INSTITUTE
OF MEDICINE

ROYAL COLLEGE OF
PHYSICIANS OF IRELAND

HIGHER SPECIALIST TRAINING IN

CARDIOLOGY & GENERAL INTERNAL MEDICINE

OUTCOME-**B**ASED **E**DUCATION – OBE CURRICULUM

This Curriculum of Higher Specialist Training in Cardiology and General Internal Medicine was developed in 2023 by a working group led by Dr Ross Murphy and Dr Briain MacNeill, National Specialty Directors, and the RCPI Education Department. The Curriculum undergoes an annual review process by the National Specialty Directors and the RCPI Workplace Education Team. The Curriculum is approved by the Specialty Training Committee and the Institute of Medicine.

Version	Date Published	Last Edited By	Version Comments
1.0	July 2025	Stephen Capper	No edits from the previous year

National Specialty Directors' Foreword

The Cardiology HST Programme aims to deliver well rounded Cardiologists with a broad range of clinical and academic and teaching skills. This curriculum is designed to produce expert graduates with the ability to manage all general cardiological presentations and disorders while recognising the need to the development of subspecialty expertise and academic interests. It is noted that the drive to subspecialty practice has become a progressively more obvious feature of practice patterns in the last decade.

The Outcome Based Education (OBE) project concerns the transition of the minimum requirements model of the cardiology curriculum and training to OBE, which is more in line with other countries in the western world. It was one of the key initiatives of the RCPI's Strategic Plan 2021 – 2024 which aimed to enhance the quality of Ireland's BST and HST training programmes to ensure they are aligned with international best practices and standards. This involves a considerable change to both the structure of and the assessments within the curriculum, and as such, required input from multiple stakeholders to ensure that any changes are valid and robust.

It was decided that a focused workshop would take place involving both NSDs, current SpR representatives, and trainers from several training sites in order to ensure that multiple perspectives were captured, and discussion could take place. This meeting took place in the RCPI in May 2023 and comprised several specific agenda items.

We began by conducting an initial review of the specialty section of the current cardiology curriculum, with specific emphasis on the content. Following group discussion, this was pared back into five main training areas of Coronary Disease and Intervention, Imaging, Rhythm Disorders, Heart Failure, and Prevention/Community/Pregnancy. There was an emphasis on core competencies rather than minimal procedure training numbers. When these core areas were identified we then began outlining specific training outcomes with a variety of assessment tools for each of the five areas.

We would like to thank all the trainers and trainees that took part in this process. We are delighted to be part of the ongoing development of the Cardiology HST programme with our colleagues in the RCPI and our Trainers around the country.

Table of Contents

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 Cardiology and General Internal Medicine (GIM) in approved training posts, under supervision, 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 Directors (NSD) for 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 consultant. 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 practice and standards, the Royal College of Physicians (RCPI) have implemented an Outcomes Based Education (OBE) approach. This curriculum design differs from traditional minimum based 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.

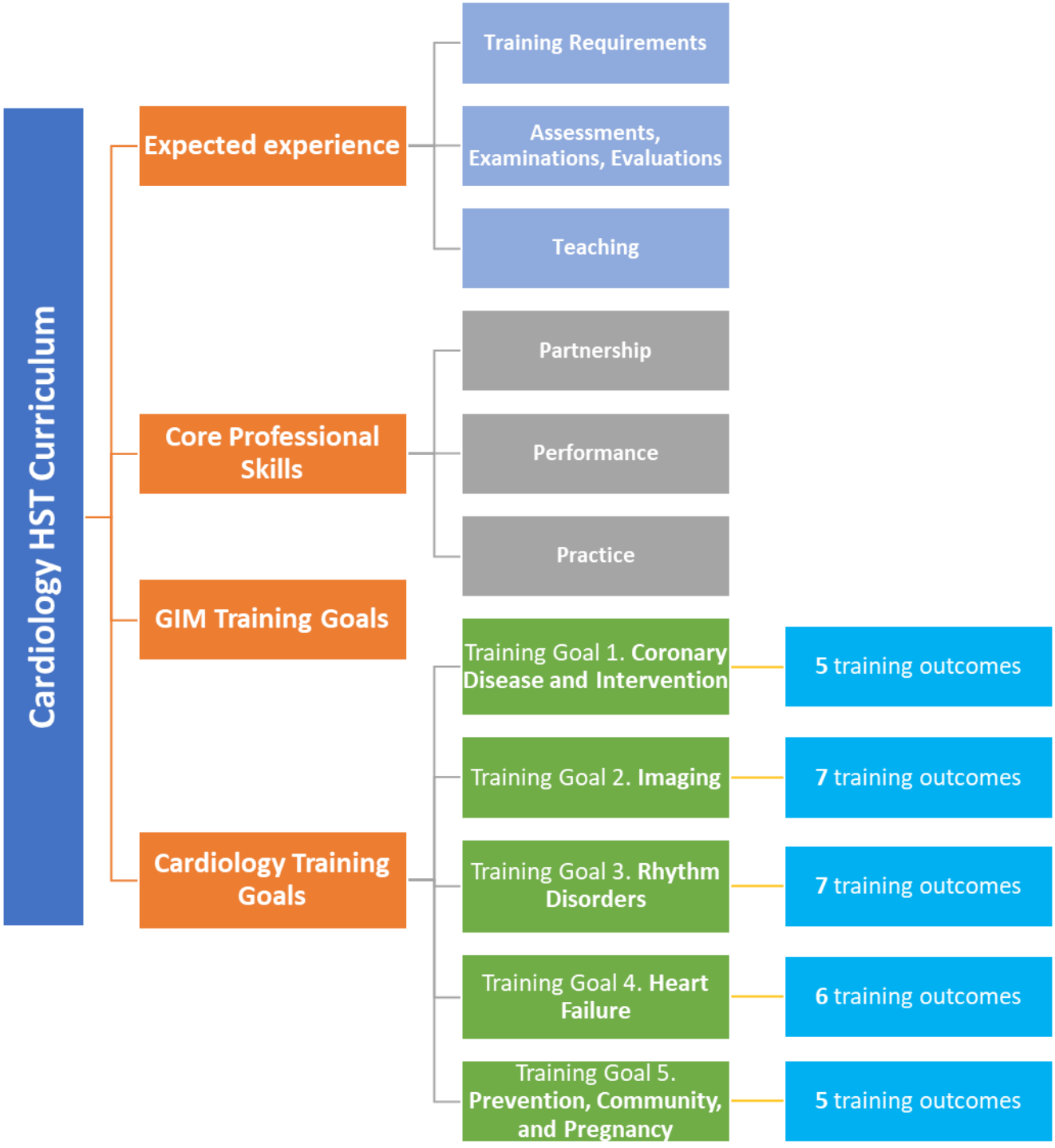
It is important to note that ePortfolio is a digital repository designed to reflect Curriculum requirements. It facilitates recording of progress through HST and evidence that training is valid and appropriate. While a complete ePortfolio is essential for HST certification, Trainees and Trainers should 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 following sections within the Cardiology HST Training Handbook for rules and regulations associated with this post. Policies, procedures, relevant documents, and Training Handbooks can be accessed on the RCPI website 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 & Organisation of Training

