FACULTY OF PAEDIATRICS

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

HIGHER SPECIALIST TRAINING IN

PAEDIATRIC CARDIOLOGY

OUTCOME-BASED EDUCATION – OBE CURRICULUM

This Curriculum of Higher Specialist Training in Paediatric Cardiology was developed in 2024 by a team of Paediatric Cardiologists led by Professor Orla Franklin (National Specialty Director) and the RCPI Education Department. The Curriculum undergoes an annual review process by the National Specialty Director and the RCPI Workplace Education Team. The Curriculum is approved by the Specialty Training Committee and the Faculty of Paediatrics.

Version	Date Published	Last Edited By	Version Comments
1.1	July 2025	Mariangela Esposito	Addition of EACVI TTE Examination requirement

National Specialty Director Foreword

Paediatric Cardiology is a sub-speciality that diagnoses, treats and supports infants and children with congenital structural cardiac anomalies, inherited cardiac conditions and heart disease acquired during childhood.

This training scheme is designed to expose the paediatric cardiac Trainee to a broad scope of presentations, investigations and management strategies for fetuses, infants, children and young adults with heart disease. It aims to provide exposure for all in the recognised sub specially interest areas of fetal cardiology, cardiac imaging, cardiac catheterisation, paediatric cardiac electrophysiology, inherited cardiovascular disease of childhood and adult congenital heart disease.

The Trainee is encouraged in years 4 and 5 to develop a sub-speciality interest in the area of practice that has most interested them in generic training and through specialist fellowship training or a pursuit of a higher academic qualification to hone their skills and expertise.

This training programme has been set up to allow the Trainee to recognise the importance of outcome-based training within the sub-speciality. The programme has identified targeted outcomes and goals that are considered key to core training in the area of paediatric cardiology. While these have been adapted from the previous Curriculum, they have been modified to reflect the advances in paediatric cardiology. The programme is designed to produce well-rounded paediatric cardiologists who having experienced core training with exposure to all aspects of paediatric cardiac care, have advanced to identify and then further train in an area of sub-specialist interest.

We the Trainers, would like to thank all Trainers and Trainees who took part in this process, and we look forward to working to help you to achieve confidence and expertise in the specific targeted outcomes and goals that we have identified as being of prime importance in training in paediatric cardiology.

Prof. Orla Franklin

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1. INTRODUCTION

This section includes an overview of the Higher Specialist Training programme and of this Curriculum document.

1.1. Purpose of Training

This programme is designed to provide training in Paediatric Cardiology in approved training posts, under supervision, in order to fulfil agreed curricular requirements. Each post provides a Trainee with a named Trainer and the programme is under the direction of the National Specialty Director for Paediatric Cardiology.

1.2. Purpose of the Curriculum

The purpose of the Curriculum is to guide the Trainee towards achieving the educational outcomes necessary to work as an independent paediatric Cardiologist. The Curriculum defines the relevant processes, content, outcomes, and requirements to be achieved. It stipulates the overarching goals, outcomes, expected learning experiences, instructional resources and assessments that comprise the Higher Specialist Training (HST) programme. It provides a framework for certifying successful completion of HST programme.

In keeping with developments in medical education and to ensure alignment with international best practices and standards, the Royal College of Physicians (RCPI) have implemented an Outcome Based Education (OBE) approach. This Curriculum design differs from traditional “minimum requirement” designs in that the learning process and desired end-product of training (outcomes) are at the forefront of the design to provide the essential training opportunities and experiences to achieve those outcomes.

1.3. How to use the Curriculum

Trainees and Trainers should use the Curriculum as a basis for goal-setting meetings, delivering feedback, and completing assessments, including appraisal processes (Quarterly Assessments/End of Post Assessment, End of Year Evaluation). Therefore, it is expected that both Trainees and Trainers familiarise themselves with the Curriculum and have a good working knowledge of it.

Trainees are expected to use the Curriculum as a blueprint for their training and record specific feedback, assessments and training events on ePortfolio. The ePortfolio should be updated frequently during each training placement.

