A Symposium:

The Future of Health Care

Challenges and Choices

October 1984

Proceedings

The American Academy of Physician Assistants
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Arlington, Virginia 22209

Table of Contents

Introduction

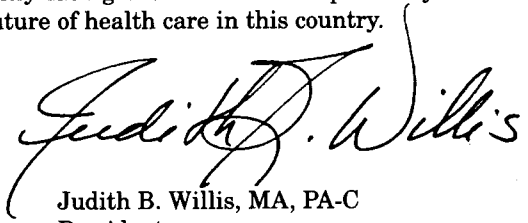
The American Academy of Physician Assistants is pleased to offer the complete proceedings of our symposium, "The Future of Health Care: Challenges and Choices." The program was designed to contribute to the extensive dialogue necessary to resolve timely and difficult questions on the future of the American health care delivery system.

This document contains all of the formal presentations, as well as commentaries on major issues. The contributors to the symposium include prominent and knowledgeable individuals representing the medical profession, private industry, educational institutions, and the federal government.

The symposium focused on four major areas: health manpower, health service delivery systems, health care financing, and medical technology. Papers were presented in panels and individually. In keeping with the original intent of the symposium, the papers presented were generic to all health care providers and policymakers. This allowed participants to develop an understanding of the numerous external factors impacting on health care. During discussion sessions, symposium participants discussed major issues as they relate specifically to the physician assistant profession.

The success of the symposium was the result of 18 months of planning and hard work by many individuals. We extend our thanks to the members of the Symposium Advisory Committee, whose support was essential in the development of the program. Thanks also to the Planning Committee, whose dedication and hard work were reflected in the effectiveness of the symposium. Our appreciation goes to the Educational and Research Foundation of the AAPA, as well as to those individual physician assistants who contributed their time and talents as moderators, facilitators and scribes. Special thanks goes to members of the AAPA national office staff, who coordinated and supported a major portion of the activities.

The American Academy of Physician Assistants is proud to offer you the symposium proceedings. Physician assistants, as members of the health care delivery system, have a vital interest in promoting an understanding of issues currently facing the nation. We hope that you will find this information valuable for its insights into the future of health care in this country.



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President
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Future Challenges in Health and Health Care

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In that classic tale delighting adults and children alike, Alice asks, "Would you tell me, please, which way I ought to go from here?" "That depends a good deal on where you want to get to," said the cat.

In examining specific issues and solutions at this meeting, it is probably useful to step back and reconsider more simply what we seek from medical care. A major characteristic of the gigantic health industry—with its vast array of health workers, facilities, technologies, entitlement and insurance programs, reimbursement mechanisms and competing alternatives—is the tendency for individual components to assume a life of their own, made possible by decentralized planning and the opportunities available through a complex reimbursement process. In focusing on specific issues and debates, it is relatively easy to lose sight of overall objectives.

The future of health care in the United States will undoubtedly evolve by building on existing forms of organization, traditional professional groupings, and dominant types of facilities. Only by having a strong sense of purpose and direction can we shape significantly what now exists in more constructive directions. Many biomedical developments are to be applauded, but the distortions in the total pattern of health care services, and the limited accomplishments for some very large investments, are striking. There is no assurance that careful priorities will prevail over economic, political and technological imperatives in any instance, but it is apparent that if we lack a clear conception of our goals, there is not much chance of competing successfully with the powerful, persistent, and motivated interests that frequent the health care arena. Health care is big business, and those who wish to shape it as a start need a clear vision, well thought out strategies and a great deal of persistence.

How then, do we define the mission of this large, powerful and expanding industry? Health is, of course, ultimately its object. The World Health Organization's definition of health as a state of "complete physical, mental and social well-being," however, strikes the pragmatist as utopian and divorced from the hard realities. But it alerts us to two important conclusions. First, health is shaped fundamentally by culture, society and environment and it is mostly at the margins that medical care services have their primary impact. Most of the great advances in health status arise from basic improvements in economic status, education, nutrition, lifestyles and the environment. Medical care is an important influence, but only one of many. Second, the WHO statement attunes us to the fact that physical illness and psychological discomfort, however influenced by inheritance and biology, arise in no small way from conditions in the family, at work, and in the community more generally. Patients' experiences of illness reflect both responses to noxious influences and ways of adapting to intolerable stresses that tax their capabilities and spirit. The biology and psychology of health are inextricably interconnected.

Medical care, of course, is a more narrow concern than health enhancement, but its goals must be broad. Health care professionals have responsibility to support and sustain those suffering pain, distress and incapacity and to restore patients to their maximal potential of functioning. The words may sound trite and unnecessary, but the fact is that most medical care is more directed to diagnosis and management of specific disease than to considering how to restore functioning or to assist patients most appropriately within the context of their illnesses and disabilities if cure is elusive. While remarkable progress has been made in the past by pursuing limited concepts of cause and a narrow view of the physician's responsibilities, the changing age profile of the population and emerging patterns of illness and disability suggest that the challenge for future health professionals will be less with cure and more with maintaining function. It gives us pause to reflect on the fact that the fastest growing subgroup of senior citizens are those over 85. This subgroup increased 174 percent between 1960 and 1980 and is expected to increase another 110 percent between 1980 and the year 2000.

These increases among the old-old in part reflect the fact that the American population is healthier than ever before, and even the majority of the now more numerous elderly maintain their function and vitality. On a statistical basis, most serious disease does not occur with frequency until relatively late in life, is chronic rather than acute, and poses serious issues for life routines, work and adaptation for those

affected. Elderly patients with chronic problems constitute an increasing proportion of the typical physician's workload and occupancy on inpatient medical or surgical services. For many the issue is not cure, but how to live in a satisfactory fashion with chronic disease and the impediments it presents.

A Necessary Balance

Medical care thus must balance carefully two competing opportunities. Thinking epidemiologically, the burden of illness falls on the elderly and the impaired, and the major challenge is to ameliorate suffering and promote functioning. But the increasing sophistication of the sciences relevant to medicine and the perfection of new technologies and procedures also makes it possible to serve the population in new and dramatic ways. When thought of in terms of knowledge development, new biomedical technology offers possibilities of serving patients in more effective ways. But when new and unproven technologies, or those whose costs outweigh their benefits, are carried forward as an imperative they raise frightening issues of financing, questions about the actual welfare achieved, and tough conflicts about the payoffs in pursuing elusive cures at the neglect of care.

In sharp contrast to impressive technical advances are continuing complaints among the chronically ill that health professionals are inattentive and often show a lack of interest in issues of functioning and the quality of their lives, which is of greatest concern to them.

The young middle-aged man following a myocardial infarction and his spouse are vitally interested in his capacity to return to work, support his family, and maintain a normal marital relationship. Relevant questions are typically evaded or ignored, or the instruction provided is so vague as to be unhelpful and increases rather than reduces anxiety and anger. Too often the medical focus is on small changes in cardiac output and far too little attention is given to the patient's social well-being. These are not costly efforts in technology or in the medical care process. But they take time, interest and patience and the acquisition of the necessary knowledge and sensitivity to be truly helpful.

A couple of years ago Dr. DeWitt Stetten, Jr., a distinguished physician and science administrator, wrote about his own frustrating experiences in coping with his increasing blindness resulting from macular degeneration. Although himself a physician, dedicated throughout his career to the enhancement of biomedical science, he discovered how little he was assisted by physicians who were interested in vision but not in blindness. Stetten writes: "Through all these years, and despite many contacts with skilled and experienced professionals, no ophthalmologist has at any time suggested any devices that might be of assistance to me. No ophthalmologist has mentioned any of the many ways in which I could stem the deterioration in the quality of my life."

While the observation can be replicated in every waiting room and hospital service, what make this observation particularly remarkable and poignant is that it comes from a physician who dedicated his professional life to the enhancement of the best science base possible in medical practice. But the sciences relevant to the practice of medicine include sociology and psychology and their applications as much as molecular biology and immunology.

No sensible person denigrates the remarkable contributions of science to enhancing medical care, or those yet to come in the future. But good science, prudently applied, must relate to a larger framework of goals, priorities and ethics. It is the mindless uses of science, and not science itself, that deflect our basic goals.

Among values about medical care, access for all stands particularly high and symbolically represents our nation's commitment to assist the fulfillment of the individual's personal and social choices and our social commitment to equal opportunity. We share the value that provision of necessary services should reflect need and not the ability to pay. Following this view, government has made large efforts to facilitate access for the old, the poor, and the medically indigent, and has struggled to develop a framework for equitable allocation that has been remarkably successful in the 1960s and 1970s as measured by improvements in physician access, hospital admissions, and measures of disability, disease specific mortality, and longevity. We must guard against losing the ground so painstakingly acquired in the past couple of decades.

Painful Choices

Current pressures to contain costs, and how we deal with them, confront us with issues of priorities and values and perhaps painful choices as well. During times of financial stress the groups easiest to disenfranchise and the programs easiest to cut are those involving the poor and disabled. Largely dependent on public funds, with poorly organized constituencies to protect existing entitlements, they are vulnerable to federal, state and local government limits on eligibility, cutbacks in the range of available services, and imposition of significant and often prohibitive cost sharing requirements. The same decision-makers that impose these burdens will permit and even encourage the application of expensive technical innovations of limited benefit that in some cases, as for example, hemodialysis among the very old, are often used inappropriately. It is ironic that the unproven uses of technology expand at the same time that we limit basic care for the poor and the chronically handicapped as well as opportunities for prevention, patient education and rehabilitation assistance.

Dependency requires that we maintain access to a reasonable level of health care services for all, and there is a strong and persistent national consensus that government should insure that result. There is also a commonly shared perception in the population—evident in almost every patient care survey—that patients desire professionals who direct attention to their broad needs, who demonstrate a personal interest in them and treat them without a sense of haste, who allow them to ask questions and provide responsive and informative feedback, and who treat illness in a way that facilitates and promotes fulfillment of usual activities.

Hospitalized patients in particular have a variety of needs related to their illnesses and to their overall well-being that may be as important to the ultimate outcome as specific medical interventions. Important from a social perspective is determining the least restrictive treatment regimen and teaching patients to manage their lives to minimize illness-related disabilities and to cope with various contingencies and uncertainties. Patients need opportunities to experiment with

aspects of the treatment regimen, and to obtain informative and supportive feedback. When a variety of medical and other health personnel are involved in the patient's hospital care, there is a further need for effective and consistent communication with the patient and with staff to minimize contradictions, duplication of efforts, unnecessary anxieties, and confusions and breakdowns in the processes of care.

In the context of economic pressures, the preservation of access or the types of responsiveness I have described cannot be taken for granted, nor are existing incentives consistent with emphasis on the socio-emotional, interpersonal, or educational components of care that play a major role in maintaining function. Present reimbursement, in contrast, encourages technical discrete procedures and induces competition and conflict among varying providers and professionals.

The transition, however slow, toward capitated payment and fixed reimbursement impresses me as the only assured way to cope with cost dilemmas in a way that allows more careful balancing among care options, types of professional services, and treatment settings. The future potential of physician assistants, nurse practitioners, and other non-physician health professionals who devote a great deal of time and effort to caring functions is much more likely to be realized in financial contexts where decisions about types of services, personnel and technologies must be weighed relative to both treatment goals and total resources available for care.

In capitated contexts, the fact that such professionals provide services comparable to those of the physician at less cost and often with greater patient satisfaction would strongly argue for their increased use. With the impending growth of the physician supply, the future of these health professionals and many of the unique services they provide are in jeopardy without a more neutral reimbursement structure that requires that the role and value of their services be weighted against other expenditures. There is every indication that Americans will support generous expenditures for medical care, but distortions of dominant payment mechanisms make it likely that the poorest and most needy patients will be most disadvantaged and that the less powerful professional groups whose work overlaps with tasks carried out by physicians will be held in check, if not increasingly disenfranchised.

Neutral Incentive System

Since much of health care is uncertain, establishing goals by regulation is a dangerous, if not a hopeless, task. We can, however, more readily develop an incentive system of greater neutrality, one that encourages careful assessments of tradeoffs among sites of care, appropriate professional providers, mix of services and intensity of care. Government constraints cannot intelligently provide guidance except in the most general ways, but they can provide the incentives that would insure that such evaluations take place. The only mechanism that achieves this without extensive and intrusive regulation is an established budget.

An established budget is initially more neutral than any other form of payment because it leaves priority judgments to administrative and professional decision-making. While the size of the budget involves the value judgment of how much is medical care worth, this is appropriately a political decision that should be made in a context of considering other major needs and sectors as well. Politics do not necessarily result in the wisest decisions, but they provide the proper forum for the necessary public discussion.

Health professionals, in contrast, are best prepared to assess, given a budget, how it might reasonably be allocated to achieve desired objectives for a defined population. There is no assurance that they will do it well or in a manner divorced from their particular interests, biases and preferences. But their judgments, however colored by their special perspectives, are still preferable to those established in some uniform way by bureaucratic officials far from the scene of action and who can abstractly divorce themselves from the pain, worry and uncertainty associated with serious illness and incapacity.

The inappropriateness of current payment mechanisms is due not only to their distorting qualities, but even more to their specific biases in favoring hospital care to outpatient services, technical to cognitive approaches and heroic curative efforts to efforts to promote functioning and morale. Fixed budgets are no panacea, and will not do away with ingrained preferences to solve the esoteric, overcome the difficult challenge, or to be intrigued by the more interesting or attractive patient. But the constraint of such a budget demands managerial and professional consideration of a more cost-effective mix between physicians and other professionals, and a better opportunity to balance some medical social services and other essential human services against costly and sometimes inappropriate technical ones.

The goals and prescriptions I have described are difficult, but neither radical nor impossible. The pressures to protect the economic position of the rapidly increasing corps of physicians will encourage the most blatant protectionism and reactionary stances to innovations in organizing services and in the use of non-medical practitioners. Physicians, resisting the intrusions on their autonomy by large corporations and hospitals on the one hand, the increasingly powerful competing health professional groups seeking to maintain and enhance their positions on the other, may not be models of reason in the unfolding public debate.

The fact, however we disguise it, is that American health care is now predominantly a publicly financed activity with major economic, social and political ramifications for all of us. It increasingly competes with much else we value in the context of a zero-sum society. The public that pays the bills would be foolish to allow those who collect the purse to establish the objects of the enterprise or the framework of the impending debate. To borrow a phrase from the late Rene Dubos, I would describe myself as a despairing optimist on these issues. The powerful interests are clearly evident and I'm not foolish enough to see a resolution coming easily. But I know that if the many talented and dedicated health professionals and other important actors in this arena make the effort to achieve an equitable and responsive solution, American health care can be the envy of the entire world.

The Effect of Recent Social and Economic Changes on the Needs for Health Manpower

John R. Hogness, MD
President, Association of Academic Health Centers

As has been true of many professional disciplines, the health care industry is changing in response to today's new and different societal demands. To appreciate fully our present situation, it is helpful to identify some of the major trends and developments which have influenced the way in which health services have been provided and then to take a look at those social and economic factors which are going to redefine the system in the future.

The expansion of health care services began in the late 1950s and early 1960s, stimulated by the general growth in the health insurance industry, the public's perception that shortages of health care personnel had developed, and the operation of some of President Johnson's "Great Society" programs. In 1963, the Health Professions Education Act was passed, providing for matching grants to assist in the construction of teaching facilities for schools of medicine, dentistry, osteopathy, public health, optometry, pharmacy, podiatry and nursing. It was this singular piece of legislation which marked the beginning of the federal government's steady and growing commitment to the alleviation of shortages in the various health professions.

This Act was amended in 1965, the same year which saw the passage of Medicare and Medicaid legislation, to create a program of grants for health professional schools which agreed to increase their enrollments. Additional measures to provide incentives promoting increased enrollment in health professions education followed in rapid succession in the 1960s and 1970s. Along with the well-known programs administered by the Department of Health, Education and Welfare (now Health and Human Services) came overlapping and complementary funding for health manpower enrollment, provided by the Department of Defense and the Veterans Administration.

In 1971 a new type of assistance formula, known as "capitation," was introduced. Health professional schools were authorized to receive grants on the basis of the number of students enrolled in their programs. This legislation sparked a controversy between those who questioned the existence of true shortages of trained personnel, characterizing the problem, rather, as one of poor distribution geographically and by specialty, and advocates of a larger professional work force. It was not until 1982 that the dispute was resolved by the almost complete elimination of the capitation support limits.

By 1980 there could be little doubt of the success of federal programs designed to stimulate and expand health professions education. A report to the President and the Congress on the status of health professions personnel in the United States, prepared that year by the Department of Health and Human Services, noted increases in the numbers of professionals in all categories, including physicians, dentists, pharmacists and veterinarians. The study concluded that not only was the projected supply of doctors of medicine adequate to meet the nation's overall needs, but it might well be in excess of demand by the 1990s. Similarly, the study indicated, the supply of dentists projected to 1990 was more than sufficient to meet the country's probable demand.

Significant Factors

It is against this background that the forces for change in the delivery of health-related services emerged. The creation of a surplus of trained personnel has had a major impact, to be sure, but it is necessary to take into account a number of other significant factors. The pressure of increasing costs of the services provided has led to attempts to make their delivery more efficient and cost-beneficial. Third party payers and employers who previously may passively have paid for health care expenses have now begun to intervene directly in the medical care process. The result has been a shift of power from individual patients and practitioners to collections of individuals served through the purchase of medical care by large-scale buyers. Employers now encourage limited choice plans and private firms now monitor admissions to hospitals and the duration of hospital stays.

There has also been a proliferation of new payment arrangements, whereby prepayment and prospective price setting have replaced the traditional notion of a fee paid for an illness diagnosed, treated and alleviated. One has only to consider

Medicare's DRGs (Diagnostic Related Groups) and the continued growth of health maintenance organizations (HMOs) and preferred provider organizations (PPOs) to appreciate that both government and private industry are attempting to keep the costs of health care within bounds by creating new cost-limiting and competitive mechanisms for dealing with the needs of potential patients.

The current surplus of both doctors and hospital beds has produced a willingness on the part of both physicians and institutions to compete with one another and to try more flexible approaches to the providing of health care. We know that hospital occupancy is declining, as are visits to physicians. Physicians' incomes have begun to fall, perhaps due in part to the rise of organizations offering preventive medical care, designed to attract consumers by making it unnecessary for them to require the services of doctors quite so often.

The Changing Practice of Medicine

As a result of this new competition and of the need to control costs, the practice of medicine itself is changing. There has been a strong trend towards the industrialization of the professions, coupled with a decline in its ability to control or to resist basic alterations in the ways in which a physician treats patients. Doctors have been able to maintain less professional autonomy and medical practice is veering away from the emphasis upon a personal relationship between the doctor and the patient. This means that we can expect that more and more physicians will feel it necessary or desirable to affiliate with larger health care organizations, especially as these continue to achieve greater familiarity and acceptance. From 1980 to 1983, for example, the number of doctors involved in HMOs increased by 40 percent. The advent of the storefront clinic for the treatment of emergencies and short-term medical conditions, staffed by a rotating group of professionals, also points towards a gravitation to group practice.

The impact of all of these trends on the state of the health care industry may perhaps best be understood by reference to five essential conclusions, drawn recently by Dr. Jerome Grossman of the New England Medical Center, from his observation of recent developments. First, we have moved from the concept of health care costs to one of health care price. Spurred on by the acceleration in expenditures for health care, the Administration and the Congress have introduced numerous proposals to contain rising costs, especially hospital costs, which are the major component of this country's spending for health care. Efforts have been directed both at reducing the size of the bill and at minimizing the utilization of services. A serious attempt has been made to stem the process of reciprocal reinforcement, whereby higher and higher charges for care and treatment have created pressure for more and more comprehensive third party insurance coverage, and expanded coverage in turn has permitted hospitals and physicians to provide even more costly services.

In 1983, in response to this state of affairs, Congress enacted legislation providing for the prospective payment of hospital bills under the Medicare program. The government will no longer pay for health services and costs on a strictly reimbursement basis, designed to cover all aspects of hospital admission and stay. Instead, a specific price has been attached to admission for each specific diagnosis. This classification system, known as Diagnostic Related Groups, or DRGs, now assures that, subject to certain adjustments, all hospitals are paid the same amount for treating a Medicare patient with a given diagnosis. This has exerted a downward pressure upon prices and has caused some cutting back on services determined not necessary to the successful recovery of the patient.

Secondly, there has been a shift in the administration of health care assistance funding from the federal government to the state and local level. Funding in the form of block grants permits decisions to be made by officials closer to local needs and requirements. A proposal presently under consideration by the Congress would remove funding for graduate medical education from the Medicare Trust Fund and transfer it in the form of a block grant to the states. States would ostensibly be given much greater flexibility and discretion to decide how best to expend this money in terms of local needs, so that priority would be given to local, not to national, considerations. Local decision-making will emphasize the setting of local goals for health services manpower development and training.

Thirdly, we are moving away from a health care system oriented towards its providers to one which will be heavily influenced by consumers. Previously, physicians determined the quantity and prices of services rendered, including what was advisable in terms of treatment, medication and hospitalization. The pressures of high prices and the loss of autonomy by physicians, however, have now contributed to a growing consumer consciousness of the economic implications of each health care purchasing decision. The public wants the maximum possible degree of care for the lowest reasonable cost. This, coupled with the cost awareness of the insurers, has forced the industry to develop alternative methods for the delivery of health care, to assure availability of a quality product at a competitive price.

Closely related to these considerations of greater consumer power over health care systems is the fourth development which we should note. The practice of medicine and related specialties has moved away from its former characterization as a cottage industry to more of the aspects of a corporate organization. Typically conducted in a setting providing multipurpose health care delivery systems, new modes of practice may involve large partnerships or professional corporations, or newer approaches such as health maintenance organizations, for-profit hospital chains, physician-owned prepayment systems and walk-in clinics. Alternatives to individual practice will become increasingly available to persons involved in health care services.

A fifth and final development which has emerged in the recent past has already been mentioned several times. It is the existence of an over-abundance of health care personnel, at least in some specialties. We have moved from shortage to surplus. The response of government to predicted acute personnel shortages, providing large grants to educational institutions to train more and more students in the health professions, has brought about surpluses in virtually all medical and surgical areas of expertise. This, in turn, has produced increased competition for the consumer, which has led to the rise of alternative delivery systems, especially those which primarily focus on prevention, rather than treatment.

It seems clear that as the influence of these five developments continues to grow, the health care industry must appro-

priately respond to each of them. The responses devised will set the direction of health care manpower policy for years to come. Let's review the manpower implications of some of the considerations of which I have been speaking.

Manpower Implications

The federal government's decision to replace reimbursement of all medical costs incurred by some beneficiaries with a system of set prices for specified care may mean that non-physicians will be performing more services, at lower overall cost, than was the case when all expenses were covered under Medicare. New and less costly approaches to prevention and treatment may require a somewhat different focus in the education and training of such personnel. In addition, efforts to divorce federal grants for medical education from the Medicare Trust Fund hold serious implications for future funding of these programs. If a system of medical education block grants is created, available funding for this education will depend largely on how each state perceives its own requirements, problems of distribution and fiscal situation.

As local governments more and more control funding for the provision of health care-related services, the market for practitioners will become determined in large part by conditions in each jurisdiction. As these will vary from place to place, it may develop that certain specialties will be at a greater premium in some areas, and it can no longer be assumed that the need for professionals in any given discipline will be constant from place to place, or that funds for their education will be disbursed according to any universal system of priorities.

The movement from provider-controlled to consumer-dictated health care will see a demand for different kinds of services. Wellness-oriented and prevention-directed programs will demand health professionals of a different background, but not necessarily new physician specialties. Other health practitioners may soon be doing even more of what doctors of medicine formerly considered their exclusive territory. There may arise an increased demand, for example, for nurse practitioners.

As corporate structures for the provision of health care become more common, they will increasingly define the type of health professionals they wish to employ, factoring in considerations of cost which may make non-physician professionals more attractive than ever before. The non-physician health practitioner may be more in demand by these corporate entities. It also appears that in the future an increasing number of doctors will of necessity be drawn into service in these corporate organizations. This movement toward the corporate structure constitutes the first of two major opposing forces which will shape the nature of health manpower needs in the future. The second force is the increased supply of physicians which past training policies have produced.

It is the tension between these two forces which will produce the changes in the health care industry that we can expect to see develop. With a more than adequate supply of doctors, and admissions to hospitals dropping, pressures will arise for doctors once again to perform duties which have recently become the province of nurse practitioners or other non-physician health professionals. On the other hand, there will be a continuing effort to contain costs, while at the same time providing for quality services. The tremendous increase in corporate structure and organizations will be defining the kinds of entities and health care professionals which will most be needed. This may mean that cost-effective care will demand more people whose training is somewhat less extensive than that of the specialty-practicing physician. More health care is needed at reasonable cost. Fewer physicians may be needed. I believe that this latter force will outweigh the forces resulting from increased physician supply.

Every two years, the number of persons enrolled in prepaid medical systems or health maintenance organizations doubles. The strong movement toward corporate care will mean that there will be more opportunities for the type of physician who likes to work in a group setting and to keep more regular hours. Even more significant, however, are the implications for the non-physician professional. The rise of the corporate mode for delivery of services and the need to contain costs will work to expand the market for the trained health services professional who can adapt to the organizational setting and the demands of the new directions in health care in the 1980s and beyond.

Demographics and Health Care Delivery

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In the next few minutes, I will be providing one perspective on the demographics of health manpower and its projected impact on the provision of health services.

This is a particular challenge, insofar as the variations of scenarios are legion, and at 9:00 a.m., it is a bit difficult to maintain audience attention without each of us having a cup of coffee in hand.

Dr. Hogness has, by modifying his topic, created a fertile environment for this symposium and discussion, since my comments provide another person's perspective on similar issues. What I will be observing certainly supports his remarks and indicates that there is 100 percent consensus on some issues, or two out of the first two speakers today.

Nonetheless, what about the size, density, and distribution of health care providers, and what are the implications for health care delivery?

The latest *Report to the President and Congress on the Status of Health Personnel in the United States* (May 1984) states that the nation's supply of health care providers has continued to rise, both in absolute numbers and in relation to the population.

For example, over the period 1970-1982, there has been a 43 percent increase in physicians and an 83 percent increase in registered nurses (RNs). Since 1980, podiatrists, RNs, and veterinarians increased at a four percent annual rate, while other health care occupations generally averaged a two percent annual increase. Primary care physician assistants (PAs) increased by 117 percent from 1978 to 1982, from 6,000 to 13,000.

Nevertheless, of much greater import, for several years now—particularly since the GMENAC report in 1980—the health care industry has been anticipating the projected "oversupply of physicians."

According to the needs based model of GMENAC, by 1990 there will be an excess of 63,000 physicians, although a more conservative estimate derived from the demand based model of DHHS's Bureau of Health Professions estimates that this oversupply will be in the magnitude of 35,000.

Under current conditions, because the PA profession is tied inexorably to the MD profession, due to its absence of independent licensure and its relationship to MD supervision, the future of PAs is directly linked to developments in the physician supply and practice mode, since PAs can only be where MDs are. This is both risk and opportunity.

The projected oversupply of physicians is even now manifesting an impact, as U.S. medical schools, both allopathic and osteopathic, are producing over 19,000 new professionals annually; U.S. citizens in numbers which cannot accurately be determined are returning home with newly earned M.D. degrees from foreign medical schools; and to a much lesser extent, alien foreign medical graduates enter the U.S. for graduate training or permanent residence.

With this increasing supply, we are seeing a diffusion, or geographic dispersion, of physicians into areas to which they have hitherto not moved. A recent working paper from the Bureau of Health Professions' Office of Data Analysis and Management supports this hypothesis, in finding that "changes in the geographic distribution of physicians at the county level over the last 10 years are clearly consistent with expected patterns of diffusion, when changes in physician specialty composition are taken into account."

This is true for office-based primary care physicians as well as other specialists, although the phenomenon is occurring more slowly for the former, in counties with less than 25,000 inhabitants.

Studies by the American Academy of Family Physicians are consistent with this observation, with family physicians distributing roughly in proportion to the nation's population.

Nonetheless, there is another side to the health care system equation, the population that we health care providers serve. It is also in a state of marked evolution, with resultant demographic shifts so significant that a recent Institute of Medicine colloquium regarding America's health enterprise in the late twentieth century noted a generic heightened perception of "change," with a "population momentum."

While fertility rate is 1.8 children per couple—a little below

replacement level—an immigration rate contributes 20 percent to our total growth, and marked improvements in medical science and technology have increased life expectancy. This latter has resulted in a growing proportion of elderly in our population.

To reassure us that these trends are not mere statistical manipulations in the medical literature and are also noted in the more profane literature, a recent article in *U.S. News and World Report*, commenting on our "maturing society," states that for the first time in U.S. history, there are more people 65 and over than there are teenagers. By 1990, the number of older citizens is expected to exceed 31 million, while the teenage population shrinks to 23 million.

