Introduction to Hospital & Health-System Pharmacy Practice

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To my love, Diane—nurse, daredevil, cowgirl.

—David A. Holdford

To my grandsons, Andrew Reaves Brown and Bennett James Brown, and my granddaughter, Piper Mackenzie Brown.

—Tom Brown
When I was a child living in Mount Vernon, Ohio, I visited my father at his workplace in the pharmacy of Mercy Hospital, a small catholic hospital serving the rural community. My Dad, Arthur A. Holdford, R.Ph., was the director of pharmacy services. In fact, he was the only pharmacist employed by Mercy Hospital at the time. Large pharmacy staffs were not common when he first took the job at the hospital. Over time, he was able to hire employees to support the expansion of pharmacy services.

The hospital where my father worked was very different from hospitals of today. Back then, there were no computers, no Internet, and no automated dispensing cabinets. Handling, storage, and administration of sterile products and other medicines were primitive compared to today. Intravenous drugs were often prepared by nurses on the floors using less than aseptic technique. Oral medications were typically sent in bulk bottles to nursing units to be administered with little pharmacy oversight or input. Medication use systems were neither very safe, nor were they really systems.

Clinical pharmacy, as we now know it, was in its infancy back then. Clinical pharmacists were rarely seen in hospitals. Today’s most commonly used drugs had not yet been invented. Major diseases including AIDS were not known either.

The hospital where my father worked was not part of an integrated health system. The hospital did not coordinate its care with a network of outpatient clinics, physicians’ offices, pharmacy benefits management, long-term care facilities, home health agencies, and the like. My father worked in a hospital, not a health system.

Medicare and Medicaid were just in their infancy at that time. Pharmacy benefits managers and many other forms of managed care were virtually nonexistent. Pharmacists were not well paid compared to the salaries given to pharmacists of today. Pharmacist training was also different back then. Pharmacists needed fewer years of schooling and their education revolved around the product, not the patient. In short, a lot has changed since my father’s days.

Individuals entering the pharmacy profession today are going to see some truly amazing changes in health care and pharmacy practice during their career. It is impossible to accurately predict what those changes will be exactly, just as it would have been impossible for my father to imagine the changes that would occur over his lifetime. The only certainty, however, is that change will continue. And pharmacists will be a part of that change.

Origin of this Text

The genesis of this introductory textbook came from the Handbook of Institutional Pharmacy Practice, first published in 1979 by Drs. Thomas Brown and Mickey Smith. The Handbook was designed to achieve ASHP practice competencies and standards for pharmacists and evolved as it went through four editions. The fourth edition, edited by Thomas Brown, consists of 40 chapters covering a broad range of topics including information systems and informatics, the integrity of the U.S. drug supply, hospice and palliative care, and evidence-based medicine. Over the more than 30 years the Handbook
of Institutional Pharmacy Practice has been the only text available for students and practitioners, it has documented the changes in practice that have been required for clinical and management advancement in the profession. The text has been the one reference for students and practitioners who wished to pursue a career in institutional pharmacy.

Many chapters from The Handbook served as the basis for this new text, Introduction to Hospital and Health-System Pharmacy Practice (HHPP). New content and pedagogy have been added to focus the content more on student needs and current practice. The book provides learning tools for students (e.g., review questions, discussion questions, and additional reading) to assist educators in building on the text’s basic terminology and concepts.

Approach and Organization

The goal of this text has been to hone the comprehensive content presented in (HIPP) and update it to meet the needs of current curriculums. This text has been reorganized and presents an overview of essential terms, concepts, and processes in health-systems pharmacy in a concise, practical, and understandable way. Content comes from recognized experts in institutional pharmacy practice. Emphasis is on explaining, developing comprehension, and encouraging application.