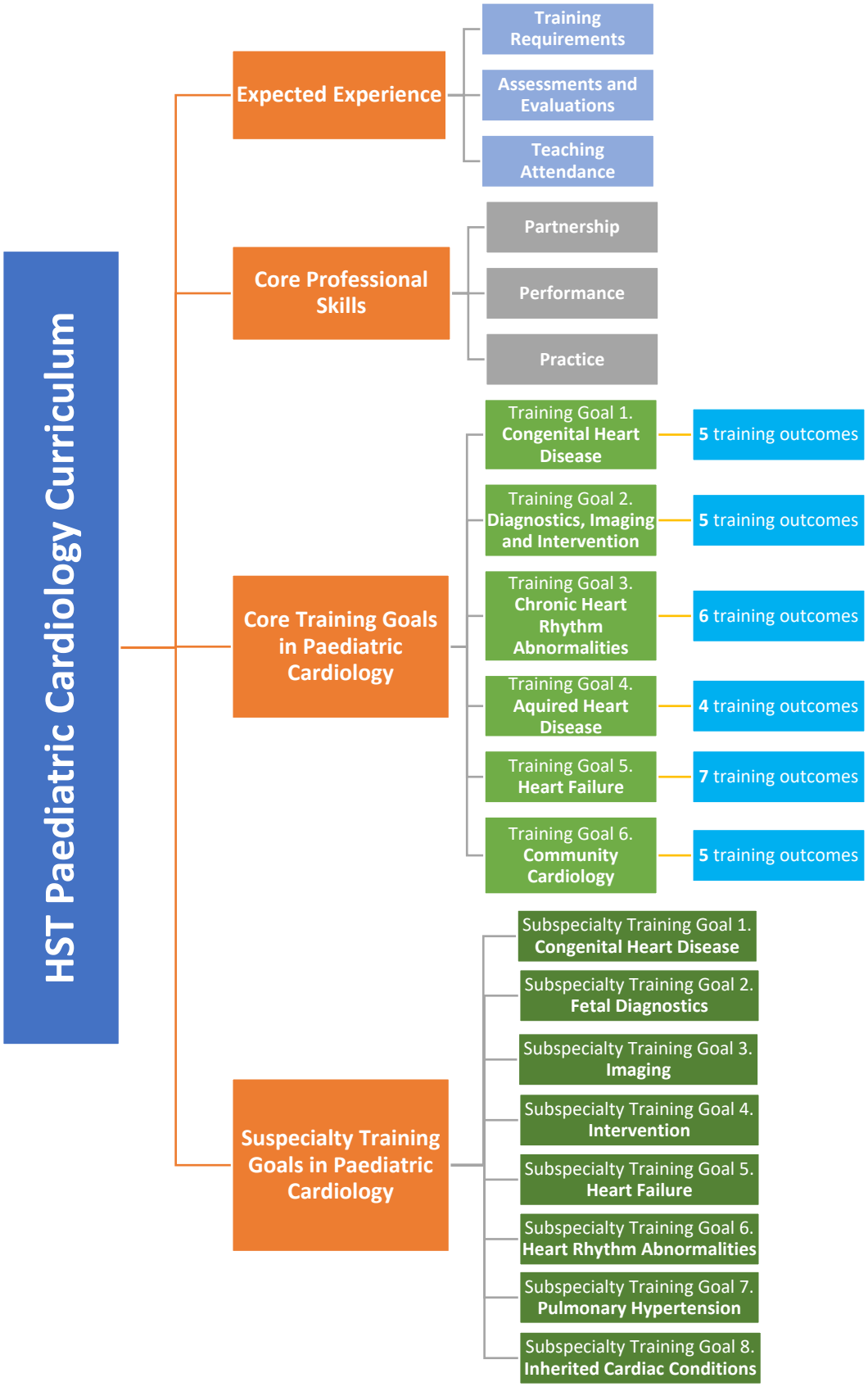
It is important to note that ePortfolio is a digital repository designed to reflect Curriculum requirements. It facilitates recording of progress through HST and evidence that training is valid and appropriate. While a complete ePortfolio is essential for HST certification, Trainees and Trainers should always refer to the Curriculum in the first instance for information on the requirements of the training programme.

Please note: It is the responsibility of the Trainee to keep an up-to-date ePortfolio throughout the programme as it reflects their individual training experience and it documents that they have successfully met training standards as expected by the Medical Council.

1.4. Reference to Rules and Regulations

Please refer to the Training Handbook for rules and regulations associated with training. Policies, procedures, relevant documents, and Training Handbooks can be accessed on the RCPI website by following this link.

1.5. Overview of Curriculum Sections and Training Goals



2. EXPECTED EXPERIENCE

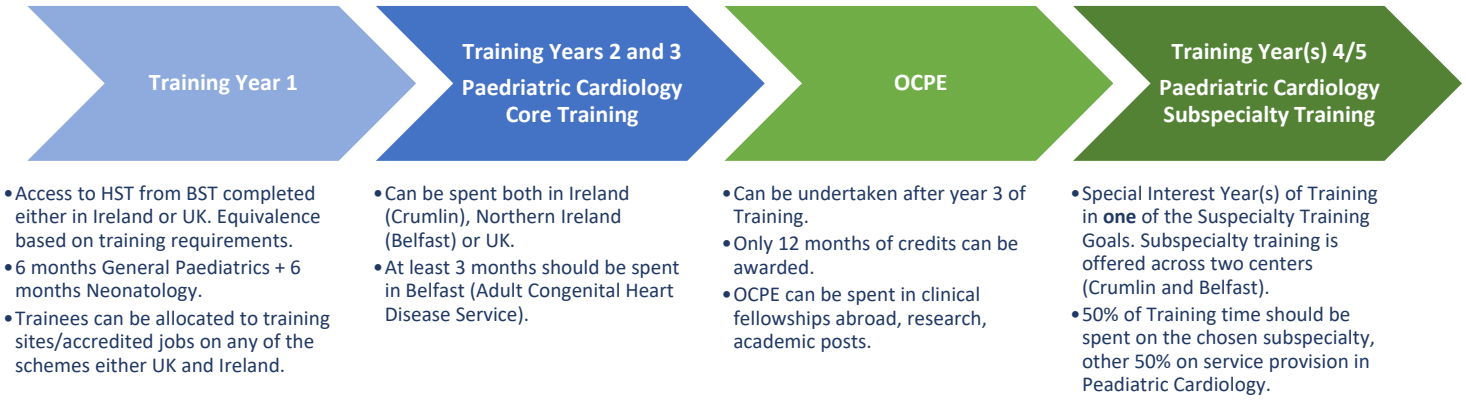
This section details the training experience and the service provision tasks that all Trainees are expected to complete throughout the Higher Specialist Training.

2.1. Duration and Organisation of Training

The duration of HST in Paediatric Cardiology is five years: six months of General Paediatrics and 6 months of Neonatology in the first year; then, four years of Paediatric Cardiology (2 years of Core Cardiology Training + 2 years of Subspecialty Cardiology Training.

Up to a maximum of one year's credit may be awarded for a pre-approved period of out of clinical programme experience (OCPE). Trainees must spend the first three years of training in clinical posts before undertaking any period out of clinical programme experience (OCPE) and credit cannot be allocated retrospectively. This period of time can only be accredited if it is in a clinical post or a clinical fellowship abroad, a clinical lecture post or a research post in Ireland or abroad. The research post can only receive credit if it includes a clinical component to maintain and further develop clinical skills.

Overview of organisation and duration of Training



In-Patient Responsibilities: The Trainee will be expected to have direct supervisory responsibilities for Paediatric Cardiology in-patients. This will require at least three personal ward rounds per week and supervising the activities of the more junior members of the clinical team at other times. An additional ward round with a consultant each week is also expected for educational experience.