Training Pathways: The six years of HST in Cardiology is intended to produce fully trained Cardiologists who will **follow one of two paths (Path 1 or Path 2).** The decision as to which path to follow will be made after 4 years of Basic Cardiology (i.e., 3 years general cardiology and 1-year GIM), which all trainees will complete.

The training period shall be so arranged that during basic training (i.e., first four years), trainees will be provided with the opportunity to gain experience in the minimum number of procedures as required:

Path 1 will lead to certification in Cardiology (CSCST) with acknowledgement of additional training having been undertaken in a subspecialty of Cardiology.

Path 2 will lead to Dual accreditation in Cardiology and General Internal Medicine, utilising the time allocated to subspecialty training during **Path 1 (above),** to obtain the additional training needed for completion of the GIM curricular requirements.

The importance to the practising Cardiologist of an adequate training in General Medicine is acknowledged by the inclusion in the General Cardiology Curriculum of a mandatory year of GIM. It must also be recognised that Specialist Cardiologists, to a greater extent than most other Medical Specialists, need to develop certain additional highly technical skills and competencies. Their capacity to acquire such skills cannot be ascertained prior to entry into HST. As a result, trainees are not asked to decide from the outset which of the two training paths they will eventually follow **All trainees are enrolled initially in General (Internal) Medicine as well as in Cardiology.**

Then, based on the results of assessments of progress made annually, and particularly on an assessment made during the latter part of basic training a decision is made prior to the commencement of a fifth year of training, enabling the General Internal Medicine CSCST option to be dropped. The 4th year assessment will be conducted as a further interview, with detailed reports from trainers during the first 3 years, assessing the trainee's suitability for Paths 1 or 2. The trainees own wishes in this regard will be considered. Following the interview, a recommendation will be made by the Training Board to the trainee regarding further training. **Any objection by the trainee to the recommendation made would be considered within the terms of the College's Appeals Process.**

Certification in Radiation Protection, Advanced Cardiac Life Support (ACLS) and the undertaking of courses in statistics and management shall take place during this period of training. Attendance at clinics related to Grown up Congenital Heart Disease and Heart Disease in Pregnancy is required.

During the final two years of sub-specialty training in Cardiology a minimum exposure to procedures relating to the sub-speciality in question is required. Those proceeding to certification in Cardiology/General (Internal) Medicine will spend one further year of high intensity General (Internal) Medicine with a further year of advanced general Cardiology. Involvement in research is strongly recommended. It may be necessary to take additional years during which the trainee may complete a course of study leading to a further qualification (MD, PhD).

Core Training: Trainees must spend the first two years of training in clinical posts in Ireland before undertaking any period of research or OCPE. The earlier years of training will usually be directed towards acquiring a broad general experience of Cardiology and GIM under appropriate supervision.

An increase in the content of hands-on experience follows naturally, and, as confidence is gained and abilities are acquired, the trainee will be encouraged to assume a greater degree of responsibility and independence.

Trainees on HST programme in Cardiology are given a rotation of posts at the start of the programme. Each rotation will provide the trainee with experience in different hospitals to acquire the broad range of training required. A degree of flexibility to meet the individual training needs is possible especially towards the end of the training programme following discussion with the NSDs. Each post within the programme will have a named trainer/educational supervisor and programmes will be under the direction of the NSDs for Cardiology or, in the case of GIM, the Regional Specialty Advisor. Programmes will be as flexible as possible consistent with curricular requirements, for example to allow the trainee to develop a sub-specialty interest. The experience gained through rotation around different departments is recognised as an essential part of HST. The rotations in Cardiology are arranged so that a Specialist Registrar will not spend more than one year in a clinical Cardiology post in a single hospital. Overall, in the programme a Specialist Registrar may not remain in the same hospital for longer than 2 years of clinical training; or with the same trainer for more than 1 year.

Out of Clinical Programme Experience: Trainees can undertake one, or more years out of their HST programme to pursue research, further education, special clinical training, lecturing experience or other relevant experiences.

OCPE must be preapproved, and retrospective credit cannot be applied.

It must be noted that even if trainees can undertake more than one year to complete their OCPE of choice, RCPI would award a maximum of 12 months of training credits towards the achievement of CSCST. In certain circumstances, RCPI may award no credits. The decision of whether to award credits for one year may differ from specialty to specialty and it is discretionary by the NSDs of each respective specialty.

For more information on OCPE, please refer to the RCPI website (here).

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. Over the course of HST, Trainees are expected to gain experience in a variety of hospital settings.

