

Health Informatics

(formerly Computers in Health Care)

Kathryn J. Hannah Marion J. Ball
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(formerly Computers in Health Care)

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Kathryn J. Hannah Marion J. Ball

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(continued after Index)

Daniel F. Cowan
Editor

Informatics for the
Clinical Laboratory
A Practical Guide

With 42 Illustrations



Springer

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Series Preface

This series is directed to healthcare professionals who are leading the transformation of health care by using information and knowledge. Launched in 1988 as *Computers in Health Care*, the series offers a broad range of titles: some addressed to specific professions such as nursing, medicine, and health administration; others to special areas of practice such as trauma and radiology. Still other books in the series focus on interdisciplinary issues, such as the computer-based patient record, electronic health records, and networked healthcare systems.

Renamed *Health Informatics* in 1998 to reflect the rapid evolution in the discipline now known as health informatics, the series will continue to add titles that contribute to the evolution of the field. In the series, eminent experts, serving as editors or authors, offer their accounts of innovations in health informatics. Increasingly, these accounts go beyond hardware and software to address the role of information in influencing the transformation of healthcare delivery systems around the world. The series also increasingly focuses on “peopleware” and the organizational, behavioral, and societal changes that accompany the diffusion of information technology in health services environments.

These changes will shape health services in this new millennium. By making full and creative use of the technology to tame data and to transform information, health informatics will foster the development of the knowledge age in health care. As coeditors, we pledge to support our professional colleagues and the series readers as they share advances in the emerging and exciting field of health informatics.

*Kathryn J. Hannah
Marion J. Ball*

Preface

This book developed out of a course in laboratory informatics for residents in training in pathology and for fellows in the clinical laboratory sciences given over a period of years. The topics covered and the approach taken were strongly influenced by real-life experience. Pathology residents and clinical laboratory scientists, like the general population, vary greatly in familiarity with information issues in the laboratory and the computer system and infrastructure that supports an information system. Some know essentially nothing at all, while others have considerable expertise in some aspect, such as microcomputer functions or even computer engineering. For all, the idea of the clinical diagnostic laboratories as primarily an information center is a new idea, and for many it is a not entirely comfortable idea.

Our objective in the instructional program and in this book is to level the knowledge of all concerned without boring those who might already have considerable knowledge. It is not possible to bring everyone to the level of expert in all areas. Our object here is literacy and familiarity with the major issues and tools, not expertise. It should be evident that for us the clinical laboratory includes both anatomic and clinical pathology as those areas are usually defined. We expect to substantially exceed the informatics requirements of the American Board of Pathology for general certification in anatomic and clinical pathology.

The contributors are all members of the faculty and staff of the Department of Pathology of the University of Texas Medical Branch, and all have years of experience in the areas in which they write. They are all workers in the fields and the vineyard, and none is a technician. The editor is a working surgical pathologist as well as Director of Laboratory Information Services.

The book is organized into three sections, the first group of chapters dealing with the concept, organization, and management of laboratory information services; the second with technical aspects of computer systems; and the third with applications. Each chapter more or less stands alone, so they do not have to be read in any particular order, although the complete computer novice, if any exist in this computer age, might do well to begin with Chapter 6. Each chapter is accompanied by a glossary and all chapter glossaries are compiled into a comprehensive glossary at the end of the book.

Throughout the book references are made to particular products supplied by various commercial vendors. This is not to be taken as an endorsement of those products or vendors, and most especially, failure to mention a product or vendor is not to be taken as a judgment. Citations of products or vendors are made to keep discussions from being hopelessly abstract and to suggest to beginners where they may start in evaluating and selecting products. The life expectancy of vendor companies and the rapid turnover of versions of products, often measured in months rather than years, are such that no recommendations or criticisms are offered or implied. We have used most or all of the applications software products mentioned.

It is difficult to know just who should be accorded thanks for the development of a book such as this, and the program that it represents. Many contribute to the development of knowledge, and often their contribution is not noticed at the time. I suspect we learn less from our friends than we do from our critics, of whom there are many and faithful ones. We would like to acknowledge the assistance of B.A. Rampy, D.O., Ph.D., for great help in the preparation of illustrations.

Finally, I would like to remember our friend and colleague, Dr. Gbo Yuoh, a fine teacher-pathologist and a gentle soul whose untimely death cut short a promising career.

Daniel F. Cowan

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