Out-Patient Responsibilities: The Trainee is expected to have personal responsibility for the assessment and review of Paediatric Cardiology outpatients with a minimum of at least one consultant-led Paediatric Cardiology clinic per week. New patient referrals should be assessed by the Trainee independently but access to consultant opinion/supervision as necessary during the clinic is an essential requirement. Ward follow-ups are an important part of Paediatric Cardiology training particularly for the purposes of on-going care commitment by the Trainee.

Training Principles: During the period of training the Trainee must take increasing responsibility for seeing patients, undertaking ward consultations, making decisions and operating at a level of

responsibility which would prepare them for practice as an independent Consultant. Supervision should be particularly close during the first years. Particularly experienced Trainees may undertake the running of an outpatient clinic on their own without direct consultant supervision later in the programme.

Core Professional Skills: Generic knowledge, skills and attitudes support competencies that are common to good medical practice in all the medical and related specialties. It is intended that all Trainees should re-affirm those competencies during HST. No timescale of acquisition is imposed, but failure to make progress towards meeting these important objectives at an early stage would cause concern about a Trainee's suitability and ability to become an independent specialist.

Recording of Evidence of training: The target numbers for training items in the following sections represent the recording requirement to document evidence of relevant and varied clinical experience; it is understood that the actual number of training experiences is likely to be in excess of these numbers.

2.2. Clinics, Ward Rounds, Consultations and Cases

Attendance at Clinics, participation in Ward Rounds and Patient Consultations are required elements of all posts throughout the programme. The timetable and frequency of attendance should be agreed with the assigned Trainer at the beginning of the post.

This table provides an overview of the expected experience a Trainee should gain regarding clinic attendance, ward rounds and consultations. These activities should be recorded on ePortfolio using the respective form.

The numbers expressed in this table are indicative of the frequency expected by Trainees in each of these training activities.

PAEDIATRIC CARDIOLOGY CLINICS			
Outpatient Clinics	**Timeline**	**Expected Experience**	**ePortfolio Form**
Paediatric Cardiology	Over the core Training Years 1-3	Once per week on average. Record 40 per core year on ePortfolio.	Clinics
Unsupervised Paediatric Cardiology	Subspecialty Years 4-5	At least 15 clinics per each subspecialty clinical year, record on ePortfolio.	
Specialty Clinics	**Timeline**	**Expected Experience**	
ICC	Core Training Years 1-3	At least 6 clinics per each core clinical year, record on ePortfolio.	
Transplant	Over the course of HST	At least 6 clinics over the course of HST, record on ePortfolio	
ACHD	Over the course of HST	At least 20 clinics each clinical year of HST and record on ePortfolio	
Fetal	Over the course of HST	At least 10 clinics each clinical year of HST and record on ePortfolio	
NICU visits	Over the course of HST	At least 20 each clinical year of HST and record on ePortfolio	

PHT	Over the course of HST	Desirable Requirement - 2 clinics over the course of HST and record on ePortfolio	
WARD ROUNDS AND CONSULTATIONS			
Type	**Timeline**	**Expected Experience**	**ePortfolio Form**
Ward Rounds – Consultant-led	Core Training Years 1-3	On average 1 per week. Record 50 on ePortfolio per each core clinical year.	Clinical Activities
Ward Rounds – Consultant-led	Subspecialty Training Years 4-5	Record 25 on ePortfolio per each subspecialty clinical year.	
Ward Rounds – SpR-led, including handover	Subspecialty Training Years 4-5	Record 25 on ePortfolio per each subspecialty clinical year.	
Consultations	Over the course of HST	Record 40 on ePortfolio per each clinical year of training.	
CLINICAL CASES			
Type	**Timeline**	**Expected Experience**	**ePortfolio Form**
ICU Cases/JCC	Over the course of HST	At least 30 to be recorded on ePortfolio	Cases
Complex Cases	Over the course of HST	Desirable to record 20 on ePortfolio	
Chronic Cases/Long term care (reflective practice)	Over the course of HST	Desirable to record 20 on ePortfolio	
Additional/Special Experience Gained (subspecialty experience)	Over the course of HST	Desirable to record 1 on ePortfolio	

2.3. Procedural/Practical/Surgical Skills in Paediatric Cardiology

Trainees are expected to complete an indicative minimum number of procedures which are essential in Paediatric Cardiology.

To record the procedures, simply log these on ePortfolio and complete the related DOPS Assessment as indicated in the table below.

Please note the difference between logging a procedure and completing a DOPS:

1. **Logging procedures**:

The trainee should log a minimum number of procedures as indicated in the curriculum. To log a procedure, the Trainee does not need the involvement of their Trainer on ePortfolio.

2. **Recording a DOPS assessment**:

- The Trainee should complete a minimum number of DOPS as indicated. To complete a DOPS the assigned Trainer needs to fill in part of the form on ePortfolio.
- A DOPS (Direct Observation of Practical Skills) is a workplace-based assessment during which the Trainee is observed and assessed by an Assessor. An Assessor can be anyone with more experience than the Trainee.
- If you wish for your assessment to be completed by an Assessor other than your assigned Trainer, please choose the option to fill in the form on the same device, then choose "Other" in the field "Assessment completed by".

- A copy of the DOPS assessment will be sent to your assigned Trainer on ePorfolio. Your Trainer will have to fill in the form for acknowledgment before it can appear as complete on your ePortfolio.
- Please ensure the Patient is aware that the DOPS assessment is taking place and that you and your Assessor have been properly introduced to the Patient.

