

Avedis Donabedian. An Introduction to Quality Assurance in Health Care. Oxford: Oxford University Press; 2003; 240 pages; ISBN 0-19-515809-1; price: GBP31.75.

A New Book by the Old Master

Avedis Donabedian was in retirement for many years but traveled, lectured at many meetings in various places, and gave interviews that were published in the professional literature. However, he has not produced new manuscripts after 1996 as his health began to deteriorate.

Haroutine Armenian, President of the American University in Armenia and Professor of Epidemiology at the John Hopkins School of Hygiene and Public Health, urged him to write a new book, arguing that the best way for Donabedian to influence the quality of medical care in Armenia and other countries around the world would be to write a book for the general readership of health care professionals. Admiring Armenian's dedication to his homeland, Donabedian accepted the proposition willingly. He wrote the book during the combat against cancer that weakened his body but left his mind untouched, at a time when most of us would have renounced any interest in the external world and focused exclusively on a rapidly deteriorating state of health. He passed away on November 9, 2000, a few weeks before his 82nd birthday, knowing that his book would be published posthumously. Rashid Bashshur of Ann Arbor, Michigan, a pupil of his, amended and edited the book, which was published by the Oxford University Press in 2003.

The book is not written for experts but rather for beginners interested in improving the quality of medical care, people who had been his concern during most of his professional life. He brings refreshing clarity to the important area of quality of care through a highly readable yet in-depth exploration of the fundamental ingredients to the delivery of service of acceptable quality within modern health care systems.

In Donabedian's view, quality is the product of two factors, one being the science and technology of health care and the other the application of that science and technology in actual practice. This product can be characterized by attributes that he refers to as "components of quality" and gives a lucid account of each of them. The well thought out underpinning of the subject gives the reader a firm basis for tackling the other issues that are critical for understanding and delivering health care of acceptable quality. He further suggests that activities of professionals must be monitored in order to identify the instances or situations where the quality of care falls beneath the expected or desired level. He offers two basic ways for

the conduct of this task: 1) "trouble shooting" – the problem is identified and an individual or team assigned to deal with the issue; and 2) "planned reconnaissance" – taking steps to find problems that were not known but only suspected and needed confirmation and documentation. Having given the two basic methods for monitoring performance and quality, Donabedian explores issues that are part of the monitoring process, such as determining priorities, selecting the most appropriate approach to assess performance, and deciding on criteria and standards against which to judge it. He gives an informative, challenging, and critical analysis of the different ways to obtain information and the implications of making a particular choice. Finally, Donabedian discusses whether monitoring of quality works and emphasizes the need for successfully bringing about changes in the behavior of those who work within health care organizations. Donabedian is certain that the concept of quality of care can be defined and measured against a standard and that subsequent adjustments can be made and quality "assured" or "improved". He knows that the term "continuous improvement" may be more useful than "assurance" in that it reminds us that no level of quality can be totally satisfactory, as the expectations of patients and providers are continually shifting upwards.

Donabedian's style throughout the book is conversational telling the reader in succinct and personal form, the story of quality of care as he knew and experienced it.

Readers familiar with his works on the theory, concept, and measurement of medical care quality will not find new revelations in this book. They will, however, find new insights and dimensions discussed and assessed in a systematic and probing personal statement. Perhaps, equally important, they will appreciate the last words from a teacher, a scholar, and a friend they have admired. Those readers new to Donabedian's expertise will be better informed and equipped to face and explore the problem of improving the quality of care.

Both categories of readers Avedis Donabedian provides with an excellent basis from which to explore further the issues and challenges surrounding the delivery of a quality health care system in the 21st century.

Reuben Eldar

Orwoll ES, Bliziotis M, editors. Osteoporosis. Pathophysiology and Clinical Management. New Jersey (NJ): Humana Press; 2002. 615 pages; ISBN 0-89603-933-1; price: US\$135

Field of medicine: Internal medicine (endocrinology) and basic research in bone metabolism.

Format: Hardcover.

Audience: Physicians, general practitioners, endocrinologists, orthopedic surgeons, and basic scientists in the field of bone metabolism.

Purpose: To provide comprehensive information on osteoporosis by describing bone physiology and pathophysiology, factors that influence bone metabolism, as well as clinical diagnosis and management of the disease.

