

Module Title	Paediatric Cardiac Surgery August 16, 2006	
Rationale and Competencies	<p>Paediatric cardiothoracic abnormalities can produce significant morbidity and mortality. A thorough understanding of normal anatomy and physiology, as well as pathophysiology and investigative tools, is required to allow appropriate investigation and management of paediatric patients with cardiothoracic disorders. Knowledge of the effects of therapeutic agents is also essential.</p> <p><u>The Graduating Trainee will be able to:</u></p> <ul style="list-style-type: none"> ▪ Recognise the symptoms of, and accurately diagnose, common paediatric cardiothoracic problems ▪ Efficiently and effectively examine the patient ▪ Recognise the most common disorders of the cardiothoracic systems and differentiate those amenable to surgical treatment ▪ Take a history, perform an examination, and arrive at a well-reasoned diagnosis ▪ Appraise and interpret imaging against patients' needs ▪ Critically evaluate the advantages and disadvantages of different investigative modalities ▪ Communicate information to patients and their family about procedures, potentialities, and risks associated with surgery in ways that encourage their participation in informed decision making ▪ Collaborate with other professionals in the selection and use of various types of treatments assessing and weighing the indications and contraindications associated with each type ▪ Develop a care plan for a paediatric patient in collaboration with members of an interdisciplinary team ▪ Select medically appropriate investigative tools to carry out clinical investigations and monitoring techniques in a cost-effective, ethical and effective manner 	
Topics relevant to this module	<p>The common congenital cardiac and vascular defects that the trainee is expected to study in some detail include –</p> <ul style="list-style-type: none"> – Atrial septal defect – Ventricular septal defect – Patent ductus arteriosus – Partial atrioventricular septal defect – Complete atrioventricular septal defect – Tetralogy of Fallot – Transposition of the great arteries – Vascular rings – TAPVD – Congenital aortic valve stenosis – Pulmonary valve stenosis – Coarctation of the aorta – Ebstein's anomaly – Congenital coronary artery anomalies 	<p>Less common defects that the trainee is not expected to study in detail include –</p> <ul style="list-style-type: none"> – Aorto-pulmonary window – Truncus arteriosus – Tricuspid atresia – Pulmonary atresia with intact ventricular septum – Interrupted aortic arch – Hypoplastic left heart syndrome – Other forms of univentricular heart
Essential Reading	Glenn's Thoracic and Cardiovascular Surgery (6th edition) Authors: Arthur E. Baue (Editor), Hillel Laks (Editor),	

Recommended Reading	1. Stark J. and de Leval M, Surgery for Congenital Heart Defects, Saunders, 1994 2. Kouchovos NT, Cardiac surgery by Kirklin & Barratt-Boyes, 3 rd ed, Churchill Livingstone, 2003.
Learning Opportunities and Methods	The trainee should take the opportunity to learn from many other colleagues and specialities – paediatric cardiologist, intensivist, echocardiographer, bypass perfusionist and cardiac anaesthetist. Ideally this should include – (1) Time spent looking at echocardiograms and cardiac angiograms. (2) Time with the paediatric cardiac perfusionist. (3) Involvement in ward rounds in the Intensive Care Unit and on the ward, learning about the details of post-operative care.
Assessment and Examination	

LEARNING OBJECTIVES

Level One	Level Two	Level Three	Level Four
<ul style="list-style-type: none"> ▪ Describe the embryology of the heart and great vessels, and explain how it relates to the development of the common congenital heart anomalies. ▪ Describe the abnormal anatomy of the major congenital cardiovascular anomalies, <ul style="list-style-type: none"> - apply this to accurately interpreting echocardiograms, angiograms and MRI examinations. ▪ Explain the intra-uterine fetal cardiac physiology, the physiologic changes around birth in the circulation and pulmonary vascular bed, and the pathophysiology of the common congenital heart defects <ul style="list-style-type: none"> - apply this to the interpretation of cardiac catheter studies 	<ul style="list-style-type: none"> ▪ Summarise the principles of cardiopulmonary bypass for infants and children, and the intra-operative management of bypass, comparing these with adult techniques for bypass and myocardial preservation. ▪ Review the clinical features, diagnosis, investigations and the management principles for the common congenital and acquired heart defects in the paediatric age group 	<ul style="list-style-type: none"> ▪ Describe the operative techniques and the post-operative care for the common congenital and acquired heart defects in this age group. ▪ Describe the expected outcome, long-term results and late complications for the common congenital and acquired heart defects. ▪ Describe the major medical, social and surgical issues for adolescents and young adults with congenital heart disease, and the management of the common surgical problems in the adult with treated congenital heart disease 	