PROCEDURAL/PRACTICAL/SURGICAL SKILLS			
Type	**Expected experience per each clinical year**	**DOPS Assessment**	**ePortfolio Form**
12 Lead ECG	50 to be recorded in ePortfolio		Procedures, Skills and DOPS
Ambulatory ECG, Exercise Testing and Cardiac Event Recording	30 to be recorded in ePortfolio	1 per each clinical year to be recorded in ePortfolio	
DC Cardioversion	5 to be recorded in ePortfolio	1 over the course of the training programme to be recorded in ePortfolio	
Basic Cardiac Pacing	2 to be recorded in ePortfolio	1 over the course of the training programme to be recorded in ePortfolio	
Pericardiocentesis (can be done by SIM where available)	1 to be recorded in ePortfolio	1 over the course of the training programme to be recorded in ePortfolio	
Balloon Atrial Septostomy	1 to be recorded in ePortfolio	1 over the course of the training programme to be recorded in ePortfolio	
Transthoracic Echocardiography Core Training Years 2-3	150 to be recorded in ePortfolio	1 per each clinical year to be recorded in ePortfolio	
Transthoracic Echocardiography Subspecialty Training Years 4-5	100 to be recorded in ePortfolio		
Transoesophageal Echocardiography Core Training Years 2-3	20 to be recorded in ePortfolio	1 per each clinical year to be recorded in ePortfolio	
Transoesophageal Echocardiography Subspecialty Training Years 4-5	20 to be recorded in ePortfolio		
Cardiac Catheterisation Core Training Years 2-3	50 to be recorded in ePortfolio	1 per each core clinical year to be recorded in ePortfolio	
Interpretation of Cardiac MRI and/or Thoracic CT Core Training Years 2-3	30 to be recorded in ePortfolio	1 per each core clinical year to be recorded in ePortfolio	
Electrophysiology Laboratory Core Training Years 2-3	10 to be recorded in ePortfolio	1 per each core clinical year to be recorded in ePortfolio	

2.4. Participation at in-house activities

Trainees are expected to attend a series of in-house commitments as follows:

- Attend and record on ePortfolio at least **8 Journal Clubs per each training year**
- Attend and record on ePortfolio at least **10 MDT Meeting per each training year**
- Attend and record on ePortfolio at least **30 Departmental Teaching Seminars per each training year**
- Attend and record on ePortfolio at least **1 Lecture per each training year**

2.5. Assessments, Evaluations and Examinations

Trainees are expected to:

- Complete **4 quarterly assessments per training year** (1 evaluation per quarter)
- Complete **1 end of post assessment at the end of each post** (if the end of a post coincides with the end of a post, this form can be filled in place of the quarterly assessment form. The two forms are equivalent)
- Complete **1 end of year evaluation at the end of each training year**
- Complete **4 Case Based Discussion per each training year** (it is recommended to complete one per quarter)
- Complete **2 MiniCEX per each training year**
- Complete **DOPS Assessments** as indicated in the table above
- Complete additional workplace-based assessments (CBD, DOPS, MiniCEX) and Feedback Opportunities per each training outcome as agreed with the assigned Trainer. Trainers may recommend Trainees complete additional assessments, other than the one indicated in the Expected Experience section of this Curriculum.
- Take EACVI (European Association of Cardiovascular Imaging) TTE (Transthoracic Echocardiography) examination in year 3 or 4 of Training.

For more information on assessment and evaluations, please refer to the Assessment Appendix at the end of this document.

2.6. Research, Audit and Teaching Experience

Trainees are expected to complete the following activities:

- Start at least **1 Audit or Quality Improvement Project**, **per each training year**
- Deliver **10 teaching sessions** (to include tutorials, lectures, bedside teaching, etc.) **per each training year**
- Attend **2 National or International Meeting**, **over the course of HST**

In addition, it is desirable, but not expected that Trainees aim to:

- Complete **1 research project**, **over the course of HST**
- Complete **1 publication**, **per each training year**
- Deliver **1 oral or poster presentation**, **per each training year**
- Achieve **1 additional qualification**, **over the course of HST**

2.7. Teaching Attendance

Trainees are expected to complete the RCPI Taught Programme, attend all the specialty-specific learning activities, and attend study days as detailed in the Teaching Appendix, at the end of this document.

2.8. Overview of Expected Experience

Experience Type	Expected	ePortfolio form
Rotation Requirements	Complete all requirements related to the posts agreed in accordance with the Paediatric Cardiology Training Handbook (access here)	n/a
Yearly Personal Goals	At the start of each year of training complete a Yearly Personal Goals form on ePortfolio, agreed with the Trainer and signed by both Trainee & Trainer	Yearly Personal Goals
On-call Commitments	Partake in on-call commitments as per requirements in your training site and record attendance on ePortfolio	Clinical Activities
Clinics	Attend Clinics as outlined in the table above and as agreed with your Trainer. Record attendance on ePortfolio	Clinics
Ward Rounds/Consultations	Gain experience in clinical handover and ward rounds as outlined above and as agreed with your Trainer. Record attendance per each post on ePortfolio	Clinical Activities
Cases	Get exposure to emergencies/complicated cases as outlined above and as agreed with your Trainer. Record attendance on ePortfolio.	Cases
Procedure and Skills	Perform all the procedures as outlined in the table above and as agreed with your Trainer. Record on ePortfolio. Complete and record the respective DOPS as indicated.	Procedures, Skills and DOPS
Deliver Teaching	Record on ePortfolio all the occurrences where you have delivered teaching (including tutorials, lectures, bedside teaching). Record at least 10 occurrences on ePortfolio per each year of training.	Delivery of Teaching
Research	Desirable Experience: actively participate in research and present research at conferences or national/international meetings	Research Activities
Publication	Desirable Experience: complete 1 publication during the training programme	Additional Professional Activities
Presentation	Desirable Experience: deliver 1 oral presentation or poster per each year of training.	Additional Professional Activities
Audit	Complete and report on an audit or Quality Improvement (QI) per each year of training, either to start, continue or complete	Audit and QI
Attendance at Hospital Based Learning	Each month attend at Journal Club and MDT Meetings. Attend 30 Departmental Teachings and 1 Lecture per training year. Record attendance on ePortfolio	Attendance at Hospital Based Learning

