Textbook of
PULMONARY AND
CRITICAL CARE MEDICINE

Second Edition

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The 2nd edition of this *Textbook of Pulmonary and Critical Care Medicine* edited by SK Jindal, Professor Emeritus, Department of Pulmonary Medicine, Postgraduate Institute of Medical Education and Research, Chandigarh, India, again offers a thoroughly comprehensive and practical reference for the clinicians, who care for patients with respiratory diseases and critical illnesses. It is a timely follow-up to the 1st edition, given the rapid developments and advances in these fields. While this textbook will have special appeal and value to the physicians of the South-Asian continent, I can attest to the fact that it offers an authoritative addition to any practitioner’s library. After receiving my copy of the 1st edition, I found myself frequently turning to the book for a refresher on topics related to the patients under my care.

I also used this textbook to supplement my lectures and seminar materials for the medical students and physicians-in-training. This new edition provides educational value for the educators, pulmonologists, intensivists, thoracic surgeons, pediatricians, postgraduate trainees, and students of medicine. It is especially unique because of the abundance of illustrations, flow charts and tables. Their clarity and, at times, simplicity, make them valuable for the novice and also very useful for the educators. The large number of radiographic and pathologic reproductions are also great teaching tools.

Once again, in this field, Professor SK Jindal has enlisted the collaboration of his colleagues from the Postgraduate Institute of Medical Education and Research in Chandigarh and of leading experts at medical schools in India and in many other countries around the globe. As a result, the textbook offers a unique exposure to special problems seen in different parts of the world. One such problem is tuberculosis (TB). Despite the fact that nearly all the cases can be cured, the WHO considers TB one of the world’s biggest threats. Fifteen chapters in this book are devoted to the topics of TB, ranging from epidemiology and risk factors to the challenges in treating routine, multidrug resistant and surgically correctable disease. This section is a highlight of the book and, based on the recent WHO statistics, education about TB continues to be a high priority in highly endemic areas. For example, of the 9.6 million new cases of TB in 2014, 58% were in Southeast Asia and West Pacific Region, whereas India, Indonesia and China accounted for 23%, 10% and 10% respectively of the total globally, and more than half of the multidrug-resistant TB has occurred in India, China and the Russian Federation. The WHO report 2015 heralds an end-TB strategy to reduce TB deaths by 90% by the year 2030—a target, the readers of this book can help to achieve.

As in the previous edition of the book, there are chapters that are very helpful especially to the practicing physicians, including those who offer a systematic approach to clinical problems including, cough, dyspnea and hemoptysis, the interpretation of plain chest radiographs, the approach to chest CT scans, and the microbiologic approach to respiratory infections. An overview of the antimicrobial and immunosuppressive pharmacologic agents used to treat lung disease, is extremely useful.

What is most impressive about this edition of the book is that it continues to be comprehensive, practical, and updated. There is hardly any topic missing that might be within the scope of this book. The physicians and clinicians around the globe will benefit from Professor SK Jindal’s extensive efforts.

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Preface to the Second Edition

The 1st edition of this *Textbook of Pulmonary and Critical Care Medicine* received huge success all over the world. This edition, in its two volumes with over 200 authors from over 12 different countries, will serve as a reference book for the students and teachers of medicine and pulmonary sciences. There has been a constant demand for the new edition from various sections for over a year. Therefore, last year, we took the decision to revise the 1st edition.

Tremendous changes have happened in the practice of medicine including those in pulmonary medicine. Rapid advances in technology, introduction of new drugs, devices and diagnostic investigations, have made it mandatory to provide updated information to our readers. Although we have tried our best to include references to the latest publications up to the year 2016, it has not been possible in all the cases because of the longer time period required to publish such a huge text.

Electronic publications and wider availability of information on the internet seems to have relegated the printed books to the background. But textbooks remain irreplaceable. One cannot opt for shortcuts in acquisition of information and knowledge of a subject especially during training or a degree program. Internet browsing tends to promote abbreviated information, which goes against the tenets of a comprehensive program. Undoubtedly, the internet and electronic books offer great help to provide supplementary as well as complementary information. A large majority of students as well as teachers, however, continue to pose greater confidence in the print version, especially in case of the ‘Text’ and ‘Reference’ books.

There has been an enormous increase in the global burden of ‘noncommunicable diseases’ recognized by the UN General Assembly in one of its ‘resolutions’, which has made it incumbent upon all the countries to take effective steps for the control and management of these diseases. Chronic pulmonary diseases constitute one major component of this burden. Factually, the ‘Third-world’ countries suffer from an increasing onslaught of both communicable and noncommunicable diseases. On the other hand, the developed countries too are not immune from infectious diseases. Respiratory system is the most favored target of infectious diseases as much as of noncommunicable diseases.

