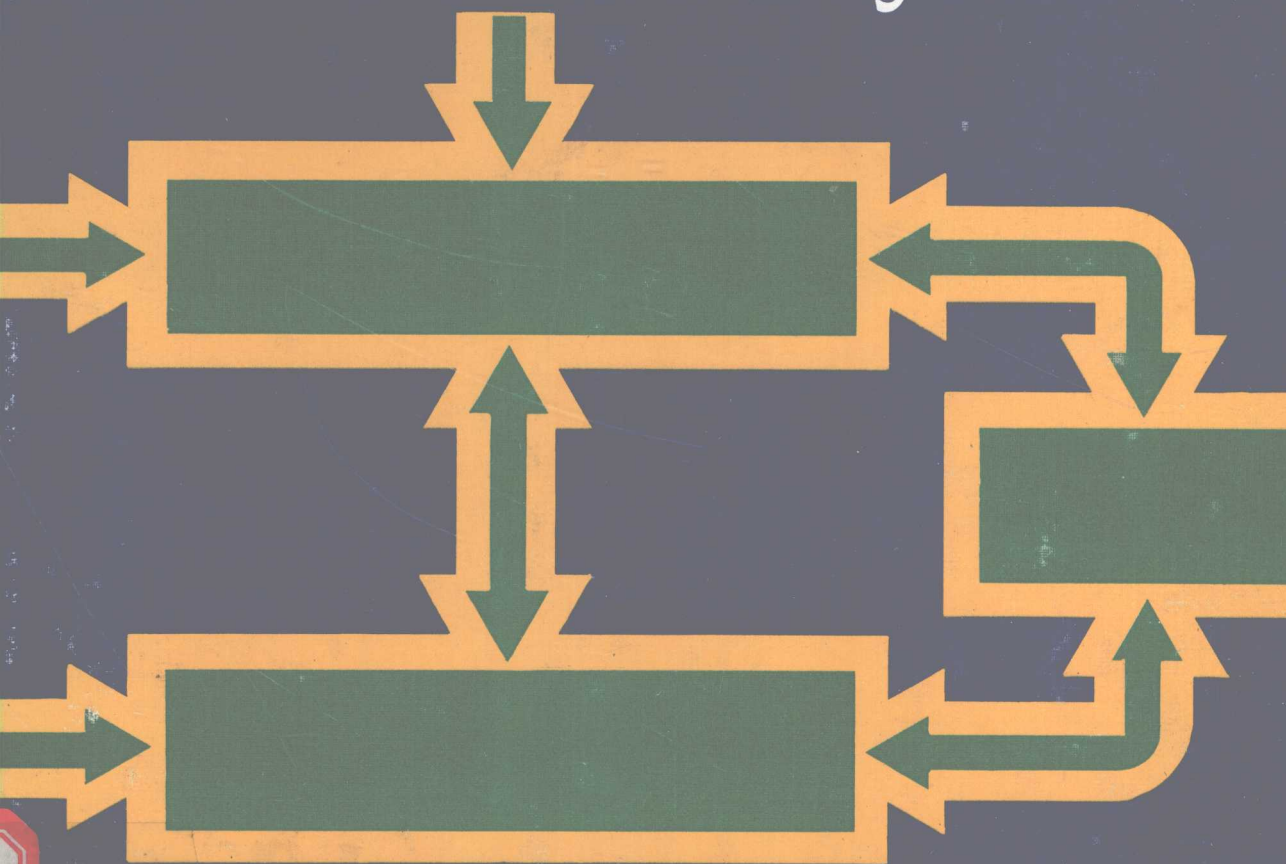




Pharmacy in health care and institutional systems



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To Mom and Dad, who made it all possible
and to my family, who gave me the inspiration.

PJL

The unfaltering devotion of my wife has made
the effort involved in editing and authoring this book possible.
My older daughter has also been a source of continuous encouragement.
When time devoted to the text sometimes preempts her requests for
my attention, my younger daughter has been uncomplaining.
Their love and continuing support give due cause for dedication
of my contributions in this book to them:
Carolyn, Joni, and Tricia.