National/International Meetings	Attend 2 over the course of HST	Additional Professional Activities
Management Experience (years 4-5) Examples to include: manage ward round; risky huddle; cardiac M&M; chairing MDT; rota management; NCHD leadership; supervision of junior colleagues.	Record 1 management experience per each subspecialty training year	Management Experience
Additional Qualifications	Desirable Experience which can be recorded on ePortfolio	Additional Professional Activities
Teaching Attendance	Attend the RCPI Taught Programme, Specialty Specific Learning Activities and Study Days as detailed in the Teaching Appendix	Teaching Attendance
Evaluations and Assessments	Complete a Quarterly Assessment/End of post assessment with your Trainer 4 times each year. Discuss your progress and complete the forms.	Quarterly Assessments/End-of-Post Assessments
Examination	EACVI TTE examination in year 3 or 4	Examinations
Workplace-based Assessment	Complete all the workplace-based assessment as outlined above and as agreed with your Trainer. Record attendance on ePortfolio using the respective form.	CBD/DOPS/Mini-CEX
End of Year Evaluation	Prepare for your End of Year Evaluation by ensuring your portfolio is up to date and your End of Year Evaluation form is initiated with your Trainer.	End of Year Evaluation

3. CORE PROFESSIONAL SKILLS

This section includes the Irish Medical Council guidelines for medical professional conduct, regarding Partnership, Performance and Practice.

These principles are woven within training experience and feedback is formally provided in the Quarterly Evaluations, End of Post, End of Year Evaluation.

Partnership

Communication and interpersonal skills

- Facilitate the exchange of information, be considerate of the interpersonal and group dynamics, and have a respectful and honest approach
- Engage with patients and colleagues in a respectful manner
- Actively listen to the thoughts, concerns, and opinions of others
- Consider data protection, duty of care and appropriate modes of communication when exchanging information with others

Collaboration

- Collaborate with patients, their families, and your colleagues to work in the best interest of the patient, for improved services and to create a positive working environment
- Work cooperatively with colleagues and team members to deliver an excellent standard of care
- Seek to build trust and mutual respect with patients
- Appropriately share knowledge and information, in compliance with GDPR guidelines
- Take on-board available, relevant feedback

Health Promotion

- Communicate and facilitate discussion around the effect of lifestyle factors on health and promote the ethical practice of evidence-based medicine
- Seek up-to-date evidence on lifestyle factors that:
    - negatively impact health outcomes
    - increase risk of illness
    - positively impact health and decrease risk factors
- Actively promote good health practices with patients individually and collectively

Caring for patients

- Take into consideration patient's individuality, personal preferences, goals, and the need to provide compassionate and dignified care
- Be familiar with
    - Ethical guidelines
    - Local and national clinical care guidelines
- Act in the patient's best interest
- Engage in shared decision-making and discuss consent

Performance

Patient safety and ethical practice

- Put the interest of the patient first in decisions and actions
- React in a timely manner to issues identified that may negatively impact the patient's outcome
- Follow safe working practices that impact patient's safety
- Understand ethical practice and the medical council guidelines
- Support a culture of open disclosure and risk reporting
- Be aware of the risk of abuse, social, physical, financial, and otherwise, to vulnerable persons

Organisational behaviour and leadership

- The activities, personnel and resources that impact the functioning of the team, hospital, and health care system
- Understand and work within management systems
- Know the impacts of resources and necessary management
- Demonstrate proficient self-management

Wellbeing

- Be responsible for own well-being and health and its potential impact on the provision of clinical care and patient outcomes
- Be aware of signs of poor health and well-being
- Be cognisant of the risk to patient safety related to poor health and well-being of self and colleagues
- Manage and sustain your own physical and mental well-being

Practice

Continuing competence and lifelong learning

- Continually seek to learn, improve clinical skills and understand established and emerging theories in the practice of medicine
- Meet career requirements including those of the medical council, your employer, and your training body
- Be able to identify and optimise teaching opportunities in the workplace and other professional environments
- Develop and deliver teaching using appropriate methods for the environment and target audience

Reflective practice and self-awareness

- Bring awareness to your actions and decisions and engage in critical appraisal of your own work to drive lifelong learning and improve practice
- Pay critical attention to the practical values and theories which inform everyday practice
- Be aware of your own level of practice and your learning needs
- Evaluate and appraise your decisions and actions with consideration as to what you would change in the future
- Seek to role model good professional practice within the health service

Quality assurance and improvement

- Seek opportunities to promote excellence and improvements in clinical care through the audit of practice, active engagement in and the application of clinical research and the dissemination of knowledge at all levels and across teams
- Gain knowledge of quality improvement methodology
- Follow best practices in patient safety
- Conduct ethical and reproducible research

4. CORE TRAINING GOALS IN PAEDIATRIC CARDIOLOGY

This section includes the Paediatric Cardiology Core Training Goals that Trainees should achieve by the end of year 3 of HST.

Each Core Training Goal is broken down into specific and measurable Training Outcomes.

To demonstrate evidence of training and progression in each Training Outcome, Trainees should record workplace-based assessments (DOPS, MiniCEX, CBD) and Feedback Opportunities on ePortfolio.

It is recommended to agree on the most appropriate type of training and assessment methods with the assigned Trainer.

Training Goal 1 – Congenital Heart Disease

By the end of the core training in Paediatric Cardiology, the Trainee is expected to understand the embryology and anatomy of congenital heart disease and to appropriately assess, investigate, and manage in a manner appropriate to the complexity of the patient.

Outcome 1 – Knowledge of anatomy/embryology

For the Trainee to demonstrate theoretical knowledge of morphology, genetics/genomics, pathophysiology and natural history across the spectrum of congenital heart disease.

Outcome 2 – Acute management

For the Trainee to recognise the signs and symptoms suggestive of congenital heart disease (including cardiovascular collapse) and instigate appropriate investigations and management.

Outcome 3 – Fetal heart disease

For the Trainee to demonstrate the ability to counsel patients and families about specific congenital cardiac defects, explaining possible treatment options and prognosis.

Outcome 4 – Perioperative management

For the Trainee to demonstrate proficiency in managing patients pre- and post-cardiac surgery and cardiac catheterisation.

Outcome 5 – NICU Cardiology

For the Trainee to demonstrate proficiency in the assessment and management of common NICU presentations including PDA, PPHN and to demonstrate knowledge of the additional risks associated with prematurity in patients with congenital heart disease and how this may alter management strategy.

