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# Pharmacy, Drugs and Medical Care

THIRD EDITION

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# DEDICATION

*To my parents and my children, all of whom helped to shape my work.*

M.C.S.

*To Dee A. and Wendy K.*

D.A.K.

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# PREFACE TO THE THIRD EDITION

A decade has passed since the authors began work on the first edition of this text. It is belaboring the obvious to say that it was a dramatic decade. A president resigned. An undeclared war finally ended. Lack of energy became a critical issue. Skylab was launched—and then fell. The list goes on. . .

For Pharmacy, too, these were exciting years of new drugs, new initiatives in professional practice, new hopes, and old disappointments. For the first time there was a pharmacist at the helm of the Food and Drug Administration. HEW became HHS. Serious thought was given to changing pharmacy education entirely to a doctoral program, but the idea was not adopted. In one state pharmacists began *prescribing* drugs. In nearly every state pharmacists began to legally "substitute."

We have attempted in this third edition to catch up, again, with developments since the second edition. We have attempted, again, to anticipate some of the things which appear to lie ahead. Every chapter has been thoroughly reviewed and revised in our efforts to meet these goals.

As in the previous editions, the emphasis of this book is on providing an introduction to pharmacy and to drugs within the context of today's dynamic health care system. Chapter 1 provides an overview of the continuing interactions of pharmacy, drugs and medical care. Included are discussions of the place of pharmacy in the process of care and the importance of drugs as a component of modern therapy.

Chapter 2 contains updated data on the supply of and demand for pharmacists. A detailed description of the functions of pharmacists is provided as well as a job analysis of pharmacy practice based on national studies. In addition to more current data, Chapter 3 reflects changes in practice in community, chain, and hospital pharmacies.

Chapter 4 includes much new material on the important events in pharmaceutical education over the last 5 years—the sweeping recommendations of the Study Commission on Pharmacy, the continuing controversy over the Pharm. D. degree, and the revolution in professional experience programs. A description of educational programs, areas of the curriculum and schools of pharmacy remains.

In Chapter 5, which covers controls on pharmacy practice, the discussion of pharmacy ethics has been totally revised, with special attention being given to the relations between law and ethics. Changes in Chapter 6 reflect the ferment in pharmacy organizations and the growth in the pharmacy literature.

Chapter 7 traces the history of government involvement in the provision of health care showing the influence of societal concern on these

developments. It provides an appropriate backdrop to expected future development of National Health Insurance.

Since the last edition, contributor Arlene Fonaroff has assumed a position in the Population, Health and Nutrition Department of the World Bank. Writing from this broadened perspective, Dr. Fonaroff has completely revised and updated Chapter 8 on the ecological dimensions of health problems.

In Chapter 9 the latest sociological studies of illness behavior have been included. The Health Belief Model and its implications for pharmacists are discussed. The pharmacist's role in patient compliance is also addressed.

Chapter 10 has been updated to reflect FDA practices in evaluating the therapeutic contributions of new drugs. Attention is given to the "drug lag" controversy as well as changes in drug development and testing resulting from an evolving regulatory environment.

Chapters 11 and 12 continue to focus attention on the ways in which drugs are used—both legitimately and illicitly. Chapter 11 points up the increasing attention to appropriate prescribing, while Chapter 12 deals with the continuing societal and personal problems of drug abuse. Contributor Tony Tommasello has substantially revised his already excellent chapter on the latter topic.

In Chapter 13 we have presented the most recent data available on the role of governmental programs in the delivery of drugs and pharmaceutical services. Hospitals and nursing homes also receive special attention.

Chapter 14 includes a discussion of the numbers of and training of the broad range of health workers who interact with pharmacy. A section is devoted to the functioning of the health care team, with special concern for areas of conflict between medicine and pharmacy. This theme carries into Chapter 15 in which the professional role and status of pharmacy are discussed.

The book concludes with a hard look at how well pharmacy measures up to performance criteria generally accepted in medical care as well as to principles recently adopted by the American Public Health Association. Finally, a look forward considers several issues that promise to profoundly affect pharmacy in the next decade.

Acknowledgements are due to many who have contributed to the third edition. Especially helpful were the thoughtful comments of numerous colleagues who have used earlier editions in their teaching. Thanks are due for help in typing the manuscripts to Ms. Mary Ervin and Mrs. Connie Richards. Finally, and most important, thanks to our families, who make it all worthwhile.

M. C. S.
D. A. K.

# PREFACE TO THE FIRST EDITION

This book is designed to provide an introduction to pharmacy for any interested reader. Pharmacy is presented within the context of the system in which it is practiced. Thus there are discussions of many aspects of health care, including the patient and his illness, the various occupations which provide his care and the agencies which administer the system.