Furthermore, as a result of the baby boom of 1946-1964, the number of people between 30 and 44 is projected at 60 million by 1990.

This population is, as a whole, better educated and healthier than ever before, with the capability to live a fuller and more active life.

In discussing demographics and the provision of health services, however, one cannot overlook the modulators between the resource of health manpower and the population that resource is to serve.

Scientific knowledge and advances in treatment have now provided opportunities for prevention of disease and treatment of illness which heretofore could not have been imagined. The darker side of that opportunity, however, is the exploding cost of providing those services: from $27 billion in 1960 to $356 billion in 1983, or 11 percent of the Gross National Product.

The nature of health care financing is also changing drastically. Aside from the estimated 18 million Americans who lack any form of health insurance, both the public and the private sectors, in recognition of the logarithmically increasing cost curve for health, are imposing limitations on reimbursement for that care, with DRGs, cost caps, co-payments, etc.

Furthermore, there appears to be a clear evolution in the concept of social responsibility for health care, devolving from the federal level to states to county and to local levels. A harsh example is the state of California, which appears to be dismantling its state health department and transferring responsibility to county and local levels. And, interestingly enough, this further appears to be happening at all levels, on a nonpartisan basis.

Implications (and, if I may be bold, perhaps some veiled prescriptions):

Health manpower and the provision of health services are not ends unto themselves, but rather are means to an end—a healthy nation.

Society has a responsibility to provide an element of equity, as well as access, which can be defined in four broad areas:

- resource, or health manpower, access;
- geographic access;
- financial access; and
- cultural/demographic access.

With our current supply and projected oversupply of some categories of health care providers, health manpower access is fast becoming a moot issue. Our health professions schools, partially in response to federal incentives in the 1960s and 1970s, have increased their production of health manpower markedly. Unfortunately, what was a solution to a perceived problem two decades ago becomes a problem itself today, with the increased production contributing to the projected oversupply.

With the increase in numbers, and the concomitant diffusion of providers, geographic access appears to be waning as a major issue, although it still is a problem. A study by the Bureau of Health Professions projects a reduction in the number of counties with a population to primary care physician ratio greater than 3,000 to 1, from 1,154 in 1982, to 454 in 1994. Furthermore, the National Health Service Corps, a program designed to complement the private sector by providing health manpower resources to those communities of greatest need which could not otherwise recruit or retain a health care provider, anticipates nearly saturating the unmet need in those health manpower shortage areas by 1986, with placement of over 4,000 new health care providers between 1984 and 1986. Despite all these efforts, however, there will continue to be many pockets and areas of health manpower shortage requiring some continuing form of intervention that complements pure market forces.

Furthermore, increases in the numbers of PAs and nurse practitioners (NPs), who have tended to locate in areas which are not heavily populated, may also contribute to alleviating the problem of underservice and lack of access to health care in those areas.

Financial access continues to be a problem, particularly highlighted by efforts to contain and control costs. The downside concern on this issue is that attempts to contain costs may adversely affect quality of care and access.

Cultural and demographic access relates to special problems of particular population groups, including age, language, as well as culture. Perhaps the most visible in this category is the growing geriatric segment of the population. The just recessed Congress has recognized this need by authorizing special training funds for health professionals in this area.

In light of this change and flux, health care providers will find a need, as well as an opportunity, to alter roles. There appears to be an increasing economic imperative in the provision of health care, with concomitant shift of responsibility for decisions in health care delivery from the individual provider to the more amorphous and impersonal organization.

Financing issues appear to be taking a more dominant role in health care decisions, with the organization of health care delivery predicated more and more on the most efficient and cost-effective model. Institutions which have previously hired physicians as staff are experimenting with the less expensive PA, with, at least on early observation, little reduction in the character of the basic medical care.

Nevertheless, given that increased numbers of physicians are working fewer hours, there does not yet seem to be a marked reduction in fees charged, although that may yet occur as the marketplace becomes more saturated and competition increases. Similarly, physicians may likewise move to the PA/NP mode of group practice as the more cost-beneficial.

The opportunities for all professions are great in this multiple dilemma to identify the best model to utilize the best resource to deliver quality care efficiently at least expense. There will need to be a further breakdown of professional balkanization that has somewhat isolated the MD from the

RN from the PA from the NP, as collaboration and interaction enhance rather than inhibit certain practice models.

The professions will need to prepare not only for the present, but also for the future needs of society, looking at the demographic trends and projecting the health care requirements of the population of the future, for the particular needs of the aging in the natural, non-institutional environment as well as in long-term care facilities.

With increasing awareness of the impact of life style and health habits on health and longevity, the professions should be more cognizant of health promotion and disease prevention, despite the current financial dilemma that these activities for the most part are non-reimbursable services. Furthermore, the concept of community-oriented primary care is the logical extension of health on an individual basis in the context of the environment.

In this necessarily superficial overview, I have glossed over the constant evolution, not only of society, but also of the technology on which our health care system is based. Developments have made hitherto complex procedures relatively commonplace, with concomitant obsolescence of certain staff and skills. A perceived oversupply or shortage of a professional category can quickly become reversed based on technological advances. It is truly imperative that to plan for the future is not a one-time activity, but a continuously reiterative and reevaluative process.

In all of these considerations, however, I feel it is only too easy to get caught up in the consideration of the macro "system," and to lose sight of the true beneficiary, the true fiduciary — the individual.

I would summarize and conclude with a final observation drawn again from the IOM colloquium to which I referred earlier.

There are four principal trends that will affect the American health enterprise:

- a series of demographic shifts — age, family, structure — more dramatic than ever before;
- an explosion in scientific discovery and opportunity;
- an increase in the supply of health professionals which could stimulate new approaches to problems of cost, access, and the organization of health services; and
- an increasing awareness from providers and consumers that knowledge of personal health and self-discipline can assist in improving the quality of life.

It is a challenge to health care providers in general, and to this audience, the physician assistant profession, in this time of apparent contradictions to make the most of this opportunity rather than fall prey to the risks of these trends, to best address our common goal of a healthy nation.

Competition Among Health Care Providers and the Implications for Physician Assistants

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Not too long ago, competition would have been a strange subject for the president of a university to discuss. Traditionally, historically, competition has been the nature of things in the marketplace. Supply and demand, raising and lowering prices, staying in business against the odds—that's what competition is all about.

And now, lo and behold, I can come before you and talk about competition as someone who is aware of it and concerned about it, because competition has invaded a new marketplace, the field of health care, of universities with medical schools and hospitals. And supply and demand and staying in business against the odds are very much what the president of a teaching institution that trains health care providers and serves the community through its hospital concerns himself with.

Let me start with the nature of competition in the health care field by providing an overview of developments in recent years.

We are living in an experimental period in which management issues and reimbursement issues are undergoing tremendous restructuring. The hospital as the center of health care may be on the way out. It is being peeled, like an onion, layer by layer, until only the core may remain. By this I mean that many services traditionally provided by the hospital are becoming the province of free-standing institutions, such as renal dialysis centers, emergency centers, "in and out surgery" centers.

A major role in this splitting of services off the hospital is being played by the HMOs, for example, which offer the big buyers of health care the same services provided by hospitals, but at lower cost. The free-standing units are able to offer services more conveniently or more effectively without carrying the burden of a big institution.

We also see competition among hospitals these days. There is competition across state lines, for instance, which HMOs are quick to utilize. There is at least one HMO in Philadelphia which sends its heart surgery patients to Texas, where lower rates are offered.

Additionally, we see the inner-city, non-profit, academic health centers threatened with competition by suburban profit-making institutions with greater resources at their disposal.

In St. Louis, for example, four suburban hospitals entered into competition with the three inner-city academic health centers in the field of open heart surgery. As a result, St. Louis and its environs now have seven institutions offering open heart surgery, while the demand does not appear to justify the supply. The competitive atmosphere could result in a fight to increase each hospital's share in the market rather than retain excellence.

Suburban hospitals, furthermore, often are able to lure top physicians and surgeons away from the teaching non-profit institutions with considerably higher salaries and other financial inducements. This is posing a serious threat to the academic health centers.

The private health care corporations, such as Humana, pose a further competitive threat to the non-profit making hospitals. They, too, are able to offer top financial rewards to the medical staff with which the non-profit making institutions have no way of competing.

Some of the hospitals, however, are retaliating. They do not want to remain on the receiving end of the competition. Hospitals which are beginning to develop satellite clinics, community health facilities, health education programs, cardiovascular training programs, community outreach centers for CPR, essentially are offering a broader line of services than before.

Manpower Specialization

What impact does all this competition have on manpower in the health care field?

While competition is chipping away at the non-profit, inner-city hospitals, it is also creating new ways of using health manpower. In the last decade or two we have been seeing two trends. On one hand there is specialization, both among the physicians and the allied health professionals. For many years

we had operated in a system in which job structures were fairly concrete and relatively unchangeable. That is now behind us, due to the increased complexities of nuclear medicine, extremely sophisticated laboratory and diagnostic equipment, and advanced surgical equipment, among other developments.

Among the allied health professionals, we now have a whole range of specialists, from the respiratory therapist to the blood pressure therapist.

On the other hand, we have been moving toward development of manpower which would take over the easier part of health care from the physician, and often from the nurse, as the latter moved into specialties of her own. That is where the physician assistants came in. The PA program was conceived to train physician extenders, as a result of a shortage of physicians during the Vietnam War. The shortage was, and still is, felt especially in rural sections of the country. The experience of the Korean and other wars, in which medics played an important role as health care providers, formed the basis for the PA program. In brief, the PAs were to be the general practitioners of the future.

The nurses, too, moved into the area of extended services. The HMOs are a fine example of making use of specialized nursing skills. They use nurse midwives and nurse practitioners. Chronic maintenance visits are almost all handled by nurses, such as community health nurses. HMOs have used the equivalent of dental assistants as medical assistants for record taking, obtaining medical histories and various measurements. In almost every case the patient does not see the physician until the end stage, particularly in follow-up cases. They represent between 20 and 40 percent of a physician's practice, and at HMOs are almost all handled by non-physician personnel.

The use of non-physician personnel fits in very well with the trend toward competition, insofar as such personnel offer cheaper, yet effective, manpower. It follows another trend we are experiencing in this country: the increasing number of elderly persons with some kind of chronic condition who are ambulatory. They need ongoing care but they do not need intensive care, and they easily can be followed by non-physician personnel, either in the home or outside of it.

Hospitals, too, have been the scene of many shifts of tasks from nurses to other personnel, para-professionals often trained within the institution.

Having stated the many new uses for non-physician personnel, let me apply the competition issue to them. The fact is that the various types of allied health professionals are competing with each other in the marketplace of health care, both within the hospital setting and in the free-standing facilities. The fact that there are more opportunities for employment of non-physicians does not automatically afford an opening for physician assistants. For example, HMOs and hospitals may make little use of physician assistants, because there are so many other allied health professionals available in these settings. It is peculiar but true, that while the nurse's role on the hospital floor has shrunk, the physician's responsibilities have been transferred in part to non-physicians other than nurses, so that today the functions of both doctors and nurses have been reduced. The PAs, however, have not moved into that vacuum.

Partly this is due to the fact that unlike other allied health professionals, the PAs are generalists. Moreover, the physician assistants are in competition with physicians. If PAs were to be the general practitioners of the future, something went wrong with the scheme, because general practitioners are in sufficient supply from among medical practitioners.

In fact, this country is producing more physicians than we need. The Health Resources and Services Administration issued a report to Congress last July, predicting an oversupply of more than 35,000 physicians in 1990, just six years from now. An oversupply of about 51,800 physicians is expected by the end of the century. To this we must add physicians from foreign countries, who work in places such as state mental institutions and jails, where American doctors prefer not to work.

The physician assistant program was conceived as training generalists because they were to work in non-institutional settings. They were to be the first line of encounter in rural areas where there exists to this day a shortage of physicians. They were to provide home care and other care, under extended supervision of the physician. That was the concept. And PAs who wish to work in rural settings will be welcomed there with open arms. In New Mexico, for example, there is not a single physician in five counties.

In fact, while we have sufficient physicians in this country, it is not clear, really, if we have sufficient primary care. There are millions of untreated upper respiratory infections, sexually communicative diseases, and a host of chronic conditions which either go untreated or are not well treated, because a physician's care is too expensive and the patients simply make do without medical attention. That is an area in which physician assistants could develop their own niche, because their services cost considerably less than those of the doctor.

In addition, the physician assistant's role must undergo evolution. If the change in the structural form of institutions is a drive to reduce the centrality of hospitals, the role of the physician assistant also must change. It would appear as if the growth which is occurring in our industry, and the places in which allied health professionals find employment, occur in settings for which the physician assistant's role had not been planned. The physician assistant also could be utilized as an extension of the doctor for home visits in inner cities. But this is not happening either. A recent check of the Yellow Pages of the Philadelphia telephone book produced six-and-a-half pages of advertisements for home visits by nurses, but not by a single physician assistant. Home visits are a service to which physician assistants are particularly well suited. Now the PAs must sell this message to the doctors, who would profit by extending their practice with the help of PAs, whom they would supervise. Otherwise the PA will run the risk of being trained for a very limited market.

Future Implications

Having examined the recent past, let me venture, in conclusion, into the near future. With the intense competition among various kinds of health care providers, whether they are institutions or types of trained individuals, what can we expect the forces of competition to have done to health care by the end of the century?

We can expect the average cost of a day in the hospital to be much higher than now. But overall hospital expenditures,

on an age adjusted basis, probably will represent a smaller share of the health care dollar.

We shall continue to see a proliferation of health care related institutions other than hospitals, such as HMOs, health retirement communities with their own clinical support services, free-standing ambulatory clinics and the like.

We can expect that every type of service now provided by hospitals which can be offered by other institutions not regulated the same way as hospitals, will be separated from them. We can expect this to happen in two ways: entrepreneurs will build the free-standing units which often will be more efficient, better run, and make money. The other way in which these units will proliferate is by hospitals that wish to survive jumping into the fray. Hospitals may well become part of their own health corporations, or join forces with existing ones, by providing their own free-standing services.

I am not sure this is all for the good, and that when all is said and done, the American people will be any healthier, or less strapped to pay the cost of health care. Or that a greater share of the poor won't fall between the cracks and receive little or no health care at all.

And then there is the question of the quality of health care. Will it stand up under the pressure of competition and cost cutting for the sake of profit making?

I raise these questions for you to ponder—you who will be in the thick of it all.

A House of Cards: Observations on the Vulnerability of the Health Care System

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Our health care system serves most Americans very well. Most of us have deep insurance coverage and easy access to the health care provider of our choice. We pay little out of pocket for health services and we worry little about the effect rising health care costs have on our access to care. Most of us are satisfied with the quality of care that we receive and the relations that we have established with physicians, hospitals, and other health care providers.[1]

To be sure, we readily complain when asked about the cost of health care services.[2] But we complain also about the cost of cars, housing and food, and seem only dimly aware of significant changes in inflation rates unless they persist over several years. Because we are constantly told that it is the case, we believe health care costs are a problem. But our attitude toward this problem depends greatly on the question that we are asked. If asked to rank national problems, we usually place health care costs far down the list. If asked if we wish to increase taxes or to alter our patterns of care to solve the health care cost problem, we more often than not say "no" to both alternatives.

The failure to control costs aside, our health care system seems to be quite effective. We are healthier than we used to be, although we are reluctant to admit it.[3] The heart disease and stroke death rates have dropped precipitously. The infant mortality rate is down and the cancer survival rate is up. Americans live longer, healthier lives. How much of this good fortune is attributable to our health care system is of course quite uncertain, but at least some of it must be.[4] Infant intensive care units prolong lives; so, too, does expensive chemotherapy. Even the doubters do not pass up the ambulance ride to the cardiac unit when stricken. Perhaps the health care system mostly offers reassurance and palliative care, but clearly we want this as well.

The system that we like so much, that we do not wish to change, and that may even be efficacious, stands in jeopardy. There is no more complex social structure than our health care system. Tens of thousands of insurance plans underwrite the care delivered to tens of millions of people in tens of thousands of settings. Cross subsidizing abounds. The young subsidize the old; the rich, the poor; Westerners, Easterners; the childless, parents; and so on, in patterns that sometimes contradict and sometimes reinforce. Hospitals are managed for profit, for God, for community betterment, and for professional prestige, often simultaneously. Physicians practice alone, in small groups, in large groups, and as employees of public and private bureaucracies. We pay for health care directly and also indirectly through many different taxes and nearly every time we buy a good or a service.

Somehow the system hangs together, although precariously. It is a house of cards threatened by every participant's search for permanent advantage. However, the search for permanent advantage is precisely the theme underlying the continuing, if not yet successful, effort to contain health care costs.

Beggar Thy Neighbor

There is a health care cost problem and it is largely governmental. Government has most of the expensive patients—the elderly, the disabled, the victims of end stage renal disease, and the poor. In contrast, the private sector takes care of workers and their families, the healthy portion of the population. With responsibility for less than 25 percent of the population, government is burdened with over 40 percent of the costs. Unlike the private sector, which can usually pass on most of its health care costs to consumers through nearly invisible price changes, government finances care through taxes that are highly visible and that meet organized resistance.

After futile attempts to control its health care costs through the regulation of capital and manpower inputs, government now seeks relief through the regulation of prices health care providers charge for services rendered to government beneficiaries. The Medicare program is implementing a prospective payment system for hospital reimbursement that utilizes fixed fees based on diagnosis classifications. Several state governments have followed suit by adopting Medicare's pay-

ment system for Medicaid reimbursements. The freezing of physician fees is more of the same strategy.

Government dictated prices have to be accepted because government controls such a large share of provider revenues. But providers can compensate for these mandated discounts by shifting losses incurred in serving government beneficiaries to the many private payers of health care services. The advantages government obtains from providers become the disadvantages other payers of health care face.

Some private payers also possess market power, especially the large firms with geographically concentrated work forces and insurers with significant localized market penetration. They now are beginning to demand discounts from providers in order not to fall victim to the providers' compensatory strategies. So, too, are health maintenance organizations with growing client bases and local governments with large work forces. The losses providers sustain in turn will have to be shifted ever more onto the smaller employers and insurers, those market participants that are price takers rather than price makers.

A Chain of Victims

Small employers and insurers are not the only victims of this beggar thy neighbor strategy. Not all hospitals have sufficient private clients to absorb the losses sustained in meeting governmental demands for price advantages. Especially vulnerable are inner-city hospitals that carry the burden of serving the uninsured and that often maintain expensive teaching programs.

These hospitals (and many others as well) are also threatened by the wave of consolidation that is occurring. Groups of non-profit and profit-making hospitals are being formed, in part to gain economies of scale in purchasing and management, but also to market services to the most attractive clients, suburbanites with private insurance coverage. Efficiency improvements, if achieved, are desirable and easily countered through buying consortia and the like. More problematic is the skimming of profitable clients which will add to the burdens of hospitals that by virtue of location, ownership or philosophy cannot avoid unprofitable clients. Such hospitals are likely also to be at an increasing disadvantage in securing new equipment and replacing physical plant, given a growing reliance on private capital markets.

Worse yet, discount seeking payers encourage the skimming of patients from hospitals by various entrepreneurial ventures such as those that create chains of day surgery clinics and emergicenters. Fed by the growing surplus of physicians, it is becoming easier and easier to promise payers bargains by providing services in specialized settings unencumbered by the reserve capacity and costly overheads needed to maintain tertiary care facilities. Bargains for some, no doubt, but this pattern of stripping away profitable clients destroys the complex web of cross subsidies that in large part supports teaching and services for the poor and those with rare or expensive illnesses.

Providers need to become more efficient and probably would not do so without the motivation for self-preservation that only competition can engender. Nevertheless, there are necessary services that the market cannot adequately support. In our current health care system, they are financed either directly by government or through the concealed taxes of cross subsidies extracted from private payers by providers. But when government and the private payers that can become "prudent buyers" do so, these necessary services can only appear as bankruptcy losses on the books of hospitals and other providers of care that are too weak, too ill informed, or too committed to defend themselves.

Picking Up the Pieces

Of course, it is possible that the trends described will be reversed before significant damage to the health care system is done. Although not all the victims have political influence, some do and might be able to force sufficient modifications in government and private policies to restore most of the existing subsidies. Certainly the major teaching facilities are well represented politically and will seek exemptions for themselves from the harshest features of price competition. Similarly, religious affiliated institutions, unions, and various champions of the poor might mobilize to protect their interests. While the rhetoric of a competitive world is very much with us, not much yet has actually changed. The Medicare system is still being phased in and few employers have exercised the preferred provider option. A reversal of trends thus would not be very wrenching to achieve.

But it is also possible that we will see a multi-tiered health care system established, structured around a patron's willingness to pay. Some, most likely the poor, will have the most limited services in the most austere settings. Others, perhaps the elderly, will have a broader range of services with a few amenities. Still others, surely those working for the most successful enterprises, will get the room with the view plus choice of entree and physician. We get our housing that way; why not our health care as well?

Finally, it is possible that the various payers of health care services will recognize their common interests in controlling health care costs and seek a mutual accommodation. Together they might agree on health care prices and the range of health care services to be made available. Instead of permitting providers to play one payer of health care services against another, they could unite to impose restrictions upon the providers of care. Surely there will be consequences for consumers. Most of us that have done well under the current arrangements will be less well off. Others will do better. Free choice of provider will be restricted, as will the availability of specialized services. Some will be able to buy their way out of the restriction, but most will not. There will be more equity, but less freedom of choice.

My own vision of the future is that we will pursue the multi-tiered model and then recoil from it as we discover the significant inequality it will produce. More importantly, perhaps, many health care providers will find the rigors of competition intolerable and petition for relief. The price extracted to guarantee their survival will be to impose restrictions on their behavior that will inevitably become restrictions on access for consumers. What we will see is an unravelling of the health care system and its reconstruction into a form that is less convenient and responsive than it is now for the majority.

Some may say that I am ignoring one important option, that providers reform themselves. It is argued that if providers avoided unnecessary admissions and wasteful treatments,

significant resources could be saved without harming access or real quality.[5] Nowhere in recorded history, however, can one find evidence of such professional self-discipline. As George Bernard Shaw once said, "Professions are a conspiracy against the laity."

In fact, if one looks at the experience in other countries — Canada and Great Britain, for example — successful cost containment only begins a long struggle with the professions to improve the efficiency of health care delivery. Professionals more readily accept stringent budgets than they do efforts to reform practice and entrenched organizational norms. Other countries have held the line on health care costs, but they have not gained control over the distribution and use of health care services. We may hope for a better fate, but should not expect one.

References

1. Robert J. Blendon and Drew E. Altman, "Public Attitudes About Health-Care Costs: A Lesson in National Schizophrenia." *N. Engl. J. Med.* (August 30, 1984): 613-616.
2. *Ibid.*
3. Aaron Wildavsky, "Doing Better and Feeling Worse," *Daedalus* (Winter 1977): 105-123.
4. See Reuel A. Stallones, "The Rise and Fall of Ischemic Heart Disease." *Scientific American* (November 1980): 53-59; William B. Kamel, "The Meaning of the Downward Trend in Cardiovascular Mortality," *J.A.M.A.* (February 12, 1982): 877-880.
5. See John E. Wennberg, "Dealing with Medical Practice Variations: A Proposal for Action." *Health Affairs* (Summer 1984): 6-32; Phillip Caper, "Variations in Medical Practice: Implications for Health Policy." *Health Affairs* (Summer 1984): 110-119.

A Union View of the Health Care Problem

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A history of the U.S. health care system would show that the medical profession has come a long way from the horse and buggy days of the previous century. As the technological base of modern medical practice has become increasingly complex, the educational requirements demanded of medical professionals have grown to keep pace. An integral part of this process has been the accelerated specialization of medical practice — today the general practitioner is an anomaly and the highly trained specialist is the norm.

The economics of high technology medicine has provided the impetus for the growth of mid-level professions and nothing has been more illustrative of this trend during the last 15 to 20 years than the development of the position of "physician assistant." This accelerated technology has provided American workers with many nearly miraculous advances, but it has not come without cost. The future of the U.S. health care system, including physician assistants, will be shaped by a complex of economic, social and political factors.

Over the last decades, the health care sector of our national economy has grown to become a dominant factor, second only to the food industry in the share of our Gross National Product that it absorbs. Soaring medical costs are erecting barriers to the health care system, bankrupting Medicare's hospital insurance fund, presenting serious obstacles to orderly collective bargaining, driving up U.S. labor costs unfairly in contrast to other countries, and generally harming our economy by soaking up too many of our scarce economic resources.

A brief consideration of U.S. Department of Labor statistics indicates that the situation has gone from serious to critical in the last 20 years and that the outlook for the immediate future is becoming increasingly bleak:

- In 1982, Americans spent a total of $322 billion on health care. This was up 12.5 percent from the 1981 health care expenditure of $287 billion. The 1982 figure is nearly four times the $83 billion that we spent in 1971 (when we were already complaining about high health costs), but pales before the $756 billion projected to be spent on health care in 1990, just six years down the road.
- Since billion dollar figures are difficult to comprehend, consider the fact that a study reported in the March 1983 *Health Care Financing Review* estimates that the 1982 U.S. average per capita health care expenditure of $1,365 will balloon to a staggering expenditure by 1990 of $2,982 for every man, woman and child in America.
- Health care inflation has increased health costs at a pace much faster than the general inflation rate. In 1983, for instance, the medical care component of the Consumer Price Index (CPI) rose by a factor 70 percent greater than the overall CPI.
- Since costs in the health care sector have been rising at a pace much faster than the general inflation rate, we are devoting more and more of our Gross National Product (GNP) to health care. In 1966, health care accounted for only six cents of every dollar spent; by 1971 the health care share was up to nearly eight cents; that proportion rose to nine cents by 1979; and now the share is more than a dime out of every dollar spent and is projected to increase to 12 cents by 1990. This amounts to a doubling of the share of our resources devoted to health care in a 25-year period.
- The Labor Department has noted that U.S. corporations' annual payments for health insurance premiums have more than doubled since 1972, from $33 billion to $78 billion. Further, the U.S. Chamber of Commerce estimates that companies are paying an average of $2,000 a year per employee for health care, up from $1,250 in 1977.
- Hospitals eat up the lion's share of health care expenditures. Of the $322 billion spent in 1982 on health care, $136 billion, or 42 percent of the total, went to hospitals. Physicians' fees accounted for $62 billion, or 19 percent of the spending. (Note, however, that physicians make decisions that account for at least 70 percent of the spend-

ing.) Total hospital expenditures are expected to reach $197 billion in 1985 and $340 billion in 1990.

- The "graying of the population" is a significant, but not the major, cause of the problem. The population 75 years of age and older is projected to increase four times faster than the population of persons under age 65, leading to upward pressure on expenditure growth.
- A comprehensive review of the first 10 years of Medicare has revealed that the unprecedented increases in the cost of Medicare were not caused by excessively large increases in utilization, but rather by increases in price or unit cost of Medicare services. Medicare's Hospital Insurance (Part A) program has experienced annual increases in costs that are almost seven times greater than enrollment increases and six times utilization increases.

In light of this crisis environment, many employers are pushing for drastic cutbacks in collectively bargained health care benefits. Working men and women have fought hard to win adequate protection against the high cost of getting sick, but if these employers have their way, workers will find themselves paying higher and higher out-of-pocket costs and may even find some of their basic coverage for preventive care, diagnostic testing, prescription drugs and dental care dropped altogether.

The usual argument that these employers present at the bargaining table is that workers are over-insured and thus over-utilize the health care system, driving up health costs in the process. Recent studies published under the auspices of the Rand Corporation have frequently been cited to justify cost-shifting on the grounds that such cost-shifting will help put a lid on health care's escalating costs by deterring over-utilization of health care services. The Rand studies may be excellent examples of complex data manipulations, complete with multiple regressions and path analyses. However, human behavior cannot always be simplified to conform to mathematical models, and there is nothing gained by imposing linear relationships on what are often non-linear realities.

The labor movement is, of course, intensely interested in controlling health care inflation, but it is also responsible for protecting the negotiated health benefits of our members. It resists mindless cost-shifting because there is awareness of the dangers that the mathematical models fail to grasp. The principal arguments in opposition to cost-sharing can be summarized as follows:

- The principal effect of cost-sharing is to transfer the cost of services directly to the patient from the carrier, not to control increases in unit price.
- After the patient makes the decision to go to the doctor in the first place, virtually all decisions about what services are to be provided are made by doctors. Providers decide what services are necessary, not consumers.
- The greatest increases in health care costs in recent years have been in the hospital sector. Yet patient cost-sharing has been shown to have even less impact on the use of hospital services than other kinds of health care.
- Patient cost-sharing places additional obstacles to access to care by lower income persons. Numerous studies have shown that the burden of cost-sharing falls inequitably on the poor and minorities. The Robert Wood Johnson Foundation recently released a special report which indicates that access problems are as serious as ever.
- It has been demonstrated that when deductibles and co-insurance are a substantial enough burden to reduce utilization, they do so by discouraging needed care as well as unneeded care. Deferring needed care often results in the worsening of a condition leading to a necessity for even more elaborate and expensive procedures.
- Cumbersome procedures for calculating and collecting patient payments increase administrative costs. A national survey of Blue Cross and Blue Shield plans found strong consensus that co-insurance and deductibles amount to an administrative nightmare.

