PACS

A GUIDE TO THE DIGITAL REVOLUTION

Second Edition

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SECOND EDITION

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To my parents
and to my family and loved ones
whose genuine enthusiasm
inspires my passion for new ideas
KJD

To my wife Elisheva,
for your love and warmth
DSH

To my wife Jean, who manages information technology in our household
and my children, Trevor and Keely, who have joined me in working
in the digital world
JHT

To my parents, MHM and NM for their guidance and support,
and my family, SAM, CKM, SKM, HKM, and RM (on her way)
for their constant humor,
and my teachers and colleagues for their help along the way
AM

PREFACE

The digital transformation of radiology marches on. Slow and inefficient film- and paper-based methods are giving way to quicker and simpler computer-based ones. Report turnaround times are being measured in minutes or hours instead of days. There are more than a hundred information technology vendors in the radiology market; they all claim that they have best system to suit your needs. How can you tell which ones really are best for you? How can you distinguish between truly important features and ones that are just marketing ploys? How can you know the right questions to ask to make sure you are getting all that you need and avoiding hidden costs? This book covers the full spectrum of radiology information technology in the digital department. It brings together the expertise of many of the respected leaders in PACS, RIS, and speech recognition systems from academic centers such as Harvard and the University of Maryland, community hospitals, and even international teleradiology practices. Recent changes in image display technologies are explored, as well as the maturation of digital mammography, three-dimensional imaging, the electronic medical record, and teleradiology.

The process of assessing the needs of the institution and developing a request for proposal that matches those unique requirements is covered in

depth. This includes information on writing the primary evaluation criteria, evaluating proposals from different vendors, and choosing appropriate vendors. To justify the considerable investment of a PACS, financial concepts and tools are included that are useful in the financial evaluation. Legal issues that arise with teleradiology and formal policies that address these issues are also discussed.

This book is intended for radiologists, technologists, administrators, and IT professionals who want to better understand these technologies and their impact. It is also useful for industry vendors, consultants, and healthcare leaders who have an interest and modest knowledge of IT management issues.

What's new in the second edition? It presents some of the latest research on reading room design and radiologist workflow. Recent developments in CR and digital mammography are also included. Major changes in display and storage technologies which can have a huge impact on the cost of PACS are discussed. Experience gained from maturing teleradiology practices is shared. The role of decision support tools for order entry and digital teaching files are also explored. These updates and additions will provide you with the most current information about the digital transformation of radiology.

We would like to acknowledge our developmental editor, Merry Post, for keeping track of the myriad of details needed to make this second edition a reality. She also deserves credit for dealing with all of our crazy schedules. Her persistence is what kept this book on track. Kudos to the chapter authors for sharing their expertise with all of us, and thanks to my fellow section editors for organizing and keeping track of progress of the chapters in their sections. I also can not thank my wife, Elisheva, enough for supporting me in editing this book. The warm and loving home that she provides allows me to focus on the task at hand; write, edit, and review chapters; and send out countless e-mails.

David S. Hirschorn, MD

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