Book Reviews

The Dartmouth Atlas of Vascular Health Care
J. L. Cronenwett and J. D. Birkmeyer, Eds.
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%, respect-
ively). Mortality rates were highest in patients under-
going 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 Chap-
ter 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 oc-
culsive 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 by-
pass 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 im-
portant 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 prob-
lems of interventional procedures, and the variation
in the use of vascular procedures are discussed, and
should be studied by all involved in care, ad-
ministration, 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®

Diabetes and Cardiovascular Disease
M. T. Johnstone and A. Veves.
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 ex-
cellent 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 syn-
drome of insulin resistance, dyslipidaemia, thrombosis,
hypertension, atherosclerosis and the roles of gly-
cosylation and the renin angiotensin system. The chap-
ters on insulin resistance (Anwar et al.) glycosylation
(Vlassara) and thrombosis (Schnieder and Sobel) are
excellent although this probably reflects personal in-
terests rather than implies any criticism of the remain-
der. 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 popula-
ations with some features of insulin resistance, the
observation that the prediabetic population are at vas-
cular risk has profound implications for our man-
agement of this largely ignored condition. This section
is well written for clinical and scientific readers in-
tegrating 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 com-
prehensive coverage of the prospective studies in the
primary and secondary prevention of myocardial in-
farction that are relevant to diabetes. These studies
(HOPE, UKPDS, CARE, 4S, EPİSTENT and others) pro-
vide 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