It is expected that the primary audience will be the pharmacy student. We would hope, however, that the book would be of value to anyone needing and seeking an appreciation of where pharmacy fits into the scheme of health things. It was impossible to discuss every aspect of pharmacy thoroughly as we would have liked to. Greater depth can be gained by consulting the references which appear at the end of each chapter. Between the time a book about health care is written and the time it is printed in today's environment, some changes may be expected to have taken place. We have tried to anticipate some of these. Short of total prescience it is impossible to predict them all. For these changes the reader is directed to the current literature.

Acknowledgements are due to many, including the following individuals, organizations and firms who have provided materials that have enriched this book. For use of their contributions we thank:

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M. C. S.
D. A. K.

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# CHAPTER 1

# Introduction

This book deals with one of the most frequently encountered health professions: pharmacy, and with a pervasive form of therapy: drugs. This chapter provides a brief introduction to both and places them in the context of medical care. An overview of the process of medical care, the structure of the medical care system and the system of drug use is presented to set the stage for more detailed discussions to follow.

## Pharmacy and the Medical Care Process

Although pharmacists usually practice in a specific location like a community pharmacy or a hospital, their activities are interrelated with those of other medical care personnel and are affected by a variety of influences in the medical care system. That is, the policies of pharmaceutical manufacturers and wholesalers, the reimbursement procedures of public and private insurance programs, and the attitudes and behaviors of patients all affect how pharmacy is practiced. The medical care system has evolved over the years as a response to the needs and demands placed upon it by the American people.

The interaction of persons in need of medical care with health practitioners who provide such care can be examined as a process: a series of events starting with the perception of a need for some sort of medical care service to its ultimate resolution. Examining the process of medical care in detail can provide an overview and a structure to illustrate how pharmacy fits into the overall medical care system.

A representation of the medical care process is shown in Figure 1.1. The process begins when a person perceives a need for some kind of medical assistance. Often this is initiated by the occurence of symptoms: pain, nausea, headache. Sometimes the need is so obvious that care is immediately sought: a broken arm or a heart attack. In other cases, the person must decide whether or not to seek professional care and, if so, from whom. Information is invariably sought from a variety of persons: other family members, neighbors, friends. Most people usually have well defined ideas about whom to ask for advice in particular situations. For example, the mother of a first-born child will turn to an acquaintance or relative with several children for advice concerning a childhood illness; a

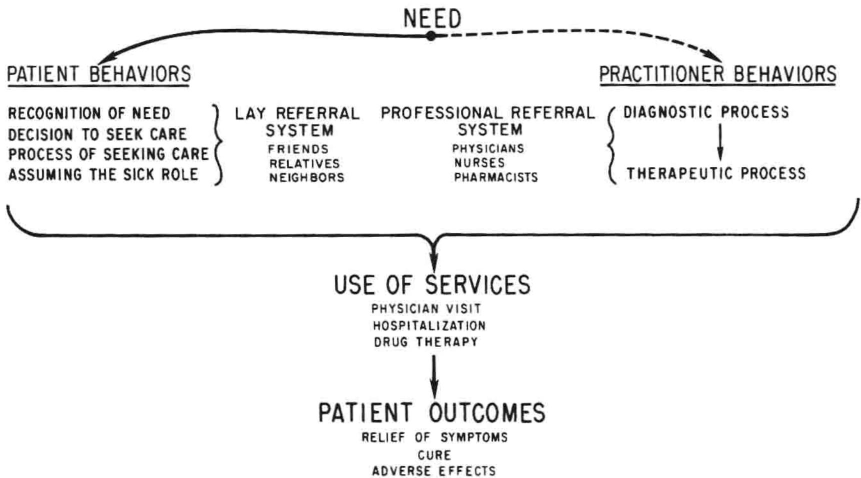


FIG. 1.1 The medical care process. (Revised and adapted from Donabedian, A.: Promoting quality through evaluating the process of patient care. *Med Care* 6: 185, 1968.)

person who is known to have recently recovered from an illness or injury may become the community expert on that condition. This "lay referral system" is often very influential in determining a person's decision to seek care. The opinions and attitudes of persons close to the individual will also affect the assumption of the sick role, that is, those privileges and responsibilities which are permitted to someone who is recognized as being sick. Privileges include permission to stay home from work or school, and receive help and sympathy, but include the responsibility to try and get well. Roughly analogous to the lay referral system is the "professional referral system" which includes physicians, nurses, pharmacists, and other health practitioners.