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.

Dual Specialty Training: GIM training is expected to be completed over the 6 years of the programme. Two of these years are GIM specific years. During the other years trainees must complete their GIM training as per their expected experience. Each post must include general medicine on-call commitment for acute unscheduled/emergency care with attendance at relevant post-take rounds.

Acute Medicine: There must be evidence of direct supervision of the activity of the more junior members of the "on-take" team and a minimum of 10 (480 per year) new acute medical assessments and admissions during the 24-hour period are expected. In addition, the trainee will be expected to

have ongoing care/responsibility for a proportion of the patients for the duration of the clinical inpatient journey as well as the follow up post discharge. In this capacity the trainee should develop skills in non-technical aspects of care including discharge planning and end of life care.

Inpatient Responsibilities: The trainee will have front line supervisory responsibilities for general medical inpatients. This will require supervising the activities (e.g., being always available for advice) of the more junior members (SHO/Intern) of the clinical team. In addition to personal ward rounds, a minimum of two ward rounds with the consultant each week is expected for educational experience. Ongoing responsibility for shared care of the team's inpatients whilst in the ITU/HDU/CCU is also essential. If this is not possible in a particular hospital/training institution, then a period of secondment to the appropriate unit will be required.

Outpatient Responsibilities: The trainee is expected to have personal responsibilities for the assessment and review of general medicine outpatients with a minimum of at least one consultant led GIM clinic per week. The trainee should assess new patients; access to consultant opinion/supervision during the clinic is essential. In the event of clinics being predominantly subspecialty orientated, a trainee must attend other clinics to ensure comprehensive General Internal Medicine training.

Procedures: The trainee should acquire the practical skills that are needed in the management of medical emergencies, particularly those occurring out of normal working hours. Some exposure to these skills may have occurred during the period of BST but experience must be consolidated, and competencies reviewed during HST. The procedures, with which the trainee must be familiar and show competencies in, either as essential to acquire, or as additional procedural skills i.e., desirable to acquire.

Essential & Additional Experience: The trainee will be expected to have had experience of/be familiar with the management of a wide range of cases presenting to hospitals as part of an unselected acute medical emergency "take". Whilst trainees will not need to be expert in all these areas, they will be expected to be able to plan and interpret the results of immediate investigations, initiate emergency therapy and triage cases to the appropriate specialist care. These emergency situations have been considered under each specialty section and are indicative of what should be covered but are not prescriptive. It should form the basis of regular discussions between the trainee and trainers as training progresses. The various clinical situations listed for experience have been divided into those, which are considered "essential" and others, which are "additional".

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 actual number of training experiences is likely to be well in excess of these numbers.

2.2. Clinics list, Ward Rounds and Consultations, Training Activities

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 clinics attendance, ward rounds and consultations. All these activities should be recorded on ePortfolio using the respective form.

While it is recognised the opportunity to experience these training activities may not be available at every site, these activities can be captured at other sites over the course of the training program, providing the expected experience number is met.

ON CALL ROTA **Unselected Admissions for General Internal Medicine (Completed in first 3 years)**		
Clinic	**Expected Experience**	**ePortfolio Form**
GIM Year	Record 480 over the course of HST	Clinical Activities
Dual Specialty Year	Record 480 over the course of Dual Specialty years	
OUTPATIENT CLINICS		
Type	**Expected Experience**	**ePortfolio Form**
General Cardiology	Attend at least 2 per week of training in Cardiology, record attendance	Clinics
Subspecialty Cardiology clinics including but not limited to: Arrhythmia Inherited cardiac conditions Structural Clinic Adult Congenital Heart disease High-risk pregnancy Cardio-oncology Hypertension Dyslipidaemia	Attend at least 1 per month of training in Cardiology, record attendance	
WARD ROUNDS/CONSULTATIONS		
Type	**Expected Experience**	**ePortfolio Form**
Consultant Led	Attend at least 1 per week, record attendance	Clinical Activities
SpR Led	Attend at least 1 per week, record attendance	
Consultations	Attend at least 1 per week, record attendance	
EMERGENCIES/COMPLICATED/CHRONIC/ICU/CCU CASES		
Type	**Expected Experience**	**ePortfolio Form**
Diagnosis of nature of problem and its presentation, emergency case for investigation	Record 1 case per year of training in Cardiology	Cases
Chronic Cases/Long term care	Record 1 case per year of training in Cardiology	
ICU/CCU Cases	Record 1 case per year of training in Cardiology	
ADDITIONAL/SPECIAL EXPERIENCE		
Type	**Expected Experience**	**ePortfolio Form**
Relevant to Cardiology	Record 1 over the course of HST (desirable)	Additional Special Experience
MANAGEMENT EXPERIENCE		

Type	Expected Experience	ePortfolio Form
Management Experience	Record 1 over the course of HST	Management Experience

2.3 Procedural/Practical/Surgical Skills in Cardiology

Trainees are expected to complete and record a minimum number of certain procedures which are essential in Cardiology.

This table summarises the **expected training per each procedure per each year of training**, simply log the procedures on ePortfolio and complete the related DOPS Assessment as indicated:

PROCEDURES, PRACTICAL/SURGICAL SKILLS EXPECTED EXPERIENCE PER EACH YEAR/PER PROGRAMME			
Type	**Expected Experience**	**Perform DOPS Assessment**	**ePortfolio Form**
Temporary Pacing Wire	Record at least 10 over the course of HST	At least 1 DOPS assessment over the course of HST	Procedures, Skills & DOPS
Transoesphagael Echo	Record at least 75 over the course of HST		
Right Heart Catheterisation	Record at least 20 over the course of HST		
Exercise ECGs (analyse)	Record 100 per year of HST		
Holter ECGs (analyse)	Record 100 per year of HST		
Echocardiography (review)	Record at least 250 over the course of HST		
Electrophysiology Studies/Catheter ablations (observed)	Record at least 15 over the course of HST		
PCI (observed)	Record at least 100 over the course of HST		
Permanent Cardiac Pacing (observed)	Record at least 20 over the course of HST		
Coronary Angiography (performed)	Record at least 200 over the course of HST		
Defib and BiVent implants (observed)	Record at least 20 over the course of HST		
Cardiac CT (interpretation)	Record at least 50 over the course of HST		
Cardiac MRI (interpretation)	Record at least 50 over the course of HST		