CPT

Preface

Twentieth century medicine has ushered in a new way of life for millions of Americans. Increased access to medical care by a large segment of the population has made health care a national priority and put health care institutions and medical services at the center of national attention. However, many of today's difficult problems related to health care institutions will remain pressing issues for a long time.

In the future both the public and the private sectors will undoubtedly influence the delivery of health care. Pharmacy services will play a far larger and more crucial role in the delivery of health care. The American hospital system, a sturdy institution whose traditions and practices have already reshaped the pharmacist's role, will continue its influence.

This text focuses on the more important concerns being raised by the interaction between pharmacy practice and the health establishment. The purposes of this book are to identify and examine these issues, to provide an interdisciplinary base of understanding of the health care and institutional system, to anticipate the difficulties that lie ahead, and to indicate the probable direction of future developments.

It is important that pharmacists become conversant with health institutions. Well over half of payments to physicians are generated by care rendered in hospitals, and 80% of all payments are for services delivered in or by a health facility. A substantial and increasing proportion of health services will be delivered in extended care facilities and home health agencies under the general supervision of a

hospital. Health care institutions are part of the broader medical care establishment for which Americans spend 39% of their total budgets. These institutions employ over 3 million persons in a variety of occupations, making health care the third largest industry in the United States. To place the new settings for pharmacy services in this emerging context, this book considers the hospital as an institutional system and examines the nature of the health care establishment.

The design of the book is simple. Part one introduces considerations in the health care and institutional systems by describing the legislative background of the National Health Insurance Act and by providing a general overview of manpower issues in pharmacy. Part two focuses on the health care system in terms of the factors influencing the system: economic factors, linkages, manpower utilization, and out-of-hospital structures. An analysis is made of the attempts at community health planning, implications of Planning Law 93-641, and the rationale for clinical pharmacy. Part three undertakes to interweave major themes developed earlier toward an understanding of pharmacy in health care institutions and to delineate present trends, the organizational structure, and institutional standards for pharmacy services. Part four deals with the impact of current trends in health care and institutional systems on pharmacy and pharmacists, the effect of sociological research, the need and innovations in continuing education, and, finally, in a most provocative section, information systems and computer technology.

The ideas and information for such a text

necessarily have many sources. We must acknowledge our indebtedness to all the contributing authors. Without being able to cite the numerous names, we wish to add our personal word of appreciation to our many friends and associates in the health care system for their encouragement.

Pedro J. Lecca
C. Patrick Tharp

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PART ONE

Considerations in health care and institutional systems

Introduction

PEDRO J. LECCA

Health care issues that seem most important today will continue to receive a great deal of attention in the years to come.

Comprehensive national health insurance appeared inevitable during postwar inflationary period, yet the government's share of the health care dollar actually declined slightly during the 1950s, while the private insurers' share rose from 9% to 21.7% of the total. History thus warns us against simplistic forecasts, although it does not refute the theory that inflation makes things happen. For the 1980s, we would be rather surprised by a response pattern similar to that of the 1950s, since the lesson most Americans seem to have learned from the recent past is that third-party payment systems fuel inflation by deranging the pricing structure.

The various health services components, hospitals (their administrators and boards), physicians, nurses, pharmacists, dentists, and other emerging components, are relatively autonomous professional and bargaining units. The relationships among them are implicitly or explicitly essentially contractual, i.e., a voluntary relationship. So far, the American political system is not anxious to own the means of production and distribution. (An important exception is education, for reasons quite peculiar to American society. This is not a contradiction given the basic value public education represents. The purposes of equalizing access to education is to enable each child to be on the same start-

ing line in competition for desirable niches in the social system.)

Since the political system is not anxious to be saddled with ownership, our method is to regulate, to bargain, and to set up incentives. Outright directives and sanctions are used sparingly, and then only when the actions are grossly contrary to implicit and explicit norms. America's is a loosely structured and functioning social and political system that allows both tremendous achievements and dismal failures, and a great deal of freedom for the enterprising. This will undoubtedly change, but only in degree as long as the economists' predictions of constantly increasing personal income and gross national product continue. It is certainly safe to predict that we will be amassing the greatest concentration of medical hardware in the world as long as we believe it is a right to live as long as possible even though in a coma. It would seem that we are still far from being forced to conserve resources so that a small but still visible minority will continue to die because of lack of transplant facilities, hemodialysis, and other gadgets of which we are still dimly aware.

