

	<b>Cardiopulmonary bypass and management of coagulation</b>	August 15, 2006
<b>Module Rationale and Competencies</b>	<p>In contemporary practice the assessment of the cardiothoracic patient requires a thorough understanding of the extracorporeal bypass. The physiology and complications of extracorporeal bypass are closely linked to daily cardiac surgery practice. An in depth knowledge the coagulation system is required in daily practice in cardiac surgery.</p> <p>The Graduating Trainee will be able to:</p> <ul style="list-style-type: none"> <li>▪ Access and apply relevant knowledge to clinical practice</li> <li>▪ Accurately identify the risks and benefits of the chosen management plan and its alternatives</li> <li>▪ Plan and implement appropriate surveillance programs</li> <li>▪ Appreciate and act according to ethical standards within cardiothoracic surgery</li> <li>▪ Communicate information to patients (and their family) in ways that encourage their participation in informed decision making</li> <li>▪ Manage patients in ways that demonstrate sensitivity to their physical, social, cultural, and psychological needs</li> <li>▪ Approach and carry out procedures with due attention to safety of patient, self, and others</li> </ul>	
<b>Essential Reading</b>	Kirklin/Barratt-Boyes Cardiac Surgery: Morphology, Diagnostic Criteria, Natural History, Techniques, Results, and Indications Nicholas T. Kouchoukos (Editor), Churchill Livingstone (November 2003)	
<b>Recommended Reading</b>	Glenn's Thoracic and Cardiovascular Surgery (6th edition) Authors: Arthur E. Baue (Editor), Hillel Laks (Editor), Mastery of Cardiac Surgery ISBN: 0316482102 Cardiac Surgery in the Adult Lawrence H. Cohn & L. Henry Edmunds	
<b>References</b>	<a href="http://www.ctsnet.org/">http://www.ctsnet.org/</a> <a href="http://www.ctsnet.org/residents/ctsn/">http://www.ctsnet.org/residents/ctsn/</a>	
<b>Learning Opportunities and Methods</b>	<p>Clinical-Ward teaching</p> <ul style="list-style-type: none"> <li>- supervised ward rounds with consultant surgeon</li> <li>- multidisciplinary meetings within each unit</li> <li>- clinical audit meetings within each unit</li> <li>- structured teaching program within each unit including trainee presentations and journal club</li> </ul> <p>Clinical-Operating room teaching</p> <ul style="list-style-type: none"> <li>- structured program for progression and assessment of surgical skills</li> <li>- assistance with and observation of methods and techniques used for complicated surgery</li> </ul> <p>Online access to current journals within each unit Access to unit database for research purposes</p>	
<b>Assessment and Examination</b>	<p>Self Assessment Tasks</p> <ul style="list-style-type: none"> <li>- multiple choice and short answer questions (have hyperlink)</li> </ul> <p>Essay Questions</p> <ul style="list-style-type: none"> <li>- set by and submitted regularly to unit's supervisor of surgical training</li> </ul> <p>Clinical Vivas</p> <ul style="list-style-type: none"> <li>- short and long cases performed with consultant surgeons</li> </ul> <p>Clinical Assessment and Mentor Reports</p>	

Level One	Level Two	Level Three	Level Four
<ul style="list-style-type: none"> <li>▪ Explain the development of cardiopulmonary bypass</li> <li>▪ Discuss the physiology of CPB</li> <li>▪ Take a history, examine, diagnose, perform (and/or arrange for) appropriate therapeutic procedures, and manage patients undergoing CPB</li> <li>▪ Apply their thorough knowledge of the, physiology, and pathology of CPB to accurately diagnose and effectively manage patients</li> <li>▪ Explain the pathophysiology of coagulation</li> <li>▪ Explain/discuss effective blood conservation</li> </ul>	<ul style="list-style-type: none"> <li>▪ Describe the physiology of CPB</li> <li>▪ Describe the physiology of coagulation</li> <li>▪ Discuss pharmacological agents involved in coagulation</li> <li>▪ Accurately identify risk factors associated with post-operative bleeding</li> <li>▪ Select medically appropriate management of coagulation disturbances in a cost-effective, ethical and efficient manner</li> </ul>	<ul style="list-style-type: none"> <li>▪ Communicate information about procedures and risks in relation to CPB to patients (and/or their family) in ways that encourage their participation in informed decision making and on-going management</li> <li>▪ Appropriately adjust the way they communicate with patients to accommodate cultural and linguistic differences and emotional status</li> </ul>	<ul style="list-style-type: none"> <li>▪ Review the rationale for and describe techniques of CPB</li> <li>▪ Interpret and discuss the available literature regarding the outcomes extracorporeal circulation</li> <li>▪ Manage patients extracorporeal circulation</li> <li>▪ Review the rationale for and describe techniques of blood conservation and pharmacological management of coagulation</li> </ul>
<ul style="list-style-type: none"> <li>• Evaluate patients on CPB</li> <li>• Interpret pathology tests related coagulation</li> <li>• Direct the critical care management of pre and post operative</li> </ul>	<ul style="list-style-type: none"> <li>• Supervise CPB during surgery</li> <li>• Perform cannulation for extracorporeal circulation</li> <li>• Direct appropriate administration of blood products</li> </ul>	<ul style="list-style-type: none"> <li>• Perform operative and non-operative management of patients undergoing hypothermic circulatory arrest</li> <li>• Perform peripheral cannulation for extracorporeal circulation</li> </ul>	<ul style="list-style-type: none"> <li>• Perform operative and non-operative management of CPB</li> <li>• Perform axillary cannulation and arch perfusion</li> <li>• Supervise CPB</li> </ul>