We have seen a rapid expansion of pulmonary and critical care services all over the world. In India, for example, there was only one postdoctoral fellowship (DM) ‘program in pulmonary and critical care medicine’ in 2011, when the 1st edition of this book was published; there are at least seven such programs now in India. This has resulted in a greater visibility of the specialty as well as an increased demand for the teaching-learning material. Parallely, there are enormous advancements made in interventional pulmonology and pulmonary critical care as well as the emergence of subspecialties such as ‘sleep medicine, allergy-immunology, environmental and occupational medicine’. The increased concern about ambient and indoor air pollution as a cause of pulmonary diseases, has added an extra burden on pulmonary trainees. We have taken care to incorporate all the important areas of pulmonary medicine that might be within the scope of this book.

This current edition of the book has several new authors and topics in the text. On the other hand, some of the chapters of the earlier edition have been either pruned or deleted altogether. That has been done only to make it more interesting and reader-friendly.

SK Jindal
Preface to the First Edition

It was merely a quarter of a century ago when the specialty of pulmonary medicine was factually recognized as an important division of medicine. Until then, the lung diseases were generally dismissed as tuberculosis, or nondescriptive pneumonias and infections. Most of the nontuberculous lung diseases remained either undiagnosed or unknown. Of course, several stalwarts of the sixties and seventies had clearly identified this deficiency and made efforts to define the pulmonary problems and plan their solutions.

It was in 1989 that the first independent, postdoctoral DM Fellowship Program in Pulmonary Medicine was started at Chandigarh. Subsequently, the program was expanded to include the Critical Care as an essential component of the DM training. In addition, there were several postgraduate MD and/or diploma courses in tuberculosis and chest diseases, and/or respiratory diseases at different medical colleges. Unfortunately, most of the postgraduate programs lacked in their curricula especially for nontuberculous diseases and other systemic disorders. Moreover, the on-hand training in diagnostic and treatment modalities had been highly inadequate in the postgraduate courses. It is rather enigmatic that we still continue to lack the dedicated thoracic surgery courses and texts in various countries.

The increased importance and scope of respiratory and critical care medicine had also necessitated the need to develop the indigenous teaching and training materials including the texts with incorporation of local problems and possible solutions. Undeniably, the science is the same all over the world, but the experiences are different. Excellent text and reference materials on the subject have been available for long, which continue to guide the students, teachers and practicing physicians. In the present literature, quite a few textbooks of pulmonary medicine have been published. Ours is one more attempt in this direction to add to the existing literature on lung diseases available worldwide. This book contains contributions by approximately hundred international esteemed pulmonary medicine consultants and teachers.

There are, however, a few important additions in this present textbook. It is fairly comprehensive with contributions from several internationally eminent authors. It includes the basic principles as well as the recent advances related to different subjects. We have also attempted to incorporate allied clinical sciences relevant to the practice of the pulmonologists. A classical example is the critical care which forms an integral component of pulmonary medicine. It also incorporates tuberculosis, other pulmonary infections, environmental and occupational medicines, sleep disorders and general systemic diseases affecting the respiratory system in one or the other way. Although the critical care is relevant to most of the medical and surgical specialties, the pulmonologists have a more vested interest than that of the other specialists. Assisted respiration, which forms the core of most critical care, lies in the primary domain of pulmonologists.

We have taken care not to forget the need to push forward and meet the goals of excellence in health care. The real test of merit of a book lies in its readership by the students and adoption of its recommendations in clinical practice. Hopefully, the material in the text will benefit a diverse category of people including internists, general physicians, pulmonologists, pediatricians, intensivists, anesthesiologists and others, who need to handle patients with respiratory diseases and critical care.

SK Jindal
Acknowledgments

I thankfully acknowledge the contribution of my colleagues Dr D Behera, Dr Ashutosh N Aggarwal, Dr Ritesh Agarwal, Dr Navneet Singh, Dr Sahajal Dhooria and Dr Inderpaul Singh Sehgal, for their continued help in editing the manuscript. Unfortunately, we untimely lost our colleague Dr Dheeraj Gupta, while this edition of the textbook was still in its infancy. He had been a great source of encouragement and inspiration, the primary force in bringing out the 1st edition. Aditya, my son, has been only partially successful in bridging the gap.

I am immensely grateful to Dr Sidney S Braman, Dr Richard S Irwin, Dr Suhail Raoof, Dr PS Shankar, Dr Kalaplatha K Guntupally, Dr Ruby Pawankar and others, who have significantly contributed to this textbook. A large number of friends and eminent colleagues from across the globe have unhesitatingly spared their time as authors and coauthors with their valuable chapters and wisdom, for which, I remain obliged to them. I also greatly appreciate the help rendered by my erstwhile secretary, Ms Manju Aggarwal, for the preparation of the manuscript.

My deep appreciation is for Shri Jitendar P Vij (Group Chairman), Mr Ankit Vij (Group President), Mr Tarun Duneja (Director–Publishing), Ms Samina Khan (Executive Assistant to Director–Publishing), Mr KK Raman (Production Manager), Mr Ashutosh Srivastava (Assistant Editor), Mr Himanshu Sharma (Proofreader), Ms Yashu Kapoor (Senior Typesetter), Mr Manoj Pahuja (Senior Graphic Designer), and the other staff of M/s Jaypee Brothers Medical Publishers (P) Ltd., New Delhi, India, for taking the challenge of publication of this huge book.
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