HEALTH SERVICES

At the core of the health service system is the decision maker, the physician, who is accorded a great deal of discretionary authority and prerogatives in his professional functions in an activity that, at best, has few good in-

dicators of performance. In contrast, medical technology carries with it a specious aura of specificity and, as such, encourages the adoption of technology. The very visibility of technology encourages its adoption in our desire for hard indicators.

The health professional is in a particularly strong bargaining position because of his proximity on frequent occasions to pain and dying. Consequently, politicians, boards of trustees, hospital administrators, and pharmacists are reluctant to constrict the physicians' resources and decision-making prerogatives unduly. This is the area of perpetual tension between health professionals and the body politic in all modern health systems regardless of ownership, sources of funds, and organizational structures.

The resolution and balancing of this tension between providers, consumers, and sources of funds will continue as a prime problem to be resolved politically rather than technically for the indefinite future. The continuing development of even more dazzling medical technology will serve to intensify and exacerbate the cruel choices that must be faced as we try to formulate social priorities. There are no clear criteria as yet of medical performance, and perhaps never will be because of mankind's ability to discover new disabilities as soon as others are brought under control.

In most of the world, the cost of health care, like the cost of education, is already paid for almost entirely by the government because this is the only social entity with the necessary financial resources. We would undoubtedly have gone the same route long before now, except that our wealth and the special circumstances of collective bargaining in U.S. industry enabled us to absorb the rising costs of health care through the price of other goods and services. Every bikini and every tin can incorporate in their price the cost of health care for the garment workers and their families and the steel workers and their families. The major theme of medical economics for the first two decades after World War II was to pass medical costs to the general consumer.

After 1965, the story began to change. The

private sector proved unable to absorb the total costs, especially for high-risk groups such as the aged. For the first time, the federal government was brought into the picture as a major factor in health care financing. Within 4 years, the public share of total U.S. health expenditures increased from less than 26%, a figure never before exceeded except in war, to 38%. Costs are now passed to the taxpayer as well as the consumer.

Along with rise in the government's share of expenditures has come a phenomenal increase in the total expenditure figure itself, to over \$118 billion in fiscal year 1975. Consumer dissatisfaction with rising prices forced even a reluctant administration to inflation control measures for the economy in general and the health care industry in particular. Both state and federal governments are trying to put the lid on rising health insurance premiums.

A taxpayer revolt at state and local levels is forcing even conservative politicians to call for national health insurance. The House Ways and Means Committee has been holding hearings on the subject, an unthinkable phenomenon even 5 years ago. Adoption of some sort of universal health insurance system seems inevitable within the next few years. Despite our wealth, despite our preference for nongovernmental financing, despite the ingenuity and efforts of private insurance carriers, despite the fears of many providers and consumers, there seems to be no other way that we can cope with the ever-rising costs of modern medical technology.

The expansion of government health care programs thus far has been generally limited to categories of persons that could not provide their own care and for whom no adequate source of support existed in the private sector. The unit costs of health services have generally not been lowered. This is not only because of the limits of mass production in health care but also because provider organizations tend to be stronger than consumer organizations, and once a program becomes politicized, it becomes especially vulnerable to such pressures.

Thus far, however, the tax base has proved

flexible enough to absorb the rising costs, chiefly by involving broader governmental units and larger population bases. So, thanks to politicization, millions of Americans, including Indians, disabled veterans, the indigent, and nearly all over age 65, who would otherwise be denied the fruits of the new technology, have access to some health services. At the same time, the incomes of most providers have improved substantially.

Medical research, professional education, and construction of facilities have been liberally supported by both public and private funds. Belatedly, but now quite generously, government is supporting research into new methods of organizing and financing health care, with strong emphasis on new technology.