Training Goal 2 – Diagnostics, Imaging and Intervention

By the end of the core training in Paediatric Cardiology, the Trainee is expected to select and interpret the appropriate diagnostic modality relevant to the clinical scenario.

Outcome 1 – Knowledge of diagnostics

For the Trainee to demonstrate a theoretical knowledge of each investigative modality (echo, cross-sectional imaging, catheterisation) including the relative advantages and disadvantages of each.

Outcome 2 – Knowledge of echocardiography

For the Trainee to demonstrate:

- theoretical knowledge as well as proficiency in performing and reporting echocardiograms to diagnose abnormalities in cardiac structure or function, including with transoeophageal echo.
- knowledge of the role of advanced echo techniques including tissue Doppler imaging, speckle tracking, myocardial deformation imaging and dysynchrony studies to serially assess cardiac function.

Outcome 3 – Knowledge of cross-sectional imaging

For the Trainee to demonstrate theoretical knowledge and proficiency in basic interpretation of cardiac CT and MRI.

Outcome 4 – Cardiac catheterisation diagnostics

For the Trainee to demonstrate theoretical knowledge and ability to perform cardiac catheterisation and angiography under supervision and to interpret results.

Outcome 5 – Cardiac catheterisation intervention

For the Trainee to demonstrate understanding of catheterisation-based interventions including when to refer for same.

Training Goal 3 – Chronic Heart Rhythm Abnormalities

By the end of core training in Paediatric cardiology, the Trainee is expected to assess, investigate and manage a patient with known or suspected rhythm disorders.

Outcome 1 – Assessment and management of acute arrhythmia

For the Trainee to demonstrate proficiency in assessing and managing patients with cardiac arrhythmias as a primary presenting complaint, as a post-operative complication, or as a complication of congenital heart disease. This should include medically managing with pharmacotherapy where appropriate and competency in cardioversion.

Outcome 2 – Management of chronic arrhythmia

For the Trainee to demonstrate proficiency in investigation, management (including pharmacotherapy) and when to perform, an electrophysiology study +/- ablation and basic interrogation and management of a paediatric implantable device.

Outcome 3 – Cardiac arrhythmia investigations

For the Trainee to demonstrate proficiency in assessing and investigating cardiac arrhythmia including interpretation of bedside monitoring, ECG, Holter, Event recorders and Exercise Stress Testing.

Outcome 4 – Management of pacing devices

For the Trainee to demonstrate proficiency in managing basic interrogation and programming of devices in children and adults with CHD including understanding indications for and complications of, device implantation, participate in implantation of and be proficient in follow-up of cardiac devices.

Outcome 5 – Management of inherited cardiac arrhythmia

For the Trainee to demonstrate proficiency in managing a patient with an inherited arrhythmia including investigation, family screening, knowledge of cardiac genetics and management strategies, ultimately referring to a specialist ICC service where necessary.

Outcome 6 – Understanding of syncope

For the Trainee to understand the causes and management of syncope.

Training Goal 4 – Acquired Heart Disease

By the end of core training in Paediatric Cardiology, the Trainee is expected to investigate and manage heart disease that is either acquired or that is secondary to an extracardiac condition.

Outcome 1 – Management of inflammatory conditions

For the Trainee to demonstrate proficiency in assessing and managing patients with cardiac inflammatory disease including screening, interpretation of echo, pharmacotherapy and long-term surveillance.

Outcome 2 – Assessment of aortic disease

For the Trainee to demonstrate proficiency in assessing, imaging, pharmacotherapy and long-term surveillance including referral to relevant sub-specialist teams of aorthopathies.

Outcome 3 – Cardiac surveillance in chronic conditions

For the Trainee to demonstrate proficiency in assessing and managing patients with cardiac manifestations of multisystem disease including cardio-oncology, renal, neuromuscular disease and autoimmune pathologies.

Outcome 4 – Management of cardiac infections

For the Trainee to demonstrate proficiency in assessing and managing patients with cardiac infections including imaging, pharmacotherapy, long-term surveillance and life-style modification advice.

Training Goal 5 – Heart Failure

By the end of core training in Paediatric Cardiology, the Trainee is expected to assess, investigate, and manage a patient with known or suspected myocardial disease, heart failure or pulmonary hypertension.

Outcome 1 – Understanding of cardiomyopathy

For the Trainee to understand the different subtypes of cardiomyopathy in regard to diagnosis, genetics and management.

Outcome 2 – Management of acute heart failure

For the Trainee to demonstrate proficiency in assessing and managing a patient with acute heart failure (cardiomyopathy/myocarditis).

Outcome 3 – Management of chronic heart failure

For the Trainee to demonstrate proficiency in assessing and managing a patient with chronic heart failure.

Outcome 4 – Management of advanced heart failure

For the Trainee to demonstrate theoretical knowledge and indications for mechanical support for advanced heart failure management.

Outcome 5 – Indication for heart transplant

For the Trainee to demonstrate proficiency in indication and timing of referral for transplant as well as management of the post-transplant patient.

Outcome 6 – Knowledge of pulmonary hypertension

For the Trainee to demonstrate knowledge of the aetiologies, assessment and management of Pulmonary hypertension.

Outcome 7 – Understanding of chronic heart failure in CHD

For the Trainee to demonstrate an understanding of the mechanisms, investigations and treatment options for chronic heart failure in coronary heart disease (CHD).

Training Goal 6 – Community Cardiology

By the end of core training in Paediatric Cardiology, the Trainee is expected to manage outpatient care of patients with known or suspected cardiac pathology and to integrate with community and national paediatric services.

Outcome 1 – Common cardiac referrals

For the Trainee to demonstrate proficiency in clinical assessment, investigations and management new patient referrals with cardiac symptoms (murmurs, abnormal ECG, syncope).

Outcome 2 – Community CHD

For the Trainee to demonstrate proficiency in managing CHD patients in the outpatient clinic and in the community.