The book consists of nineteen chapters divided into seven sections. The first section answers the question, “What is Institutional Pharmacy Practice?” It provides an overview of IPP, describes its history, and discusses key legal and regulatory issues. The next section, Managing Medication Use, describes how the medication use process is controlled through formularies, clinical pharmacy practice, and medication safety practices. Managing Medication Distribution describes systems for managing the distribution of medications (including controlled substances) throughout institutions. Using Technology discusses the role of automation, technology, and information systems in health systems. Financial Management reviews key management responsibilities of the pharmacy department including inventory control, budgeting, and cost control. Sterile Product Preparation and Administration discusses key systems, practices, and terms in preparing and administering sterile products. Managing People addresses leadership and human resources management in institutions. Finally, Careers in Institutional Pharmacy Practice discusses different training options for careers in health systems.

Prior knowledge of health-systems practice is not necessary to use this text, because it is written in an easy-to-read style and provides definitions for unfamiliar vocabulary. Additionally, visual aids such as pictures, diagrams, and flow charts are provided throughout to help explain ideas and conceptual relationships. Some of the major highlights of this book include:

- Learning objectives for each chapter
- Key terms are highlighted and defined within chapters
- Definitions for key terms are listed in each chapter and summarized in a glossary
- Key points are highlighted and then explained by answering “so what?”
- Review questions are provided at the end of each chapter for self-assessment
- Discussion questions are provided in each chapter to initiate dialogue and debate
- Extensively referenced to allow further research on chapter topics
- Supplementary exercises which guide hands-on application of chapter content
Intended Readers

This book is written for any pharmacy student interested in institutional pharmacy practice. For students interested in institutional practice, this book provides a foundation for introductory and advanced pharmacy practice experiences and on-the-job training in hospitals and health systems. Mastery of the book’s terms and concepts will be particularly useful for students who plan to seek residencies.

The book can also be useful for students who plan to practice in community settings by helping them understand how health systems work. Not all community pharmacists understand institutional practice, although a general understanding of health systems can be valuable when interacting with institutional pharmacists. Interactions often occur as patients move in and out of hospitals and other settings. Greater contact and understanding will also be needed across practice settings if integrated therapeutic interventions such as disease management are going to succeed in achieving positive patient outcomes.

In addition, practicing pharmacists who read this book can gain insight into institutional practice. Non-institutional pharmacists working in community settings or other jobs will learn about the various financial, clinical, technological, and distributional systems in health care institutions. This can be especially useful for individuals seeking a career change, but it can be just as helpful for people who just want to understand what goes on in a hospital or health system. Pharmacists and students from other countries can use this book to compare how their health care systems compare with that of the United States.

For Educators

This book can be used as the core text around which an elective or required course in institutional pharmacy practice can be built. It can also serve as a text for the integration of institutional pharmacy across the curriculum.

For a standalone elective or required course, educators can build learning experiences around individual chapters. The textbook offers a selection of readings that can form the backbone of the course. Faculty members can supplement the readings with presentations by practitioners, classroom assignments, and active learning projects. A textbook would also help guide the presentations of different faculty involved in team-taught courses. For instance, the first section can be used to provide an overview of health systems and pharmacy practice within them. Faculty and guest speakers can describe common types of institutional settings and the types of patients treated in each, discuss pharmacist’s roles and models of practice, the history of hospital pharmacy, and the various accreditation, regulation, practice standards, and institutional policies and procedures influencing practice. Clarification of concepts within the related chapters can occur and problem based learning activities can be used to apply and synthesize ideas covered in the book and class.

Use of the text could also occur across the curriculum as part of integrated, multidisciplinary education. This could be accomplished by mapping institutional pharmacy topics across curriculum, identifying the desired learning objectives for various courses, and matching book chapters to the learning objectives. For instance, chapters from the Managing Medication Use and Managing Medication Distribution sections of the book could be assigned as part of hospital introductory pharmacy practice experiences (IPPEs).
The section *Sterile Product Preparation and Administration* could accompany laboratory classes that teach compounding of intravenous solutions. Financial management could be part of a pharmacy management course, while careers in institutional pharmacy practice could be part of career training. Students who complete all of the text’s learning objectives would be able to have a much richer institutional advanced pharmacy practice experiences (APPEs).

*David A. Holdford, Co-Editor*

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