The drug industry is that portion of the health care industry most clearly in line with general technological trends and the economies of mass production. Its achievements have been tremendous. Chemotherapy is today one of the most powerful arms of modern medicine. But overused and abused, it becomes a powerful pollutant. Its effluence is the current drug culture and its Frankenstein offspring, the heroin epidemic. Here, indeed, the sorcerer's apprentice has lost control.

How can we improve the decision-making process at all levels so that good intentions can be matched by clear understanding of probable consequences? In the health care field, the acid test of our ability to cope with problems will probably come with our eventual decisions on national health insurance. But these decisions, in turn, will be greatly influenced by what we do or do not do today and tomorrow, with respect to a multitude of subsidiary or related issues, including medical education, professional licensing, hospital franchising, regulation of the private health insurance industry, health maintenance organizations, Medicaid, drug abuse, day care centers, and consumer health education.

Vitaly important, of course, is the question of who will develop and control the health care technology of the future: the health professions and consumers through their elected representatives or technologists, both in and

out of government. If the latter group gain control, I believe it will be primarily due not to greed on their part but to default by those who have the greatest stake in accountable democratic controls.

As we look ahead to the 1980s and consider the health care system from the point of view of education, we need to focus on a number of considerations, including health manpower, the continuing impact of new knowledge, the expanding role of technology, the effect of national health insurance, and the potential of public education.

HEALTH MANPOWER

In certain fields of medicine, such as psychiatry, shortages are severe. It may be conservative to estimate that we could well use as many as 15,000 additional psychiatrists. The problems that relate to the widespread use of drugs, the striking cultural changes, and the general unrest that afflicts society all contribute to the unmet need. Especially urgent are additional psychiatric services for low-income, disadvantaged groups whose access to care is severely limited.

The need for pharmacists, of course, is intimately related to the availability of other health care professionals. For example, if, as has been suggested, 50% of the time of practicing pediatricians is spent in tasks that can be done as well or better by some other health professionals, then the number of pediatricians needed for a well-designed system will be significantly less if educational programs are designed to produce adequate numbers of pediatric paraprofessionals and if pediatricians learn how to work in a complementary manner with them. The same thing is of course true in other branches of medicine. Physician's assistants are now being educated in increasing numbers. In large measure, these current programs are directed toward training these individuals for specialty practice. The added financial benefits that can be derived from specialty practice may well work against adequate numbers of physician's assistants accepting less specialized roles as, for example, in the emergency rooms of community hospitals.

The pattern of practice will obviously influence the quantity of health care personnel needed. Group practice and particularly hospital-based group practice, which are both growing at present, should favor more efficient deployment and use of personnel. Regionalization and the avoidance of unnecessary duplication will also be important influences for good.

TECHNOLOGICAL ADVANCES

Technological change will inevitably influence the health care system in a major way. If the personnel who man the system are to discharge their responsibilities effectively, they must be in a position to use technology effectively. Health care personnel must become familiar with the concept of technological applications during their years of education and training so that such assets as computerized record-keeping and integrated medical information systems, which make a data base for all patients possible in hospitals, clinics, and other health care facilities, can be properly utilized. Monitoring, limited today almost completely to intensive care units, will almost certainly be extended more broadly and at all levels from the physician specialist to the generalist aide. The process of providing care will be simplified and made more efficient. In sparsely populated areas, the use of two-way audiovisual communication will make it possible for health care to be more comprehensive; modern means of transportation will be used to move patients to secondary or tertiary centers when needed.

Creating ways for the easy interfacing of institutional goals will, undoubtedly, be the major challenge of the 1980s. So far, it appears that the consumers have been more willing to make attempts at accommodation than has the provider. They have been willing to recognize the technical expertise of the provider and to concede his right to make technical and professional judgments. The provider has not always been willing to consider the considerable social and humanistic contributions that the consumer can bring to major decision-making processes. Frequently, it is when responsible consumer attempts to

bring this about fail that consumer control becomes the battlecry. But there is ample evidence that this latter approach has not gained high marks as a panacea either. A cooperative interface must still be the ultimate aim.

