Chapter 3 covers heart failure, including definitions, prevalence, prognosis, predictors of poor prognosis in heart failure, symptoms, investigations, and treatments.

Valvular heart disease
Ali Khavandi

Chapter 5 covers valvular heart disease, including epidemiology, aortic valve, aortic stenosis, aortic regurgitation, mitral valve, mitral regurgitation, mitral stenosis, tricuspid valve, tricuspid regurgitation, tricuspid stenosis, pulmonary valve, pulmonary regurgitation, and prosthetic valves.

Ventricular tachycardia and sudden cardiac death
Ali Khavandi

Chapter 8 covers ventricular tachycardia and sudden cardiac death, including definitions, diagnosis of ventricular tachycardia, acute treatment of ventricular tachycardia, implantable cardiac defibrillators, sudden cardiac death/arrest, managing the risk of sudden cardiac death in specific conditions, ventricular tachycardia in structurally normal hearts, and risk of sudden cardiac death with accessory pathways.

Presyncope and syncope
Ali Khavandi
Chapter 6 covers presyncope and syncope, including an overview, a glossary of terms, prevalence, classification and pathophysiology, evaluation of patients, investigations, treatment of reflex syncope and orthostatic hypotension, bradycardhythmia: anatomy and electrophysiology of the heart rhythm, bradycardia, conduction system defects, evaluation of bradycardia patients, clinical implication of electrophysiology study in patients with suspected conduction disturbances, and treatment of bradycardhythmia.

**Cardiomyopathy**

Ali Khavandi

Chapter 4 covers cardiomyopathy, including primary cardiomyopathy, hypertrophic cardiomyopathy, dilated cardiomyopathy, restrictive cardiomyopathy, storage diseases, arrhythmogenic cardiomyopathy, unclassified cardiomyopathy, inflammatory myocardial disease, secondary myocardial diseases, and cardiac transplantation.

**Adult congenital heart disease**

Ali Khavandi

Chapter 14 covers adult congenital heart disease, including the basics and key concepts, fundamental concepts in congenital lesions, simple lesions (atrial septal defects and patent foramen ovale, ventricular septal defects, atioventricular septal defects, anomalous pulmonary venous drainage, Ebstein’s anomaly, coarctation of the aorta, patent ductus arteriosus, sinus of valsalva aneurysms), and complex lesions (transposition of the great arteries, congenitally corrected transposition of the great arteries, tetralogy of Fallot [TOF], functionally single ventricle and the Fontan circulation, and truncus arteriosus).

**Cardiovascular system**

Jeremy Prout, Tanya Jones, and Daniel Martin

This chapter covers the assessment and investigation of perioperative cardiac risk, the principles of perioperative haemodynamic monitoring and physiological changes in cardiac comorbidity with their relevance to anaesthetic management. Perioperative cardiovascular risk includes assessment of cardiac risk factors, functional capacity and evidence-based
guidelines for preassessment. Cardiovascular investigations such as cardiopulmonary exercise testing and scoring systems for cardiac risk are included. Management of the cardiac patient for non-cardiac surgery is detailed. Invasive monitoring with arterial, central venous and pulmonary artery catheters is described. Cardiac output measurement systems including dilution techniques, pulse contour analysis and Doppler are compared. The physiological changes, management and implications for anaesthesia of common cardiac comorbidity including ischaemic heart disease, heart failure, valvular heart disease, pacemakers and pulmonary hypertension are described.

Management of critically ill patients with haemodynamic disturbances

Ali Khavandi

Chapter 21 covers the management of critically ill patients with haemodynamic disturbances, including shock, non-surgical cardiology admissions to intensive care, specialized monitoring on the intensive care unit, inotropes, mechanical support devices, and haemodynamic effects of positive pressure ventilation.

Pain medicine

Jeremy Prout, Tanya Jones, and Daniel Martin

This chapter summarizes the assessment and management of acute and chronic pain for FRCA. Pain pathways and physiological consequences of pain are considered along with sites of action and the pharmacology of common analgesics. Assessment of pain for different patient groups and settings is explained. Pain management strategies, pharmacological, non-interventional and interventional techniques are described, including multidisciplinary management of chronic pain. Specific management of some common chronic pain conditions, such as trigeminal neuralgia, are discussed in more detail.