Clearly, increased cost-shifting to workers and other consumers of health care will not solve the problem created by health care cost inflation. And just as clearly, the rapid escalation in the cost of health has spawned an ever-growing obstacle to union efforts to reach fair collective bargaining agreements. At General Motors, for instance, the cost of health care premiums is now well in excess of $2.00 per hour worked. These excessive health care costs come out of the workers' pockets because the money GM and other companies devote to health insurance could otherwise be spent on higher pay or other benefits.

Given the strong belief in the free market system which permeates much of our culture, it is not surprising that certain proponents of the expansion of the for-profit sector of health care are touting this as the miracle elixir that will cure this nation's problem of runaway health care costs by introducing new capital, supposed efficiency, and economies of scale to the health delivery system.

Far from being a panacea, the fast growth of the for-profit sector is a threat to the health interests of this nation and its workers. For-profit corporations have long been involved in health care, but their entry into "hands-on" caring sectors too often has been characterized by poor and even criminal performance. The scandalous experience with for-profit nursing homes is a case in point. While nursing homes have made lucrative profits, often as a result of kickback schemes from pharmacists and doctors and shady deals involving shadow corporations, patients all too often have been warehoused with minimal care and attention. For example, the Service Employees International Union (SEIU) has documented the excessive overhead costs and inferior quality of many nursing homes owned by the proprietary chain, Beverly Enterprises.

The experience of for-profit prepaid health plans under the California Medi-Cal program in the mid-1970s, during the administration of then-Governor Reagan, serves as a shocking lesson to the nation. A number of outfits obtained a large percentage of Medi-Cal dollars in the form of administrative expenses, supposed risk reserves, profits, and, in some cases, through outright fraudulent practices. In the meantime, patients received few services. Often, care was given which was less adequate than in the hospital clinics and emergency rooms which previously were the major treatment sites. The situation eventually was cleaned up by government intervention and criminal indictments.

For-profit corporate hospital chains may avoid some of these more horrendous pitfalls, but they are subject to many of the same conflicts that generally make the profit motive incom-

patible with the delivery of compassionate and high quality health care. The potential negative impact on the health care system becomes all the more apparent when one considers that the trendline of the growth of for-profit chains points to their potential domination of health care services.

Prior to 1960, corporate involvement in hospital proprietorship was virtually unknown. Since then, the remarkable growth of such corporate hospital chains as American Medical International and the Hospital Corporation of America has taken them to positions of prominence in the health delivery system. Between 1962 and 1975, the for-profit sector grew at a rate nearly one-third faster than the non-profit sector. This trend does not appear to be abating. The percentage of acute care hospitals owned by corporate interests increased from 10 percent in 1977 to 16 percent today and it has been projected that by 1990 as many as one-half of our hospitals will be corporate-owned. This prospect is alarming.

Corporate hospital chains have increased their political clout within the Congress and the federal executive branch. This rise of a new powerful vested interest poses the danger that our health care delivery system will be further distracted from meeting human needs, in favor of a preoccupation with other goals, such as justifying a corporate bottom line.

Proponents of the for-profit sector of the health system often suggest that the competition they advocate is a reaffirmation of the principles of the free market system which they believe can help solve our country's troublesome health problems. They do not understand or do not want to understand that the competition they are advocating in reality is between profits and quality of care — with the consumer caught in the middle.

The classic Adam Smith model of the competitive marketplace assumes that a knowledgeable consumer makes rational selections among the available choices. In order to be successful, an enterprise must attract consumers in sufficient numbers to cover on-going costs and, hopefully, to generate a profit.

The Competitive Model

The model just described, however, breaks down when applied to the health care market. The patient, who is the consumer, is not sufficiently knowledgeable, in an age of explosive advancements in medical science and technology, to make informed and rational choices among health providers and services. Consequently, consumers must rely on experts to guide their choices. In other words, sellers dominate consumption decisions. If the expert is a physician who has a proprietary interest in prescribed services and/or hospitalizations he orders, the potential for abuse is obvious.

Recent studies have suggested that the supposed benefits of the "competitive marketplace" to the health care system provided by proprietary hospitals have been greatly exaggerated. Comparisons of the performance of corporate-owned hospitals to non-profit hospitals have shown that the chains are not really the models of efficiency that they claim to be. Investigators in California and Florida found that patient costs and operating expenses consistently ran higher in corporate chains than in non-profit hospitals. One explanation for some measure of the higher costs of corporate-owned hospitals is the overhead associated with the maintenance of a plush corporate headquarters.

It should be clear by now that the health care market does not fit the classic model of a competitive marketplace governed by the law of supply and demand. The problems with our health care system are not the users of the system, but the system itself.

Part of the problem is that traditionally, physician and ancillary service reimbursements have been based on the principle of a "usual, customary and reasonable" fee. The UCR basis of determining fee schedules has essentially allowed providers to charge whatever the market will bear. Freezing fees, as the American Medical Association and other groups have recently recommended, alone is not the answer, judging by Blue Cross and Blue Shield of Michigan's experience following the capping of fees in the late 1970s and early 1980s. Doctors merely increased the number of services performed to maintain the growth in their personal incomes that they had come to expect.

In a similar manner, hospital charges have traditionally been based on a "cost plus" principle, which allows hospitals to pass on to third party payers all increases in cost, thus robbing them of most of their incentive to be cost-conscious. The traditional hospital reimbursement systems have rewarded inefficiency and over-utilization and have exacerbated the problem of over-building and over-bedding of hospitals which plague most, if not all, of our states. "Prospective reimbursement" systems, such as ones recently implemented by Medicare, several states and Michigan Blue Cross-Blue Shield, the control plan for auto national accounts, attempt to address this problem by setting limits on a hospital's ability to freely pass on all costs.

Labor-Management Initiatives

Since the real root of the problem lies in the provider and delivery system, that is where solutions must be directed. The UAW has long advocated a "two-way street" strategy to deal with inequities in the health care delivery system. One direction involves initiatives and demands that can be dealt with at collective bargaining tables; the other involves public policy initiatives compatible with the ultimate goal of assuring reasonable and equitable health care delivery to all citizens at an affordable cost.

Joint labor-management health care cost containment and quality assurance committees have already begun to implement some acceptable programs which focus on tightening the health care delivery system. The development of alternative delivery systems, such as health maintenance organizations (HMOs) and dental capitation programs, which hold down costs while actually improving the quality and scope of benefits, is one example. The UAW some 30 years ago recognized the potential cost savings represented by prepaid delivery systems while carrying over quality assurances. The UAW historically has played an instrumental role in the development of HMOs as organizations and as options to traditional health care benefits plans.

Programs which require pre-certification of selected medical procedures for quality and cost control are another example of joint labor-management initiatives. Patients can't be expected to know whether particular procedures are medically necessary, but a pre-certification process for certain types of non-emergency procedures can weed out some of the excessive utilization. Identifying unnecessary procedures not only saves

money, it also spares patients from being exposed to unnecessary risks. In Michigan, for instance, podiatric surgical procedures ran about three times the rate in comparable states until predetermination programs were implemented. These programs saved literally millions of dollars and had the added benefit of sparing patients from thousands of unnecessary procedures.

Similar examples exist in programs which require mandatory second opinions for selected elective surgical procedures and programs which encourage the substitution of cheaper ambulatory surgery performed on an outpatient basis rather than more costly inpatient procedures. The proper goal of a surgical benefit is to provide health protection for people, not to provide a handsome source of income for providers. Programs, such as the kind described here, help to clarify this goal and inhibit the tendency of providers to encourage unnecessary utilization.

Other examples of joint initiatives include the development of "preferred provider organizations" (PPOs) or "prudent purchaser arrangements" (PPAs) through which providers supply a benefit at a discount in exchange for volume. Mail order prescription drug programs are one example of this type of arrangement. It should be recognized that union negotiated prescription drug benefits are meant to benefit the members and their families and are not designed for the enrichment of pharmacists and other providers. It makes sense for a "prudent purchaser" to strike the best deal available.

Modern technology can be utilized to help solve the problems. Computers are increasingly being employed to perform selective reviews to identify over-utilization patterns and to implement action against providers of care who are abusing benefit plans.

While labor participation is essential to cost containment initiatives, the crisis in the health care system affects the entire nation, not just labor organizations. It will not be enough for unions to put their fingers in the dike as long as water is cascading over the top. In the long run, legislative solutions to the problem must be sought on a national level.

The Kennedy-Gephardt Medicare Solvency and Health Care Financing Reform Act now before Congress is an intermediate step which will help by imposing price controls on doctors, hospitals and other providers, and encouraging states to set up their own cost containment programs. The Health Security Action Council, chaired by Douglas Fraser, is helping in the push for adoption of progressive legislation such as the Kennedy-Gephardt and "Control Health Escalating Costs" (CHEC) bills.

The Economic Alliance for Michigan, a joint cooperative effort by management and labor statewide, has pushed hard for legislation to establish a statewide hospital capital expenditure budget plan in Michigan similar to that recently adopted in Massachusetts, and to win legislation paving the way for establishment of PPAs.

This sort of intermediate legislation represents a step in the right direction, but the development of a comprehensive national health insurance plan — designed to reform our health care delivery system by improving access and quality while controlling costs — remains an ultimate goal. It is tempting to conclude that passage of national health insurance would solve all our health care problems, but, of course, such a conclusion would be simplistic. The United States could, however, benefit from the experience of other industrialized nations, avoiding some of their errors and capitalizing on their successes.

One lesson that we as a nation can learn is that the relationship between health care expenditures and a population's health status is not a direct relationship. In other words, the spending of additional dollars does not necessarily result in better health. Public expenditures for health care per person are already higher in the United States than in similar nations which have health statistics equal to or better than ours. One way that we can save money while improving our national health is to promote the use of less expensive medical professionals, such as physician assistants.

Physician assistants are under-utilized. A recent survey of 552 acute care hospitals with 400 beds or more found that surgical physician assistants were employed in only 165 of the hospitals surveyed. The surgical department chairmen anticipated increased use of physician assistants, but there were important regional differences. For instance, hospitals in the West use fewer physician assistants than hospitals in the East and South, where the use of surgical physician assistants principally arose.

Physician assistants also may provide an economical "early detection" system, if properly used. Dollars spent on early detection and programs which encourage diet and exercise improvements achieve more desirable results than dollars spent on custodial and remedial care for persons already sick. An approach utilizing physician assistants and emphasizing easy access, early detection and "wellness" programs would hold system costs down while having a beneficial effect on the health status of our population.

A recent presidential commission paid lip service to the belief that "society has an ethical obligation to ensure equitable access to health care of all." The billions we Americans spend on health care makes available the latest in medical technology and the best qualified personnel; accessibility to the health care system, however, is another matter.

According to the recent report published by the Robert Wood Johnson Foundation, 28 million Americans do not have suitable access to health care, which means that doors to most medical providers are closed to them and they don't know where to seek needed care or have a hard time getting there. Included are seven million children, many of whom are the offspring of the "new poor"—recently unemployed workers who have lost their health insurance benefits.

It is the plight of these children which illustrates most eloquently the pressing need for a rational and comprehensive national health system. Even if the current political realities nurtured by a national administration antagonistic to such a concept make such a step unlikely for the present, we must not forget our ultimate goal of making health care as a right a reality for all Americans.

Health Promotion and Illness Prevention

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There is a great deal of confusion about the terms "health promotion" and "illness prevention." This confusion was given official sanction in *Healthy People, The Surgeon General's Report on Health Promotion and Disease Prevention*, in which the terms were used interchangeably.[1]

Health promotion is concerned with the achievement of health rather than the prevention of illness. Its rationale is based on the concept that "Health is a state of physical, mental and social well-being and ability to function, and not merely the absence of illness or infirmity."[2] As the great medical historian Henry E. Sigerist pointed out many years ago, when he defined the functions of medicine as the promotion of health, the prevention of illness, the restoration of the sick, and rehabilitation, "health is promoted by providing a decent standard of living, good labor conditions, education, physical culture, means of rest and recreation."[3] There are degrees of health, that is, of well-being and ability to function, and the concern of health promotion is to maximize these.

Illness prevention is of two types: primary and secondary. Primary prevention is the prevention of the occurrence of disease, that is, a pathologic reaction to causative agents. Secondary prevention is the prevention, once disease has occurred, of illness resulting from the pathologic reaction. Examples of primary prevention are immunization against infectious diseases, hypertension control to prevent cerebrovascular disease, and the prevention of coronary heart disease by a diet low in saturated fats, hypertension control, physical exercise, and avoidance of cigarette smoking. Examples of secondary prevention are the Pap smear to detect asymptomatic cancer of the cervix and mammography to detect asymptomatic cancer of the breast, in order to remove the pathology and prevent the occurrence of illness.

The Second Epidemiologic Revolution

The times are changing. The enormous escalation of medical care costs is forcing a reexamination of priorities, and it is becoming increasingly apparent both in and out of government that, to rephrase the proverb, "A penny for prevention is worth a pot of gold for cure." The primacy of prevention is therefore no longer a concept, but an inescapable necessity.

Enormous savings in medical care costs are now possible. Epidemiologic research has laid the groundwork for a second epidemiologic revolution, the conquest of major non-infectious diseases which are high on the list of causes of illness, disability and death. In the short span of 30 years, epidemiologists have discovered the etiology of almost all cases of lung cancer; learned enough about the epidemiology of dental caries to be able to prevent a sizable portion of this disease; delineated the health effects of radiation exposures and stimulated adoption of control measures; discovered important risk factors in coronary heart disease and tested the possibility of achieving effective preventive programs; enlarged considerably our knowledge of the various diseases caused by tobacco and alcohol; and begun to study a broad spectrum of diseases, including drug-induced and other iatrogenic disorders, in a serious way. Indeed, they have become bold enough to study medical care services from the epidemiologic standpoint, that is, with regard to their impact on health status. Epidemiologists have also extended the boundaries of their discipline by including injuries from accidents and violence among their concerns. And finally, they have begun to develop studies in the epidemiology of health — of human vitality and well-being — including major investigations of the relation of prenatal and infant nutrition to the mental and physical development of children.

The new epidemiology has achieved a record of brilliant successes within a relatively short period of time. It has extended the concept of public health control from the limited area of infectious diseases to encompass all causes of illness, disability, and death, and in so doing has opened new vistas for public health action.

Prevention

The most rapid and dramatic improvements in the health of the public will result from preventive measures. This was true in the past, when infectious diseases were the major focus of concern. It is just as true today, when the non-infectious diseases are the most important causes of illness, disability, and death.

Heart disease, the nation's number one killer, will be greatly reduced by a massive public health program: health education

on the major risk factors, i.e., saturated fat consumption, hypertension, cigarette smoking, and lack of physical exercise; regulations limiting the use of saturated fats in prepared foods and commercial baking; incentives and assistance to farmers and the food industry to switch production to foods rich in unsaturated fats; and measures to control hypertension, reduce tobacco consumption, and encourage regular physical exercise.

Cancer, our second major killer, requires major public health programs to educate the public on the hazards of tobacco use, alcohol consumption, and treatment with estrogen hormones; prohibit tobacco advertising, sharply increase excise taxes on tobacco, repeal tobacco subsidies, and provide financial and technical assistance to farmers to switch to non-lethal crops; ensure the elimination of carcinogenic substances in the workplace, in industrial and other wastes polluting our air, soil and water, and in food additives, insulation, and other products; and greatly expand programs for early detection and treatment of cancer of the breast and cervix to reach all women at risk.

Stroke, third in the list of causes of death, will be reduced to a fraction of its present toll by large-scale programs for health education, early detection, and continued treatment of hypertension.

Accidents and violence, the fourth leading cause of death and number one killer under age 45, will be vigorously attacked by measures to lower alcohol consumption; stringent action against drunk driving; required use of air-bags or other passive restraints in automobiles; safe design of roads and motor vehicles; handgun control; safe cigarette acts; consumer product safety regulations; full enforcement of occupational safety laws and standards; and more effective control of medical and non-medical use of tranquilizers, sedatives, narcotics and other dangerous drugs.

The toll from chronic non-infectious lung diseases, the sixth leading cause of death, will be considerably decreased by measures to reduce cigarette smoking; prevent occupational exposures to silicosis, coal miners' pneumoconiosis, the byssinosis of textile workers, and other industrial dust diseases; and drastically lower air pollution levels throughout the nation.

Chronic liver disease and cirrhosis, now eighth in the list of causes of death, will be greatly diminished by reducing the amount of alcohol consumption: prohibiting all advertising of distilled spirits, wine and beer; sharply increasing excise taxes on these products; repealing tax expenditures and other hidden subsidies to the alcohol industries; and subsidizing farmers to use their land for other crops.

Diseases of infancy and childhood remain unnecessarily high among the causes of illness, disability and death. The barriers to early prenatal care for all women will be removed; family planning programs will be greatly strengthened; nutrition supplementation for women, infants and children will be expanded to prevent illness as well as deficits in physical and mental development; the goal of close to 100 percent application of immunization procedures will be realized; and childhood screening and treatment programs will be extended to the entire population to prevent serious burdens of chronic illness and disability from being carried into adult life.

Health departments at all levels — federal, state, and local — will require ample financial resources to implement a comprehensive program for the prevention of non-infectious and infectious diseases, protection from environmental and occupational hazards, and the protection and improvement of the health of mothers and children. A substantial investment in these programs will achieve extraordinarily high dividends in terms of reduction in illness, disability and death, as well as in the need for costly treatment services.

The following table presents rough estimates of some of the potential savings in the direct costs of illness, i.e., the $255 billion spent for personal health care in the United States in 1981.

	Direct Costs of Illness		Percent of illness to be prevented	Savings in direct costs of illness
	Percent of total costs	Estimated amount for 1981		
Heart disease	12	$31 billion	60	$19 billion
Injury	7	18	33	6
Cancer	5	13	15	2
Stroke	3	8	67	5
TOTAL	27%	$70 billion		$32 billion

It is important to understand that, unlike medical care, both primary and secondary prevention decrease the incidence of illness as well as mortality. Recent projections of the future need for medical care by the National Center for Health Statistics[4,5] overlook this distinction. Their estimates are grossly exaggerated by their assumptions that the change that will occur in the coming period will be a decline in mortality at the same rate as in the decade of the seventies, but that no changes will occur in the amount of illness.

Let us take the most dramatic change in mortality, the 38 percent decline in the age-adjusted rate for cerebrovascular disease from 1968 to 1978. How did this come about? Not even the most optimistic clinicians would claim that improvements in the treatment of cerebrovascular disease were responsible. Clearly the cause of the decline was the increased use of antihypertensive drugs and more effective maintenance of hypertension treatment and control. The decline was sharply accelerated by the national program for hypertension control launched by the Public Health Service in the early 1970s. This was primary prevention of cerebrovascular disease; not only mortality was affected, but incidence as well.

Or take the 25 percent decline in the age-adjusted mortality rate for ischemic heart disease from 1968 to 1978. In view of the fact that 60 to 67 percent of deaths from myocardial infarction occur outside of hospitals,[6,7] while improvements in medical and surgical therapy have been shown to exert only a moderate effect on survivorship,[8,9] treatment cannot be considered to have played a major role in the decline. On the contrary, all of the evidence points to risk factor changes as the most important factor in this unprecedented reduction.[8,10-12]

During the coming decades — the decades of the successful implementation of the second epidemiologic revolution — we shall lower mortality not only from cerebrovascular and ischemic heart disease, but also from accidents, poisonings and violence; from lung and other cancers caused by tobacco, alcohol, and other environmental carcinogens; from chronic obstructive lung disease and cirrhosis of the liver — and we shall accomplish these victories by primary prevention, by methods which, unlike medical care, reduce both incidence

and mortality. We shall also make effective use of screening programs to discover cervical and breast cancer in the presymptomatic stage, thereby also preventing illness as well as mortality.

Perspectives

The implementation of the second epidemiologic revolution will result in a significant decline in the need and expenditures for medical care. More significantly, we are entering a new era in the history of humanity. Just as the first epidemiologic revolution caused a profound change in the age composition of the population, so the combination of the second epidemiologic revolution and continuing progress in birth control is creating a second demographic revolution. The trend will be for the demographic pyramid to be stood on its head, with an enlarging base in the older groups and a contracting top at the younger ages.

We can look forward to an ever larger proportion of the healthy aged, of older people who no longer are sick or disabled from such major preventable diseases as ischemic heart disease, cancer, stroke, accidents, chronic obstructive lung disease, and cirrhosis of the liver. Dr. James Fries of Stanford University has estimated that the natural human life span is approximately 85 years, with individual variations falling nearly entirely within the range of 70 and 100 years. In a remarkably apt phrase, he describes current trends as "the compression of morbidity" into an ever smaller portion of the life span.[13] We are indeed adding not only years to life, but also "life to the years."

This trend may well occur also for mental disease. The pessimistic projection that aging of the population will result in a great increase in mental illness does not take into account the fact that much mental illness and incompetence in the aged is the result of cerebral atherosclerosis. The prevention of cerebral as well as coronary and other sites of atherosclerosis may be expected to emerge as one of the most significant outcomes of current preventive measures.

Profound social changes will take place as the result of the second epidemiologic revolution. The workforce will become increasingly older and more experienced; this will be congruent with an economy based more on scientific and technical knowledge and proficiency than on manual labor. Compulsory retirement at a specific age will no longer be tenable.

Elderly people in the future will not only live longer, but their illnesses and disabilities will be markedly reduced, their mental competence will be less subject to deterioration, their vitality and ability to do useful work will be maintained, and they will by no means be a financial drain on the working population. Indeed, they will be a vital part of the working population, and it will be our task to develop an economy in which the elderly can make their fullest contribution to society's production of goods, services and human culture.

It will also be our task to develop a society which will promote health, which will foster "physical, mental and social well-being and ability to function, and not merely the absence of illness or infirmity." This will require a sharp reversal of our nation's priorities, turning away from the astronomical escalation of military expenditures toward realization of the following objectives: full employment; adequate family income; decent housing, including the elimination of urban and rural slums; good nutrition; greater financial support to public education and the elimination of financial barriers to higher education; improved cultural and recreational opportunities; affirmative action in all areas of our national life, to end discrimination against minority groups based on race, sex, age, religious belief, or national background; and — most urgent of all — freedom from war and the threat of a nuclear holocaust. Achievement of these objectives will not only provide the fundamental basis for good health; it will meet the overall needs of the public and serve the common good.

References

1. U.S. Department of Health, Education, and Welfare. *Healthy People: The Surgeon General's Report on Health Promotion and Disease Prevention.* Washington, D.C.: U.S. Government Printing Office, 1979.
2. Terris, M. "Approaches to an Epidemiology of Health," *Am. J. Pub. Health* 65 (1975): 1037-45.
3. Sigerist, Henry E. *The University at the Crossroads.* New York: Henry Schuman, 1946, p. 127.
4. National Center for Health Statistics, Rice, D. P., H. M. Rosenberg, L. R. Curtin, and T. A. Hodgson. Changing Mortality Patterns, Health Services Utilization, and Health Care Expenditures, United States, 1978-2003. *Vital and Health Statistics.* Series 3, No. 23. DHHS Pub. No. (PHS) 83-1407. Public Health Service. Washington, D.C.: U.S. Government Printing Office, Sept. 1983.
5. Rice, D. P., and J. J. Feldman. "Living Longer in the United States: Demographic Changes and Health Needs of the Elderly," *Milbank Mem. Fund Quart., Health and Society* 61 (1983): 362-96.
6. Kuller, L., A. Lilienfeld, and R. Fisher. "Epidemiological Study of Sudden and Unexpected Deaths due to Arteriosclerotic Heart Disease," *Circulation* 34 (1966): 1056-68.
7. McNeilly, R. H., and J. Pemberton. "Duration of Last Attack in 999 Fatal Cases of Coronary Artery Disease and its Relation to Possible Cardiac Resuscitation," *Brit. Med. J.* 3(1968): 139-42.
8. Levy, R. I. "The Decline in Cardiovascular Disease Mortality," *Ann. Rev. Pub. Health* 2 (1981): 49-70.
9. Braunwald, E. "Effects of Coronary-Artery Bypass Grafting on Survival: Implications of the Randomized Coronary Artery Surgery Study," *N. Engl. J. Med.* 309 (1983): 1181-84.
10. Warner, K. E., and H. A. Murt. "Impact of the Antismoking Campaign on Smoking Prevalence: A Cohort Analysis," *J. Pub. Health Policy* 3 (1982): 374-90.
11. The Gallup Poll. *Gallup Leisure Activities Index,* 1980. The Gallup Organization, Princeton, N.J., May 15, 1980.
12. Walker, W. J. "Changing U.S. Life Style and Declining Vascular Mortality — A Retrospective," *N. Engl. J. Med.* 308 (1983): 649-51.
13. Fries, J. F. "The Compression of Morbidity," *Milbank Mem. Fund Quart., Health and Society* 61 (1983): 397-419.

The Future of Government Health Care Financing

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Before I begin my talk, I would like to spend a moment or two on something a little different. There is a tradition in our agency that when one of the senior members leaves, we usually have a party and given them a little plaque—the Administrator's Citation—which signifies that they worked awfully hard while they were here.

As all of you know, Lynn May came to his current position as Executive Director of the American Academy of Physician Assistants from being Associate Administrator at the Health Care Financing Administration, where his leadership, persuasive abilities, wit and charm added a great deal to the momentum that our agency achieved in the last four years, especially during the two-plus years that Lynn was with us.

So I'd like to take a moment this morning to present to Lynn the Administrator's Citation. It says: "For demonstrating outstanding leadership, creativity and personal commitment in implementing the Prospective Payment System for hospitals." It represents many hours of briefings that he gave personally to many of the outside health care organizations, without which we could not have moved so smoothly into the entire prospective payment system. So thank you, from the bottom of my heart.

Now, I think I better do what I was asked to come here to do, which is to talk about what's going to happen in the next several years in the federal government, which is a direct outgrowth of what has happened over the last several years. Before I do that, however, I would like to say that I recognize that many of you are here because of your intense interest and involvement in the physician assistant movement. Physician assistants are clearly entering a significant period of growth: a 36 percent increase in the last two years is very impressive. You can probably predict that this growth will continue.

I think it will continue because we are embarking upon an era where we have great concern for the cost effective delivery of quality care. I believe that the demonstrations that have been done in the past, as well as current demonstrations, are probably going to prove that physician assistants furnish that kind of care.

Let's spend a minute or two looking at the growth of Medicare. Lynn mentioned that HCFA programs are consuming one-tenth of the federal budget and that's true, but let's put it in even simpler terms: Medicare and Medicaid this year will be spending $11 million dollars an hour for the care of the 50 million Americans whose health care bills we pay. That's up from last year's $10 million dollars an hour.

When you're growing this fast, you have to begin to look at how you can slow this enormous rate of increase, which is two to three times the normal Consumer Price Index inflation rate.

Let me preface my remarks by outlining the Administration's strategy. It is based on a tried and tested way to ensure the best quality at the lowest price: through competition.

The Need for Competition

Competition has been lacking in health care because heavily-subsidized government and employer-financed care has largely removed the consumer from the picture. Health care is commonly viewed as "free," leading to waste, overutilization and overspending; against this, regulations have been futile in stemming soaring costs.

The best cure for this is to install competition. Our strategy involves three kinds of initiatives. First, we are reforming the way we pay providers of care. Medicare's old cost-based system just paid the bills and the more providers billed, the more they were paid. Prospective payment challenges providers to be cost effective and those who do earn revenue. Those who don't, lose revenue. We are also developing proposals to reimburse hospital capital expenditures in a way that will reduce the inflationary effect of new technological procedures on health care costs.

Our second kind of initiative is to foster the growth of health maintenance organizations, preferred provider organizations, and other competitive plans. Since these plans derive their income on a fixed-price basis, they have a compelling incentive to provide cost-effective care.

Our third initiative is to foster measures that impel consumers to be careful shoppers in the health care marketplace

and prudent users of resources. Without consumers who are aware of costs and quality, no effective marketplace can exist in health care.

Of these three broad initiatives, the most important now is prospective payment. It seeks to change provider behavior by changing provider incentives. It is a risk-reward arrangement—and that's how a true marketplace operates. In time, we expect to extend the same payment principle to other providers of care.

We believe these initiatives will moderate the astronomical growth in health care costs in recent years, such as use of new technology and unnecessary utilization of care.