2.4 In-house commitments

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

- Attend at least **1 Grand Rounds per month**
- Attend at least **1 Cardiology Meeting per week**
- Attend at least **2 Journal Club per month**
- Attend at least **1 MDT Meeting per month**
- Attend at least **2 Specialist Lecture per year**
- Attend at least **2 Specialist Seminar per year**

2.5 Research, Audit and Teaching experiences

Trainees are expected to complete the following activities:

- Deliver **10 teaching sessions** (to include tutorials, lectures, bedside teaching, etc.) per each year of HST
- Complete **1 Audit or Quality Improvement Project**, per each year of HST
- Attend **1 National or International Meeting**, per each year of HST
- Attend 1 Committee Meeting, over the course of HST
- Deliver **1 Oral presentation or Poster**, per each year of HST
- Complete **1 research project**, over the course of 6 years of HST
- Complete **2 publications**, over the course of 6 years of HST
- **Additional Qualifications** (MD, PhD, MSc, MA) **Desirable**

2.6 Teaching Attendance

Trainees are expected to attend the majority of the courses and study days as detailed in the Teaching Appendix, at the end of this document.

2.7 Evaluations, Assessments and Examinations

Trainees are expected to:

- Complete **4 quarterly assessments per training year** (1 assessment per quarter)
- Complete **1 end of post evaluation at the end of each post** (this can replace the quarterly evaluation in happening at the end of a post)
- Complete **1 end of year evaluation at the end of each training year**
- Complete all the **workplace-based assessments** as appropriate, and as agreed with Trainer. It is recommended to **record at least 1 WBA** (CBD, MiniCEX, or DOPS) **per quarter** to be reviewed at the Quarterly Assessment.
- Attempt **at least one of the following examinations**:

- European Society of Cardiology Examination (ESC) in Year 3 or 4 of HST
- EACVI or BSE or ASE
- EAPCI
- EHRA CP
- EHRA EP

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

2.8 Summary of Expected Experience

Experience Type	Expected	ePortfolio form
Rotation Requirements	Complete all requirements related to the posts agreed	n/a
Personal Goals	At the start of each post complete a Personal Goals form on ePortfolio, agreed with your trainer and signed by both Trainee & Trainer	Personal Goals
On-call Commitments	Partake in on-call commitments in Cardiology and GIM for the full duration of the programme and record attendance on ePortfolio	Clinical Activities
Clinics	Attend Cardiology outpatient and Subspecialty Clinics as agreed with your trainer and record attendance per each post on ePortfolio	Clinics
Ward Rounds/Consultations	Gain experience in clinical handover and ward rounds as agreed with your trainer and record attendance per each post on ePortfolio	Clinical Activities
Deliver Teaching	Record on ePortfolio all the occurrences where you have delivered Tutorials, Lectures and Bedside teaching. Record 10 examples per year of training	Delivery of Teaching
Research	Desirable Experience: actively participate in research, seek to publish a two papers and present research at conferences or national/international meetings	Research Activities
Publication	Complete 2 publication during the training programme	Additional Professional Activities
Presentation	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 In-House Activities	Each month attend at least 1 Grand Round, 2 Journal Club per month, 1 MDT Meeting per month. Attend 2 Specialist Seminar and 2 Lecture per year. Record attendance on ePortfolio	Attendance at hospital-based learning
National/International Meetings	Attend 1 per year of training	Additional Professional Activities
Teaching Attendance	Engage with Taught Programme and Study Days as detailed in the Teaching Appendix	Teaching Attendance

Examinations	European Society of Cardiology Examination: The trainees are expected to sit the European Society of Cardiology Exam in Year 3 or Year 4 of the HST programme.	Examinations
Evaluations and Assessments	Complete a Quarterly Assessment/End of post assessment with your trainer 4 times in each year. Discuss your progress and complete the form.	Quarterly Assessments/End-of-Post Assessments
Workplace-based Assessment	Complete all the workplace-based assessment as agreed with your trainer and complete the respective form. It is recommended to record at least 1 WBA (CBD, MiniCEX, or DOPS) per quarter to be reviewed at the Quarterly Assessment.	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 Medical Council guidelines for medical professional conduct, regarding Partnership, Performance and Practice.

These principles are woven within training practice and feedback is formally provided in the Quarterly Evaluations, End of Post, End 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. GENERAL INTERNAL MEDICINE SECTION

This section includes the General Internal Medicine requirements that the Trainee should demonstrate proficiency in by the end of the higher specialist training.

In order to demonstrate proficiency, it is recommended to agree the most appropriate training and assessment methods with the assigned Trainer.

By the end of Higher Specialist Training the Trainee will be able to identify and treat immediate life-threatening causes of common medical presentations, form a differential diagnosis for non-life-threatening cases and effectively manage the patient including further investigation and appropriate referral. They will have acquired a broad range of procedural and clinical skills to manage diverse presentations.

