

Appendix 1. Basic screening echocardiography for ITU

Produced locally, based on BSE Generic model for certification in screening echocardiography.

Topic 1. Basic echocardiography

Knowledge

- Basic principles of ultrasound
- Basic principles of spectral Doppler
- Basic principles of colour flow Doppler
- Basic instrumentation
- Ethics and sensitivities of patient care
- Basic anatomy of the heart
- Basic echocardiographic scan planes
 - Parasternal long axis standard
 - Parasternal short axis including aortic valve, mitral valve and papillary muscles
 - Apical views, 4 and 5 chamber, 2 chamber and long axis
 - Subcostal

Basic screening standard imaging planes

- Parasternal long and short axis
- Apical 4 and 5 chamber
- Subcostal
- Pleural effusion

Practical competencies

STAGE 1 ASSESSMENT

Interacts appropriately with patient

Understands basic instrumentation

Can optimise controls

Cares for machine appropriately

Puts in patient demographics

Obtains a clear ECG

Can store images appropriately

Uses basic colour Doppler appropriately

Can obtain standard views (PSIx/PSsx/4CH/ SC)

Can make basic measurements (LV size)

Topic 2. Left ventricle

Knowledge

- Coronary anatomy and correlation with 2D views of the left ventricle
- Segmentation of the left ventricle
- Wall motion
- Measurements of global systolic function
- Features of dilated and hypertrophic cardiomyopathy
- Common differential diagnoses

Practical competencies

Can differentiate normal from abnormal LV systolic function

Can recognise large wall motion abnormalities

Can recognise low CO state

Can recognise significant LVH

Topic 3. Valve Disease

Knowledge

- Normal anatomy of the AoV & MV (Inc subvalvular apparatus) and their relationship with LV function.
- Main causes of valve disease
- Degenerative calcific, ischaemic, functional, rheumatic, endocarditis, aortic dilatation

Practical competencies

Can recognise when a valve is normal or thickened

Can recognise major valvular pathology
(restriction or severe AR/MR/TR)

Is aware when a 'formal' valve study should be requested

Topic 4. Right Heart

Knowledge

- Causes of tricuspid and pulmonary valve disease
- Causes of right ventricular dysfunction
- Causes of pulmonary hypertension
- The imaging features of pulmonary hypertension

Practical competencies

Can recognise RV dilatation & knows when to refer

Can recognise normal vs. hypokinetic function

Can assess IVC for size and reactivity

Can identify possibility of PE/enlarged RV

Can identify underfilling by collapsed/flat IVC
and hyperactive small RV/LV

Topic 5. Pericardial Disease

Knowledge

- Anatomy of the normal pericardium
- Features of tamponade

Practical competencies

Can differentiate a pleural and pericardial effusion

Can assess a pericardial effusion (e.g. site and size)

Is aware of the role of echo in diagnosis of tamponade