We know from the studies of Wennberg and others that there is enormous variation in practice patterns around the country. Some of that we can attribute to individual differences in medical practice itself. Others we can attribute to the fact that if you are going to pay for an individual service, then one way to maximize one's reimbursement—perhaps unconsciously, perhaps consciously—is to encourage utilization of more of those individual services. When we had an open checkbook, retrospective, cost-based reimbursement system for hospitals where we paid for each individual service, you could see the number of services rising, including laboratory services, x-rays, and special procedures, such as respiratory therapy.

How does prospective payment reduce unnecessary utilization? Simply stated, it requires a hospital to live within a budget and to do so, hospitals will have to eliminate procedures or practices that are not essential to treatment.

Quality of Care

Despite this incentive to provide less care, the overall quality of care is not diminishing. And I think that is important to remember, from a number of points of view. You who are physician assistants will understand this more than almost any other group would. Clearly the care that you provide is not any lower in quality than the care the physician gives, yet your services are lower in cost, generally, than physicians'. Lower cost care can be as good in quality as high cost, intensive care.

Under prospective payment, hospital staffs are encouraged to take a look at what services should be given to patients when they come into the hospital. The hospital must make a coordinated effort to ensure that only appropriate tests are ordered and scheduled, and that no one misses their preparation so that patients do not spend needless days in the hospital. Moreover, the hospital should make a coordinated effort at planning ahead for the patient's discharge by arranging for link-ups with community agencies or providing coordinated patient education.

I think that a higher quality of care is evolving because there is attention to all of these activities by a coordinated team. It is pretty clear, too, that there is a need to reduce complications and that the team members who are at the bedside have the responsibility to spot early signs and symptoms and move to intervene at a very early stage. Thus, there is more attention to the quality of care that is being collectively delivered to the individual patient.

When we started to develop this program, we paid great attention to its effect on quality. We had conducted a five year study, looking at some 2,900 hospitals and 600,000 beneficiaries with 18 specific diagnoses. We could not find any diminution of quality when we measured such things as mortality rates, readmission for complications, or registered nurses to beds. There was no adverse impact. What was apparent was that hospital professionals changed their style of behavior to provide good care under a new system.

It is true that there has been a reduction in the length of hospital stay of about two days. It is true that there has been some reduction in ancillary testing and an increase in specialization of procedures, especially where a number of hospitals have performed a low volume, high cost procedure. Now we observe only one or two hospitals performing that same procedure, but doing so economically because of their higher volume. So we're now beginning to see more de facto planning among hospitals in an area than in the past.

As we move in that direction, we'll continue to find that quality of care is not diminished for one very simple reason: some high cost technologies, such as open heart surgery, should not be done in every hospital. We know from a recent Public Health Service study that where you offer high technology procedures in an institution where there is a high volume, you have a 13 percent lower mortality rate than in institutions that perform those same procedures infrequently. You know as well as I do that for a time, open heart surgery was a major prestige procedure hospitals felt they had to offer.

So long as the government was paying all the costs, there was no particular reason not to indulge in this prestige building. It was a marvelous recruitment tool. Now hospitals have to consider patients and costs before offering a high tech service.

Prospective payment is also encouraging less costly methods of providing expensive institutional care, such as ambulatory surgery, HMOs, and so forth. Efficient, good quality hospitals will not be at a disadvantage in this competition, however.

Hospitals are also becoming more competitive: some have hired marketing directors; others have launched special services, such as sports medicine centers; some have opened lower-cost units that care for the less severely ill; many have begun to see the economic benefits of competitive bidding for equipment and supplies; and not a few are resorting to preadmission diagnostic work-ups and discharge planning to minimize the length of patient stays.

Some experts wonder whether DRGs are only temporary relief from climbing costs, to be replaced by something else in the future. DRGs are a very serviceable concept that we have invested a lot of resources in developing. So anyone who thinks they are going to be replaced in any foreseeable timeframe has another guess coming.

DRGs are still a ripening concept and much work lies ahead in developing them. We have a host of DRG-based studies ahead. These include the folding of capital costs into DRGs, including exempted hospitals, and the advisability and feasibility of adapting DRGs to pay doctors for inpatient care. This is in addition to studies underway on how to adapt the concept to skilled nursing facilities and home health agencies. Absorbing new medical technology into DRGs will be a continuing task.

Now, let me spend a few moments on what all this means to people in the physician assistant movement. It is pretty

clear to me that as Medicare encourages more outpatient care and HMO coverage, physician assistants should be in demand because of your experience in these settings and also because these settings emphasize preventive services, primary care, and quality of care.

Current Studies

We have been authorized by Congress to do a study looking at the impact of Medicare costs on various methods of reimbursing physician assistants in urban settings. That study, which is being carried out in California and Tennessee, compares the impact of Medicare costs under fee-for-service and cost-based reimbursement of physician assistants. We have 40 different clinics that we are collecting this data from, both Medicaid and Medicare, and then we will evaluate the impact of that on the kinds of reimbursement alternatives and on productivity and cost effectiveness in the use of resources. I think it will provide us with a lot of data. Clearly, we are interested in what will be cost effective. What are the differences in the medical care costs, between primary care physicians compared to clinics where physician assistants and nurse practitioners provide a significant portion of that primary care?

We are looking, too, at the "incident to" issue. Is there a basis then for changing the "incident to" provisions to a different system of reimbursement, particularly for the clinic visit? I think this particular study will bring forth a great deal of useful data. The evaluation component probably won't take place until early 1986 because the actual collection of data won't end until next August.

One of the many studies that Congress gave us to do might be of some interest to you. That one will explore the advisability and feasibility of integrating payments to physicians for their inpatient services into the Diagnosis Related Group payment for the hospital. This study certainly has attracted great interest from many folks around the country. And we have a lot of unanswered questions, but we are out gathering the data that will help us decide whether to pursue DRGs for inpatient physician care or other alternatives, such as fee schedules for both inpatient and outpatient care. This involves questions of whom to pay. Should we pay differentially for specialty areas? Should we pay differentially for geographic areas? If so, what should that geographic area be? These are some of the issues that we have to sort out.

Along with the above, we will continue to work on the development of prospective payment for skilled nursing facilities, for home health care, and for outpatient services.

In all of our reimbursement reforms, we are seeking to pay on the basis of a prospectively set rate for clustered services to encourage efficiency. As hospitals seek to lower costs and maintain quality, they will be attracted to mid-level practitioners such as physician assistants.

Conclusion

If I look into the future 15 years, I see our number one problem as care for the elderly. The frail elderly are growing at a rate three times faster than in the past. And so, if you look to the year 2000, you find that we will have to provide for three times the current number of older people. Long term care needs will become even more apparent, as we approach the year 2000 and beyond.

There is a clear need for primary care services and for preventive services in the area of geriatrics. I think this is a golden area of opportunity for physician assistants and nurse practitioners because I have not seen a whole lot of interest among other health providers in that field. I think it is a fertile growth field.

In closing, let me say that yes, yours is an evolving discipline. I think you will continue to evolve and grow because I believe intuitively—and we are looking for the data on which to prove it empirically—there is indeed cost effectiveness connected with the delivery of quality services that PAs provide. The concept of teamwork, I think, gained in the area of primary care is expanding into other areas such as surgery, through the use of surgical assistants. I think you will find a continuing role for your discipline and for your skills in the areas of prevention and primary care. I also believe that your teamwork skills will be valuable in the comprehensive, capitated health plans that are growing in popularity. Thank you.

Managed Physician Groups: An Analysis of Their Development and Future Directions

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For the past two decades, the cost of health care in this country has been rising at a dramatic rate. The national total health expenditure has grown from the 1965 pre-Medicare/Medicaid level of $41.7 billion to $322.4 billion in 1982, a 673 percent increase.[1] This translates into a per capita increase from $211 per person in 1965 to $1,365 per person in 1982. Health care's percentage of the Gross National Product has expanded from 6.5 percent in 1965 to 10.5 percent in 1982.

Those who assume the financial risk, that is, pay the health care bills, have an opportunity to control health care costs by modifying the economic incentives associated with the delivery of health care services. According to information from the Health Care Financing Administration, 43 percent of the nation's 1982 health expenditure was made by public sources (federal, state and local governments).[2] This is a sharp increase from the 1965 pre-Medicare/Medicaid level of 26 percent for the public sector. Of the 57 percent of the nation's health expenditure attributed to the private sector in 1982, slightly more than half came from private health insurance and other private third parties. The remainder (28 percent of the total) came from direct patient payments.

This report reviews the early and more recent responses of the public and private sectors to the rising cost of health care and points out how these responses have led to the development of the "preferred provider" concept. The report also examines the economic and organizational incentives for physicians that develop out of their involvement with Preferred Provider Organizations (PPOs), describes how this results in the establishment of managed physician groups and suggests that such groups, as they become successful, will evolve in the direction of health maintenance organizations (HMOs).

Early Public and Private Sector Responses

During the early years of Medicare/Medicaid's influence on health economics, the private and public sectors did little to control the cost of health care. For the most part, the health insurance industry behaved like a conduit that pooled consumer health dollars and then distributed those dollars to health care providers. Periodically, private insurance companies identified increases in provider rates and levels of service, calculated the resultant increase in cost and passed the added cost on to subscribers in the form of premium increases. Federal and state governments responded to the rising cost of their Medicare and Medicaid programs in a like manner; namely, by identifying the extent of cost increases and assigning more and more tax revenue to their health care programs to cover the increases. This laissez-faire approach practiced by both the private and public sectors contributed to the spiraling cost of health care.

An exception to the "do nothing" approach is the health maintenance organization concept which was first started by a member of the private sector, Kaiser Industries, shortly after World War II. As developed by Kaiser, an HMO is an organization which insures for medical risk and provides, upon payment of a fixed, periodically paid premium, medical care service to a specifically enrolled population through an organized medical care system, which takes responsibility for the provision of covered medical service.

HMOs grew slowly until 1976 when a key member of the public sector, the federal government, passed legislation that provided financial and organizational support to HMOs through the then Department of Health, Education and Welfare. There are now nearly 12 million people enrolled in more than 250 HMOs in operation throughout the United States, ranging from the Kaiser Foundation Health Plans (4,000,000 members and 35 years of experience) to others with a few months experience and less than 1,000 members. In some places in the country (for example, Los Angeles, San Francisco, Oakland, Minneapolis and St. Paul), HMOs are formidable competitors in the health insurance market, having achieved 25 percent of the market or more.[3] In most areas of the country, however, the HMO penetration of the market is considerably less than

25 percent and their influence on health economics is proportionally modest.

Recent Public Sector Response

As the pressure to control costs mounted, the public sector, except for its HMO initiatives in the mid-70s, responded by attempting to gain control of the situation through regulation; the most recent example being the Tax Equity and Fiscal Responsibility Act of 1982. Eventually it has become recognized that regulations piled on top of regulations can keep health care increases below what they might have been, but at a high systems cost. New regulations are constantly needed as conflicting regulations are uncovered and others are rendered ineffective because of enlarging loopholes. The bureaucracy needed to administer regulations of necessity multiplies over time. Before long, it begins to turn inward and becomes self-sustaining. Worse yet, those that are excessively regulated abandon innovation and creativity and become "rule beaters" in order to succeed.

Appreciating that further regulatory "band-aids" are not the answer, the federal government recently decided that fundamental reform was needed and chose to emphasize competition over regulation in an effort to gain control of health care costs. Realizing that 67 percent of the cost of the Medicare program is associated with the provision of inpatient hospital services[4] and that there are 7,000 hospitals in the country as compared to 400,000 physicians,[5] the initial federal objective is to focus on hospitals and replace the reimbursement of hospitals on the basis of allowable cost with a prospective, case-mix payment system based on Diagnosis Related Groups (DRGs).[6] In other words, the federal government moved on October 1, 1983, from cost to price by establishing a single Medicare payment rate for 467 DRGs.

Physicians have not been altogether forgotten, however. As part of the 1983 DRG legislation, the Health and Human Services Secretary is to report to the Congress by 1985 on the advisability and feasibility of applying DRGs to physician charges for hospital services and is to recommend legislation to apply DRGs to physicians.

While most state Medicaid programs continue to rely on regulation to control the cost of their programs, California Medicaid is attempting to control cost through competition by establishing a bid/contract arrangement with providers. The State of California recently passed legislation that allows it to seek competitive bids on the provision of Medicaid services and is now awarding contracts to preferred providers on the basis of service availability and relative cost.[7] Some states are considering the California approach. Other states are following the federal lead and moving to adopt DRGs as the reimbursement cornerstone of their Medicaid programs.

Recent Private Sector Response

The rapidly rising cost of health care together with the traditional, passive role of private insurance companies has stimulated increasing numbers of employers, Taft-Hartley trust funds and others with health benefit dollars to spend, to attempt to control their health care costs by assuming the financial risk of their health care program through a self-insurance approach. Once financial risk is assumed, most self-insurers recognize the need to gain firmer control over decisions regarding what health benefits are provided to their employees or beneficiaries and which providers are going to deliver those benefits. Recognizing that cost-based reimbursement of hospitals and fee-for-service payment to physicians in an insurance-rich environment are counter-productive to cost containment because of their built-in incentives to over-utilize health care, the growing trend is for self-insurers to develop contractual arrangements with those providers (hospitals and/or physician groups) that can demonstrate a capacity to deliver quality care in a cost efficient manner.

It is critically important for self-insurers, or agents acting on their behalf, to identify quality, cost efficient hospitals and physician groups. With 7,000 hospitals, the self-insurers' task of finding cost efficient hospitals is challenging but doable. With the physician population at 450,000, most of whom are professionally accountable only to themselves even if they practice within a group, the task of finding physicians with a demonstrated track record of cost conscious practice is very difficult. As a result, a market is being developed for the creation of managed group practices made up of physicians who are willing to meet standards of cost conscious medical practice established by their peers within the group. Physician groups are finding that the development and enforcement of reasonable practice standards is essential for a group to deliver the quality, cost-effective health care that is a marketable product to discriminating, self-insured entities.

Development of PPOs

The trends just described are leading to the development, first in Colorado and on the west coast and then across the country, of preferred provider organizations.[8] In a PPO arrangement, the third party payer (usually a self-insured employer, union trust fund or insurance carrier) contracts with a panel of providers who furnish services at discount rates negotiated in advance. In return for the discounts, the third party carrier promises prompt payment (on a fee-for-service basis) and an increased volume of patients. Patients are not locked in to the preferred provider groupings, but they are given an incentive (e.g., first dollar coverage or increased benefits) if they voluntarily limit their choice of providers by receiving services from listed providers. Patients who do not use a preferred provider remain covered by the existing indemnity plan, subject to normal co-payments and deductibles. Interestingly, the only significant differences between preferred provider organizations and health maintenance organizations, other than capitated versus fee-for-service payments, are that PPOs do not require a subscriber lock-in provision and do not accept financial risk.

As PPOs have matured and developed, it has become increasingly apparent that the discounts they initially feature have only a modest, short-term effect on controlling health care costs. Real savings result from the efforts of PPOs to reduce the utilization of health care services, especially in the hospital where 42 percent of total health care dollars and 67 percent of Medicare dollars are spent.[9] Particularly important is a PPO's control over hospital admissions and length of hospitalizations. Studies have shown that effective, managed HMOs can reduce hospital utilization by as much as 40 percent.[10] It is expected that with similar incentives, PPOs will produce comparable statistics.

Evolution of Managed Physician Groups

It is recognized that the professional decisions of physicians are directly or indirectly responsible for approximately 70 percent of this nation's expenditures for health.[11] Put another way, physicians generate most health expenditures and, as a result, are in a key position to control the level of such expenditures. As managed physician groups mature and become more comfortable with the practice of cost conscious medicine, their potential for saving health care dollars can turn into the reality of savings. Physicians soon come to realize that their efforts in cost containment are producing savings for others; namely, those who are willing to accept the financial risk, increasingly often employers who have adopted a self-insurance approach. The next logical step is for physicians, confident of their ability to practice their profession in a cost effective manner, to step forward during future contract negotiations and insist on an opportunity to assume part or all of the financial risk; thus, benefit themselves from the savings that develop from their adopting cost conscious patterns of practice.

An interesting aspect of the scenario just described is the shifting of financial responsibility and risk, first from the traditional insurance company to the self-insured entity, and then from the self-insured entity to the managed physician group. As they assume financial responsibility, managed physician groups will want to stabilize their practice environment and seek to introduce a lock-in provision for those patients served under contract. A preferred provider organization that accepts financial risk and requires subscriber lock-in is well on its way toward becoming a health maintenance organization, in form if not in title.

Return to the HMO

Put another way, the PPO movement of today is very likely an important intermediate step for physicians as they move from fee-for-service to capitation as the predominant form of payment for their professional services. What the PPOs provide is a relatively protected environment for physicians to retain at least some advantages of fee-for-service reimbursement, while becoming more certain of their ability to succeed professionally and economically in a managed, medical practice situation. An associated phenomenon is that PPO patients enjoy many of the same transition benefits as their physicians. Once physicians become comfortable and confident in their new environment and aware of potential economic opportunities, they are ready, perhaps even eager, to assume financial risk and evolve toward an HMO. What physicians are being encouraged to do is to trade off fee-for-service reimbursement in order to maintain their key, controlling position of decision-maker in the health care delivery system and thus sustain the economic advantages associated with that position. What many physicians may discover is that the trade-off, while initially troublesome, is worthwhile in the long-run.

References

1. Department of Health and Human Services. *Health Care Financing Review*. 5 (Fall 1983): 1.
2. *Ibid.*
3. "Fee-for-Service Group Less Able to Reduce Hospitalization." *Group Health News*. 21 (January 1980): 1-6.
4. *HHS, op. cit.*, 1.
5. Tarlov, A.R. "The Increasing Supply of Physicians, the Changing Structure of Health Services, and the Future Practice of Medicine," *N. Engl. J. Med.* 308 (1983): 1235-45.
6. Iglehart, J.K. "The New Era of Prospective Payment for Hospitals." *N. Engl. J. Med.* 307 (1982): 1288-92.
7. Melia, E.P., Augoin, L.M., Duhl, L.J., Kurokawa, P.S. "Competition in the Health Care Marketplace." *N. Engl. J. Med.* 308 (1983): 788-92.
8. Kodner, K. "Competition: Getting a Fix on PPOs." *Hospitals*. (Nov. 16, 1982): 59-66.
9. HHS, *op cit.*, 1.
10. Luft, H.S. "How Do Health Maintenance Organizations Achieve Their Savings?" *N. Engl. J. Med.* 298 (1979): 1336-43.
11. Blumberg, M.S. *Provider Price Changes for Improved Health Care Use/Health Handbook*. Amsterdam, The Netherlands: North Holland Publishing Company, 1979.

The Private Insurance Industry Perspective

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The invitation from the American Academy of Physician Assistants to be a non-PA participant in the Symposium on the Future of Health Care came to me at a time when I was deeply involved in the study of DRGs and its impact on health care delivery systems, institutional as well as non-institutional.

The driving force behind innovative approaches is the spiraling health care cost to the public and the projected increase in the number of providers. Economic conditions and technologic advances have affected health care coverage by public as well as private plans. It has become more difficult in recent years to secure adequate funding to cover public plans or to raise insurance premiums to pay for costly medical or surgical diagnostic and therapeutic procedures. Add to this the rising cost of labor and equipment and it becomes easy to understand the outcry for cost containment, cost-effectiveness or cost-shifting.

To obtain an overall view of our health care system, Louis Harris and Associates conducted two health care surveys sponsored by the Equitable Life Assurance Society in August 1983 and March 1984. The first survey, entitled "Options for Controlling Costs," was a survey of the American public and selected professionals in the health care field. The surveyors concluded that the American public views both cost and access to health care services as areas in need of change. There is widespread dissatisfaction with the cost of hospitalization. The health care system as it is today does little to encourage price competition. While professional groups have varying perspectives on cost containment proposals, the American public is ready to accept a broad range of cost containment proposals. Corporate executives whose companies have implemented cost containment programs believe them to be effective. There is widespread opposition to a proposed tax on employer-paid health insurance premiums. Shifting costs from Medicare patients to other patients is viewed with disfavor. The American public revealed awareness and concern about health care issues.

The second survey explored physicians' attitudes on cost containment. It revealed that less than half of all physicians believe that the American health care system works well and needs only minor changes. Most physicians are satisfied with the availability and quality of health care generally, with their own health insurance benefits, and with the cost of health care.

A majority of physicians thinks that the cost of hospitalization is unreasonably high, due to factors such as the increasing use of expensive equipment and technology, the growth of expensive malpractice suits and malpractice insurance, the availability of government-funded programs, employer-provided health insurance, the ordering of more laboratory tests than are necessary and unnecessary hospitalization. They also believe that the third party payment system, as it exists today, is a major contributor to increased health care spending. There was no agreement regarding acceptance of specific health care cost containment policies, but cost-sharing by patients is considered effective and acceptable. Most physicians endorsed changes in the health care system that would reduce hospitalization and find the requirement for second opinions prior to non-emergency surgery acceptable, as is the proposal to discourage duplication of expensive equipment and specialists at nearby hospitals. There was little agreement about the effect of utilization review. A majority found fixed fees to doctors based on DRGs, government price controls, HMOs and PROs unacceptable, although many feel that such measures would result in cost containment.

Physicians seem to favor insurance plans that provide individual incentives for healthy living, changes in law relating to malpractice, reduced pressure to practice defensive medicine and changes in antitrust laws so that third party payers can join together to negotiate fees with providers. Business coalitions are seen as effective in the control of health care cost. There appears some resistance among physicians to encouraging the use of nurse practitioners, nurse midwives and physician assistants instead of physicians. In general, there was overwhelming disapproval of the concept of cost-shifting and younger physicians appeared more receptive to proposed changes in the health care system.

It must be remembered that both surveys dealt with specific groups whose bias was almost predictable, but that the find-

ings are pertinent to a particular period in time and subject to change in response to economic, social, political and technologic variations.

In the effort to control the rate of increase of health care costs, DRGs were introduced for inpatient care, at first as a pilot project in limited areas, to be expanded nationwide with an escalating drive towards uniformity of benefits.

The effect of the limitation of public program benefits on private payers was recognized very readily and resulted in a drive to extend DRGs to privately financed payment plans. Caught in such a squeeze, inpatient facilities hasten to set up outpatient clinics and centers for ambulatory care, still exempt from DRGs, to compensate for projected declines in income.

It should come as no surprise, therefore, that there is a growing interest to expand the DRG program to outpatient and physician payments. A report of a study of the feasibility of DRG physician payments by the Health Care Financing Administration is due July 1, 1985.

The ability to render cost-effective health care may depend on the make-up of the health care provider team, including physicians, physician assistants, nurses, nurses' aides, and other technicians.

The existing oversupply of physicians in certain specialties, contributing to some extent to higher charges for their services to maintain a level of income with a declining patient load, could be reduced by the utilization of physician assistants with postgraduate training in certain specialties. By this process, the need for resident physician trainees will be reduced, with an eventual reduction in the number of trained and certified physician specialists. Your Academy may wish to look into the creation of specialty postgraduate training programs in cooperation with the number of teaching facilities currently available to you.

Under a DRG system for outpatient services, which I believe is to be established in the not-too-distant future, many group practices will be ready to place physician assistants on their teams, not only to lower their cost of operation, but also to increase patient load and access and to provide cost-effective services.

Industry-sponsored business coalitions, many without participation of health care providers, are developing not only data but also leverage to affect some control over the cost, if not over the type, of health care services. It is hoped that their attempts will become a cooperative effort with providers rather than an adversary proceeding in which there can be no winners.

Where does all this leave the physician assistant? I would say the physician assistant is in a good place to maintain and upgrade his or her position. What about coverage? Physician assistants as dependent providers appear relatively assured of adequate remunerations.

Most commercial carriers will not be able to reimburse for direct payments to physician assistants without costly changes in policy provisions subject to approval by state superintendents of insurance.

The extension of mandatory coverage through legislative amendments to insurance laws has started an accelerating trend for many industrial establishments to become self-insured and thereby circumvent compliance with state insurance laws.

It will behoove health care providers to combine their collective abilities to devise through cooperative efforts appropriate methods to serve the public and to offer the best available care at affordable cost.

I am grateful for this opportunity to relate to you some of my thoughts about the future of health care and health care coverage.

A Perspective on the Future in Health Care Technology

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Medicine is at the threshold of an era which will likely be witness to the most dramatic advances ever in prevention, diagnosis, therapy, and rehabilitation. Within the last decade, there has been an enormous increase in medical knowledge accompanied by remarkable technological innovations. Many diseases have been either eliminated or are now controlled by preventive measures or by therapy. At the same time, there are many indications that before the end of the century, many diseases for which currently there are no remedies, will be treatable or perhaps even preventable.

At the same time that these advances are occurring, health care delivery in the United States is undergoing the most drastic alterations since the advent of voluntary health insurance and the establishment of the Medicare program in the 1960s. While the quality of health in this country is recognized to be among the best in the world, there has been widespread concern for a decade or more about the extraordinary rise in health care costs, with annual increases of 12 percent to 14 percent since 1965. Total health expenditures in 1983 came to about one billion dollars a day, with hospital costs at $140 billion. Since 1974, Medicare expenditures have risen at an average annual rate of 19 percent to a level of $52 billion in 1982. By comparison, the GNP grew at 9.6 percent per year. A recent Office of Technology Assessment (OTA) study (*Medical Technology and Costs of the Medicare Program*, p.51) concludes that nearly 30 percent of the increase in Medicare costs per enrollee from 1977 to 1982 can be attributed to technology-related factors. Another study found that approximately 40 percent of the rise in operating costs per admission resulted from the increased use of ancillary services. Physicians' services accounted for 22 percent of total health expenditures but physicians influenced 70 to 80 percent of health care spending (*Health Care Financing Review*, Vol. 5(1)19, 1983).

Although the number of visits to physicians has not changed very much, the numbers and types of services have increased. For example, the volume of tests in independent laboratories has been increasing at an annual rate of 15 percent in recent years.

These alarming increases in health expenditures and services led the Congress in 1982 to enact the Tax Equity and Fiscal Responsibility Act (TEFRA), which effected major reductions in Medicare and Medicaid reimbursements. TEFRA initiated the transition to the present prospective reimbursement system based on diagnosis related groups—DRGs.

In contrast to the fee-for-service system, the DRG mechanism, as you know, pays the hospital a flat fee per case based on the patient's diagnosis. However, there are many potential problems with the prospective payment mechanism, one of them being that hospital administrators will tend to resist the adoption of a new technology no matter how effective unless it reduces the length of a hospital stay since the total reimbursement to the hospital would remain the same. In any case, we have embarked on a major experiment and no one knows how it will turn out, but there is general agreement that the current system will have to be modified and probably extended to other providers and insurers beyond Medicare if it is to be successful.

The problem of increasing health care costs will be with us for the foreseeable future and, at the same time, the demand for medical services and the application of new technologies will not decline. That portion of our population that draws most heavily on the health care system, the elderly, continues to increase. Furthermore, as I mentioned at the outset, there are strong indications that the next two decades will witness even greater advances in medical progress and technological innovation than we have seen in the previous two decades. It appears unlikely that, on balance, health care costs will decline significantly, if at all.

Balancing Commitments

Thus, we are faced with a very difficult dilemma. We have a heavy commitment to biomedical research and to technological innovation in order to improve the health of our people.

However, the innovations tend to be expensive and complex. The question is: How do we make them available to those who will benefit and at the same time, keep health care costs reasonable?

Let me cite some examples to illustrate the problem.

Two years ago, there was a good deal of discussion in the U.S. about one type of organ transplant, heart transplants. There was a major study reporting that at least 50 percent of patients with severe heart disease who would have died otherwise were living five years or more. The question was, should Medicare provide reimbursement for the procedure? In the face of estimates that there might be as many as 30,000 transplant candidates at a cost of three billion dollars initially, the government decided to delay a decision on Medicare reimbursement and instead mounted a study, the results of which most experts felt were already known, i.e., that heart transplants were beneficial and worthwhile.

For the last year or more, liver transplants have received a great deal of attention, both in the media and in the Congress. Parents of children with liver failure have appeared at medical professional meetings to try to find organ donors and we have even had the spectacle of the President appealing on national radio for a liver donation.

In some areas of our country, insurance carriers have paid for the procedure, but Medicare has not yet rendered a decision. A National Institutes of Health consensus development panel concluded that liver transplants for children with biliary atresia are safe and effective. The panel also opened the door slightly to make other groups, such as alcoholic cirrhotics, potentially eligible.

Accordingly, we are faced with perhaps 5,000 children annually with biliary atresia who are candidates for transplantation at a cost of one-half to one-and-a-half billion dollars and an unknown number of other potential candidates for liver transplants.