Assessment and Learning Methods

Learning opportunities during HST are through:

- Self-Directed Learning
- Attendance at Study days
- Participation in In-house activities
- Unselected acute on call
- General Medicine outpatient clinics
- Department education sessions (black box, journal club, tutorials)
- Completion of Required courses
- Attendance at additional learning events such as recommended courses and masterclasses

Progress is assessed through:

- Case Based Discussion (CBD)
- ePortfolio
- Annual assessment
- Direct Observation of Procedural Skills (DOPS)
- Mini Clinical Examination Exercise (MiniCEX)

In the Acute Setting

During the course of HST the trainee will encounter common acute presentations and will be expected to demonstrate the following competencies:

- Recognising and assessing urgency
- Stabilising the patient
- Prioritising
    - Tasks
    - Investigations
- Managing co-existing morbidities
- Making appropriate referrals
- Decision making and appropriate delegation

The presentations listed in this section represent the most common acute presentations and conditions currently seen in Irish hospitals, accounting for over 95% of admissions. It is expected that

HST trainees in general internal medicine will have a comprehensive knowledge of, and be able to provide a differential diagnosis for, these conditions.

Presentations

1. Shortness of breath
2. Cough
3. Chest Pain
4. Blackout/ Collapse/ Dizziness
5. The frail older patient in the acute setting
6. Abdominal Pain
7. Fever
8. Alcohol and substance dependence or withdrawal
9. Falls and Decreased mobility
10. Weakness and Paralysis
11. Headache
12. Limb Pain and/or Swelling
13. Nausea and Vomiting
14. Seizure
15. Diarrhoea
16. Delirium/Acute confusion
17. Acute Psychological illness
18. Palpitations
19. Hepatitis or Jaundice
20. Gastrointestinal Bleeding
21. Haemoptysis
22. Rash
23. Acute Back Pain
24. Poisoning and Drug Overdose
25. Hyper-glycaemia

Emergency Management

Recognising and managing emergency cases including:

- Acute Coronary Syndrome
- Acute Kidney Injury
- Acute Respiratory Failure
- Acute Seizure
- Anaphylaxis / Angioedema
- Cardio-respiratory arrest
- Critical electrolyte abnormalities (calcium, sodium, potassium)
- Hypo- or Hyperglycaemia
- Sepsis and septic shock
- Stroke/ TIA
- The unconscious patient
- Unstable hypotensive patient

Skills and Knowledge in General Medicine Setting

By the end of Higher Specialist Training, the Trainee should know life threatening causes, clinical feature, classifications, investigations, and management, including indications for urgent referral, for common general medicine presentations. The following outlines commonly associated features, causes and/or routes of investigation for these presentations, both acutely and for ongoing case management, the trainee is expected to know and the competencies they are expected to demonstrate.

When a patient presents with a general medicine complaint the trainee is expected to demonstrate an ability to:

- Assess their signs and symptoms, formulating a differential diagnosis
    - Take history as part of an investigation
    - Undertake primary assessment
    - Recognise and assess urgency
    - Undertake secondary assessment
- Initiate appropriate investigations
    - Interpret results for common investigations
- Initiate appropriate treatment, including stabilising the patient where necessary
- Manage co-existing morbidities
- Manage on-going cases including
    - confirming a diagnosis for those not requiring urgent referral
    - assessing response to initial treatment
    - recognising signs to escalate management when needed
- Appropriately refer based on:
    - Response to treatment
    - Local guidelines
    - Culture
    - Self-awareness of their own knowledge and ability
    - Services available
- Provide ongoing management of the case

Shortness of breath

When a patient presents with shortness of breath a trainee is expected to demonstrate knowledge of the clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for common causes.

- Life threatening causes of breathlessness
    - Airway Obstruction
    - Acute severe asthma
    - Acute exacerbation of COPD
    - Pulmonary oedema
    - Tension pneumothorax
    - Acute presentations of Ischaemic heart disease
    - Acute severe left ventricular failure
    - Dysrhythmia
    - Pulmonary embolus
    - Cardiac tamponade
    - Metabolic acidosis

Cough

When a patient presents a cough a trainee is expected to demonstrate knowledge of the clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Common causes of acute cough
    - Viral and Pertussis type cough
    - Acute bronchitis
    - Pneumonia
    - Tuberculosis
    - Lung cancer
    - Understand the relevance of subacute and chronic cough
    - Common causes (Asthma, Upper airway, GORD)
    - When to refer for assessment of lung cancer
    - Consideration of Interstitial lung disease

Chest Pain

When a patient presents with chest pain a trainee is expected to demonstrate knowledge of the clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for common causes.

- Life threatening causes of chest pain
    - Myocardial infarction
    - Dissecting aortic aneurysm
    - Pulmonary emboli
    - Tension pneumothorax
    - Oesophageal rupture
- Clinical features of:
    - Cardiac chest pain
    - Chest pain caused by respiratory disease and oesophageal rupture
    - Chest pain caused by gastrointestinal disease
    - Chest wall pain
    - Functional chest pain

Blackout / Collapse / Dizziness

When a patient blacks out, collapses or presents with dizziness a trainee is expected to demonstrate that they know the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Stroke
    - Cerebral infarction
    - Primary intracerebral haemorrhage
    - Subarachnoid haemorrhage
- Syncope
    - Cardiac causes (arrhythmia, cardiogenic shock)
    - Vasovagal syncope
    - Postural hypotension (e.g., drugs, neurocardiac, autonomic)
    - Localised vascular disease (posterior circulation)
    - Metabolic causes (e.g., hypoglycaemia)
- Seizures and epilepsy

Management of the frail older patient in the acute setting

When a frail older patient presents a trainee is expected to demonstrate knowledge of the appropriate approach to assessment, risk factors, appropriate investigations and necessary management, including indications for urgent referral, for this population.

