

## **APPENDIX A**

### **3.0 CURRICULUM**

#### **A. Basic knowledge:**

- Embryology: detailed knowledge of cardiac embryology
- Anatomy: cardiac and vascular anatomy, including anatomic variants and congenital abnormalities
- Genetics: understanding of principles with special attention to current understanding of aetiology
- Epidemiology of congenital heart disease
- Physiology: basic circulatory physiology, fetal and transitional circulations, myocardial blood flow regulation, myocardial physiology and metabolism. Detailed knowledge of the physiology of shunts, parallel circulations, single ventricle
- Vascular biology and pathology: normal vascular structure and function, response to injury, mechanisms of pulmonary vascular disease
- Haemostasis: intrinsic and extrinsic coagulation cascade and platelet physiology
- Pathophysiology: cyanosis, myocardial ischaemia and infarction, myocardial reperfusion, circulatory shock, anaphylaxis, cardiac arrhythmias and bypass injury
- Pharmacology: anticoagulants, antiplatelet drugs, X-ray contrast agents, myocardial inotropes, vasopressors, vasodilators, anti arrhythmic drugs and drugs affecting lipid metabolism
- Radiology imaging and radiation safety: principles of X-ray imaging, operation of cinefluorographic equipment, operation of digital video imaging systems, and radiation protection
- Ultrasound: principles of ultrasound imaging including Doppler studies
- Limited knowledge of new developments in cardiology including Magnetic Resonance Imaging, fetal echocardiography, 3-D echocardiography and contrast echo

#### **B. Clinical cardiac conditions and management strategies – congenital heart disease:**

- Congenital heart disease including recognition, diagnosis, natural history and management – a thorough and in depth knowledge as covered in one of the standard texts
- Grown up congenital heart disease including management of the transition to adult care

#### **C. Clinical cardiac conditions and management strategies – acquired heart disease**

- Rheumatic heart disease and valve lesions
- Endocarditis
- Pericardial disease
- Cardiomyopathies and cardiac failure
- Arrhythmias and conduction defects
- Syncope
- Cardiac tumours
- Vasculitides – Takayasu and Kawasaki disease
- ‘Office’ cardiology including preventative care, chest pain, hyperlipidaemia, long distance referral and telemedicine

#### **D. Resuscitation and advanced cardiac life support including care of the patient with a duct dependent circulation**

#### **E. Diagnostic cardiac catheterization**

- Indications/complications/preparation/premedication
- Haemodynamic monitoring and derivation of data

#### **F. Percutaneous interventions:**

- Valvuloplasty
- PDA occlusion
- Rashkind septostomy
- Stent implantation
- Retrieval of intravascular foreign bodies
- ASD/VSD occlusion
- Pericardiocentesis

#### **G. Echocardiography:**

- Transthoracic echo (TTE)
- Transoesophageal echo (TEE)
- Fetal echo

#### **H. Cardiac Imaging:**

- Evaluation of chest X-ray
- CT of the heart
- MRI of the heart
- Nuclear cardiology techniques
- Angiography

#### **I. ECG evaluation:**

- Resting ECG
- Holter ECG

#### **J. Exercise Testing**

#### **K. Electrophysiology:**

- Indications for EPS
- Applications including tilt testing

#### **L. Pacemakers:**

- Knowledge of criteria for implantation
- Knowledge of pacemaker selection
- Placement of temporary transvenous pacemakers
- Application of external pacemakers
- Placement of permanent pacemakers
- Testing of pacemakers

#### **M. Principles of post operative management including haemodynamic monitoring and the use of inotropes and vasodilators**

**JOHANNESBURG**  
**February 2004**