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Informatics in Radiation Oncology.

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BOOKS AND PUBLICATIONS

All interested medical physicists are encouraged to have their names added to a list of available reviewers. Please rank your interest among radiation therapy, x-ray, imaging, nuclear medicine imaging, ultrasound imaging, MR imaging, radiation injury, radiation protection, and others. Make your interest known to Dimitris Mihailidis, Ph.D., Books Review Editor (dimitris@charlestonradiation.com). Include your name and e-mail address in the body of the response.

Informatics in Radiation Oncology. Imaging in Medical Diagnosis and Therapy. Editors: G. Starkschall and R. A. C. Siochi, Series Editor: William R. Hendee. CRC Press/Taylor & Francis Group, Boca Raton, FL, 2014. 329 pp. Price: $149.95. ISBN: 978-1-4398-2582-2 (hardcover).

Description

Informatics in Radiation Oncology, part of the CRC book series on Imaging in Medical Diagnosis and Therapy, presents a broad overview of the role of informatics in decision-support and decision-making in radiation oncology. The book provides in-depth insight on how informatics and information technology play a major role in radiation oncology processes from imaging to planning, including quality assurance (QA), quality control (QC), outcome-modeling, research, and teaching.

Purpose

Effective, efficient, and safe patient-care delivery requires innovative approaches to amass and exploit the wealth of information acquired during the diagnosis and treatment process. This book focuses on building synergies between radiation oncology and informatics professionals. It enables medical physicists and information technology (IT) personnel to develop the knowledge and expertise to effectively apply informatics principles in radiation oncology. The authors meet the book's objectives by covering a wide-array of topics that range from informatics in day-to-day clinical operations to advanced and emergent fields.

Audience

The book is directed at radiation oncology professionals and informaticists. Additionally, with many medical physicists providing IT support to imaging, planning, and electromagnetic radiation (EMR) systems in radiation oncology, this book can enhance their knowledge on informatics in the clinical practice. The book can also provide educational material to IT professionals who support radiation oncology clinics. Researchers in the field of informatics in radiation oncology can benefit from this book, too. A total of 52 authors from 22 institutions contributed to the chapters of the book. Many of the authors are considered experts in informatics and IT.

Contents/Features

The book consists of 6 main sections: (1) introduction, (2) information in radiation oncology, (3) informatics for teaching and research, (4) informatics for imaging, (5) informatics for treatment planning, delivery, and assessment, and (6) informatics in outcomes modeling and QA. These chapters are easy-to-read and include up-to-date references for each subject. The book discusses important informatics principles, concepts, and tools in an effective and thorough manner. It also provides a nice balance in the covered topics in an easy-to-digest educational format with numerous illustrations, and various practical examples.

The major scheme of the book is well designed. However, the book can benefit from a slight re-grouping of information. The book contains sections with chapters that discussed informatics, which are part of the daily clinical operations, while others focus on research, future directions, and the role of informatics in programs and trials. Some readers would likely prefer a more distinct separation between the three topics. For example, they may prefer having all imaging related chapters in the imaging informatics section. The informatics for clinical trials, National Cancer Institute (NCI) cancer imaging program informatics, and patient assessment tools chapters can also benefit from being merged into a separate section. Some of the figures have small font and are difficult to read. Additionally, the book has a few minor redundancies. Nonetheless, the book shines in many areas and is noted for providing discussions on current topics in radiation oncology as well as several research and emergent topics.

Assessment/Comparison

With the broad development and implementation of advanced technologies and systems, the book fills a gap in the knowledge domain of informatics in radiation oncology. The book provides a vehicle to advance our field by deepening our knowledge in informatics and improving the efficiency of processes and effectiveness of our treatments. The book is comprehensive in scope with relevant discussions of informatics principles in radiation oncology that are not available in any other books. *Informatics in Radiation Oncology* is a valuable resource book that deserves to be added to our reference book library.

Reviewed by Moyed Miften, Ph.D.

Moyed Miften is Professor and Chief Physicist in the Department of Radiation Oncology at the University of Colorado School of Medicine. His main responsibilities are clinical service, research, teaching, and administration. His primary research interests are in the areas of IMRT, IGRT, dose–response modeling, and SBRT.

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