- Understand the broad differential diagnosis and management of complex multi-morbid illness in older patients
- Approach to investigation and management of recurrent Falls
- Non-pharmacological and pharmacological management of behavioural complications of dementia
- Investigation of causes, non-pharmacological and pharmacological management of Delirium
- Polypharmacy and inappropriate prescribing in older patients (e.g. renal dose adjustment)
- Medical management of nursing home residents- identifying aspiration risk
- Palliative care and pain management in the acute setting
- Acute stroke thrombolysis delivery and criteria for referral for intravascular intervention
- Completion of NIHSS stroke scale

Abdominal Pain

When a patient presents with abdominal pain a trainee is expected to demonstrate knowledge of the life threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Initial assessment of abdominal pain
- Differential Diagnosis:
    - Intra-abdominal
        - Gastrointestinal
        - Vascular (aneurysm, ischemia)
        - Urological
        - Gynaecological
    - Extraabdominal causes of pain
- Ability to identify and initiate management of life-threatening conditions causes of abdominal pain
- Indications for surgical consultation and urgent referral
- Identifying constipation and urinary retention in older patients

Fever

When a patient presents with fever a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Recognize the symptoms and signs of sepsis
- Identify common causes of fever
    - Infection
    - Non-infectious including PE, Drugs, vasculitis,
- Delivery of initial management of septic patient
- Knowledge of the choice of empiric and infection targeted antibiotics

Alcohol and substance dependence or withdrawal

When a patient presents with dependence or withdrawal a trainee is expected to demonstrate that they know the classifications and necessary management, including indications for referral.

- Recognition
- Psychosocial dysfunction
- Autonomic disturbances
- Stress and panic disorders
- Insomnia and sleep disturbance
- Understand the role of psychiatrist and referral to rehabilitation services

Falls and Decreased mobility

When a patient falls or presents with decreased mobility a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations, and necessary management, including indications for urgent referral, for the common causes.

- Common medical and social causes of falls in medical patients
- Complications of falls
    - Fractures including the neck of the femur
    - Intracranial injury
    - Rib fracture and pneumothorax
    - Loss of mobility and independence

Weakness and Paralysis

When a patient presents with weakness or paralysis a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Stroke/ space occupying lesion
- Spinal cord injury
- Underlying neurological causes: e.g. multiple sclerosis, Guillain-Barre syndrome
- Infections and diseases causing weakness

Headache

When a patient presents with headache a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Clinical classifications of headache
- Headache with altered neurological and focal signs
- Headache with features suggestive of raised intracranial pressure
- Headache with papilloedema
- Headache with fever
- Headache with extracranial signs
- Headache with no abnormal signs
- Drugs and toxins

Limb Pain and/or Swelling

When a patient presents with limb pain or swelling a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- As a result of injury
- As a result of an underlying medical condition
    - Undifferentiated inflammatory arthritis

Nausea and Vomiting

When a patient with nausea and vomiting a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Understanding of common causes
    - Abdominal
        - Acute Gastroenteritis
        - PUD
        - Pancreatitis
        - Acute hepatitis
        - Bowel obstruction
    - Central Causes (CNS)
    - Poisoning and Medications
- Management
    - Identification of underlying cause
    - Control of symptoms
    - Treating dehydration

Seizure

When a patient presents with seizures a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Causes
    - Unprovoked seizures/epilepsy
    - Seizures associated with metabolic, toxic and system illness
    - Cerebral hypoxia
    - Seizures associated with drugs and toxic substances
- Management
    - Emergency supportive treatment
    - Anticonvulsant treatment
    - Work up of first presentation with seizure
    - Understand driving implications for patients with seizures

Diarrhoea

When a patient presents with diarrhoea a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Classification
    - Osmotic
    - Secretary
    - Exudative
- Causes
    - Infectious
    - Inflammatory
    - Ischemic
    - Malignant
- Complications
- Management
    - Acute management
    - Knowledge of appropriate investigations
    - Recognition of associated complications
    - Role of antibiotics
    - When to refer to gastroenterology.

Delirium/Acute confusion

When a patient presents with delirium or acute confusion a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Clinical features of acute confused state- differentiating delirium, dementia, depression and psychosis
- Causes of delirium
- Use of screening instruments for delirium and/or cognitive impairment
- Clinical features of acute delirium
- Clinical features of acute functional psychosis
- Causes of confused state associated with alcohol abuse- delirium tremens, Wernicke's encephalopathy
- Drug induced/related confusion/delirium
- Bacterial meningitis, Viral encephalitis
- Subarachnoid haemorrhage/ subdural haematoma

Social issues

When a patient presents with social issues a trainee is expected to demonstrate knowledge of the appropriate approach to assessment, risk factors, appropriate investigations and necessary management, including indications for urgent referral, for this population.

- Managing medical conditions with an uncooperative patient
- Identifying potential elder abuse
- Recognising substance abuse
- Basic principles of psychiatry
- Recognising an at risk patient

Palpitations

When a patient presents with palpitations a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Anxiety
- Exercise induced
- In relation to pre-existing conditions including
    - Thyroid disease
    - Anaemia
    - Fever
    - Dehydration
    - Low blood sugar
    - Low blood pressure
- Resulting from medications or toxins
- Hormonal changes
- After prior myocardial infarct
- Coronary artery disease
- Other heart problems including congestive heart failure, heart valve or heart muscle problems

Hepatitis or Jaundice

When a patient presents with hepatitis or jaundice a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Incubation and prodromal phase
- Virus-specific
- Toxic hepatitis
- Autoimmune
- Acute liver failure

Gastrointestinal Bleeding

When a patient presents with gastrointestinal bleeding a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Understanding of the initial assessment and stabilization of patients with GI bleeding
- Understanding of haemovigilance and blood transfusion protocols
- Upper gastrointestinal bleeding including
    - Peptic ulcer Disease
    - Gastritis
    - Esophageal varices
    - Mallory-Weiss tears
    - Gastrointestinal cancers
    - Inflammation of the gastrointestinal lining from ingested material
- Lower gastrointestinal bleeding including
    - Diverticular disease
    - Gastrointestinal cancers
    - Inflammatory bowel disease (IBD)
    - Infectious diarrhoea
    - Angiodysplasia
    - Polyps
    - Haemorrhoids and anal fissures

Haemoptysis

When a patient presents with haemoptysis a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Recognition and Management of massive Haemoptysis
- Common causes of haemoptysis
    - Acute and chronic bronchitis
    - Tuberculosis
    - Lung cancer
    - Pneumonia
    - Bronchiectasis
    - Pulmonary Embolus
    - Alveolar Haemorrhage (vasculitis)

Rash

When a patient presents with a rash a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Urticaria
- Anaphylaxis and Angio Oedema
- Erythroderma and exfoliation
- Psoriasis and seborrhaoeic/contact dermatitis
- Purpura and vasculitis
- Blistering eruptions
- Infections and the skin

Acute Back Pain

When a patient presents with acute back pain a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations and necessary management, including indications for urgent referral, for the common causes.

