

Critical Care Echocardiography Exam Content Outline (CCE)

- 01 Functional Anatomy**
 - 01.A Left ventricle**
 - 01.A.01 Systolic function (qualitative, quantitative)
 - 01.A.02 Diastolic function
 - 01.A.03 LV chamber quantification
 - 01.A.04 Masses/thrombi
 - 01.A.05 Cardiomyopathies
 - 01.B Right ventricle**
 - 01.B.01 RV chamber quantification
 - 01.B.02 Function
 - 01.B.03 Estimated right heart pressure
 - 01.C Atria**
 - 01.C.01 Chamber quantification
 - 01.C.02 Atrial septum
 - 01.C.03 Masses/thrombi
 - 01.C.04 Left atrial hemodynamics
 - 01.D Valvular disease**
 - 01.D.01 Aortic
 - 01.D.02 Mitral
 - 01.D.03 Tricuspid
 - 01.D.04 Pulmonic
 - 01.D.05 Endocarditis
 - 01.D.06 Prosthetic valve disease/dysfunction
 - 01.E Pericardium**
 - 01.E.01 Pericardial effusion
 - 01.E.02 Constrictive pericarditis
 - 01.E.03 Hematoma
 - 01.F Great vessels**
 - 01.F.01 Aorta
 - 01.F.02 Pulmonary artery
 - 01.F.03 IVC and SVC
 - 01.G Devices and foreign bodies**
 - 01.G.01 Catheters
 - 01.G.02 Pacing wires
 - 01.G.03 Cannulae
 - 01.H Intracardiac masses**
 - 01.H.01 Left ventricle
 - 01.H.02 Right Ventricle
 - 01.H.03 Atria
 - 01.I Adult congenital**
 - 01.I.01 Atrial septal defect
 - 01.I.02 Ventricular septal defect
 - 01.I.03 Bicuspid valve
 - 01.I.04 Patent foramen ovale
 - 01.I.05 Persistent left superior vena cava

02 Clinical Diagnosis and Management

02.A Shock

- 02.A.01 Obstructive
- 02.A.02 Hypovolemic
- 02.A.03 Distributive
- 02.A.04 Cardiogenic

02.B Volume assessment

- 02.B.01 Fluid responsiveness
- 02.B.02 Volume overload

02.C Acute cardiovascular presentations

- 02.C.01 Myocardial infarction
- 02.C.02 Regional wall motion abnormalities
- 02.C.03 Pulmonary embolism
- 02.C.04 Aortic dissection
- 02.C.05 Valvular heart disease
- 02.C.06 Cardiomyopathy
- 02.C.07 Congenital heart disease

02.D Trauma

- 02.D.01 Blunt
- 02.D.02 Penetrating

02.E Respiratory failure

- 02.E.01 Cardiac versus pulmonary
- 02.E.02 Adverse effects of mechanical ventilation

02.F Cardiac arrest

- 02.F.01 Etiology
- 02.F.02 Classification
- 02.F.03 Appropriate implementation

03 Technical Skills & Equipment Optimization

03.A Physics

- 03.A.01 2D ultrasonography
- 03.A.02 Doppler ultrasonography
- 03.A.03 M mode
- 03.A.04 Enhanced cardiac ultrasound (contrast)

03.B Artifacts

- 03.B.01 Reverberations
- 03.B.02 Side lobe
- 03.B.03 Mirror image/refraction
- 03.B.04 Acoustic shadowing
- 03.B.05 Aliasing
- 03.B.06 Electrical interference

03.C Image Acquisition

- 03.C.01 Probe position
- 03.C.02 Probe manipulation
- 03.C.03 Probe selection
- 03.C.04 Indications
- 03.C.05 Canonical views

- 03.C.06 Image optimization
- 03.C.07 Normal variants
- 03.C.08 Patient positioning
- 03.C.09 Cardiac versus abdominal presets

04. C Integrated ultrasound imaging

04.A Lung and pleural

- 04.A.01 Postintubation assessment
- 04.A.02 A line versus B line
- 04.A.03 Pleural effusion
- 04.A.04 ARDS
- 04.A.05 Pneumonia with sepsis
- 04.A.06 Pneumothorax

04.B Vascular

- 04.B.01 DVT

04.C Abdominal

- 04.C.01 Evaluation for free fluid