

## Book Reviews

### **The Dartmouth Atlas of Vascular Health Care**

J. L. Cronenwett and J. D. Birkmeyer, Eds.

AHA Press, 1999.

220 pages.

This is an important and highly recommended publication. Although only concerned with American data, it should be studied, in detail, in all European countries by health care professionals within the vascular surgical basic and clinical sciences and related specialties, administrators, and health politicians. The work was supported by grants from The Society for Vascular Surgery and The North American Chapter of the International Society for Cardiovascular Surgery. As stated in the preface by the Presidents of these organisations, information on how vascular health care is being delivered, and how the documented outcomes of treatment are of benefit to vascular patients, purchasers and policy makers. The Atlas is of crucial importance to the efforts of these professional societies to improve quality.

The Appendices should be read first. Appendix One deals with the methods used for collecting, and interpreting the data. The Atlas is based on Medicare beneficiaries registered in several databases. Files were provided by the American Hospital Association, the American Medical Association, the American Osteopathic Association, and several federal agencies, including the Agency for Health Care Policy and Research, the Bureau of the Census, the Health Care Financing Administration, and the National Center for Health Statistics. The problems of defining the hospital service areas, the referring regions, vascular physician workforce rates, and Medicare diagnostic and surgical procedure rates are described together with vascular workforce prediction model, benchmarking, and measures of variation and association. In addition, it contains succinct information that will be of interest to all involved in creating or maintaining national or regional procedural databases. Appendix Two describes the geographical distribution of health care in the United States; 3436 geographically distinct hospital service areas were identified and aggregated into 306 hospital referral regions.

The Atlas itself consists of an Introduction, six chapters dealing with a range of vascular procedures, and a Conclusion. The graphs and a wealth of Atlas figures are of high quality, and easily understandable. The book is printed on good paper with an attractive layout that eases the reading, and understanding, of details. Chapter One describes the Vascular health care workforce. Board certified vascular surgeons did 39% of major vascular surgical procedures in Medicare patients; cardiothoracic surgeons and general surgeons each performed 29%, and neurosurgeons 3%. From 1993 to 1996, the percentage of procedures performed by board certified vascular surgeons increased from 35 to 39%. Among surgeons performing at least two major vascular procedures in 1996, vascular surgeons performed 63 major vascular operations in Medicare enrollees, compared to 25 by cardiothoracic surgeons and 17 by general surgeons. High volume surgeons (those performing more than 50 or more procedures) treated 53% of all Medicare patients undergoing major vascular surgery, but this proportion varied widely by hospital referral regions. In 1996, the number of clinically active surgeons doing major vascular surgery was 2.9 per 100 000 residents (varying from 1.0 to 6.2 between regions), and was at least 30% higher than the national average in 73 hospital referral regions (54% had rates more than 25% below average). The average number of clinically active vascular surgeons doing major vascular surgery was 0.51 per 100 000 residents. On an age-adjusted basis, the supply of vascular surgeons will increase over the next 15 years, from 0.5 to 0.7 per 100 000 residents, and then stabilise. Interventional vascular procedures were done by radiologists (68%), cardiologists 14%, general surgeons 7%, vascular surgeons 6%, and cardiothoracic surgeons 4%. From 1993 to 1996 interventional procedures performed by vascular surgeons decreased from 7.5 to 6.2%.

Carotid artery disease is dealt with in Chapter Two. The number of carotid endarterectomy procedures declined after 1985 when the EC-IC bypass study was published, but rose sharply after 1991, with publications of the NASCET and ACAS trials. The rates of carotid endarterectomy vary from 1.0 to 7.4 per 1000 Medicare enrollees, with a national average of 3.5 per 1000 and

the rates of carotid duplex varied from fewer than 20 to more than 115 per 1000. Operative mortality after carotid endarterectomy at low volume hospitals was at least 50% higher than at high volume centres and "centres of excellence" which participated in the NASCET or ACAS trials (3.5%, 1.7% and 1.5%, respectively). Mortality rates were highest in patients undergoing procedures by surgeons doing three or fewer operations compared to those surgeons performing more than 25 procedures (2.8% vs 1.4%, respectively).