- Non-specific acute back pain
- Causes of chronic low back pain
- Neurologic findings in back pain
- Identifying serious aetiologies of back pain e.g.,
    - Cancer
    - Fracture
    - Infection

- Cauda equina syndrome

Poisoning and Drug Overdose

When a patient presents with poisoning or overdose a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations, and necessary management, including indications for urgent referral, for the common causes.

- Diagnostic clues in the assessment of overdoses
- Identification of toxic agent (paracetamol, SSRI, benzodiazepines, opiates, amphetamines, TCAD)
- Immediate management
- Mental health assessment and definitive care

Hyper-glycaemia

When a patient presents with hyper-glycaemia a trainee is expected to demonstrate knowledge of the life-threatening causes, clinical feature, classifications, appropriate investigations, and necessary management, including indications for urgent referral, for the common causes.

- Symptoms of acute hyper-glycaemia
- Recognition and Management of diabetic ketoacidosis
- Recognition and management of Hyperosmolar non-ketotic hyperglycaemic states

Procedures

By the end of Higher Specialist Training the Trainee will be expected to develop proficiency in common procedures required for general internal medicine.

Abdominal paracentesis under ultrasound

ECG Interpretation

Emergency DC cardioversion

- Up to date ACLS training to cover:
    - Necessity of Synchronised Shock
    - Starting voltage
    - Safe use of Defibrillator

Emergency care of tracheostomy

- In cases of:
    - Cardiac arrest
    - Dealing with a compromised airway

Femoral venous lines with ultrasound guidance

- Ultrasound guided femoral venous line placement
- Anatomical markers for femoral veins
- Safe cannulation of vein
- Secure line in place/review position on X-ray

Intercostal drain under ultrasound

- Anatomical markings
- Insertion of intercostal tube (small bore seldinger)
- Connection to underwater seal and secure in place
- Assessment and management of drain
- Safe removal of the tube

Joint aspiration

- Sterile field
- Fluid analysis
- Injectable compounds

Lumbar puncture

- Anatomical markers
- Cannula selection
- Safe puncture including appropriate preparation
- Measurement of CSF pressure
- Removal of samples and interpretation of results
- Management of post lumbar puncture headache

Non-invasive Ventilation

- Principles of BIPAP and CPAP
- Monitoring and limitations
- Mask fitting
- Understanding of pressures

Pleural and ascitic fluid aspiration under ultrasound

- Safe approach and role of ultrasound guidance
- Puncture pleural / peritoneal space
- Withdrawal of fluid

General Internal Medicine Procedures Requirements Map

Trainees are expected to complete and record a number of certain procedures which are essential in general internal medicine.

This table summarises the **expected training per each procedure over the course of HST,** simply log the procedures on ePortfolio and complete the related DOPS Assessment as indicated:

Activity	Expected Experience & DOPS Assessments	ePortfolio form name
BIPAP/CPAP	Complete 10 procedures and 1 DOPS over the course of HST	Procedures, Skills and DOPS
Emergency DC cardioversion	Complete 10 procedures and 1 DOPS over the course of HST	
ECG interpretation	Complete 50 procedures and 1 DOPS over the course of HST	
Joint aspiration	Complete 4 procedures and 1 DOPS	
Abdominal paracentesis – under ultrasound	Complete 4 procedures and 1 DOPS over the course of HST (Desirable)	
Femoral venous line placement – under ultrasound	Complete 1 procedure and 1 DOPS over the course of HST (Desirable)	
Pleural aspiration – under ultrasound	Complete 4 procedures and 1 DOPS over the course of HST (Desirable)	
Intercostal drain Insertion – under ultrasound	Complete 1 procedure	

5. SPECIALTY SECTION – CARDIOLOGY TRAINING GOALS

This section includes the Cardiology Training Goals that the Trainee should achieve by the end of the Higher Specialist Training.

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

*Under each Outcome there is an indication of the **suggested** assessment/learning opportunities.*

In order to achieve the Outcomes, it is recommended to agree the most appropriate assessment methods with the assigned Trainer.

Training Goal 1 – Coronary Disease and Intervention

By the end of Cardiology Training, the Trainee is expected to assess, investigate, and manage a patient with known or suspected coronary and structural heart disease in a manner appropriate to the complexity of the patient.

Outcome 1 – Perform assessment of patient with symptoms of coronary heart disease

For the Trainee to demonstrate proficiency in the assessment of a patient with symptoms suggestive of coronary artery disease (early stage of training).

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX or CBD) as indicated by Trainer

Outcome 2 – Management of patients with acute coronary syndrome

For the Trainee to demonstrate proficiency in the management of a patient with acute coronary syndrome (early stage of training).

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX or CBD) as indicated by Trainer

Outcome 3 – Management of patients with chronic coronary syndrome

For the Trainee to demonstrate proficiency in the management of a patient with chronic coronary syndrome (early stage of training).

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX or CBD) as indicated by Trainer

Outcome 4 – Assessment of a patient using coronary angiography

For the Trainee to demonstrate proficiency in the assessment of a patient using coronary angiography (late stage of training).

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer

Outcome 5 – Knowledge of structural heart disease intervention

For the Trainee to demonstrate knowledge of structural heart disease intervention (late stage of training).