ORGANIZATIONAL AND CONCEPTUAL CHANGES

In the 1970s, the major processes for the delivery of health services are still those developed at the turn of the century. Financing mechanisms have been inherited from the 19th century and are supplemented by some created in the 1930s. There are currently those who recognize the need for change in the financing mechanisms, but who believe that the organizational patterns and the archaic reward system should be left intact.

Pharmacists must recognize that the rationalization of the health care delivery process is a systems problem. Therefore, we must turn to the technology of systems analysis to define these problems rationally.

Systems analysis and operations research, although most highly developed outside the health industry, appear to have promising applications within the health field. This is so because they can be applied both to major areas such as national planning and resource allocation and to less grandiose problems such as intrahospital systems, i.e., laboratory functions, laundry, scheduling, etc.

The capability exists in operations research to begin the development of delivery models through the process of simulation. This model building must, of course, be preceded by well-designed studies of health care needs and accurate inventories of resources. Simulation can then propose the most rational models for the allocation of existing resources as well as identify the gaps in resources.

These studies and technological applications must take place at regional levels where the results can be introduced into the process of priority setting and resource allocation and where the political and financial support necessary for the implementation of acceptable models can be generated. It may well be that the application of some of this technology should be incorporated into the

planning of health maintenance organizations before any major expenditure to implement the concept.

The use of the computer in the diagnosis of disease as well as in the planning of preventive programs is currently being explored and should be a major technological goal for the 1980s. The realization of its fullest development will, however, depend upon the success we achieve in designing the delivery systems that interface with these machines.

Can technology make a contribution to better use of existing personnel as well as to better prediction of need? The answers appear to be affirmative. Much lip service has been given to the notion that the division of labor among disciplines and the appropriate delegation of duties and responsibilities to optimally trained levels of personnel within professional hierarchies can improve utilization of skilled manpower. The scientific systems and task analysis necessary for the realization of this improvement, however, have been slow in coming. As a result, what we have had is a lot of dabbling with the physician's assistant, the expanded nurse, or the MEDEX and no real change in manpower patterns.

The applications of machines to man in the form of artificial organs and other life-preserving stratagems have less potential as technological goals for the immediate future of health services delivery than may be apparent at first glance, because they create as many problems as they solve. Granted that these problems may be ethical rather than technical, they do complicate the process of planning and systems development.

There is another resource that must not be overlooked because its contribution will be crucial to the public's acceptance of all the benefits that can accrue as a result of technology. The potential application of the theories of the social sciences to health care delivery problems is frequently overlooked and, even more often, denigrated. This is shortsighted because blind acceptance of the dictates of technology by a community is becoming less and less the rule. It therefore becomes the responsibility of the social sciences to interpret to the community the benefits to be

derived both by the individual and the community in the application of technology. This is especially true when rational planning proposes solutions that are efficient and cost saving but which may not seem totally convenient to some segments of the community.

The social and behavioral scientists must therefore be encouraged to improve their understanding of human motivation and to broaden their knowledge of the tools of persuasion so that they can add their contribution to the total effort.

DYNAMICS OF THE HEALTH CARE SYSTEM

Admittedly, the pressure today seems to be more on efficiency than on effectiveness in streamlining medical care, such as through the use of automated multiphasic screening and the use of physician's assistants. Efficiency is a different concept from effectiveness. It has been said that one should not strive to do efficiently what one need not have to do at all. To a great degree this is probably true with respect to curative medical care for some of our most significant illnesses. Nevertheless, efficiency will save funds that, in turn, will purchase that all-important entity—time.

In discussing health care systems we must realize that many factors, including sanitation, diet, housing, pollution, work and exercise habits, education, and manpower, will all have their separate impacts on the needs and the delivery of health care.

Let us look at some of the major problems of the moment. The poor and the almost-poor frequently encounter financial barriers that limit or prohibit their gaining access to medical care. Those living in sparsely settled rural areas, regardless of their income level, may have no health care immediately available. In many cases the financial barriers and maldistribution of health care services are compounded by a lack of understanding of what people themselves should do to avoid accidents and illnesses and by a lack of knowledge about available resources.

Even those with ample insurance coverage and adequate personal financial resources