Abdominal aortic aneurysms are analysed in Chapter Three. The overall surgical mortality was 5.5%. The frequency of elective surgery varied from 0.37 to 1.54 per 1000. High volume surgeons (>10 cases) had a mortality rate of 4.0%, whereas low volume surgeons (<3 procedures) had a patient mortality rate of 8%.

Chapter Four describes lower extremity arterial occlusive disease. The rates of angioplasty increased from 38% from 0.95 to 1.31 per 1000 from 1993 to 1996. Surgical bypass procedures increased 16% to 2.53 per 1000, but the rates of major amputation also increased in the same interval to 1.6 per 1000. All figures had wide geographical variation, for example: surgical bypass procedures varied from 0.41 to 4.58 per 1000.

Chapter Five and Six deal with haemodialysis access procedures and miscellaneous vascular diseases. The final chapter discusses several pertinent questions; for example: do populations living in areas with fewer vascular surgeons have inadequate access to an important resource? Or is there an oversupply in areas with more vascular surgeons; what number is the "right" in a given area; how many more should be trained to meet, but not exceed, the need for their services. Benchmarking, workforce planning, the problems of interventional procedures, and the variation in the use of vascular procedures are discussed, and should be studied by all involved in care, administration, and planning. Read this book, be amazed, and draw your own conclusions.

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available online at <http://www.idealibrary.com> on **IDEAL**<sup>®</sup>

### **Diabetes and Cardiovascular Disease**

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Humana Press.

458 pages, price \$125.

In Western populations up to 75% of diabetic patients die from cardiovascular disease, angina and left ventricular failure are more common and medical and

surgical interventions have less favourable outcomes. This volume is a much needed and meritorious attempt to integrate the scientific and clinical knowledge in this very important area. Approximately half of the text is dedicated to the pathophysiology of this association and the remainder is divided into three sections covering disorders of the heart, peripheral vascular system and microcirculation. The editors have assembled an excellent panel of international scientists and clinicians with contributors from across the U.S.A. and parts of Europe. The chapters have been generally edited to a high standard, the text, figures and tables are well presented and the style is generally interesting and readable.

The initial section of pathophysiology consists of 13 chapters covering a range of topics, including the syndrome of insulin resistance, dyslipidaemia, thrombosis, hypertension, atherosclerosis and the roles of glycosylation and the renin angiotensin system. The chapters on insulin resistance (Anwar *et al.*) glycosylation (Vlassara) and thrombosis (Schnieder and Sobel) are excellent although this probably reflects personal interests rather than implies any criticism of the remainder. The chapter on vascular abnormalities in the prediabetic state (Caballero *et al.*) covers an extremely important area as it is possible that an awareness of this topic holds the key to the increase in vascular disease we have observed in the West in the last century. With predictions of up to 200 million individuals worldwide with diabetes and a staggering 25% of western populations with some features of insulin resistance, the observation that the prediabetic population are at vascular risk has profound implications for our management of this largely ignored condition. This section is well written for clinical and scientific readers integrating the vascular abnormalities associated with the prediabetic state and their clinical implications. In section II, the chapter on coronary artery disease in diabetes (Aronson and Johnson) is well written and excellently referenced. I particularly enjoyed the comprehensive coverage of the prospective studies in the primary and secondary prevention of myocardial infarction that are relevant to diabetes. These studies (HOPE, UKPDS, CARE, 4S, EPISTENT and others) provide us with the information to practice evidence based medicine in this area and make essential reading for all clinicians with an interest in this subject.

Overall, a well written, readable and balanced book on a very important topic relevant to many scientists and most clinicians. On the negative side, there is some repetition at various points in the text that could have been weeded out. The fibrinolytic system is covered comprehensively in chapters 9 and 13, but