Outcome 3 – Adult CHD

For the Trainee to show proficiency in the clinical assessment, investigations and management of adult patients with CHD, including an understanding of common adult cardiac comorbidities and their impact on care.

Outcome 4 – Participate in follow-up of high-risk infants and their families

For the Trainee to participate in the follow-up of high-risk infants and their families, including liaison with relevant MDT and community services.

Outcome 5 – Integration into cardiac network

For the Trainee to understand the structure and function of the paediatric cardiology network and show proficiency of working within this system.

5. SUBSPECIALTY TRAINING GOALS IN PAEDIATRIC CARDIOLOGY

This section broadly describes the Paediatric Cardiology Subspecialty Training Goals. Trainees should choose one of these Training Goals to achieve during the last part of the HST programme (years 4/5).

During the last years of HST Trainees are expected to continue delivering service provision and gain training in all the areas of Paediatric Cardiology. In addition to this, they should identify one subspecialty area of Paediatric Cardiology for more focused training.

Each Subspecialty Training Goal included in this section captures the different subspecialty areas of Paediatric Cardiology available in Ireland and UK.

These 8 Subspecialty Training Goals are aligned with the 8 Themed for Service CiPs identified in the JRCPTB Paediatric Cardiology Curriculum (cf. pp. 25-37, access here).

Trainees should record workplace-based assessments (DOPS, MiniCEX, CBD) and Feedback Opportunities on ePortfolio only for the Subspecialty Training Goal selected for focused training.

It is recommended to agree on the most appropriate type of training and assessment methods with the assigned Trainer.

Subspecialty Training Goal 1 – Congenital Heart Disease

By the end of subspecialty training in Paediatric Cardiology, the Trainee is expected to diagnose and manage acute and chronic structural congenital and paediatric heart disease, including the life-long care of the disease, potential comorbidities and end of life care.

Subspecialty Training Goal 2 – Fetal Diagnostics

By the end of subspecialty training in Paediatric Cardiology, the Trainee is expected to provide fetal diagnostic and management services for pregnancies affected by adult CHD.

Subspecialty Training Goal 3 – Imaging

By the end of subspecialty training in Paediatric Cardiology, the Trainee is expected to provide comprehensive imaging services for paediatric and adult CHD patients (e.g. echocardiographic, cross-sectional imaging, etc.)

Subspecialty Training Goal 4 – Intervention

By the end of subspecialty training in Paediatric Cardiology, the Trainee is expected to provide complex structural interventions for paediatric and adult CHD patients.

Subspecialty Training Goal 5 – Heart Failure

By the end of subspecialty training in Paediatric Cardiology, the Trainee is expected to manage all aspects of the heart failure service, including transplant assessment and on-going follow up.

Subspecialty Training Goal 6 – Heart Rhythm Abnormalities

By the end of subspecialty training in Paediatric Cardiology, the Trainee is expected to provide a heart rhythm abnormalities service including ablation and device therapy for paediatric and adult CHD patients.

Subspecialty Training Goal 7 – Pulmonary Hypertension

By the end of subspecialty training in Paediatric Cardiology, the Trainee is expected to provide a comprehensive diagnosis and treatment service for patients with pulmonary hypertension.

Subspecialty Training Goal 8 – Inherited Cardiac Conditions

By the end of subspecialty training in Paediatric Cardiology, the Trainee is expected to manage inherited cardiac conditions (including cardiomyopathies, inherited arrhythmia syndromes and aortopathy syndromes).

6. APPENDICES

This section includes two appendices to the Curriculum.

The first one is about Assessment (i.e. Workplace Based Assessments, Evaluations etc).

The second one is about Teaching Attendance (i.e. Taught Programme, Specialty-Specific Learning Activities and Study Days)

ASSESSMENT APPENDIX

Workplace-Based Assessment and Evaluations

The expression "workplace-based assessments" (WBA) defines all the assessments used to evaluate Trainees' daily clinical practices employed in their work setting. It is primarily based on the observation of Trainees' performance by Trainers. Each observation is followed by a Trainer's feedback, with the intent of fostering reflective practice.

Relevance of Feedback for WBA

Although "assessment" is the keyword in WBA, it is necessary to acknowledge that feedback is an integral part and complementary component of WBA. The main purpose of WBA is to provide specific feedback for Trainees. Such feedback is expected to be:

- **Frequent**: the opportunities to provide feedback are preferably given by directly observed practice, but also by indirectly observed activities. Feedback is expected to be frequent and should concern a low-stake event. Rather than being an assessor, the Trainer is an observer who is asked to provide feedback in the context of the training opportunity presented at that moment.
- **Timely**: preferably, the feedback should be a direct conversation between Trainer and Trainee in a timeframe close to the training event. The Trainee should then record the feedback on ePortfolio in a timely manner.
- **Constructive**: the recorded feedback would inform both Trainee's practice for future performance and committees for evaluations. Hence, feedback should provide Trainees with behavioural guidance on how to improve performance and give committees the context that leads to a rating, so that progression or remediation decisions can be made.
- **Actionable**: to improve performance and foster behavioural change, feedback should include practical and contextualised examples of both Trainee's strengths and areas for improvement. Based on these examples, it is necessary to outline a realistic action plan to direct the Trainee towards remediation/improvement.

Types of WBAs in use at RCPI

There is a variety of WBAs used in medical education. They can be categorised into three main groups: *Observation of performance*; *Discussion of clinical cases*; *Feedback; Mandatory Evaluations*.

As WBAs at RCPI we use *Observation of performance* via MiniCEX and DOPS; *Discussion of clinical cases* via CBD; *Feedback* via Feedback Opportunity.

Mandatory Evaluations are bound to specific events or times of the academic year, for these at RCPI we use: Quarterly Assessment/End of Post Assessment; End of Year Evaluation; Penultimate Year Evaluation; Final Year Evaluation.

Recording WBAs on ePortfolio

It is expected that WBAs are logged on an electronic portfolio. Every Trainee has access to an individual ePortfolio where they must record all their assessments, including WBAs. By recording assessments on this platform, ePortfolio serves both the function to provide an individual record of the assessments and to track Trainees' progression.

