

Adult Congenital Heart Disease Service

Echocardiography - ACHD Training protocol towards CHD Certification (EACVI or BSE)

Continuous practical and report writing supervision in ACHD echocardiography

- This protocol applies to Echocardiographers that already hold adult TTE certification.
- Trainees are expected to read and follow the internal ACHD scanning/echo protocols.
- Supervision stages:
 - **Initial stage:** 1-to-1 training until the minimum number of unrepaired and repaired cases is achieved (as per table below).
 - **Final stage:** A senior ACHD Echocardiographer or an ACHD Consultant should always be accessible for advice.
 - **Independent:** No supervision is mandatory after EACVI or BSE CHD TTE accreditation is completed, but a senior ACHD Echocardiographer or Consultant will always be available for advice or a second opinion.
- According to the training stage (as per above) it's mandatory for the supervisor's name (Physiologist or Consultant) to be stated in the report
- A "Provisional report" statement should be used in the report until it is ratified.

- Lesions that **might not need** specific supervision and report ratification **in the final stage:**
 - Isolated congenital aortic valve disease (e.g. bicuspid aortic disease)
 - Aortic stenosis – subvalvular, valvular or supra-ventricular
 - Isolated congenital mitral valve disease (except parachute valve, cleft leaflet)
 - Mild isolated pulmonary stenosis - subvalvular, valvular or supra-ventricular
 - Mild isolated pulmonary regurgitation
 - Unrepaired, isolated small ASD, VSD, or PDA
 - Repaired secundum ASD, sinus venosus defect, VSD, or PDA without significant residual defects or other sequelae, such as chamber enlargement, ventricular dysfunction, or elevated PAP
 - Coarctation of the aorta

- Lesions that **always need** supervision and report ratification **regardless of the training stage:**
 - Anomalous pulmonary venous connection - partial or total
 - ASD secundum, sinus venosus defect - moderate or large size
 - Anomalous coronary artery arising from the PA (ALCAPA)
 - Anomalous coronary artery arising from the opposite sinus
 - AVSD – partial, transitional or complete
 - Interrupted aortic arch
 - VSD – moderate or large size and/or with associated abnormalities
 - Double chambered right ventricle
 - Ebstein anomaly
 - PDA - moderate or large size
 - Peripheral pulmonary artery stenosis
 - Pulmonary stenosis (subvalvular, valvular or supra-ventricular) - moderate or severe
 - Sinus of Valsalva aneurysm/fistula
 - Tetralogy of Fallot
 - Isolated pulmonary regurgitation – moderate or severe
 - Transposition of the great arteries (D-TGA) - after arterial/atrial switch or Rastelli
 - Congenitally corrected transposition of the great arteries (CCTGA or L-TGA)
 - Any CHD associated with elevated PAP (including Eisenmenger syndrome)
 - Any cyanotic CHD - unrepaired or palliated (e.g. central shunts)
 - Double-outlet ventricle (DORV)
 - Fontan or Hemi-Fontan circulation
 - All forms of pulmonary atresia
 - Truncus arteriosus
 - Other complex abnormalities of atrio-ventricular and ventriculo-arterial connection (e.g. crisscross heart, heterotaxy syndromes).

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Table - minimum number of unrepaired and repaired cases for the initial stage of training:

Unrepaired lesions	# cases	Repaired +/- residual lesions	# cases
Ostium secundum ASD	8	Ostium secundum ASD	4
Sinus venosus ASD	4	Sinus venosus ASD	2
Anomalous pulmonary venous return	2	Anomalous pulmonary venous return	2
Ventricular septal defect	8	Ventricular septal defect	4
AVSD	4	AVSD	8
PDA	4	PDA	2
Subaortic stenosis	2	Subaortic stenosis	2
Congenital aortic valve disease	4	Congenital aortic valve disease	4
Congenital mitral valve disease	2	Congenital mitral valve disease	2
Congenital pulmonary valve disease	4	Congenital pulmonary valve disease	4
Congenital tricuspid valve disease	4	Congenital tricuspid valve disease	4
Anomalous coronary artery origin	2	Anomalous coronary artery origin	2
Aortic artery disease	4	Aortic artery disease	8
Pulmonary artery disease	2	Pulmonary artery disease	2
Double chambered RV	2	Double chambered RV	2
CCTGA	4	Tetralogy of Fallot	10
Other complex / cyanotic CHD	2	D-TGA	10
CHD with raised PAP	2	Truncus arteriosus	2
		Fontan or Hemi-Fontan	10
		Other complex / cyanotic CHD	2
Total cases	64	Total cases	86

- A scan can only be used for one lesion, to ensure that sufficient scans are performed

ASD = atrial septal defect

AVSD = atrioventricular septal defect

CHD = congenital heart disease

D-TGA = transposition of the great arteries

CCTGA = congenitally corrected transposition of the great arteries or L-TGA

PAP = pulmonary artery pressure

PDA = patent ductus arteriosus

VSD = ventricular septal defect

RV = right ventricle

Document written based on 2020 ESC Guidelines for the management of adult congenital heart disease. The Task Force for the management of adult congenital heart disease of the European Society of Cardiology (ESC) - doi:10.1093/eurheartj/ehaa554

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