delineation of alternative mechanisms of prevention, treatment, and rehabilitation, it would be possible to critically review problem areas which are the keystone to the health services structure. For example: What steps are necessary to meet "true" need for health care? Which can be compromised? At what levels should the planning process be directed? Who should participate in the planning? What are the measures of program success?

This reviewer had hoped Professor Anderson would address himself to some of these questions, specifying the implications of alternative answers. One can question the usefulness of projections of needed personnel (even at minimum levels) based on the current professional/population ratios.