Finally, we have magnetic resonance imaging devices (MRI) which, in the view of its advocates, may be the greatest advance in diagnostic imaging since the x-ray. It is complex and expensive, costing as much as four million dollars to purchase and install. There are already two machines in the city of New York, with four more to be acquired by hospitals in the city and a total of 13 in the state. There is also competition for MRI devices in other major cities. Furthermore, entrepreneurs in private practice are installing their own MRIs so as to circumvent local government restrictions. About 70 have been installed or are awaiting installation nationwide. All this, even though its role in diagnosis has not been elucidated completely.

MRI has just been approved by the FDA, but to my knowledge there has been no coordinated effort in our government to assure its appropriate distribution and utilization. Thus far, it is the CT scanner revisited, i.e., entry into practice of an exciting technology before criteria for use have been established, associated with pressure on hospitals for its acquisition and on insurers for reimbursement.

These scenarios epitomize the conflict between the capability and ingenuity of our medical research enterprise and the inability of our delivery system to cope adequately with the emergence of new beneficial technologies and the limits on availability of health care resources imposed by political leaders.

This conflict will persist and intensify as we approach the next century and I do not think it will be resolved by arbitrary limits on expenditures as conceived under the prospective payment system. Instead, we should be focusing on other approaches to improving our health care delivery system and making it more cost effective, including a greater role for physician assistants and other allied health professionals, eliminating waste and inefficiency, avoiding unnecessary hospitalizations and instituting measures fostering appropriate utilization of technologies, and rectifying the reimbursement bias for procedure intensive specialties. However, as a nation, we have to recognize explicitly that modern health care is expensive and will continue to be so. Fortunately, in large part driven by economic consideration, there are some recent developments that have the potential of reducing costs.

With the great advances in medical technology, particularly in the decades since World War II, the importance of the hospital and its role in the delivery of medical care was strengthened. Hospitals provided the logical location for the remarkable but expensive diagnostic technologies which began to appear two or three decades ago, as well as for complicated therapies requiring resources that only a hospital could afford to provide. For many types of services where an array of complex services are required, such as major surgery, the role of the hospital will not change.

On the other hand, in recent years, a trend toward decentralization of services away from the hospital has begun. The principal reason has been economic, but quality of life, e.g., keeping the elderly sick at home with provisions for home care, is also an important factor, along with technological innovations that can be applied in outpatient settings. With an aging population, it is clear that less expensive alternatives like home care will have to be fostered.

Increasingly, medical technologies aimed at home care have appeared, beginning with home dialysis for end stage renal disease, and now including home blood glucose monitors, pregnancy tests, infusion pumps, parenteral feeding, and others. As a recent article in the *Washington Post* (August 26, 1984, p.H1) indicated, diagnostic test kits based on monoclonal antibody, photographic film chemistry, and other technologies will soon be available for home use to test for such things as time of ovulation, urinary sodium output in patients with hypertension on diuretics, etc.

Industry has recognized that home health care provides a new marketing opportunity and companies like Upjohn and Baxter Travenol have moved quickly into the market. Several major firms have developed distribution services for technologies such as respiratory assist devices, parenteral and enteral nutrition and renal dialysis.

In 1981, the home care industry in the U.S. was estimated at $5.3 billion, but by 1990 it may be at more than $16 billion, including one billion dollars in parenteral feeding alone.

The economics of health care in the hospital setting have also led to the establishment outside of the hospital of a variety of free-standing centers aimed at delivering certain types of services at low cost. These include primary care, emergency and ambulatory surgery centers, as well as "urgent care" centers—a response to fill the need created by the unavaila-

bility of physicians on weekends and evenings. More recently, free-standing diagnostic centers have appeared, offering a variety of imaging and other services. Of course, renal dialysis centers have long been big business in the U.S. Obviously, these recent developments have important implications for physician assistants and other allied health professionals.

Recently, a special issue of the journal, *Health Affairs* (Vol. 3, Summer 1984), was devoted to the problem of geographic variation in medical practice. Such variation is important because it suggests misuse or inappropriate application of technology, including hospitalization. Variation in physician behavior determines whether an individual with hypertrophy of the tonsils will undergo surgery or be treated conservatively, or whether someone needing cystoscopy will be hospitalized or have it done as an outpatient or whether an elderly person with a stroke will have a CT head scan or not. It affects not only hospital admissions, but also length of hospital stays. However, such differing opinions of physicians concerning the need for hospital admission are the most important determinants in establishing per capita costs of treating specific diseases.

There are many reasons for these variations in physician behavior, including lack of scientific information about certain technologies, ignorance, fear of malpractice, and physician or patient convenience. In spite of the fact that this problem has been recognized for years, little has been done to alleviate it. The solution lies in physician and patient education, eliminating the need for the practice of defensive medicine, and providing evaluative information about the safety and effectiveness of technologies.

Variation in another sense is also a problem in Medicare coverage. Determinations at the national level for coverage or non-coverage have been made for many technologies, but since the Medicare program is highly decentralized, there are large local variations in coverage and reimbursement. For example, an OTA study recently reported that for a set of approved technologies, coverage decisions by intermediaries ranged from about 60 percent to nearly 100 percent. In a set of disapproved technologies, eight to 15 percent of the intermediaries provided coverage.

This variation reflects an inefficiency in the system in that some patients are being denied beneficial technologies, while others are being subjected to certain procedures or tests which have been deemed to be ineffective or unproven.

The practice of defensive medicine and malpractice are continuing problems and important contributors to the increases in health expenditures. Malpractice premiums, malpractice awards, and defensive medicine came to more than $20 billion in 1983, an amount which is larger than the anticipated savings for the next several years under the prospective payment system. In 1975, there were 75 plaintiff verdicts, averaging $220,000, with three one-million-dollar verdicts. In 1981, there were 141 such verdicts averaging $850,000, with 45 one-million-dollar verdicts.

In part, this problem is a by-product of technology and it shows no signs of abating. Fortunately, some in Congress have begun to try to deal with it and at least one legislative proposal on malpractice has been introduced. In no other country in the world is malpractice as important an issue as it is here and there is certainly no evidence that the quality of care is any less in this country.

The Role of Technology

As I have mentioned, technology is a major factor in the increase in hospital costs and in health expenditures in general. How much of this is unnecessary, ineffective, or even harmful is impossible to determine, but there certainly is a widely held impression that over-utilization and inappropriate application of technologies constitute a major problem.

In the early 1970s there was a beginning appreciation that many technologies were moving from research into wide application in practice before their safety and efficacy had been determined. This realization alerted the Congress that there was no institutional process for evaluating medical technologies and their implications. In 1978, Congress passed Public Law 95-623, creating the National Center for Health Care Technology (Center) in the Department of Health and Human Services with the mandate to assess medical technologies, particularly so-called high priority technologies, from the standpoint of safety, efficacy, cost, and cost effectiveness and for their ethical and social implications. The Center was also charged with providing Medicare with evaluations for its use in making decisions about Medicare coverage.

Thus, there was now a focus in the government to which physicians, hospitals, consumers, and third party payers could turn to obtain unbiased information about the safety and efficacy of medical technologies. Remarkably, there was for the first time since the passage of the Medicare legislation in the 1960s, a formal mechanism to provide a rational basis for Medicare coverage decisions.

The Center's policy was to rely on the private sector to perform the assessments and make the recommendations. Its role was that of a catalyst, to minimize bias and to provide funds for appropriate research studies required to address pertinent questions in technology assessment.

The Center survived only two years before being abolished by the Administration, ostensibly for budgetary reasons. The elimination of the Center had two important effects: (1) there was now no agency either in the public or private sectors that concerned itself with the national implications of new technologies; and (2) there was no agency specifically charged with supporting research which addresses questions of immediate relevance to the practice of medicine.

Thus, the nation is now in exactly the same position relative to major technologies as it was in 1978 when the Center was created, except that the technologies which were prominent then and which sensitized the Congress to establish the Center have been replaced by new ones. In 1978 it was the CT scanner, mammography, and electronic fetal monitoring. In 1984, they are MRI, organ transplants, and PTCA, the balloon procedure for coronary artery obstruction and a procedure which is being used all over the country even though it has not been subjected to a valid scientific study. The technologies have changed, but the concerns they generate are the same, i.e., rapid diffusion and wide application before their safety, effectiveness, and cost-effectiveness have been adequately evaluated, confusion about their appropriate application—all accompanied by increasing pressures for third party coverage.

Medical technologies have a life cycle which consists of several phases. It begins with basic research and ends with either persistence of the technology in practice or abandonment. At the front end, the nation has a great commitment

to expanding the knowledge base, but we do little to evaluate the products of the research enterprise. Furthermore, our health care reimbursement policies foster rapid adoption and often inappropriate use of technologies, thus contributing to the increases in health care expenditures.

In order to address the complex issues medical technologies raise, we need to re-establish a mechanism to serve as the focal point for evaluating technologies, particularly new ones, and to provide a source of funds for research aimed at generating new information about their safety, efficacy, cost and cost-effectiveness. The new prospective payment system has made this need even more urgent.

Another major problem in our health care delivery system is our failure to regionalize in a formal and pre-determined manner certain procedures for which highly skilled teams and special facilities are required and where there are enormous demands on the resources of the hospital. It is irrational to duplicate such expensive activities all over the country, certainly not in this age of jet transportation. Hospitals acquire these technologies or establish such programs for a variety of reasons, not the least being for prestige and recruitment purposes. However, it does not make sense and, of course, once the technology or special program is in place, it has to be used, thus further contributing to increases in health care costs.

The creation of regional centers would also provide a mechanism for evaluating new technologies before they are widely applied. As is well known, there is constant pressure on the Food and Drug Administration to accelerate the granting of licenses for marketing of new drugs and devices. As I have already mentioned, the pressure is particularly intense for new devices. Once out, they are often applied in circumstances far beyond the indications established by scientific study. While a great deal of information may be obtained from the experience with a new drug or device in the practicing arena, such information is infrequently and sporadically reported in medical literature. This represents a very serious gap in the life cycle of technologies.

One way to rectify that deficiency would be to allow selected hospitals and physicians to use a technology, but reimbursement would be contingent upon the submission of minimal data based on previously agreed protocols concerning safety, effectiveness and patient outcome. This suggestion was under study by the National Center for Health Care Technology and has again been raised by the OTA in its recent report, *Medical Technology and Costs of the Medicare Program*, just released (p. 153). This approach would also be useful in evaluating new surgical procedures which are infrequently subjected to sound clinical trials.

In summary, it seems to me that in the 1980s and for the remainder of this century, any discussion of medical technology must be coupled with a discussion of health care expenditures. There are many reasons for the increases in health care costs in the western industrialized nations and they may vary from country to country, but the factor which is cited most often is technological innovation.

The problems engendered by medical technologies can only intensify, given the fact that biomedical research and technology innovation in this country constitute a remarkable and productive enterprise and secondly, that our aging population will place increasing demands on the health care system.

I am convinced that despite what the pessimists say about rationing of health care being the only solution, it will be impossible to deny our citizens the new technologies now available or soon to appear, such as: dynamic metabolic studies using the new imaging devices, PET and MRI, pancreatic transplants, and in the not too distant future, the artificial heart, cochlear implants and others.

Our policymakers must be made to recognize that modern health care is expensive and will remain so. There appear to be no cheap and easy solutions. National planning for the remainder of this century will have to acknowledge that simple fact.

What Limited Resources Mean for the Delivery of Health Care

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Two events, often confused, but actually quite separate, are going to buffet the medical profession for many years. They will profoundly affect all groups of health providers, including physician assistants. They will force all Americans to reconsider basic assumptions about the provision of health care, about the rights of people to the best available care, about rights of physicians to clinical freedom, and about the rights of individuals to sue for malpractice.

The first of these events is the federal budget crisis and the associated financial predicament of the Medicare program for the aged and disabled. Projections indicate that unless revenues are somehow increased, the Medicare program will cease by about 1990 to be able to pay for all benefits promised under current law.

Even if this financial problem did not exist, budget deficits, now at $170 billion and projected to rise to about $270 bilion by 1989, would force a reexamination of existing federal commitments in most areas, including health. Although the composition and size of the cuts proposed by a President Mondale are likely to be rather different from those proposed by a President Reagan, some reduction in federal medical outlays is likely, whoever sits in the White House.

The second event that will buffet the medical profession is the blossoming awareness that large sums are being spent on medical care in general, but hospital care in particular, that in some sense are not worth what they cost. I do not refer only to the fact that medical outlays have been claiming an ever-increasing share of Gross National Product and that the trend seems up without foreseeable end. We do not after all complain of the skyrocketing expenditures on personal computers or videocassette recorders. I am referring rather to the growing recognition that many hospital admissions and many diagnostic and therapeutic procedures (both inside and outside of hospitals) are producing benefits that are so small or nonexistent that their cost is difficult to rationalize.

The result of this dawning concern is expressed in state programs to regulate hospital costs, in business efforts through preferred provider organizations, and through such individual efforts as the hospice movement to curtail costs or to alter the provision of care. As the fecund imagination of medical science and manufacturing entrepreneurship increase the range and cost of available services, these movements are likely to strengthen.

How will the pressures from the political imperative to reexamine federal spending and from the general unease with rising medical outlays make themselves felt? In answering these questions, we in the United States have very little to go on. It is true that we have never managed to finance the provision of medical care for low-income Americans on very generous terms, at least not by comparision with the arrangements of most other developed industrial countries. And judging by the cutbacks to the Medicaid program already in effect or under way, we are going to decrease the provision of care for these groups. The objective of assuring access to adequate care, once the engine behind efforts to secure passage of national health insurance, may gain renewed force if further cuts are enacted. This question is important, but it is not the one I shall focus on here.

The Choices Ahead

Rather, I want to draw attention to the kinds of choices that will have to be made in the organization and delivery of care for the majority of Americans who do and will have adequate financial protection against the costs of health care and who account for the vast majority of actual health spending.

During the last half century, the United States has gradually constructed a payment system expressly designed to shield patients and providers from the cost of hospital care when it is provided. People have sought and achieved health insurance coverage, and the Internal Revenue Code has greatly encouraged them in that quest. In addition, Congress has established numerous public programs to spare the aged and disabled, the poor, veterans, merchant seamen, Indians, and others from the costs of hospital care. As a result, individuals directly pay for only 10 percent of the costs of hospital care. For most people the extra cost of an additional test or treatment, of one more day in the hospital, of another bedside visit from the doctor, is usually zero. If there is any medical benefit

to be derived from such sources, it is in the patient's interest to have them. And under a fee-for-service system of reimbursement, it is in the interest of physicians and hospitals to provide them.

The technological advances that have transformed medicine in the last generation are generating a growing list of potentially beneficial procedures—CT scanners (now joined by nuclear magnetic resonance), hemodialysis, organ transplantation, coronary artery surgery, total parenteral nutrition, bone marrow transplants, monoclonal antibodies, to name a few.

If patients divided into two categories, one deriving many benefits from such procedures, the other few or none at all, there would be little difficulty in deciding how to reduce hospital costs. But, of course, patients are spread along a smooth continuum. That means that reducing the growth of medical expenditures will require subtle judgments and distinctions.

Many people think that the hard choices can be avoided if hospitals are encouraged to operate more efficiently or if the rate of hospitalization can be reduced to levels common in well-managed health maintenance organizations. I believe that this hope is wishful thinking. It is true that many billions can be achieved if hospital efficiency is increased and if the rate of hospital admissions is reduced, and these savings would be of enormous importance. But they are one-time savings that leave the fundamental issue unresolved: when technology is generating numerous and highly costly services, should such services be provided in the many cases where benefits are positive, but small? If so, how should the decisions be made about when care is to be provided? And who should make those decisions?

The British Experience

To clarify these questions, Dr. William Schwartz and I compared the provision of 10 important medical technologies in Britain and in the United States. Per capita British hospital spending is about half of that in the United States. British reactions to limited resources are suggestive of how the United States would respond if we choose to limit resources flowing to hospital care. Despite important differences between Britain and the United States, medical practice is similar in the two nations. Physicians are similarly trained. British and American physicians frequently exchange visits. They read the same journals. Cultural traditions are similar, although by no means identical.

We found that some services in Britain are provided at the same rate as in the United States. These services include treatment of hemophilia, radiotherapy for cancer, and chemotherapy for responsive cancers. Other services are rationed strikingly. These services include conventional x-rays, CT scanning, kidney dialysis, coronary artery surgery, total parenteral nutrition, and chemotherapy for unresponsive cancers. Hip surgery occupies an intermediate position, with the rate of service slightly below that in the United States.

The critical questions concern how rationing is done. How do the British make socially acceptable the denial of services, some of which are life-preserving? Perhaps the most important component is a process of rationalization, whereby economic necessity is translated into the medically indicated. As one British internist put it:

> The sense that I have is that there are many situations where resources are sufficiently short so that there must be decisions made as to who is treated. Given that circumstance, the physician, in order to live with himself and to sleep well at night, has to look at the arguments for not treating a patient. And there are always some—social, medical, whatever. In many instances he heightens, sharpens, or brings into focus the negative component in order to make himself and the patient comfortable about not going forward. He states the reason for not going forward in medical terms . . . but that formulation in many instances is in no small part conditioned by the fact that there really aren't enough resources to treat everybody, and there is a kind of rationalization which is, perhaps, influenced by resource constraints.

A nephrologist explained why the British rarely provide dialysis to patients over 50 with kidney failure by suggesting that most such patients have other diseases that make treatment medically undesirable. He explained that almost everyone over 50 is "a bit crumbly."

The director of the intensive care unit at one of London's leading teaching hospitals explained why it would be inappropriate for Britain, with one-fifth to one-tenth of the proportion of intensive care beds available in the United States, to have more:

> It would be empire building to blow it up that big. You would set your threshold here much lower. It has to be appropriate to the surroundings. Now what we have by your standards is way short of the mark. It would be too small in America, but if you took this unit and put it down in the middle of Sri Lanka or India, it would stick out like a sore thumb. It would be an obscene waste of money.

Both capital and personnel limits play a central role in rationing of hospital care in Britain. If a particular service cannot be provided without a key piece of equipment—CT scanners, for example—the service can be denied impersonally by a high-level decision not to buy the equipment. Such a decision can be made far removed from the physician or patient directly affected and without the need for direct person-to-person confrontations. In a similar fashion, not hiring specially trained personnel is an effective way to ration services that only those personnel can provide.

Kidney dialysis is a prime example. In-patient dialysis capacity is controlled by limiting the space provided for dialysis and by not hiring key personnel. Oddly, hospital-based nephrologists report that they rarely if ever have to turn away patients, despite the fact that roughly half of all patients with chronic kidney failure, a fatal disease, go untreated. The process of screening out such patients falls to the general practitioner or to the hospital-based general internist. When asked what he would do if confronted with a 65-year-old woman with chronic kidney failure, one general practitioner was unusually candid:

> Obviously the patient is 65 and therefore does not come within the regional dialysis program . . . I would say that mother's or aunt's kidneys have failed or are failing and there is very little that anybody can do about it because of her age and general physical state, and that it would be my suggestion or my advice that we spare her any further investigation, any further painful procedure and we would just make her as comfortable as we can for what remains of her life.

In addition to age, other factors that play a role in the rationing process are the aggregate cost of treatment, the cost of not treating, and the dependency of procedures on key equipment or personnel. The British treat all cases of hemophilia and provide slightly more bone marrow transplants per

capita than does the United States. Despite the high cost per case, relatively few cases present for treatment each year. It is doubtful whether either disease would be treated as fully if the number of cases approximated the number of new patients who would qualify on medical grounds for renal dialysis.

In contemplating the consequences of the discovery of a costly drug effective in treating one of the common cancers, a leading oncologist at one of Britain's leading cancer hospitals acknowledged that "that is something I wake up screaming about." He then went on to state that he thought that in such an event, sufficient funds might not be made available to treat everybody and that the physician might be placed in the position of having to deny treatment to specific people face-to-face. One nephrologist acknowledged that the key to denial of dialysis services was that others did the screening. As he put it, "once you get face-to-face, there is no way to say 'no.' "

The cost of not treating also plays a role. Despite the fact that hip transplantation is not a life-saving procedure, but merely improves the quality of life, the British do 70 to 80 percent as many as are done in the United States on a per capita basis. This high rate of treatment contrasts with coronary artery surgery where the British do only about 10 percent as many procedures on a per capita basis as are done in the United States. The reason for the difference may well be that hip patients are likely to become invalids and to require costly custodial care. In contrast, coronary patients usually adjust to the lack of treatment by changes in life style. What is more startling is that the British fail to do coronary artery surgery in more than half of the cases where treatment not only improves the qualify of life but extends it as well.

For a number of reasons, the British experience has been different from what the American experience would be under limited medical resources. Most British physicians are salaried; most American physicians are reimbursed on a fee-for-service basis. This difference in reimbursement makes it far easier for British physicians to accommodate to and cooperate in the enforcement of budget limits than it would be for American doctors. The difference between American and British political systems is also important. The British have a parliamentary system, marked by party discipline. The U.S. Congress has rarely been accused of exhibiting discipline. A third difference concerns the role of the courts. Obstacles to litigation in Britain permit British doctors to buy malpractice insurance for $250 per year. In contrast, premiums for malpractice insurance in the United States run as much as $70,000 per year and sometimes more.

A final intangible, but important, difference is patient attitudes. Although this difference is difficult to document, physicians from both sides of the Atlantic who have practiced in both countries attest to it. A British internist put it this way:

> I have been much involved with patients who have been investigated and subjected to surgery in the U.S.A., including some of the best medical centers there, and I have seen quite a lot of U.S. medicine firsthand. What impresses me is that in comparison with the U.K., it seems very seldom that the U.S. physician ever states there is no surgery that would help, no drug that is advantageous, and no further investigation, even though in many cases the doctor must realize that there is no possibility of benefit.

An American cardiologist echoed these sentiments:

> That there are fundamental differences in the personality structure of an Englishman versus an American seems to be well established throughout the contemporary literature and the cartoons of our time. One has a 'stiff upper lip,' the other is flamboyant to the point of 'wearing it on his sleeve.' One, genteel and reserved, the other macho. The American demands surgery and wants the consolation of having done everything possible. The Englishman tends to be more philosophical in approach and

The United States seems well launched on an experiment to determine whether it dislikes rising medical costs enough to face the distasteful medicine of cost limits. The Health Care Financing Administration is implementing a new method of prospective payment under Medicare. Great savings are anticipated. Even if less is saved than some predict, the new payment mechanism is a landmark break with traditional methods of paying the costs of all services provided. The pressure to extend similar controls to all payers and, perhaps, to bring physicians' fees under control, will be powerful. Several states already have cost control programs in effect and the number of such programs is likely to grow. President Reagan proposed placing a limit on the amount of employer-financed health insurance individuals may exclude from their taxable income. This measure, intended to encourage more cost-sharing and greater cost sensitivity by patients, was ignored by Congress; but that proposal or similar ones are likely to return.

How far these efforts will go is impossible to foretell. But it is clear that if these efforts persist, Americans will have to face for the first time the reality that slowing the growth of medical spending sooner or later will require the sacrifice of beneficial care. We surely will not follow British priorities precisely. But we can see in the painful choices they have successfully made a warning of the political and ethical dilemmas we shall have to face.

Discussion Paper

The United States Health Sector: Challenges and Choices for the Future

Henry B. Perry, MD, PhD, MPH

Introduction

During the remainder of the twentieth century, we are almost certain to see a continued questioning of the traditional roles played by all actors in the health sector: patients and consumers, physicians and other health professionals, hospitals and other corporate health institutions. We are beginning to pass through a period of ferment and change in health care. It is a time of refreshing candor as American society seeks to contain costs, maintain quality health services, incorporate biomedical advances, and at the same time obtain a clearer control over and understanding of what promotes good health and what resources society chooses to devote toward health activities. It is also a time when all actors in the health sector are maneuvering to at least maintain or preferably strengthen their "turf" within the health sector.

Today's ferment is fueled by a variety of forces, all coming together to stimulate change. The doubling of real financial resources expended by society for health expenditures, especially in the hospital, during the past 15 years, together with a concern that such increased expenditures have not resulted in any significant improvement in health, is obviously a leading source of ferment. The widespread publicity of the projected "doctor glut," the growing role of physician assistants, nurse practitioners, and nurse-midwives as providers of care previously given only by physicians, as well as the surplus of hospital beds and the declining rates of hospitalization, have all raised serious questions about the traditional roles of these important actors within the health sector. The continued rapid growth of biomedical science and technology and the pressures for incorporating highly expensive "state of the art" advances into day-to-day practice, prior to a scientific evaluation of the associated costs and benefits, have all added to the ferment.

Finally, the heavy emphasis in modern medicine upon the biomedical model as the basis of diagnosis and treatment is coming to be seen as highly valuable, but not the "be all and end all" of health care practice. A renewed appreciation for the importance of psychological and social influences upon disease and healing as well as upon the health care process itself has added to the ferment in which the health care sector will find itself during the remainder of this century.

The opportunity now exists of critically examining what is being done and why within the health sector. This evaluation can provide an assessment of what aspects of the health care sector need to be preserved and what aspects need to be changed. This is the **challenge** which faces society as health care in the United States enters this critical period during the remainder of this century.

The **choices** to be made by society at large and by specific actors within the health sector will hopefully be choices which are aimed at the attainment of the highest possible level of health for the individual and society at a reasonable cost. It is within this framework, at least, that the challenge and choices for the future of health care should be viewed.

Challenges for the Future

The health sector of American society in the twentieth century has traditionally been concerned with the treatment of organic disease by physicians trained in the biomedical tradition, as well as with the prevention of communicable infectious diseases through local, state, and federal public health programs. Although advances in the biomedical scientific understanding of organic diseases and their treatment have been truly remarkable, it is becoming clearer that in spite of continuing remarkable advances in biomedical science and technology, mankind may be approaching the limit of its potential to treat organic disease. Furthermore, and perhaps more importantly, it is becoming more widely appreciated that health promotion and prevention offer more opportunities for improving the health of the United States population in the future than does a continually expanding reliance upon highly sophisticated biomedical technology for diagnosis and treatment of disease.

These concerns raise fundamental questions. What is health, anyway? What is the role of society at large, of the health

sector, and of individuals themselves in treating and preventing illness and in promoting health?

The definition of health is a philosophic matter subject to considerable debate.[1,2] Most would agree that health is more than simply the absence of disease, but the World Health Organization's definition of health as the attainment of "physical, social and mental well-being" seems too ambitious to be considered as a realistic definition. Somewhere between these two extremes lies a more logical point from which to define health. Kass, for instance, considers health as a "state of being that reveals itself in activity as a standard of bodily excellence or fitness, relative to each species and to some extent to individuals, recognizable if not definable, and to some extent attainable."[3]

Given this premise, at least as a basis for discussion, the question provided by today's ferment is how can individuals, specific social groupings such as families or occupational groups, or society as a whole achieve optimum health? The opinion of many experts in the health field today is that optimum health will not be achieved by continuing to simply expand investments in traditional medical care services provided by physicians and hospitals.[4] Even the achievement of such remarkable biomedical advances as the complete eradication of heart disease, cancer, and stroke would in the United States only prolong life expectancy at birth by six years and at age 65 by two years, according to one estimate.[5] Medicine's contribution to longer life may have nearly reached its natural limit. Modern advances of medical care in improving life expectancy have had their greatest impact on lowering mortality rates for infants and children. The average life expectancy for those who reached age 65 has increased only 1.5 years between 1900 and 1970, while life expectancy from birth has increased by 22 years during the same period.[6]

The challenge, in my view, for the future of health care in the United States is to reduce investments in traditional medical care services without lowering their quality or their availability for disadvantaged segments of society and at the same time to initiate serious programs in health promotion and disease prevention at the societal level and at the individual level which do not impinge upon our personal freedoms.

It is now becoming clear that American society is approaching the limit of the percentage of the Gross National Product which can be devoted to health care. Certainly this percentage will not rise much above the current level of almost 12 percent. It is also becoming increasingly clear that the provision of traditional medical care services is substantially inefficient and in many cases overpriced or overutilized. For society and the health sector per se to seriously engage in health promotion and disease prevention, resources will have to be freed up from savings produced by reduced expenditures in the provision of traditional medical care services.

By "priming the pump," so to speak, with savings obtained from improved efficiency and reduced excessive utilization of traditional medical care services to finance health promotion and preventive activities, the theoretical possibility exists that the demand for diagnostic and therapeutic services will decrease in the future. There exists a danger, however, that with the growth of the "for-profit" corporate providers of medical care, profitable services will be marketed which bear little or no relationship to health promotion, disease prevention, or providing high quality diagnostic and therapeutic medical care.

For this reason, there is a critical need for vigorous research of the highest scientific quality to determine what aspects of medical diagnosis and treatment are essential in maintaining quality and humaneness and what aspects are not. Only then can cutbacks in expenditures for traditional medical services be made with integrity and confidence.