Content: The book is written by a group of authors, many of them distinguished scientists and clinicians in the field of osteoporosis. It is divided into 28 chapters. A short preface written by the editors explains the aim of the book, which is to integrate basic and clinical aspects of osteoporosis. Genetic basis of human and mouse osteoporosis is a subject of the first two chapters. Problems associated with research of osteoporosis in humans are comprehensively described, and a list is provided of the potential genetic factors that influence bone metabolism. The importance of genetic studies on potential molecular targets for future pharmacological interventions is emphasized, although all data on genetic markers of osteoporosis are still inconsistent. Chapter Three clarifies the characteristics of peak bone mass development, time and determinants of peak bone mass acquisition, and conditions that may impair peak bone mass attainment. The fourth chapter describes the physical basis and principal errors of dual X-ray absorptiometry (DXA) and quantitative computed tomography (QCT) measurements of bone mineral density, as well as methodology of DXA and QCT techniques, together with the information on currently available DXA and QCT systems. The fifth chapter discusses the clinical role of radiographic densitometry methods in evaluating bone status, and analyzes its clinical use in the evaluation of osteoporosis. The principles of bone mineral density measurements and a list of requirements that any radiographic method should meet, especially when used as a screening method, are also included in the fifth chapter. The sixth and seventh chapters overview technical aspects of quantitative ultrasound measurements in bone, and offer a review of clinical devices explaining basic aspects of ultrasound itself and discussing challenges and value of clinical use of bone ultrasound measurements. Chapters Eight and Nine discuss molecular markers of bone turnover, their basic and analytical aspects, and

their role in investigation of osteoporosis. These chapters offer a list of main markers of bone formation and resorption and emphasize the influence of skeletal processes on those markers and the interpretation of the diagnostic data. The authors also analyze the use of bone turnover markers in the clinical evaluation of osteoporosis. The main benefit of these measurements is that they provide information of bone reaction to therapy before it can be assessed by bone mineral density measurements. Chapters Ten and Eleven discuss the effects of exercise on bone, define the functional mechanical environment of bone, and demonstrate the ability of physical signals to influence bone morphology. The authors also discuss the importance of exercise in prevention of falls and osteoporosis-related fractures, and recommend exercises for reducing this risk factor. Physiology and cell biology of calcium transport, importance of maintaining constant internal calcium environment, control mechanisms that regulate and maintain calcium balance, calcium requirements and sources, and recommendations for calcium supplementation are subject of chapters Twelve and Thirteen. Chapter Fourteen focuses on the importance of vitamin D compounds on calcium transport and balance, direct effects on bone and bone cells as well as its action in kidney and other tissues. This chapter also offers an overview of effects of vitamin D deficiency on bone and role of calcitriol in postmenopausal osteoporosis. The fifteenth and sixteenth chapter discuss physiology and mechanisms of action of estrogen and estrogen-like substances on bone metabolism, and their role in regulation of bone remodelling. These chapters also provide an overview of clinical trials of estrogen and selective estrogen receptor modulators (SERMs) in the prevention and treatment of osteoporosis. Chapters Seventeen and Eighteen briefly overview beneficial effects of androgen on bone mass in both men and women, discussed in light of possible indirect action on body composition. These chapters are mainly based on animal data (with possible relevance for humans) indicating that androgen action is involved in metabolism of the male skeleton. The influence of gonadal steroids on male skeleton is the subject of Chapter Nineteen, which provides an overview of the skeletal effects of various disorders of gonadal steroid production, as well as the therapeutic effects of gonadal steroid administration. Chapter Twenty deals with the biochemistry and molecular biology of calcitonin, its role in calcium metabolism, and clinical abnormalities of calcitonin secretion, whereas the

twenty-first chapter discusses use of salmon calcitonin in the treatment of diseases associated with increased bone resorption, including osteoporosis, and includes a list of clinical trials using salmon calcitonin in therapeutic purposes. Chapters Twenty-two and Twenty-three discuss pharmacokinetics and mechanisms of bisphosphonate action on bone and review clinical data on those highly effective compounds for the treatment of osteoporosis and other conditions with abnormal bone loss. Chapters Twenty-four and Twenty-five discuss the effects of parathyroid hormone (PTH) on bone at the molecular, cellular, and tissue level and describe preclinical studies and clinical trials of the efficacy of PTH treatment in osteoporosis. Immunosuppressant drugs are nowadays widely used in various conditions. Their actions on bone and underlying mechanisms are the subject of the Twenty-

sixth and Twenty-seventh Chapter. These chapters also review epidemiology and pathogenesis of bone loss after various types of organ transplantation, as well as *in vivo* and *in vitro* studies that elucidated effects of these drugs on bone. The final, Twenty-eighth Chapter shortly reviews molecular pharmacology of bone and established therapies for osteoporosis, as well as potential targets of drug action in future.

Highlights: This is an excellent book providing comprehensive and current data covering all aspects of osteoporosis – the “silent epidemic”. Detailed information provided in this book is based on both fundamental and clinical research, which makes this book a very useful reference for basic as well as clinical researchers.

Martina Bašić-Koretić