Formative and Summative Assessment

The Trainee can record any WBA either as formative or summative with the exception of the *Mandatory Evaluations* (Quarterly/End of Post, End of Year, Penultimate Year, Final Year evaluations).
If the WBA is logged as formative, the Trainee can retain the feedback on record, but this will not be visible to an assessment panel, and it will not count towards progression. If the WBA is logged as summative it will be regularly recorded and it will be fully visible to assessment panels, counting towards progression.

Specialty-Specific Examination

All Trainees are expected to take the EACVI (European Association of Cardiovascular Imaging) TTE (Transthoracic Echocardiography) examination in Year 3 or 4 of training.

WORKPLACE-BASED ASSESSMENTS	
CBD | *Case Based Discussion*	This assessment is developed in three phases: 1. Planning: The Trainee selects two or more medical records to present to the Trainer who will choose one for the assessment. Trainee and Trainer identify one or more training goals in the Curriculum and specific outcomes related to the case. Then the Trainer prepares the questions for discussion. 2. Discussion: Prevalently, based on the chosen case, the Trainer verifies the Trainee's clinical reasoning and professional judgment, determining the Trainee's diagnostic, decision-making and management skills. 3. Feedback: The Trainer provides constructive feedback to the Trainee. It is good practice to complete at least one CBD per quarter in each year of training.
DOPS | *Direct Observation of Procedural Skills*	This assessment is specifically targeted at the evaluation of procedural skills involving patients in a single encounter. In the context of a DOPS, the Trainer evaluates the Trainee while they are performing a procedure as a part of their clinical routine. This evaluation is assessed by completing a form with pre-set criteria, then followed by direct feedback.
MiniCEX | *Mini Clinical Examination Exercise*	The Trainer is required to observe and assess the interaction between the Trainee and a patient. This assessment is developed in three phases: 1. The Trainee is expected to conduct a history taking and/or a physical examination of the patient within a standard timeframe (15 minutes). 2. The Trainee is then expected to suggest a diagnosis and management plan for the patient based on the history/examination. 3. The Trainer assesses the overall Trainee's performance by using the structured ePortfolio form and provides constructive feedback.
Feedback Opportunity	Designed to record as much feedback as possible. It is based on observation of the Trainees in any clinical and/or non-clinical task. Feedback can be provided by anyone observing the Trainee (peer, other supervisors, healthcare staff, juniors). It is possible to turn the feedback into an assessment (CDB, DOPS or MiniCEX)
MANDATORY EVALUATIONS	
QA | *Quarterly Assessment*	As the name suggests, the Quarterly Assessment recurs four times in the academic year, once every academic quarter (every three months). It frequently happens that a Quarterly Assessment coincides with the end of a post, in which case the Quarterly Assessment will be substituted by completing an End of Post Assessment. In this sense the two Assessments are interchangeable, and they can be completed using the same form on ePortfolio. However, if the Trainee will remain in the same post at the end of the quarter, it will be necessary to complete a Quarterly Assessment. Similarly, if the end of a post does not coincide with the end of a quarter, it will be necessary to complete an End of Post Assessment to assess the end of a post. This means that for every specialty and level of training, a minimum of four Quarterly Assessment and/or End of Post Assessment will be completed in an academic year as a mandatory requirement.
EOPA | *End of Post Assessment*	
EOYE | *End of Year Evaluation*	The End of Year Evaluation occurs once a year and involves the attendance of an evaluation panel composed of the National Specialty Directors (NSDs); the Specialty Coordinator attends too, to keep records of and facilitate the meeting. The assigned Trainer is not supposed to attend this meeting unless there is a valid reason to do so. These meetings are scheduled by the respective Specialty Coordinators and happen sometime before the end of the academic year (between April and June).
PYE | *Penultimate Year Evaluation*	The Penultimate Year Evaluation occurs in place of the End of Year Evaluation, in the year before the last year of training. It involves the attendance of an evaluation panel composed of the National Specialty Directors (NSDs) and an External Member who is a recognised expert in the Specialty outside of Ireland; the Specialty Coordinator attends too, to keep records of and facilitate the meeting. The assigned Trainer is not supposed to attend this meeting unless there is a valid reason to do so.
FYE | *Final Year Evaluation*	In the last year of training, the End of Year Evaluation is conventionally called Final Year Evaluation, however, its organisation is the same as an End of Year Evaluation.

TEACHING APPENDIX

Specialty-Specific Learning Activities (Courses & Workshops)

Trainees should always refer to their training curriculum (please see diagram below) for a full list of requirements for their HST programme. When not sure, Trainees should contact their Programme Coordinator.

Study Days

Study days vary from year to year, they comprise a rolling schedule of hospital-provided topic-specific educational days and national/international events selected for their relevance to the HST curriculum.

Trainees are expected to attend the majority of the study days available and **at least 4 per training year**.

RCPI Taught Programme

Paediatric Cardiology Trainees would have completed their Taught Programme and/or mandatory courses during the first years of Training in Paediatrics. Any outstanding Taught Programme requirements would be available on Brightspace. When not sure, Trainees should contact their Programme Coordinator.

The RCPI Taught Programme consists of a series of modular elements spread across the years of training.

Delivery will be a combination of self-paced online material, live virtual tutorials, and in-person workshops, all accessible in one area on the RCPI's virtual learning environment (VLE), RCPI Brightspace.

The live virtual tutorials will be delivered by Tutors related to this specialty and they will use specialty-specific examples throughout each tutorial. Trainees will be assigned to a tutorial group and will remain with their tutorial group for the duration of HST.

Trainees will receive their induction content and timetable ahead of their start date on HST. Trainees must plan the time to complete their requirements and must be supported with the allocation of study leave or appropriate rostering.

As the HST Taught Programme is a mandatory component of HST, it is important that Trainees are released from service to attend the Virtual Tutorials and, where possible facilitated with the use of teaching space in the hospital.

Paediatric Cardiology Teaching Attendance Requirements