The ultimate success of the new movement toward health promotion and disease prevention rests on the strength of the scientific evidence justifying nontraditional activities and upon rigorous evaluation of their effectiveness. Without such research, the full potential of those newly emerging health activities could be lost.

Only a brief glance at the illnesses now plaguing those in our society under 65 years of age will make it clear that the traditional medical care system will not be able to add much toward the improvement of health for this segment of our population. In 1981, of the total number of years of life lost, 40 percent were caused by violence, in comparison with one percent by cancer and 10 percent by diseases of the heart. Among males age 15–24, the leading causes of death are accidents, homicide, and suicide.[7] For those under 65, psychosocial factors are the principal etiologic agents of physical morbidity and mortality. Even widespread improvement in the early care of injured patients through trauma centers and so forth is not likely to make a major impact on the morbidity and mortality associated with trauma.

Those over age 65 constitute the most rapidly growing segment of American society. For the remainder of this century, a demographic transition will be occurring in which these senior citizens will constitute an increasingly important segment of the population. This demographic shift has an important implication for the health sector. Diseases of the elderly are primarily disabling chronic diseases. Since we are unlikely to be able to cure these chronic diseases once they develop, renewed efforts will need to be made in prevention and in maintaining or restoring maximal limited function for such patients. If such an approach can reduce reliance upon total care institutions such as nursing homes, savings to society could be substantial. Promotion of maximally possible function has unfortunately not been a vigorous concern of the health sector.

Designing strategies for health promotion and disease prevention at the societal and individual levels will require a broader understanding of how individual behavior and how social, governmental, and environmental influences affect health and how they can be modified to promote better health. These are all matters for serious scientific research, for public discussion, for implementation of well-thought-out strategies, and for rigorous scientific assessment of the effectiveness of these strategies.

The potential benefits of disease prevention and health promotion are so significant that they can no longer receive minimal attention and minimal resource investment from society. Consider the following:

- 35–50 percent of all cancers and 50 percent of myocardial infarctions could be avoided by adherence to dietary guidelines, particularly limiting the intake of cholesterol and saturated fats;[8,9]
- cigarette smoking is the largest single preventable health problem in the United States and is believed to be

responsible for one-third of all cancers (including three-fourths of all lung cancers in men), most emphysema and bronchitis, half of all asthma and peptic ulcers, and one-fifth of myocardial infarctions;[10]

- up to half of all illness in the United States could be avoided through changes in behavior brought about by voluntary adjustments in lifestyle or by preventable measures on the part of government and private organizations;[11]
- approximately one-third of all cancers are felt by some experts to be caused by environmental contaminants;[12]
- accidents, including automobile accidents, cause 100,000 deaths per year which are preventable;[13]
- physical health status and longevity are favorably affected by the following personal behaviors: no cigarette smoking, sleeping at least seven hours per night, eating breakfast, not being overweight, not consuming excessive amounts of alcohol, daily exercise, and not eating between meals.[14,15]

The challenges at the societal (and governmental) level for health promotion and disease prevention lie in three separate spheres of activity. First of all, there exists the challenge of making the public's environment more healthful by reducing the levels of carcinogens and other toxic substances in the air, water, and food and by increasing the threshold for accidents of all kinds. Secondly, there exists the challenge of reducing morbidity and mortality inflicted by another person's behavior, such as a drunken driver killing innocent victims. Finally, at the societal and governmental level, there is the challenge of encouraging a more healthful lifestyle by reducing smoking, alcohol intake, obesity, stress, and obtaining regular exercise. For instance, it has been estimated that the consumption of a single pack of cigarettes costs $2.00 to society in health expenditures and productivity losses and therefore a pack of cigarettes should be taxed at this level.[16]

The challenges at the individual level for health promotion and disease prevention lie first and foremost in increasing our scientific epidemiologic understanding of the effects of individual psychosocial factors and lifestyle factors on health and disease and in informing health care providers, as well as the lay public, of the practical implications of this knowledge. The challenge is also to move away when possible from the individual's dependence upon traditional medical care services toward a renewed awareness of the individual's responsibility, rather than the physician's or the hospital's responsibility, for health. Finally, the challenge at the individual level is to seek to lower the individual's threshold and increase the individual's motivation for promoting health through a healthy lifestyle and through specific preventive activities.

Choices for the Future

As society struggles with the challenges just described, it will be forced to make many important choices during the coming decades. The most publicized choices will focus upon the reduction of expenditures for medical care.

Reducing Medical Care Expenditures

Pressure to reduce medical care expenditures, or at least reduce the rate of growth of such expenditures, continues to mount as the percent of the Gross National Product expended on health care has increased from six to almost 12 percent in the past 15 years. The federal government's expenditures for Medicare and Medicaid appear to be virtually uncontrollable. With the federal government's national debt having become a serious economic and political issue, the momentum for reducing federal health expenditures has reached a peak, even though there is evidence that the public would prefer to reduce defense spending more than financial assistance to the elderly and poor for medical expenditures.[17] Increasingly, business-labor coalitions are forming to try to limit the growth of medical costs as the vast sums consumed by health care erode corporate profits and limit personal expendable income for workers.

Growing expenditures for medical care have prompted the question, "what are we really getting for these additional expenditures, anyway?" In the economic marketplace, with the growth of competition in the health sector, the consumer is becoming increasingly cost-conscious and looking for less expensive options for purchasing health care which is still of high quality.

The direction of health care policy for the federal government and also for private third party payers is toward prospective payment of providers for services, with the goal of providing incentives to providers to be more efficient. The unit of reimbursement under the DRG (diagnostic-related groups) mechanism instituted by Medicare in 1983 is the hospital admission for a specific diagnosis. Hospitals receive a set fee from Medicare for a specific admission diagnosis regardless of the actual costs to the hospital in caring for that particular patient. Eventually, all providers will likely negotiate with all third party payers a lump sum per capita per year for all the services which the third party payers cover.

Policies of third party payers (private and governmental) have up until now encouraged overutilization and inefficiency in hospitals through retrospective "customary, prevailing and reasonable" payment criteria. Expenditures will certainly be much more closely scrutinized in the future under the prospective payment mechanism.

In spite of such efforts at cost containment, there will always be intense pressure for the critically ill and dying patient to receive the very latest and most expensive medical technology and treatment. As Rhoads points out, the sanctity of life is a central value to our society and, as such, the emotional issues surrounding life and death will always lead us as individuals to spend far more per life on "rescue missions and kidney dialysis patients than on life-preserving preventive programs."[18]

The basic choice which I see facing society as it grapples with these issues of cost containment is, will it opt for the politically expedient choice of reducing financial assistance to the poor and disadvantaged—thereby creating a two or more tiered system of care depending on the patient's ability to pay—or will it trim overutilization and inefficiency from traditional medical care services in general and preserve equal access and universal criteria of quality regardless of the patient's personal financial status?

In order to opt for the latter choice (which I believe we should), it will be necessary to greatly expand our understanding of what specific diagnostic procedures and treatments are actually necessary for high quality medical care and which

are not. This will require an entire new area of emphasis in medical research. Assessing the value of commonly utilized tests and procedures, which may not be expensive per unit but in the aggregate account for large sums of money, is certainly one area in critical need of attention. An assessment of outcomes of patient care (and their associated costs) at differing levels of intensity of services is an area which we need to understand much more fully. We are beginning to realize that annual physical examinations, annual PAP smears, and annual chest x-rays consume health care resources without improving health outcomes. We have only begun to explore these matters, but greatly expanded research in this area will be needed to develop a scientific storehouse of knowledge to justify a reduction in the use of diagnostic and therapeutic interventions in specified situations.

Unfortunately, most of the current thinking about cost containment focuses upon reduction of government expenditures for medical care for the poor. As Ginzberg has argued, this is only imaginary cost containment since most of these costs are actually shifted to the private sector. True cost containment, argues Ginzberg, should involve reducing medical care costs which do not adversely affect the satisfaction of patients or their health status.[19]

Rethinking the Physician's Role

The manner in which physicians are socialized and educated to become pivotal actors in the health sector is certainly a matter for serious consideration by those interested in long-term changes which will improve the health of the United States population. If physicians are to become involved in the challenges for the health sector outlined above (and I believe they should), then the biomedical model relied upon today in the education and training of physicians will require expansion.

Physicians should be at the forefront of investigations regarding how to reduce expenditures for traditional medical care without sacrificing quality or access for the disadvantaged. Physicians should also be at the forefront of investigations concerned with health promotion and disease prevention. Physicians are the health professionals most eminently qualified to assess quality of medical care and to make judgments regarding what activities and expenditures may or may not be necessary for maintaining quality and access. The president of the Society of University Surgeons, in his presidential address in 1984, calls for physician-researchers to establish standards of scientific excellence in assessing the quality, the cost effectiveness, and overall impact of medical services on health.[20] Hopefully, academic medicine is beginning to consider this frontier as its responsibility to conquer.

The choice to be made is whether physicians will hold fast to their traditional domains of diagnosis and treatment, allegiance to the biomedical model, and professional protectionism, or become leaders in the search for the best health available at a reasonable cost. Although physicians will continue to be involved in basic biomedical research, a critical role for the future is for physicians to become more eclectic in their selection of investigative techniques from whatever branches of the biological and social sciences applicable in pursuit of the issues of the causes of disease and health and in the design of efficient strategies to promote health, prevent disease, treat disease more effectively and efficiently, improve personal functioning in diseased patients, and limit unnecessary suffering. If, in fact, the mainstream of the American medical profession moves in this direction, a renaissance of knowledge applicable to the health sector could be forthcoming which could help meet the challenges outlined earlier in this paper.

Tarlov has described the physician's central medical objective during the period since 1940 as the "correction of physiologically measurable abnormalities."[21] Bok considers this biomedical model to still be the central concept around which medical education is organized: "at the heart of this conception is a view of human disease as a scientific phenomenon consisting of deviations from a biomedical norm."[22] In the coming decades, Tarlov envisions the physician's role to be "the maintenance and improvement of individual patient functioning in the patient's normal environment while he or she performs usual activities."[23] Instead of curing disease (which we now recognize as increasingly less possible in an era of chronic diseases), the physician's role will likely shift to maximizing function.

One very likely outcome of this new physician orientation is a realization that the numbers of physicians required for the more distant future will be considerably less than those deemed appropriate for today and the immediate future. The Graduate Medical Education National Advisory Committee (GMENAC), in calculating that by 1990 there will be an estimated surplus of 70,000 physicians,[24] relied upon a role orientation for physicians which is quite traditional. The experience with physician extenders, such as physician assistants, nurse practitioners, and nurse-midwives, has confirmed the concept that non-physicians with less extensive training can provide up to 90 percent of ambulatory pediatric primary care and up to 75 percent of ambulatory adult primary care without any demonstrable decline in quality of care.[25] More recent experience is suggesting that the utilization of such new health professionals as these for non-primary ambulatory care settings and for inpatient care could make non-primary care physicians considerably more efficient. The application of these concepts could lead to even a much greater surplus estimate of the numbers of physicians required to provide high quality medical care in American society than GMENAC has projected. The eventual cost savings of a reduced but more efficient physician manpower pool could be enormous.

The current focus on competition within the health sector is likely to provide a strong impetus toward continually growing roles for new health professionals, even in the face of an increasing surplus of physicians. As Light has concluded, "delegation and substitution—and the managerial skills to use them efficiently—will be key tools in providing good care at competitive prices."[26]

The spectre which many foresee of physicians becoming mere technicians, handmaidens of corporate organizations, hemmed by government regulations, and being replaced by paramedics or computers[27] seems over-exaggerated. Starr argues that even within corporate structures, physicians are not likely to become "proletarianized" even though they will certainly lose some of their previously enjoyed autonomy.[28] "Because of their dependence on physicians," Starr writes, "the corporations will be generous in granting rewards, including more autonomy than they give to most other workers."[29] Furthermore, one can predict that corporations con-

trolled by physician providers are likely to arise which will serve physicians' interests more fully,[30] even though the monopoly enjoyed by the medical profession in the past[31] is eroding.

While physicians may not need to continue to provide in the future the same services they have in the past, there is no question that, as the most highly trained and skilled health professional, the physician will continue to be the leader of the medical care team, the final authority on judgment issues in diagnosis and treatment and the person responsible for invasive or complex diagnostic and therapeutic procedures. Only physicians are going to be able to judge with integrity and with a scientific basis which activities can be eliminated from the medical care process without significantly jeopardizing quality. As the health sector moves toward reducing resources for traditional medical care services, an increasingly important role for physicians will be in expanding our knowledge base of how important specific services are to the quality of care and in making judgments regarding which activities to eliminate in which particular situations.

Rethinking the physician's role involves, then, an orientation toward a broader role than just applying biomedical principles in the diagnosis and treatment of disease. It involves an extension of the biomedical model of disease to what Engel has termed the biopsychosocial model of health and illness.[32] Such an extension involves an emphasis on examining psychosocial influences upon the development of disease, response to disease, and the healing process. Noncompliance with medical treatments, for instance, is now being recognized as perhaps the "most significant problem facing medical practice today."[33] Understanding and improving compliance will certainly require a broader vision than the biomedical model of disease diagnosis and treatment will allow. Certainly the recognition that between a third and a half of patients who visit primary care physicians have no physical or biomedical ailment and that drugs and diagnostic tests are of no use in these cases is sufficient basis for an expansion of the biomedical model to a biopsychosocial one.[34] The extension of scientific research into the important subject of mind-body relationships and the impact of the mind on healing and on health promotion and disease prevention certainly offers great promise for improving the effectiveness of medical care. Norman Cousins' eloquent testimony of his own illness demonstrates that mental attitude and the human will are powerful forces in preserving health and coping with disease.[35] Weil, in his thoughtful discussion on the future of medicine, argues that these mind-body relationships will be at the forefront of medical research in the twenty-first century.[36] He states that:

> Anyone who comes to see healing as an innate capacity of the body rather than something to be sought outside it will gain greater power over the fluctuations of health and illness. Anyone who recognizes the importance of mind and belief in determining responses to treatments will be able to make better sense out of past interactions with medical practitioners and better decisions about future ones.[37]

These new concepts for the physician's role are now entering the discussion regarding the appropriateness of the medical content of today's medical school curriculum in preparing the physician of tomorrow. In his recent report on medical education to the Board of Overseers of Harvard University, President Derek Bok stated the following:

> Matters outside the domain of science command little attention. Although everyone knows that psychological and behavioral factors can influence health, doctors have tended to regard those matters as unscientific and have left them largely to others—psychologists, social workers, public health officials, and the like . . . . Similarly, since ethical issues and patient values have little effect on the scientific determination of disease, they have not loomed large in the thinking of physicians. . . . Much the same has been true of other subjects relevant to health, such as the prevention of disease, the cost and equitable distribution of medical services, and the development of health policies and regulations. Because these topics are peripheral to the scientific analysis of illness, they have been either relegated to secondary status in the curriculum or left to other faculties such as public administration and public health.[38]

Bok's argument is that these matters deserve an integral place in the basic education of physicians. The teaching of preventive medicine occupies only 1.5 percent of the total teaching time of the curriculum in American medical schools today.[39]

The choice is whether to go beyond the biomedical model in the definition of the physician's domain of knowledge, interest, involvement and investigation. The Association of American Medical Colleges' recent report, *Physicians for the Twenty-First Century*, has endorsed the need for an expanded role for health promotion and disease prevention in the basic education of all physicians and has also endorsed the incorporation of concepts and principles derived from the social sciences and humanities which are applicable to clinical practice.[40] The pendulum has begun to swing toward a reorientation of the physician's role for the challenges of tomorrow.

Toward Increased Personal Responsibility for Health

One of the dysfunctional features of the health sector in the United States is the dependence which it fosters among the healthy as well as the ill. Illich, for instance, argues that "more health damage is caused by people's belief that they cannot cope with their illness unless they call the doctor than doctors could ever cause by foisting their ministrations on people."[41] In our knowledge-rich society, we need an increased dissemination of information to the lay public regarding healthful and unhealthful behavior and regarding activities lay persons can undertake which will promote health. As mentioned previously, we need a much greater understanding of these topics and we need to further develop what Terris has called an "epidemiology of health."[42]

The choice to be made is for society to recognize or not the importance of increased personal responsibility for improved health. If this recognition is confirmed, then concerned individuals, organizations, professionals, and segments of government will need to work collectively toward this goal.

Changing lifestyles and personal behaviors are long-term matters which depend much more upon education than upon legislation. Nevertheless, efforts in this direction are definitely in society's best interests, although personal freedom, one of our society's greatest values, must be respected in efforts to discourage smoking and alcohol abuse and in efforts to encourage weight control and regular exercise. Healthful personal lifestyles and behaviors are probably society's greatest hope for improving health and containing medical care costs as well.

Toward a New View of Social Medicine

Social medicine has historically been closely associated with the term "socialized medicine." The term social medicine concerns the social influences upon the maintenance of health and upon the occurrence of disease, as well as the social influences upon disease prevention, illness treatment, the healing process, and outcomes of medical care.

The father of social medicine was the great German pathologist Rudolph Virchow, who maintained that "medicine is a social science" and that "the goal of medicine is not scientific understanding for its own sake but knowledge applied to the promotion of health through social means."[43]

The choice awaiting society is whether to develop a new view of social medicine which is not focused upon efforts toward "socialized medicine," but which is focused upon the mobilization of society-wide efforts toward containing costs without reducing quality or access, toward promoting healthy personal lifestyles, and toward creating a healthy social and biological environment. Society needs to develop mechanisms for investing a small fraction of medical care expenditures in the development and dissemination of better information on the cost-effectiveness of medical care and in encouraging (or requiring) practitioners of medicine to incorporate this information into their daily patient care decision-making.[44] The fostering of the appropriate organizational environments which encourage these types of medical practice, without sacrificing the individual practitioner's ability to provide the highest quality of care and concern for his or her patient, represents a major challenge for social medicine in the future. "Experts on health policy need to continue to press for reforms in organization and finance that will lead patients to want, and health professionals to deliver, more cost-effective care," writes Fuchs.[45]

A new vision of social medicine will be required to combat the perverse aspects of corporate health care, whether it be limited access to the poor or befuddling the well-to-do with "trendy" services which do not contribute to improving health outcomes.[46] A new vision of social medicine will also need to clarify and affirm the many important social functions provided by physicians in society and provide appropriate safeguards to allow the physician to function in the best interests of his patient whenever possible. Fuchs has argued that "the commitment of the individual physician to the individual patient is one of the most valuable features of American medical care."[47] Similarly, Cunningham maintains that "given some similarity of resources, anybody in his right mind would rather be cared for in a doctor-driven system than in a price-driven system."[48] Mutual confidence and trust between the physician (or other health professional) and patient is one of the most critical ingredients for the provision of effective medical care. Society will need to seek to promote conditions which foster and protect these kinds of relationships.[49]

Although the medical profession has come under serious criticism from many different sources and its political influence and professional dominance have eroded and will continue to do so,[50] serious thinking will need to be devoted to how physicians can best serve the health needs of individuals and society.[51] For instance, social ethics of physician groups and physician-dominated for-profit corporations providing health and medical services will have to be closely monitored to protect the interests of patients.[52]

A new vision of social medicine will need to combine our concern for equal access and high quality medicine for all citizens with the concern for using society's resources to improve the health of the population through health promotion and disease prevention as well as through cost-effective medical practices. Today's current policies of cost containment are not selectively aimed at ineffective medical practices but at all medical care, good and bad. Eisenberg calls for a new vision of social medicine which goes far beyond simply putting a cap on medical expenditures:

> Today, concern for the health of the population is being swamped by a national preoccupation with the costs of care. "Health" is disappearing from "health policy." When costs become paramount, savings replace health status as the index of policy success. . . . [F]iscal limits do not discriminate between necessary and effective care, on the one hand, and useless or even harmful procedures on the other. . . . We must insist, as Rudolph Virchow did, that health outcome is the primary concern of health policy.[53]

The task of making the current medical care process more efficient without sacrificing access or quality and of finding new resources for health promotion and disease prevention is at the heart of a new vision of social medicine. Concerns continue to mount that a growing reliance on for-profit market mechanisms in health will lead to an overabundance of services for those who have money to spend, especially on acute care, while preventive measures and care for the disadvantaged and less economically powerful segments of society, such as the poor, the elderly, minorities, and children, will become less available.[54]

Thus, skeptics of the free market philosophy in health care are beginning once again to call for regulation by government to preserve these important social values which the free market is not likely to respect. Schramm, for instance, claims that:

> . . . if left to the market, the hospitals that survive would all be in the suburbs; they would have neither the commitment nor the experience to care for the poor, and they would have no responsibility for teaching and research. . . . Reliance on "market solutions" will only reaffirm individual claims to resources over group interests and favor acute care to individuals, regardless of prognosis, over measures to improve the health status of society as a whole. . . . Only through government can we assert our collective best interest over our individual self interest.[55]

Developing a socially and ethically acceptable consensus regarding how to reduce traditional medical care expenditures is a critical task for a new vision of social medicine. As one medical school ethics professor at the University of Alabama School of Medicine, Gregory Pence, states:

> Medical costs are uncontrollable because we lack moral agreement about how to deny medical services. Deciding how to say "no," and to say it with honesty and integrity, is perhaps the most profound, most difficult moral question our society will face in coming years. But face it we must, for the alternative is disastrous.[56]

Finally, a new view of social medicine will have to come to grips with the counterproductive characteristics of a health care sector which has lost sight of health as a goal and which has encouraged dependence of individuals and other sectors of society on it. Illich's spectre of the health sector as not necessarily serving society's interest in better health should be given serious consideration in a new view of social medicine:

> The threat which current medicine represents to the health of populations is analagous to the threats which the volume and intensity of traffic represent to mobility, the threat which education and the media represent to learning, and the threat which urbanization represents to competence in homemaking. . . . The cumulative result of overexpansion in the health-care industry has thwarted the power of people to respond to challenges and to cope with changes in their body or their environment.[57]

Summary

The challenges and choices facing the United States health care sector involve increasing our efforts to lower the costs of personal health care for the sick without sacrificing quality or access or denying technological advances when truly efficacious. This set of challenges and choices will involve a close examination of issues of quality, outcomes, costs, equity, evaluation of new technology, and professional orientation of physicians.

A separate set of challenges and choices awaits the United States health sector in the areas of health promotion, disease prevention, and moving beyond the biomedical model of disease diagnosis and treatment. Increasing our understanding of the epidemiology of health, psychological and social influence upon disease and healing, and enhancing personal responsibility for health are the frontiers of tomorrow.

With the evolution of the health sector into a "medical-industrial complex," a whole host of professions, occupations, organizations, and businesses has been brought together in a common enterprise. This has brought ferment and creative tension. Although the medical profession has come to feel threatened by the growing external constraints on the practice of medicine, as well as by growing discontent with the biomedical model as the basis of medical practice, I believe that the greatest hope for the future is that those of us in the health professions will redirect our efforts toward fulfilling the responsibility which society has entrusted to us in pursuing the goals of medicine as defined by the great medical historian, Henry Sigerist:

> The task of medicine is to promote health, to prevent disease, to treat the sick when prevention has broken down and to rehabilitate the people after they have been cured.[58]

I agree with Bok that, in the end, reliance upon outside experts to deal with all of these terribly important and complex issues will ultimately be self-defeating.[59]

> . . .[T]he critical decisions cannot be cut into separate parts and entrusted permanently to specialists. Eventually, a physician must take the pieces and fit them together to form a coherent plan of action. . . . There is no substitute for doctors who can understand and integrate a range of subjects quite outside the body of bioscientific knowledge.[60]

As Eisenberg so rightly insists, it is the responsibility of physicians to exercise leadership in social actions for health and in insisting that the primary concern of health policy be health outcome, not health costs or potential profits.[61]

References

1. Kass, Leon R. "Regarding the End of Medicine and the Pursuit of Health," *Public Interest* (Summer 1975): 11–42.
2. Weil, Andrew. *Health and Healing: Understanding Conventional and Alternative Medicine.* Boston: Houghton Mifflin Co, 1983.
3. Kass, "End of Medicine," p. 28.
4. Fuchs, Victor R. "The Economics of Health in a Post-Industrial Society," *Public Interest* (Spring 1979): 3–20.
5. Kass, "End of Medicine."
6. Ibid.
7. Eisenberg, Leon, "Rudolph Ludwig Carl Virchow, Where Are You Now That We Need You?" *Am. J. Med.* 77 (1984): 524–32.
8. World Health Organization. "The Causes of Cancer: Quantitative Estimates of Avoidable Risks of Cancer in the United States Today." *Diet, Nutrition and Cancer: World Health Statistics Annual 1982.* Geneva: World Health Organization, 1982.
9. Lipid Research Clinics Program. "The Lipid Research Clinics Coronary Primary Prevention Trial Results: The Relationship of Reduction in Incidence of Coronary Heart Disease to Cholesterol Lowering," *J.A.M.A.* 251 (1984): 365–74.
10. Chandler, William U. *Improving World Health: A Least Cost Strategy.* World Watch Paper 59, Washington, 1984.
11. Bok, Derek. "The President's Report, 1982–83." *Harvard University Gazette* 79 (April 20, 1984): 1–12.
12. Singer, Max. "How to Reduce Risks Rationally," *Public Interest* 51 (1978): 93–112.
13. Ibid.
14. Belloc, N. B. and Breslow, L. "Relationship of Physical Health Status and Health Practices," *Preventive Medicine* 1 (1972): 409–21.
15. Belloc, N. B. "Relationship of Health Practices and Mortality," *Preventive Medicine* 2 (1973): 67–81.
16. Advisory Committee to the Surgeon General of the U.S. Public Health Service. Smoking or Health: Report of the Advisory Committee to the Surgeon General of the U.S. Washington, D.C.: U.S. Government Printing Office, 1984.
17. Navarro, J. "Where is the Popular Mandate?" *N. Engl. J. Med.* 307 (1982): 1516–18.
18. Rhoads, Steven F. "How Much Should We Spend to Save a Life?" *Public Interest* (Spring 1978): 74–92.
19. Ginzberg, Eli. "Cost Containment—Imaginary and Real," *N. Engl. J. Med.* 308 (1983): 1220–24.
20. Jaffe, Bernard M. "Presidential Address: How Big is the Bite?" *Surgery* 96 (1984): 129–32.
21. Tarlov, Alvin R. "Shattuck Lecture—The Increasing Supply of Physicians, the Changing Structure of the Health Services System and the Future Practice of Medicine," *N. Engl. J. Med.* 308 (1983): 1235–44.
22. Bok, "President's Report," p. 4.
23. Tarlov, "Shattuck Lecture."
24. U.S. Department of Health and Human Services. Graduate Medical Education National Advisory Committee. Report to the Secretary, Department of Health and Human Services, Vols. I–VII. Washington, D.C., 1980.
25. Record, Jane C. *Staffing Primary Care in 1990: Physician Replacement and Cost Savings.* New York: Springer, 1981.
26. Light, Donald W. "Is Competition Bad?" *N. Engl. J. Med.* 309 (1983): 1315–18.
27. Maxman, Jerrold S. *The Post-Physician Era: Medicine in the Twenty-First Century.* New York: Wiley and Sons, 1976.
28. Starr, Paul. *The Social Transformation of American Medicine.* New York: Basic Books, 1982.
29. Ibid., p. 446.
30. Marcus, Sanford A. "Trade Unionism for Doctors: An Idea Whose Time Has Come," *N. Engl. J. Med.* 311 (1984): 1502-11.
31. Berlant, Jeffrey L. *Profession and Monopoly: A Study of Medicine in the United States and Great Britain.* Berkeley: University of California Press, 1975.
32. Engel, George L. "The Biopsychosocial Model and Medical Education: Who Are to Be the Teachers?" *N. Engl. J. Med.* 306 (1982): 802–06.
33. Eraker, S. A., Kirscht, J. P. and Becker, M. H. "Understanding and Improving Patient Compliance," *Annals Int. Med.* 100 (1984): 258–68.