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX or CBD) as indicated by Trainer

Training Goal 2 – Imaging

By the end of Cardiology Training, the Trainee is expected to select and interpret the appropriate cardiac imaging modalities relevant to the clinical scenario.

Outcome 1 – Assessing a patient using multiple imaging modalities

For the Trainee to demonstrate proficiency in assessing a patient using multiple imaging modalities including Echo, CT, CMR, and Nuclear (late stage of training).

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer

Outcome 2 – Manage patients with valvular heart disease

For the Trainee to demonstrate proficiency in managing a patient with valvular heart disease.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 3 – Manage patients with congenital heart disease

For the Trainee to demonstrate proficiency in managing a patient with congenital heart disease.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 4 – Manage patients with endocarditis

For the Trainee demonstrate proficiency in managing a patient with endocarditis.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 5 – Manage patients with cardiac tumour

For the Trainee to demonstrate proficiency in managing a patient with cardiac tumour.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 6 – Diagnosis and management of diseases of the aorta

For the Trainee to demonstrate proficiency in diagnosis and management of diseases of the aorta.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

OUTCOME 7 – ASSESSMENT OF PATIENTS USING TRANSOESOPHAGEAL ECHO

For the Trainee to demonstrate proficiency in the assessment of a patient using transoesophageal echo.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer

Training Goal 3 – Rhythm Disorders

By the end of Cardiology Training, the Trainee is expected to assess, investigate, and manage a patient with known or suspected rhythm disorders in a manner appropriate to the complexity of the patient.

Outcome 1 – Assessing a patient using ECG, Holter, and EST

For the Trainee to demonstrate proficiency in assessing a patient using ECG, Holter, and EST.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer

Outcome 2 – Assessing and managing patients with atrial arrhythmias

For the Trainee to demonstrate proficiency in assessing and managing patients with atrial arrhythmias.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 3 – Assessing and managing patients with ventricular arrhythmias

For the Trainee to demonstrate proficiency in assessing and managing patients with ventricular arrhythmias.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 4 – Participate in implantation of and be proficient in follow-up of cardiac devices

For the Trainee to understand indications for, participate in implantation of and be proficient in follow-up of cardiac devices.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer
- Study Days

Outcome 5 – Understand indications for and observe catheter ablation of cardiac arrhythmias

For the Trainee to understand indications for and observe catheter ablation of cardiac arrhythmias.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer

Outcome 6 – Managing patients with inherited cardiac disease including knowledge of cardiac genetics

For the Trainee to demonstrate proficiency in managing a patient with an inherited cardiac disease including knowledge of cardiac genetics.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 7 – Understand the causes and management of syncope

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

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Training Goal 4 – Heart Failure

By the end of Cardiology Training, the Trainee is expected to assess, investigate, and manage a patient with known or suspected myocardial and pericardial disease in a manner appropriate to the complexity of the patient.

OUTCOME 1 – ASSESSING AND MANAGING PATIENTS WITH ACUTE HEART FAILURE

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

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer

OUTCOME 2 – ASSESSING AND MANAGING PATIENTS WITH CHRONIC HEART FAILURE

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

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer

OUTCOME 3 – ASSESSING AND MANAGING PATIENTS WITH ADVANCED HEART FAILURE

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

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer

OUTCOME 4 – ASSESSING AND MANAGING PATIENTS WITH MYOCARDIAL OR PERICARDIAL DISEASE

For the Trainee to be demonstrate proficiency in assessing and managing a patient with myocardial or pericardial disease including cardiac tamponade.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, CBD, or DOPS) as indicated by Trainer

OUTCOME 5 – ASSESSING AND MANAGING PATIENTS WITH PULMONARY ARTERIAL HYPERTENSION

For the Trainee to demonstrate proficiency in assessing and managing a patient with Pulmonary arterial hypertension.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer
- Study Days

OUTCOME 6 – ASSESSING AND MANAGING CARDIO-ONCOLOGY PATIENTS

For the Trainee to demonstrate proficiency in assessing and managing cardio-oncology patients.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer
- Study Day

Training Goal 5 – Prevention, Community, and Pregnancy

By the end of Cardiology Training, the Trainee is expected to assess, investigate, and manage a patient with cardiovascular risk factors in a manner appropriate to the complexity of the patient.

Outcome 1 – Assessing and managing patients with hypertension

For the Trainee to demonstrate proficiency in assessing and managing a patient with Hypertension

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer
- Study Days

Outcome 2 – Assessing and managing patients with dyslipidaemia

For the Trainee to demonstrate proficiency in assessing and managing a patient with Dyslipidaemia

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 3 – Gain experience in assessing heart disease in pregnancy

For the Trainee to to gain experience in assessing heart disease in pregnancy.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 4 – Gain experience in cardiac rehabilitation

For the Trainee to to gain experience in cardiac rehabilitation.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

Outcome 5 – Gain experience in managing patients in a community

For the Trainee to gain experience in managing cardiac patients in a community setting.

Assessment and learning opportunities

- Feedback Opportunity
- Workplace Based Assessment (Mini-CEX, or CBD) as indicated by Trainer

6. APPENDICES

This section includes two appendices to the curriculum.

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

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 Evaluation/End of Post Evaluation; 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 Feedback

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.

Examination

European Society of Cardiology Examination: The trainees are expected to sit the European Society of Cardiology Exam in Year 3 or Year 4 of the HST programme.

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. It is good practice to complete at least one assessment per quarter in each year of training.
***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. It is good practice to complete at least one assessment per quarter in each year of training.
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

RCPI Taught Programme

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.

Specialty-Specific Learning Activities (Courses & Workshops)

Trainees will also complete specialty-specific courses and/or workshops as part of the programme.

Trainees should always refer to their training Curriculum 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**.

Cardiology and General Internal Medicine Teaching Attendance Requirements