In American society the medical care system can be characterized as passive. In most cases it is up to the patient to initiate contact with the system and seek out medical care. Thus, the person with the problem must make the initial decision to seek professional advice. Once the patient is in the system the physician is in charge. The complex process of diagnosis begins, assisted by consultants, laboratory workers, nurses, and others. After provisional diagnosis comes the determination and implementation of appropriate therapy, which in a majority of cases involves the use of drugs and, therefore, the pharmacist.

During the medical care process, the patient usually interacts with both the lay referral system and the professional referral system, receiving both lay and professional advice. Because of the differing perspectives of laymen and health practitioners, sometimes patients themselves are

forced to sort out a variety of opinions and advice. Ultimately, however, advice gathering and decision-making result in the use of health services (a hospital stay, a prescription). The use of health services will result in some sort of outcome for the patient. Desirable outcomes include a cure for the condition, relief of symptoms, and restoration to health. In some cases, the use of health services may only modify the need or indeed produce new needs, which indicates that the medical care process is at times circular. For example, a visit to a physician for treatment of an acute condition might lead to the discovery of a chronic condition such as high blood pressure which would require chronic therapy for many years. In other cases the therapy itself might result in an adverse reaction which must be countered by other forms of therapy.

*Role of the Pharmacist in the Medical Care Process*

As a health practitioner, the pharmacist is a member of the professional referral system. The pharmacist usually deals with the implementation of therapy, providing the drugs necessary for the treatment of the diagnosed condition. As he is a separate practitioner, an additional control is added to the quality of drug therapy provided, which can reinforce the patient's understanding of drug therapy. The pharmacist may also assist in the selection of proper medication in consultation with physicians or other professionals. In some cases he may assist in the diagnostic process, especially if the condition is suspected to be drug related. Pharmacists frequently serve as a link between the lay referral system and the professional referral system. This is due largely to their accessibility. Unlike other health professionals, pharmacists are conveniently found in over 50,000 locations throughout the United States, and hours of practice are long, extending into the evenings and over the weekend. Some pharmacies in urban areas are open 24 hours a day; most others offer round the clock service on call in emergencies. Because of accessibility in both location and time, the pharmacist is often consulted for assistance in making the initial decision to seek medical care. Thus, the pharmacy is frequently a gateway to the medical care system, leading the client to formal diagnosis and treatment.

*The Environment of Medical Care*

The process of medical care outlined previously describes the interactions among patients and health practitioners in medical situations. Learning how to optimize these one-on-one interactions occupies much of the health professional's time, both in training and in practice. Often overlooked, however, is the fact that these activities are affected profoundly by many other things besides the characteristics of the specific persons involved or the technical aspects of the complaint being consid-

ered. These other things include the organization of health care services, the environment of medical care, and the societal and cultural factors which pervade and influence the interaction of patients and health practitioners.

Most medical care interactions take place in some sort of organization. Even the solo practitioner of medicine practices in an organizational setting inasmuch as he usually has a nurse and a secretary, office hours, a means of billing his clients, and formal relationships with one or more hospitals. Those organizational arrangements which affect the manner in which services are made available and paid for are generally controllable by the administrator or manager of the organization. Differences in organizational arrangements have a great influence on the process of medical care.

This influence is easily seen in organizations which are directly responsible for delivering personal health services, for example, hospitals, clinics, home health care services, nursing homes, and pharmacies. Administrative decisions can affect how efficiently health practitioners can function and how satisfied they are with their work. Decisions relating to staffing patterns, hours of operation, physical layout, and the types of equipment available also will effect the quality and accessibility of care offered to patients.

Financing institutions such as Blue Cross/Blue Shield and government programs such as Medicare and Medicaid influence the provision of services by the way they structure their benefit packages and how they reimburse health practitioners. For example, because most insurance programs offer better coverage of hospitalization expenses than of physician office visits, patients are often hospitalized for procedures which could be carried out on an outpatient basis merely because their expenses will be covered by insurance.

Large organizations which provide and pay for health care services, if administered properly, should be able to provide better service, because by pooling resources they should be able to afford to employ specialists who can deal more successfully with both administrative and medical care problems.

Many other kinds of organizations are involved in the medical care system. The educational system, including medical, dental, and pharmacy schools as well as academic health centers, provide future generations of health practitioners and are very much involved in the provision of direct patient care services. Also important are a variety of regulatory bodies, including groups which license and regulate the practice of pharmacy and other professions, those which accredit hospitals and educational institutions, and agencies which regulate products and equipment used in medical care (the Bureau of Drugs and the Bureau of Medical Devices in

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