34. Cohen-Cole, Steven A. "On Teaching the New (and Old) Psychobiology." In Charles P. Friedman and Elizabeth F. Purcell, eds., *The New Biology and Medical Education: Merging the Biological, Information and Cognitive Sciences*. New York: Josiah Macy Foundation, 1983.
35. Cousins, Norman. *The Healing Heart*. New York: Avon, 1983.
36. Weil, *Health and Healing*.
37. Ibid., p. 273.
38. Bok, "President's Report."
39. Ibid., p. 7.
40. Association of American Medical Colleges. "Excerpts from Physicians for the Twenty-First Century," *Annals Int. Med.* 101 (1984): 870–2.
41. Illich, Ivan. *Medical Nemesis: The Expropriation of Health*. New York: Parthenon Books, 1976.
42. Terris, Milton. "Approaches to an Epidemiology of Health," *Am. J. Pub. Health* 65 (1975): 1037–45.
43. Eisenberg, "Virchow," p. 530.
44. Thurow, Lester C. "Learning to Say 'No'," *N. Engl. J. Med.* 311 (1984): 1569–72.
45. Fuchs, "Rationing Medical Care," p. 1573.
46. Alper, Philip R. "The New Language of Hospital Management," *N. Engl. J. Med.* 311 (1984): 1249–51.
47. Fuchs, "Rationing," p. 1573.
48. Cunningham, Robert M. "Entrepreneuralism in Medicine," *N. Engl. J. Med.* 309 (1983): 1313–14.
49. Weil, *Health and Healing*.
50. Starr, *Social Transformation*, p. 380–92.
51. Levinsky, Norman G. "The Doctor's Master," *N. Engl. J. Med.* 311 (1984): 1573–75.
52. Nutter, Donald O. "Access to Care and the Evolution of Corporate, For-Profit Medicine," *N. Engl. J. Med.* 311 (1984): 917–19.
53. Eisenberg, "Virchow," p. 530.
54. Austin, Glenn. "Child Health-Care Financing and Competition," *N. Engl. J. Med.* 311 (1984): 1117–20.
55. Schramm, Carl J. "Can We Solve the Hospital-Cost Problem in Our Democracy?" *N. Engl. J. Med.* 311 (1984): 729–32.
56. Friedrich, Otto. "One Miracle, Many Doubts: A Feat of Heart Surgery Sharpens the Debate Over Benefits and Costs," *Time* (December 10, 1984): 70–77.
57. Illich, *Nemesis*, p. 220.
58. Sigerist, Henry E. *Civilization and Disease*. Chicago: University of Chicago Press, 1943.
59. Bok, "President's Report," p. 6.
60. Ibid.
61. Eisenberg, "Virchow."

Discussion Paper

Challenges and Choices for Physician Assistants

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The major theme expressed by speakers and participants at the symposium on the future of health care was that of change in the health care sector. We are entering a new era in health where the issues and assumptions of the past are being redefined and challenged. The experts have carefully identified the pressing issues we face as health professionals and have attempted to explain their causal basis. The scenarios they present based on their analyses involve marked restructuring of the roles of health professionals and major alterations in the financing structure through which they are paid.

How will these looming changes affect the physician assistant (PA) profession? For example, what impact will the rising number of physicians have on the acceptance and utilization of physician assistants? It appears that this issue alone may lead to a basic redefinition of the rationale for the PA profession. It may no longer be sufficient to ground the existence of the profession in provider shortages and maldistribution, but instead to view the role of PAs as providers who are cost-effective and possess wide practice versatility.

This analysis centers on those issues, identified by several speakers but more fully elucidated in the discussion sessions, that impact most specifically on the PA profession. It attempts to take the major global themes expressed by the various experts and use them to focus on specific aspects of PA training, utilization and practice. The objective is to look closely at how the PA profession can successfully deal with the changing focus in health care.

Issues in Education

Adjustments in future directions for the physician assistant profession begin in how PAs are educated. Until recently, PA education has focused on training practitioners for roles in primary care, reflecting the mandate of both the major funding source for most programs and the national accrediting agencies. But health care marketplace determinants have broadened the clinical roles of PAs far beyond that of primary care into specialty and subspecialty areas.* One key question posed by participants on several occasions involved PA program responsiveness. That is, should programs train practitioners based on the tradition and mandates of the past, or should they be more sensitive to marketplace responses to PA availability? We know that many PAs currently are, by choice or by necessity, working in non-primary care areas. To what extent should PA programs make efforts to shift the focus of their curriculae to accommodate this marketplace need? The development of a number of specialty-oriented, post-PA program training experiences suggests an ongoing market for the specialty PA.

Financial support for PA education is a pressing issue. Currently, most PA programs receive at least some support from the federal government, but indications are that this support is soon likely to cease. A number of programs have successfully institutionalized themselves within their sponsoring colleges or universities, yet others have not and continue to depend upon the increasingly perilous federal source of funding. When the day comes that programs no longer are federally supported, what will be the impact on PA education and on the profession?

In the absence of federal support, it is possible that some programs would close. This could reduce the total number of programs by 10 to 15, leaving 35 to 40 surviving programs which have obtained the necessary internal commitments and/or alternative sources of funding. These surviving programs in a Darwinian sense will represent the fittest and may very well be able to expand their class enrollment such that the total pool of graduate PAs will remain at approximately 1,500 individuals per year. Complete institutionalization, as emphasized by Dr. Moritsugu, must be the chief goal of all PA programs.

Another issue, perhaps more philosophical in nature, involves

*Cawley, J. F., Ott, J., DeAtley, C. "The Future for Physician Assistants," *Annals Int. Med.* 98 (1983): 993–97.

the changing characteristics of the students attracted to the PA profession. It is clear that the typical PA student of the present has much less "real world" health care experience but possesses more formal academic credit than students of the previous decade. There is some concern that this trend may lead to the production of PAs who are less patient care-oriented, less motivated to sell themselves and the concept, and more likely to be prone to frustration, over time, with their clinical roles. While this may represent the harpings of stodgy traditionalists, there does seem to be an increasing emphasis placed by PA programs on academic credentials and achievements. The natural progression of this trend is for programs to come under increasing pressure to award the master's degree. While this notion has been discussed for many years, only two programs have moved in this direction thus far. The time may be right, in view of the increasing number of students who enter PA programs with a baccalaureate degree, for the profession to encourage institutions that sponsor PA programs to consider master degree tracks. This also would entail negotiations with accrediting agencies and certifying bodies regarding how master-prepared PAs would be recognized.

Broad-based changes in educational policies for PAs are limited by the requirements and resources of the 53 separate institutions engaged in PA training. Some may be more willing than others to embark on major new directions. Progressive institutions should recognize that PA education cannot remain dormant in the changing health environment.

Recently, the Association of American Medical Colleges issued a report* on the status of medical education in this country and included recommendations on improving the quality and content of medical training. PA education closely resembles medical education in many aspects and the report contains much information of relevance to PA educators. Programs should be encouraged to consider the recommendations of the GPEP report, particularly in view of how they may relate to current trends affecting PAs. One objective of the PA profession should be to support and facilitate discussion of educational issues among PA program directors and faculty and to encourage PA program responsiveness to the changing forces in health care.

Issues in Organization

As a profession, the physician assistant concept may be said to be moving into its adolescence. The PA profession is no longer a struggling young band of pioneering ex-corpsmen, but it is not yet comparable in stature to the large, long-established health groups such as doctors and nurses. Barely 20 years old, the PA profession has evolved quickly through the stages of organizational development where its role, identity and educational and legal frameworks have become established. We are now at the stage where most of these issues have been largely resolved. Our numbers have reached the point where we now must consider other organizational factors and perhaps reevaluate our relationships with outside groups.

That is not to say that as an organization we must operate alone. All health groups must interact to some extent with each other, and PAs, due to the nature of their close practice relationships with doctors, must necessarily keep close ties with physicians. But organizational maturity brings with it the responsibility for the profession to clearly delineate its own specific goals and objectives and to articulate these views in a persuasive way to health policymakers.

Because of the unique dynamics between PAs and doctors, and because of the historical distance between medicine and nursing, organizational maneuvering among these groups must occur with some caution and diplomacy. PAs have struggled in past attempts to clarify their practice roles both to physicians, who sometimes believe that PAs are seeking increased practice autonomy, and to nurses, who sometimes believe that PAs are somehow a threat to their status and livelihood. The dependent role of the physician assistant should continue to be emphasized and clarified.

The process of achieving organizational maturity through the setting forth of the goals and objectives of the profession is important, yet it is not an end unto itself. This effort must extend into the health policy arena where our views can be heard by key administrators, health leaders and legislators. The profession should seek to strengthen and extend its formal affiliations with major medical groups and emphasize to them the dependent role of the PA. Our thrust must be to be perceived as partners in health care delivery rather than as threats to the doctor's practice.

Issues in Professional Data

In the new era of health care, where competition among providers is increasing and financial resources are decreasing, it becomes necessary for all health professions to clearly justify their roles and contributions to the health care system. It is no longer adequate to defend the PA concept on intuitive grounds or on the basis of unrealized potential. A major challenge to the PA profession in the future is to assemble a strong research data base to be used to advance the acceptance and utilization of PA providers.

When PAs were first introduced, the expendiency of the health provider shortage precluded extensive investigation of their performance prior to their entry into practice. Nonetheless, many studies were subsequently conducted that indicated that PAs were indeed quite competent, were well accepted by doctors and patients, and fulfilled needed roles in health care delivery. Quality of care issues were quickly resolved and several studies indicated substantial cost savings to practices employing PAs. After reviewing the large amount of data that accumulated in the 1970s, one could easily conclude that PAs had fulfilled the promise inherent in their creation—PAs delivered high quality of care, extended the practice capacity of physicians, and were serving in areas of need.

As the PA profession entered the 1980s, the changing environment of health care raised a number of new questions regarding PAs. As medical costs became a major issue in health, cost effectiveness became an item of crucial importance. Although PAs were shown to be cost effective in the HMO setting, was this true in other areas such as hospitals, private practices and clinics? How would the DRG-based prospective payment system affect the utilization of PAs in the inpatient setting? What are the factors that maximize PA cost effectiveness?

*Physicians for the Twenty-First Century: GPEP Report. Association of American Medical Colleges: Washington, D.C., 1984.

Unfortunately, we lack conclusive data in these areas at present. Funding and grant programs for research in health manpower dropped off sharply after 1980 and consequently there have been few large-scale efforts measuring the ongoing contributions and performance of PAs. PA cost effectiveness is the most important but not the only area where key information is needed but is currently lacking.

The national longitudinal survey of PAs, funded by the Robert Wood Johnson Foundation, has provided extensive and useful information on the practice and professional characteristics of PAs through the years 1975 to 1981. Although the 1981 data are quite adequate and a subsequent secondary analysis was completed in 1984, there is a need to continue the work of tracking PA graduates over time and observing their utilization patterns, professional demography and employment trends.

Why is it necessary to obtain such data? The answer is simply to help market the PA concept. Most individuals outside of the profession are unaware of the various practice characteristics and contributions of PAs. The key target groups to which current and accurate data must be directed include federal policy makers and legislators who control the support for PA education, health administrators and physicians who are in positions to hire PAs, and state-level administrators and legislators who determine PA practice regulations and policies within the states. An additional group involves those who are in policy making positions in the health financing arena. Currently there are major renovations underway in health financing policies. Reimbursement policies are being closely examined and it will be necessary for all health professions to present clear and meaningful data on cost effectiveness as a means of justifying third party reimbursement for their services.

In terms of PA cost effectiveness, most people involved with the profession are convinced intuitively that PAs save money for the practice or institutions that employ them. That intuitive feeling is not enough to convince the federal Health Care Financing Administration or other third party payers that PA services should be covered. The data that exist on PA cost effectiveness come primarily from studies done in an HMO setting nearly eight years ago. To present a convincing case for reimbursement of PA services, it will require that cost data be compiled from a variety of clinical settings, including hospitals, and that the number of PAs enrolled in the study be sufficiently large to provide meaingful information. To conduct such a study will require substantial funds, time and effort, but must be done if PAs hope to obtain coverage for their services.

Apart from reimbursement and cost effectiveness, which are clearly overriding issues, there are other professional areas that need to be examined. It is important, for example, to gain information on the patterns of physician delegation of medical tasks and the factors that promote maximum delegation. What circumstances contribute to the physician's comfort in delegating medical duties to PAs? Another question involves the content of care provided by PAs. Are PAs providing only medical services, i.e., substituting for physicians, or are they providing physician complementary services, such as counseling, health education and preventive services? To what extent is it feasible to have PAs provide preventive services within a physician's practice? The answers to these questions could provide a wide range of new professional directions for PAs and also could insure a firm professional foundation for PA practice in the health care system.

Issues in Competition

Health manpower experts foresee increasing turf battles as the number of health providers rises in the coming decade. The principal force in this struggle will be the rapidly expanding population of physicians. The potential oversupply of physicians threatens to undermine the future viability of the PA profession. How does the PA profession deal with the issue of the physician oversupply? What steps can be taken to ensure the ongoing vitality of the profession?

First of all, this issue must be considered from the point of view of health manpower resources. In this country, we have taken a large step to more rationally divide medical labor by the creation of the PA and other types of non-physician providers. Inherent in the establishment of these professions was the understanding that there are many medical tasks that do not require the extended training possessed by physicians. We have learned that PAs and their counterparts are very able to deliver a large component of primary care and indeed do so in a wide variety of settings. That they are also economically effective in delivering services is an important consideration, but is not the paramount issue. Our national health manpower policy should be based upon using our existing medical talent in the most effective ways. This should entail the utilization of PAs as part of a team approach to health care delivery where physician time and talent can be maximally applied. To discard PAs and other non-physician providers in the face of an excess of doctors would be to ignore the lessons in medical education and application that we have learned in 20 years of experience with mid-level practitioners. From the viewpoint of the most effective division of medical labor, it makes sense to employ qualified PAs to do what they do best: assist physicians in the diagnosis and management of routine illnesses and play a major role in patient education.

The increase in the number of practicing physicians is expected to markedly accelerate competition among providers. Practices will be seeking to attract patients by offering improved access, broader services and reasonable fees. Light* has argued that for practices to achieve these goals, physicians will be required to become much better managers of their time and resources. The practices that are most effective in terms of utilization of manpower and resources are likely to be the most competitive in the health marketplace. By employing PAs, physicians can develop a practice structure that may be more effective economically and broader than otherwise, i.e., using PAs to provide complementary services. It is incumbent on the PA profession to market this notion to physicians and to stress that PAs are not a threat but a complement to their practice.

The expanding versatility of PAs bodes well for their continuing utilization in the health marketplace. PAs are now working in nearly all areas of clinical medicine, from primary care to subspecialties. PAs are spread across the spectrum of health care delivery, from private offices to major medical

*Light, Donald, PhD. "Is Competition Bad?" *N. Engl. J. Med.* 309 (1983): 1315–18.

centers. This practice flexibility is a distinct advantage of PA health manpower and expands the range of opportunities open to PAs. Physician assistants have the capacity to work with nearly any physician who may desire their services. Although this may sound simplistic and theoretical, with more physicians in practice there are more potential employers of PAs.

Another factor related to PA versatility is their ability to enter other segments of the health care industry. Enterprising PAs are now working in the areas of utilization review, clinical research, public health, health care administration, medical publishing, pharmaceutical and medical equipment sales, medical employment review, and health promotion ventures. The PA credential appears to give individuals a wide latitude of opportunities both in the clinical and non-clinical domains of the health care sector. The foundation of the profession must rest, of course, with the clinical PA. Nonetheless, the numerous expanding roles for PAs suggest extensive acceptance of the profession by the health care industry, a circumstance that by all evidence appears to be growing rather than shrinking.

Summary

The challenges to the PA profession in the coming decade involve advancing the acceptance and utilization of PA providers in the face of increasing competition among medical practitioners within a framework of limited or declining financial resources. The strengths which will bolster the profession in its efforts to meet these challenges will be the proven productivity and quality of care given by PAs, their practice versatility, their commitment to social and health care responsibility and their economic advantages to employing practices. The limitations impeding the profession will continue to be the lack of reimbursement for PA services, increasingly restrictive and uneven state practice laws and regulations, declining financial support for PA education, and the overall trend of retrenchment in the health care sector.

To meet these challenges will require the PA profession to make choices regarding its political, professional and educational directions, its allocation of resources for research, political action, and public education, its capacity to maintain internal unity and its determination to withstand pressure from hostile groups. The outcome of these decisions will determine the future prosperity of the PA concept in American medicine.

Speakers

Henry Aaron, PhD, is a Senior Fellow at the Brookings Institution in Washington, DC, and Professor of Economics at the University of Maryland. He is the author of the recent book, *The Painful Prescription: Rationing Hospital Care.*

Irving Bluestone served as Vice President of the International Union of the UAW from 1972 until 1980. He is now University Professor of Labor Studies at Wayne State University in Detroit.

Bertram S. Brown, MD, is the President and Chief Executive Officer of Hahnemann University in Philadelphia. Dr. Brown was in government service from 1960–1980 serving in a variety of posts, including Director of the National Institute of Mental Health and Assistant Surgeon General.

Carolyne K. Davis, PhD, was appointed Administrator of the Health Care Financing Administration in 1981. Prior to her position at HCFA, Dr. Davis was Associate Vice President for Academic Affairs at the University of Michigan.

John R. Hogness, MD, is President of the Association of Academic Health Centers in Washington, DC. In 1970 he was elected the first president of the Institute of Medicine of the National Academy of Sciences.

Thomas J. Herrmann, MD, is Associate Dean for Clinical Affairs at the Michigan State University College of Medicine. Dr. Herrmann writes and advises on health care financing issues.

Robert Katz, MD, is Associate Medical Director of Metropolitan Life Insurance Company and Vice President of the American Academy of Compensation Medicine.

David Mechanic, PhD, is University Professor at Rutgers University and a leading medical sociologist. He has written extensively on the organization of health care and health care behavior.

Kenneth P. Moritsugu, MD, MPH, is Director of the National Health Service Corps. Dr. Moritsugu was commissioned in the Public Health Service in 1968 and received a Distinguished Service Medal from the Public Health Service in 1983.

Seymour Perry, MD, is Deputy Director of the Institute for Health Policy Analysis, Georgetown University Medical Center. He was Director of the National Center for Health Care Technology from 1980–1982.

Milton Terris, MD, MPH, is Editor of the *Journal of Public Health Policy.* He is the founder and President of the National Association for Public Health Policy and teaches at the University of Toronto Medical School.

Harvey M. Sapolsky, PhD, is Professor of Public Policy and Organization at the Massachusetts Institute of Technology. Dr. Sapolsky specializes in studies of bureaucracy, health policy, science and defense.

Discussion Papers

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Appendix

The Current Status and Future Trends of the Physician Assistant Profession

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In the almost two decades since their inception, physician assistants (PAs) have made important contributions to advances in American health care. In doing so, the notion that highly trained mid-level practitioners could assume a large number of medical tasks traditionally performed only by physicians has gained widespread acceptance.

Introduced amid the extensive shortage of primary care providers, PAs have, in large measure, fulfilled the promise inherent in their creation. They practice predominantly in primary care settings, are well accepted by patients and supervisory physicians, and have proven themselves to be productive and highly competent clinicians.[1] Despite these accomplishments, issues regarding PAs still remain. Uneven state medical practice laws governing PAs and the lack of third-party reimbursement for their services are but two of several policy barriers restricting the realization of the full potential of PAs to extend medical care services and to reduce health care costs.

The purposes of this paper are to explore these and other issues facing the PA profession, and to review some of the more important aspects of the development of the PA concept in the United States. Our analysis considers the current status of the PA profession, the extent of PA involvement in health care delivery, some present trends in PA utilization, and what lessons two decades of experience with PAs hold for U.S. health manpower policymakers. Also discussed are current trends in health manpower supply and demand and issues regarding how health providers practice and are reimbursed. Consideration of these issues may shed light on the future prospects for PAs in health care delivery and aid policymakers in determining new and expanded directions for these practitioners.

The mandate for PAs in the 1960s became one of increasing both the quantity and quality of primary care services.

Hudson's dream became a reality in 1965 when Eugene Stead, MD, of Duke University, founded the first physician assistant training program. Soon after, similar programs began at the University of Colorado and the University of Washington. Spurred on by the national publicity given to the Duke program, interest grew on the part of government policymakers and medical educators. Support for PA training programs came forth from government agencies (U.S. Bureau of Health Manpower Education, the National Center for Health Services Research, the Veterans Administration, the U.S. Public Health Service) and private foundations (Macy, Rockefeller, Carnegie, Brunner). Between the years of 1965 and 1971, over 50 programs were established in colleges, universities and medical centers across the country. In 1971, Congress passed the Comprehensive Health Manpower Act, which extended federal support to most existing PA programs and provided additional financial impetus for the further expansion of new programs.

The medical establishment soon joined the government and private agencies to further solidify the young PA profession. In 1970, the House of Delegates of the American Medical Association recognized the PA profession and recommended that states be encouraged to amend medical practice acts to allow physicians to delegate medical tasks to qualified PAs. The following year, the AMA took steps to recognize and accredit the rapidly growing number of PA training programs. Through its Joint Review Committee (JRC), composed of representatives from major medical societies and the PA profession, the AMA established an accreditation mechanism for

This paper has been published in the *Journal of Public Health Policy* 6 (March 1985):78–99

PA programs and issued the "Essentials for an Educational Program for the Assistant to the Primary Care Physician."[3] The "Essentials" stipulated the general curricular framework for PA programs and continue to be the basis for ongoing accreditation. In 1973, the JRC was officially recognized by the U.S. Office of Education as the agency responsible for PA program accreditation.

The founders of the PA concept believed that the key to the success of the innovation was for PAs to have a close practice relationship with the physician.[4] Thus, efforts to legally sanction PA practice were aimed not at licensure, but toward modifying existing statutes to allow physicians to delegate a wide variety of medical tasks to PAs. Unlike most "allied health professions," PAs were not introduced to assume new roles brought about by advances in medical technology. Instead, they would perform duties heretofore exclusively performed by doctors—history taking, physical examination, diagnosis, and patient management. The establishment of a physician-dependent role allowed PAs to assume a large amount of responsibility for patient care, yet did not usurp the ultimate authority of physicians in patient care. Thus, the legal basis for PA practice is predicated upon physician supervision, an arrangement unique among the health professions.

Model legislation permitting PA practice was enacted in North Carolina in 1971. Similar statutes were passed in Colorado and California in 1970. By 1980, 46 states had passed enabling legislation for PAs. The laws differ considerably in requirements, and frequently are vague in defining supervision and scope of practice. Uneven practice laws, coupled with the narrow eligibility for reimbursement under Medicare to practices employing PAs, have constrained the potential of these providers to expand medical services at a lower cost.[5]

To ensure the competence of PAs entering medical practice, the AMA and the PA profession cooperated with the National Board of Medical Examiners to produce a national certifying examination for the profession. This effort resulted in the establishment of the National Commission on Certification of Physician's Assistants (NCCPA) in 1974. The NCCPA, composed of representatives from major medical groups, nursing, the PA profession, and the public, administers a yearly comprehensive primary care examination and certifies the entry-level competence of graduate PAs. Currently, at least 37 states have recognized the NCCPA certificate as a major criterion for PA practice eligibility. Nationally certified PAs are required to complete 100 hours of continuing education every two years and to sit for re-examination every six years to maintain their certification.

As the graduates of the early PA programs entered practice, they quickly began to organize their young profession. The American Academy of Physician Assistants (AAPA) was formed in 1971 to further the interests of working PAs, particularly in the areas of state legislation, liaison to organized medicine, and public education. The AAPA, with national headquarters in Arlington, Virginia, charters state PA chapters, monitors issues of PA interest, and provides a variety of professional services to its members. A closely related organization, the Association of Physician Assistant Programs (APAP), represents the interests of PA educational programs and conducts research on PA students and graduates, aids in curriculum development, and cooperates with the Academy in disseminating information on the PA profession.

Throughout the 1970s, health services researchers took a great interest in observing the impact of these new health professionals. The introduction of PAs to medical practice was not without its skeptics, and a wide range of questions were initially raised regarding PA performance. Would PAs be accepted by patients? Would they be employed by physicians? What is the content and quality of care provided by PAs? Is their training sufficient? Are they productive and cost-effective? Are they working in areas of need? What differences exist between practices using PAs versus those which don't? The answers to these and related questions will be fully considered later in this paper.

Suffice it to say that the results of research on PAs shows largely positive results. Spitzer notes that the introduction of PAs to U.S. medicine has been a "responsible policy" and comments that "many other innovations mediated by medical practitioners have gained widespread acceptance with less rigorous prior evaluation than was given to the use of . . . 'physician assistants.' "[6] In point of fact, the PA profession has been carefully studied for the past 15 years and a good deal is known regarding their acceptance, performance, and impact. In little more than a decade, the PA profession has become well established and has grown considerably. A favorable national climate, support by government policymakers and the medical establishment, and creative and farsighted planning on the part of early leaders, were all key factors in the successful introduction of the PA concept. Many of the promises inherent at the time of their introduction have been realized as PA graduates entered practice with physicians. To be sure, questions remain and new ones have arisen. These issues are the focus of later sections of this paper.

PA Education

During the formative years of the PA profession, there was a great deal of diversity in approaches to training physician assistants. Between 1965 and 1972, a total of 75 programs had emerged, almost half of which were specialty-oriented; the others were primary care or generalist programs modeled along the lines of the Duke University program.[7] Most specialty programs, sponsored by community or junior colleges, were shorter in length than primary care programs and many fell by the wayside as the PA role became more established in primary care. The primary care programs tended to be set in academic medical centers or universities, were usually 24 months in length and were better able to attract external funding. This model has evolved into the predominant form of PA training, primarily because graduates of these programs are more versatile to employing physicians. Their generalist background permits them to readily assume primary care roles, but also affords them the opportunity to enter specialty practice.

At present there are 53 accredited physician assistant training programs. The typical program is two years in length and has two major phases: a didactic phase, usually nine to 12 months involving academic coursework in the basic medical sciences, clinical sciences and related biomedical and behavioral subjects; and a clinical phase, usually 12 to 15 months, consisting of clinical rotations in the major medical disciplines and often concluding with an extended preceptorship in a primary care setting. Most programs are located in medical

schools, schools of allied health, or hold a close affiliation with an academic medical center or teaching hospital.

PA education is, in many respects, quite similar to medical education. In some programs, PA students share classes with first- or second-year medical students and frequently serve the same types of clinical clerkships as third-year medical students. The key overall differences are a shorter course of didactic study and a sustained emphasis on primary care. Another difference is that many PA programs, from the beginning, have included formal coursework in interpersonal skills, health education, counseling techniques, and epidemiology and preventive medicine. Such topics have only recently begun to appear in medical school curriculae. Physicians predominate as faculty of PA programs, although the numbers and responsibilities of graduate PAs, behavioral scientists, and educators have steadily increased.[8]

Programs and their faculties have become more academically integrated over the past several years, reflecting both the need to establish legitimacy within the sponsoring institution and the changing characteristics of applicants. Unlike the early recruits to the profession who tended to have an extensive health care background, current applicants to PA programs are more likely to have only moderate health experience, but are substantially more academically prepared. The typical PA graduate of 1973 had an average of 10.3 years of health care experience (usually as a military corpsman); PA graduates in 1981 averaged just over four years of experience. The percentage of graduates having a bachelor's degree before entering a PA program rose from 32 percent in the years 1967–1974 to 62 percent for 1980 graduates.[9] Also, more women are now entering the PA profession. At least 40 percent of most recent PA graduates are women, and in some programs this figure is much higher.

Academically, PA education is presently on a baccalaureate level. Of the current 53 programs, 36 award a bachelor's degree. Support has been expressed for PA programs to move toward a master's level,[10] and two programs have done so (University of Colorado, Northeastern University). With high numbers of incoming students who already possess a bachelor's degree, it is likely that more programs in the future will award the master's degree or will consider master's degree tracks.

Although the recruitment of more academically qualified students has definite advantages to the overall standing of the PA profession, it also brings some negative effects. Programs may have a tendency to select students more on the basis of academic aptitude and less on the basis of interpersonal skills and motivation to become a health practitioner. This trend could affect the professional performance of PAs. Another potential ill effect of change is that the expectations for professional responsibility, reward, and career advancement potential may not be congruent with the reality of the job. Some studies suggest that the amount of post-high school education has a negative effect upon the job satisfaction of PAs.[11] One the other hand, stronger academic backgrounds may allow more patient care responsibilities for PAs.

Most physician assistant programs have received funding from federal sources. The government, through a variety of agencies and programs, has expended over 104 million dollars since 1967 to support PA training. Currently, 31 PA programs are at least partially funded through the Bureau of Health Professions of the Department of Health and Human Services. Although contingent on legislative and administration policy, federal support for PA training has continued since the late 1960s. At present, many programs have taken steps to secure alternative funding sources, either internal or external to the program. The federal appropriation in fiscal 1984 for PA education was $4.8 million.

The costs of PA training are difficult to measure on a per student basis, but the best data show that the training cost of a primary care physician assistant in 1976 was $15,095.[12] Undoubtedly this figure would be much higher at present, yet still far below the costs of physician education. LeRoy estimates that for each physician trained between 1969 and 1978 the cost to the federal government was in the range of $40,000 to $60,000. The federal cost for each nonphysician (either PA or nurse practitioner) ranged from $10,000 to $20,000.[13]

Lower training costs, the high quality of PA education, and a shorter training period are all factors related to federal support of PA education. The government investment in training PAs had borne significant results in a number of ways. First of all, policies supporting PAs have permitted the creation and deployment of highly trained health providers largely in areas of need. PAs have filled many gaps in health manpower distribution including inner city clinics, rural areas, prison systems, and nursing homes. Secondly, federal support has encouraged the growth of innovative programs that have contributed to advances in medical education.[14]

Experience in over 15 years of PA education suggests that it is possible to train individuals with some amount of previous health care experience and college preparation, and in a relatively short time prepare them to handle a majority of cases in primary care practice. Few recognize this latter point, but it indicates, among other things, that prolonged basic science preparation may not be required to prepare practitioners for primary care roles. Experience from education also suggests that the generalist, primary care approach for PA educators is most effective. Graduates of primary care programs have little difficulty in fulfilling this traditional role in a variety of practice settings, and can also quickly assume specialty roles, often with little or no additional training.

In certain specialties, however, formalized clinical training programs have developed on the post-PA program level. Usually termed "PA residencies," these are one-year experiences providing additional didactic and clinical training for graduate PAs. Such programs currently exist in surgery, emergency medicine, and pediatrics. A two-year postgraduate program for PAs exists in occupational medicine and awards the MPH degree. As the profession continues to diversify, and as more graduates move toward specialty practice, it is likely that the number and type of "PA residencies" will expand.

Practice Characteristics

Of the estimated 18,000 PAs in the United States, a large number (87 percent) are working in full-time clinical practice. In contrast to the strong male predominance in the beginning years, currently the PA profession is 36 percent female. The average age for both men and women is 32 years. Nearly all PAs (88 percent) have obtained some college credit prior to entering a training program and 42 percent were college graduates. Over 96 percent of PAs have entered the profession by graduation from a "formal training program," and 89 percent

were employed in a health-related occupation prior to becoming a PA.[9]

Physician assistants appear to be improving the distribution of medical manpower by practicing in smaller communities and rural areas. Only 14 percent of U.S. physicians are located outside of Standard Metropolitan Statistical Areas, while 32 percent of the PA profession and 27 percent of the general population are located in such areas. Among male PAs, 50 percent are located in communities of fewer than 50,000 persons. One-third of the graduates of MEDEX programs are working in communities of fewer than 10,000 persons.

A majority (74 percent) of physician assistants are working in the primary care specialties of family practice, general internal medicine, emergency medicine, pediatrics, and obstetrics/gynecology (see Table I).

Table I. Specialty Distribution of Physician Assistants

	1978 (N = 3,416) (percent)	1981 (N = 4,496) (percent)
Specialty		
Family practice	52.0	53.5
Internal medicine	12.0	9.6
Surgical subspecialties	6.2	8.5
General surgery	5.5	4.9
Emergency medicine	4.9	4.8
Medical subspecialties	6.3	2.9
Pediatrics	3.3	3.7
Occupational medicine	2.7	3.2
Obstetrics and Gynecology	2.0	2.6
Other specialties	5.1	6.5

From: "National Longitudinal Survey of Physician Assistants," Association of Physician Assistant Programs.

The practice settings of PAs have changed over the years, primarily due to forces in the medical marketplace. In 1974, over half of all PAs were employed by private (solo or group) practices. By 1981, despite a rapid increase in the total PA population, the percentage of PAs in private settings declined to 36 percent. Concurrently, the percentage of institutionally based PAs rose from 43 percent to 64 percent (see Table II). This shift occurred for several reasons. First of all, response by private practitioners to the availability of PAs was tempered to some degree by unfamiliarity with the PA concept. Moreover, vague medical practice statutes, limited reimbursement policies, and organized local opposition in some areas caused many private doctors to defer hiring PAs for these practices.

Although the private practice sector has responded only moderately to the availability of physician assistants as primary care providers, growing numbers of institutions, large group practices, and other health organizations have turned to PAs as a solution to manpower shortages. This shift has occurred for three reasons: 1) The availability of positions created by cutbacks in the immigration of foreign medical graduates; 2) the substantial economic advantages of physician assistant health manpower; and, 3) the aforementioned versatility of PAs to adapt to a variety of clinical settings.[15]

Table II. Major Practice Settings of Physician Assistants

	1974 (N = 902) (percent)	1978 (N = 3,416) (percent)	1981 (N = 4,496) (percent)
Private solo practice	23.8	17.9	19.3
Private group practice	33.3	16.8	16.5
Total private practice	57.1	34.7	35.8
Hospital	14.0	23.7	29.5
Ambulatory clinic	13.9	23.4	24.9
Military	15.1	18.2	9.4
Total institutional practice	43.0	65.3	63.8

From: "National Longitudinal Survey of Physician Assistants," Association of Physician Assistant Programs.

Since 1975, the flow of foreign medical graduates into American graduate medical education programs has declined substantially as a result of more stringent entrance requirements mandated by the 1976 Health Professions Educational Assistance Act (Public Law 94-484). Hospitals and health care institutions, which previously were dependent on foreign medical graduates, have been forced to seek alternative sources of health manpower. The institutions most affected by this legislation have been public, community, Veterans Administration, and psychiatric hospitals and nursing homes. Manpower shifts have also closed or reduced residency programs in smaller community hospitals, particularly in certain overcrowded specialties such as surgery. The decline in the number of foreign medical graduates has been partially offset by the increase in American medical graduates, although this effect has not been felt in many smaller hospitals where shortages have continued.[16]

When health manpower shortages began to occur, institutions quickly recognized that PAs had the potential not only to provide most of the required medical services with no decline in quality of care, but also to provide these services at reduced costs. In a review of 15 studies of PA productivity, Record concluded that between 75 to 80 percent of adult primary care services could be safely delegated to PAs.[17] Other investigators have come up with similar findings, although the overall degree of PA productivity varies depending upon the practice setting and the extent to which tasks are delegated to the PA by the physician.[18]

Usually a PA who works with a physician in providing medical services allows the physician to increase productivity. As Reinhardt points out, this is true even if the PA spends more time providing the same service: "because of the need for supervision of physician extenders, the delegation of a task normally requiring 10 minutes of a physician's time (and may

require 20 minutes of the physician extender's time). Even so, as long as some physician time is freed at all, task delegation will enable the physician to treat more cases per unit of time and hence increase . . . hourly productivity."[19] It has also been shown that productivity gains brought about by PAs tend to be greater in institutional settings. Scheffler points out that PAs in institutions see more patients in the same amount of time than PAs in private practice.[20]

When one considers the productivity benefits, the cost-effectiveness, and the wide versatility of PA health manpower, it is not surprising to observe the movement of PAs into institutional settings. This shift has opened many new roles for PAs, ones not envisioned by the founders of the concept.

New Roles for Physician Assistants

Physician assistants are employed as house staff on surgical, medical, and pediatric services, in long-term care facilities, and in other settings in the health care system. It appears that supervised physician assistants, along with attending house staff physicians, can provide the necessary range of services with the additional benefit of cost-containment. In some instances, hospitals have supplanted physician residency programs with cadres of physician assistants, providing needed services and reducing the number of physician specialists who would otherwise enter practice and intensify the competition among specialty providers.

Surgical House Staff

The use of physician assistants in surgical practice is not new. Physician assistants have been used by surgeons in private as well as hospital practice. What is new, however, is the development of the role of the physician assistant as surgical house staff.

The use of physician assistants as surgical house staff in hospitals has grown for several reasons. There has been a growing recognition of the need to reduce the number of surgical specialists in the United States.[21] There has also been a reduction of foreign medical graduates in residency programs. In many hospitals, surgical residency programs have been reduced or phased out, creating a need for surgical manpower on the wards and in the operating room.

The current use of physician assistants as surgical house staff is fairly extensive. Perry[22] has done a survey of the extent of physician assistant use in surgery, and found that of 522 surgical departments surveyed, 165 employed at least one physician assistant. Among these hospitals, there was an average of five physician assistants. Thirty-three percent of the chairmen of these departments felt that physician assistants had improved surgical patient care in their institution, and 50 percent felt that surgical physician assistants had improved the quality of residency training. Perry projects an increasing need for surgical physician assistants in the coming years, and further comments: "It is noteworthy that, in little more than a decade, a new health profession, whose role principally has been to provide additional primary care health manpower, could have been rather widely used in surgery. Many of these surgical physician assistants have been trained in programs which prepared them to assist physicians in primary care."

A recent development has been the formalization of physician assistant surgical house staff roles that are termed "physician assistant residencies."[23] Presently, at least three such programs exist, where physician assistants receive additional clinical training beyond the basic two-year primary care educational program.

Physician assistants on surgical services provide care before, during, and after surgery. Physician assistants are employed in subspecialty areas such as open heart programs, trauma units, burn units, and renal transplantation programs.

Medical and Pediatric House Staff

A substantial number of physician assistants are employed by hospitals as medical or pediatric house staff, in roles similar to those of surgical physician assistants. As in surgery, a major factor influencing the use of physician assistants has been foreign medical graduate cutbacks and manpower staffing changes. Physician assistant house staff roles appear to be increasing because, as Perry[24] points out, "it is now becoming increasingly recognized that broadly trained mid-level health professionals can perform quite adequately the role of house officer in both medical and surgical subspecialties."

Physician assistants employed on medical services usually fall into one of two categories: those employed as general medical house staff obtaining patient histories and doing physical examinations, routine diagnostic and therapeutic procedures, and other general ward duties; and those employed by medical subspecialists to do specific patient care or procedure-related functions. The precise role of physician assistants on medical services differs depending on the service, the institution, and the staffing needs of the supervising physicians.

For some years, physician assistants have served in ambulatory pediatric clinics, but only recently have they moved into inpatient pediatric settings and neonatology units. Appropriately trained physician assistants can do a wide range of outpatient and inpatient pediatric tasks.[25] In two institutions, formal postgraduate residency training programs in neonatology have been established for physician assistants, suggesting not only the applicability of the physician assistant concept to specialty pediatric practice, but also a need for additional manpower in these settings.

Emergency Medicine

As emergency rooms in the 1970s expanded to provide an increasing amount of primary care, it seemed natural that physician assistants would augment the clinical staff of emergency departments. In 1982, nearly five percent of all physician assistants were working in emergency settings.

Properly supervised by physicians, physician assistants can handle most patients seen in the emergency setting without a decline in quality of care.[26] Several reports show the advantages of incorporating physician assistants into emergency room staff, particularly in smaller community hospitals.[27,28] In these settings, one, two, or sometimes more physician assistants, working closely with a similar or smaller number of physicians, can provide the complete range of services required in an emergency setting at a lower cost than a staff of physicians.

Occupational Health

As increasing attention is given to the maintenance of health in the workplace, new approaches to staffing occupational

health clinics have emerged. Several reports have described the use of physician assistants in such clinics.[29,30] Among the activities of physician assistants in occupational health settings are exercise stress testing, annual employee physical examinations, occupational health education, and treatment of work-related trauma. Because most worker injuries involve common strains, sprains, and extremity injuries such as lacerations, physician assistants seem particularly well suited for occupational health roles.

Geriatrics

There is a rapidly growing need for geriatric care in the United States. Projections include physician assistants and other types of nonphysicians as sources of manpower to meet this demand.[31] Weston[32] has urged that increasing emphasis be given to geriatrics in physician assistant training programs. Kane and colleagues[33] have shown that various nonphysicians can be used to increase the availability and quality of care to nursing home patients. Because salary costs are a major expenditure of nursing homes,[34] the ability of physician assistants to provide a wide range of services at a much lower cost than physicians is an important consideration.

Physician assistant use in nursing homes may take several forms. Many private practitioners use physician assistants to expand the quality and quantity of services provided to their nursing home patients. A newer pattern, however, is the employment of full-time staff physician assistants hired by the institution. An example of the latter pattern has been seen at the Beth Abraham Hospital in New York. In this 400-bed geriatric institution, foreign medical graduate house officers were replaced by physician assistants in 1979. There was a marked decrease in patient mortality on physician assistant-staffed wards when compared with rates before 1979. Additional benefits were improved relations with attending physicians, and better communications with patients' families and the nursing staff.

Other reports support the effectiveness of physician assistants in the geriatric setting.[35] As the American population ages, and as geriatric facilities grow in size and number, increasing demand for physician assistants in this setting seems likely.

Prison Systems

The provision of health services in penal institutions, which have an estimated population of nearly 500,000, is a significant undertaking. Recently, several correctional systems in large jurisdictions, such as the Baltimore City Jail and the Rikers Island Prison in New York, have incorporated physician assistants into their medical staff.

In the mid-1970s, Montefiore Hospital in New York, known for its extensive use of physician assistants, contracted to provide health care services to Rikers Island Prison. This package included physician assistants as primary care providers.[36] More recently, a similar contractual model has been developed in the Baltimore City Jail system. Reports from this experience show that, with the introduction of physician assistants, the number of patient visits per day per 1,000 inmates fell from 62.9 to 27.4. Length of patient encounters rose over threefold. Prescriptions for decongestants, cough suppressants, and antibiotics increased, and prescriptions for narcotics and sedatives decreased.[37]

Physician assistants are of value to the prison health care staff. As budget cutbacks affect city, county, and state penal systems, the use of physician assistants will increase as administrators seek to contain costs while maintaining adequate services.

Future Trends and Issues

The health manpower picture in America has undergone considerable transformation over the past two decades. We have come full circle since the 1960s. No longer is the issue a shortage of primary care. America is now faced with a potential oversupply of physicians. The solutions to the problems of the 1960s — increasing the number of physicians and creating new categories of health manpower — are now the issues of the 1980s.

The report of the Graduate Medical Education National Advisory Committee (GMENAC) in 1980 marked a major turn around in perceptions of health manpower supply and demand.[38] Until GMENAC, few were concerned that the policies of simultaneously increasing physician numbers and also creating new health practitioners were in potential conflict. But GMENAC documented the large number of physicians who had already entered the medical education "pipeline," and based on needs projections through the year 2,000, forecasted a surplus of 140,000 physicians by that time. Taking this projection, GMENAC recommended a 17 percent reduction in medical school enrollment by 1984, a figure that has not been reached. In terms of PAs, the committee acknowledged the substantial contribution of PAs and other non-physicians to improvements in primary care delivery. Yet GMENAC called for no further increase in the number of non-physicians in training and recommended further research on the future need for these providers in light of an excess of physicians.

The findings of the GMENAC report have been questioned in many quarters. The basic assumptions used by the committee to determine provider demand, and the overall methodology used by the study, may have been incorrect.[39] Also, more recent statistics from the Bureau of Health Professions suggest that some of the key assumptions used by GMENAC were erroneous, and that recalculation shows a much smaller excess of physicians.[40] The question for PAs becomes: what effect will any physician excess have on the future prosperity of their profession?

In many ways, the PA profession has already demonstrated a capability to deal with this question. By expanding their roles far beyond only that of primary care, PAs have integrated themselves into the practice structure of a wide range of medical settings. As we have seen, the PA profession now encompasses providers who work in the traditional primary care setting, but also includes many who provide primary care in institutional settings, and those who have branched out into specialty areas, inpatient practice, subspecialty roles, medical administration, medical education and clinical research. PAs have not confined themselves to a single practice role, but have diversified their functions across the spectrum of medical care delivery. They have moved into areas traditionally avoided by physicians (nursing homes, prison systems, prepaid groups, rural areas) and have maintained or improved the level of medical care in these settings. This practice versatility should keep PA manpower in demand for years to come.

But there are several other factors that will keep the PA profession viable even in the face of a physician excess. Cost containment has become the burning issue in health in the 1980s. Any strategies that will keep health costs down yet maintain existing services must be seriously considered. The proven capabilities of PAs to provide a large number of medical care services at a lower cost than physicians is a very important consideration in health delivery planning.

Since manpower policy innovations have created PAs, and since experience with PAs has shown them to be cost-effective, it would seem logical to continue to utilize PAs wherever possible in an effort to contain overall health care costs. Major federal manpower policy reports consistently emphasize the economic and practice advantages of PAs as a means of containing or reducing health care costs to the public.[1,3,41] These same documents point out that limitations restricting the full potential of PAs remain, i.e., uneven state legislative statutes and the lack of full reimbursement for PA services, and recommend that these policies be modified to allow for the further maximum and most effective utilization of PA health manpower.

Increasing competition among providers has been cited as a primary outcome of the rising numbers of health providers. Commenting on GMENAC, Ginzberg states that "faced with clear warning signs of the large-scale increases in the supply of physicians, and recognizing the potentially adverse effects of such increases on their earnings, more and more physician groups are likely to adopt increasingly restrictive stances with respect both to the numbers of physician extenders being trained and to their approved scope for practice."[42] This scenario may prove true for those non-physicians who seek independent roles in practice, for example, some nurse practitioners, but may not apply to dependent practitioners such as PAs. In appreciating this difference between non-physician providers, doctors will realize that PAs do not pose a threat to their practice, but in fact bring a capability to expand and extend the physician's practice scope.

In a recent essay addressing competition in medical practice, Light argues that competition, in many ways, is healthy and that the addition of a PA to the physician's practice may be a way to gain a competitive edge in the coming years. He states that the physician who will be the most successful in the coming years will be the one who has developed effective managerial and delegatory skills in using PAs.[43] This argument can be extended to institutional and organized settings which seek to contain health personnel costs and maximize use of existing talent. The incorporation of PA manpower into medical practice would seem to be a rational as well as a sound economic strategy in future health care delivery.

The PA concept represents a fundamental change in the division of medical labor in this country, one that should bear increasing dividends as acceptance and utilization expand. There is also hope that the current generation of physicians, who frequently train side-by-side with PAs, and who tend to be more open to the concept, will increasingly perceive PAs more as partners in patient care delivery and less as threats to their economic and professional status. This may be particularly true if the physician chooses to utilize the PA in a practice-complementary role.

We spoke earlier of the intended promise that PAs could bring to medical practice — health education, counseling, and preventive services. It appears that public demand for these types of services is steadily growing. PAs seem to be an ideal provider to fulfill a role involving not only working with the physician in routine and specialized medical care functions, but also in extending the range of preventive oriented services within the practice. Thus, both from the perspectives of economic effectiveness and expanded practice capabilities, PAs hold great potential for enhancing individual physicians' practices and for improving the operations of health care organizations. Recent experiences with PA utilization in HMOs show appreciable cost savings per provider, improved quality of care, and high acceptance.[44,45]

Organized medicine appears to be generally satisfied with the current role of the PA in health care delivery. Where controversy has arisen, it usually has involved non-physicians who seek either independent practice status or formal individual hospital privileges. As established dependent practitioners, PAs remain closely tied to physicians, educationally and professionally. Career attrition within the PA profession has not proved to be a major issue, although some PAs have chosen to attend medical school or enter other health careers. Most PAs appear to be quite comfortable with their relationships with doctors, and recent surveys show a strong degree of job satisfaction among a majority of working PAs.[46]

Summary

When one takes a broad view of manpower developments in this country over the past 25 years, it is remarkable to observe the changes and impact brought about by the establishment of the PA profession. Few would have imagined in 1965 the extent of the integration of PAs into medical practice that has transpired. Fewer still would have predicted the quality of clinical capabilities demonstrated by PAs over the years. Not only can they manage a majority of cases in primary care practice, but repeated studies have shown that they do so at a level of quality that is indistinguishable from physician care.[47] The introduction of PAs into U.S. medicine has been compared to similar experiences with other types of non-physicians in various countries. These experiences do not readily parallel the American experience with PAs, reflecting the fact that individual successes or failures utilizing non-physicians are primarily based on the medical, cultural, and economic systems of the countries that employ them.[2]

PAs have successfully functioned in America's largely entrepreneurial medical care system principally because they have been responsive to public and medical needs in ways that do not threaten the established professions. Like other health professions in this country, PAs will have to deal with changing economic and practice regulations that are affecting medicine. The recently introduced prospective payment system for Medicare reimbursement promises to have far-reaching implications for health care delivery and the way that providers are to be paid. It appears that some system of accountability, already familiar to practicing PAs, may soon be extended to all other types of health providers.

The future of PAs is not dependent on factors found wanting with these practitioners. They have proven their clinical effectiveness, cost-effectiveness, and public and professional responsiveness. Instead, the future for PAs hinges on a determination of a clear public policy direction for their profession. Such a policy must take into account the known abilities and

accomplishments of PA practitioners, and promote their maximal effectiveness in private as well as organizational settings. The lifting of restrictions regarding how practices employing PAs are reimbursed through Medicare would be one important step in expanding the attractiveness of PA manpower to potential physician and hospital employers. Elimination of vague and overly restrictive state medical practice statutes governing PAs would be another.

The progression of the PA concept in America from that of a noble experiment to one of a lasting innovation is continuing. More Americans will come to realize what certain policymakers and health services researchers already know: that it is possible for trained non-physicians to provide a wide range of medical care tasks safely, effectively, and at a reduced cost. If the objectives of the nation's health agenda include provision of high quality health care in areas of need at a reasonable cost, then it seems logical and advantageous to set policy directions incorporating the utilization of physician assistants.

References

1. Congressional Budget Office, U.S. Congress, Physician Extenders: Their Current and Future Role in Medical Care Delivery. Washington, D.C.: U.S. Government Printing Office, 1979.
2. Cawley, J. F., Golden, A. S. "Non-physicians in the United States: Manpower Policy in Primary Care," *J. Pub. Health Policy* 4 (1982): 69-82.
3. American Medical Association, Council on Medical Education: Essentials of an Accredited Educational Program for the Assistant to the Primary Care Physician. Chicago, 1971.
4. Stead, E. "Conserving Costly Talents — Providing Physicians' New Assistants," *J.A.M.A.* 198 (1966): 182-3.
5. Miller, H. Review and Analysis of State Legislation and Reimbursement Practices of Physician Assistants and Nurse Practitioners. Springfield, Virginia: National Technical Information Service, 1978; DHHS pub. No. (PB) 279-242.
6. Spitzer, W. O. "The Nurse Practitioner Revisited: Slow Death of a Good Idea," *N. Engl. J. Med.* 310 (1984): 1049-51.
7. Dobmeyer, T. W., Sonderegger, L., Lowin, A. "A Report of a 1972 Survey of Physician's Assistant Training Programs," *Medical Care* 3 (1975): 294-307.
8. Westberg, J., Lefever, D., Jason, H. "Clinical Teaching in Physician Assistant Training Programs," *J. Med. Ed.* 55 (1980): 173-180.
9. Carter, R. D. The 1981 National Physician Assistant Survey. Arlington, Virginia: Association of Physician Assistant Programs, 1982.
10. Detmer, L. M. "Comments on Paper by Lawrence and Light" *In:* Physician Assistants on the Threshold of the '80s. Proceedings of a Conference. Department of Physician Assistant Education, Health Sciences Center, State University of New York at Stony Brook, June, 1978.
11. Perry, H. B. "The Job Satisfaction of Physician Assistants: A Causal Analysis," *Soc. Sci. Med.* 12 (1978): 377-85.
12. System Sciences, Inc. Nurse Practitioner and Physician Assistant Training and Deployment Study. Bethesda, MD, September 30, 1976.
13. LeRoy, L. and Solkowitz, S. The Costs and Effectiveness of Nurse Practitioners. The Implications of Cost-Effective Analysis of Medical Technology. Background Paper #2. Washington, D.C.: Office of Technology Assessment, U.S. Congress, July 1981.
14. Golden, A. S., Hagan, J., Carlson, D. *The Art of Teaching Primary Care.* New York: Springer Publishing Co., 1981.
15. Cawley, J. F., Ott, J. E., DeAtley, C. A. "The Future for Physician Assistants," *Annals Int. Med.* 98 (1983): 993-97.
16. Goodman, L. J., Wundermon, L. E. "Foreign Medical Graduates and Graduate Medical Education," *J.A.M.A.* 246 (1981): 854-55.
17. Record, J. C. (ed.) Provider Requirements, Cost Savings and the New Health Practitioner in Primary Care: National Estimates for 1990. Washington, D.C.: Department of Health and Human Services, 1979. DHHS pub. no. 321-77-0077.
18. Steinwachs, D. M., et al. "The Role of New Health Practitioners in a Prepaid Group Practice," *Medical Care* 4 (1976): 95-119.
19. Reinhardt, U. E. *Physician Productivity and the Demand for Health Manpower.* Cambridge, Mass: Ballinger Publishing Co., 1975.
20. Scheffler, R. M. "The Productivity of New Health Practitioners: Physician's Assistants and Medex," *Research Health Economics* 1 (1979): 37-48.
21. Moore, F. D., Zuidema, G. D., Ballinger, W. F. "Surgical Manpower and Public Policy," *Surgery* 83 (1978): 116-20.
22. Perry, H. B., Detmer, D. E., Redmond, E. L. "The Current and Future Role of Surgical Physician Assistants," *Ann. Surg.* 193 (1981): 132-7.
23. Heinrich, J. J., Fichandler, B. C., et al. "The Physician's Assistant as Resident on Surgical Services," *Arch. Surg.* 115 (1980): 310-14.
24. Perry, H. B., Breitner, B. *Physician Assistants: Their Contribution to Health Care.* New York: Human Sciences Press, 1981.
25. Machotka, P., Ott, J. E., Moon, J. B., Silver, H. K. "Competence of Child Health Associates," *Am. J. Dis. Child.* 125 (1973): 199-203.
26. Maxfield, R. G., Lemire, D. R., Wansleben, T. D. "Utilization of Supervised Physician's Assistants in Emergency Room Coverage in a Small Rural Community Hospital," *Trauma* 15 (1975): 795-99.
27. Golomb, H. M., Herrold, S. R. "An Alternative Staffing Proposal for Emergency Rooms: Three-year Experience in a Rural Hospital," *J.A.M.A.* 228 (1974): 329-31.
28. Goldfrank, L., Corso, T., Squillacote, D. "The Emergency Services Physician Assistant: Results of Two Years' Experience," *Ann. Emerg. Med.* 9 (1980): 96-9.
29. Richmond, H. W. "Health Care Delivery in Cummins Engine Company," *Arch. Environ. Health* 29 (1974): 348-59.
30. Weisenberger, B. "Occupational Medicine's New Resource," *J. Occup. Med.* 16 (1974): 676-7.
31. Kane, R., Soloman, D., et al. "The Future Need for Geriatric Manpower in the United States," *N. Engl. J. Med.* 302 (1980): 1237-32.
32. Weston, J. L. "What's Ahead for Nurse Practitioners and Physician Assistants?" *Health Care Finance Admin. Forum* (Dec. 1980): 2-6.
33. Kane, R., Hammer, D., Brynes, N. "Getting Care to Nursing Home Patients: A Problem and a Proposal," *Med. Care* 15 (1977): 174-80.
34. National Center for Health Statistics. Utilization Patterns and Financial Characteristics of Nursing Homes in the United States: 1977 National Nursing Home Survey. Hyattsville, Maryland: National Center for Health Statistics, 1981, DHHS pub. no. PHSO-81-1714.
35. Isiadino, O. "Physician's Assistants in Geriatric Medicine," *N.Y. State J. Med.* 79 (1979): 1069-71.
36. Novick, L. F. "The Contractual Model for Prison Health Care," *Med. Care* 14 (1976): 694-9.
37. Freeman, R. W., Gollub, R. E., Wolski, M., et al. "Planning Health Services For a City Jail: Impact of Contractual Services on Men's Sick Call." *Med. Care* 19 (1981): 401-8.
38. U.S. Department of Health and Human Services. Report of the Graduate Medical Education National Advisory Committee. Hyattsville, MD: Department of Health and Human Services, 1980, DHHS pub. no. 81-651.
39. Reinhardt, U. E. "The GMENAC Forecast: An Alternative View," *Am. J. Pub. Health* 71 (1981): 1149-57.

40. U.S. Department of Health and Human Services. Third Report to the President and Congress on the Status of Health Professions Personnel in the United States. January 1982. Hyattsville, MD: Department of Health and Human Services, 1982. DHHS pub. no. 82-2.
41. Scheffler, R. M., Weisfeld, N., Rubey, G., et al. "A Manpower Policy for Primary Health Care," *N. Engl. J. Med.* 298 (1978): 1058-62.
42. Ginzberg, E., Braun, E., Hirstand, D., et al. "The Expanding Physician Supply and Health Policy: The Clouded Outlook," *Mil. Mem. Fund Quart./Health and Society* 59 (1981): 508-41.
43. Light, D. "Is Competition Bad?" *N. Engl. J. Med.* 309 (1983): 1315-18.
44. Record, J. C., et al. *Staffing Primary Care in the 1990s. Physician Replacement and Cost Savings.* New York: Springer Publishing Co., 1981.
45. Greenfield, S., Komaroff, A., Pass, T., et al. "Efficiency and Cost of Primary Care by Nurses and Physician Assistants." *N. Engl. J. Med.* 298 (1978): 305-09.
46. Carter, R. D., Perry, H. B., Oliver, D. Secondary Analysis: The 1981 National Survey of Physician Assistants. Arlington, Virginia: Association of Physician Assistant Programs, 1984.
47. Sox, H. C. "Quality of Patient Care by Nurse Practitioners and Physician Assistants: A Ten Year Perspective," *Annals Int. Med.* 91 (1979): 459-72.