FACULTY OF PATHOLOGY

ROYAL COLLEGE OF PHYSICIANS OF IRELAND

HIGHER SPECIALIST TRAINING IN

CHEMICAL PATHOLOGY

OUTCOME **B**ASED **E**DUCATION CURRICULUM

This Curriculum of Higher Specialist Training in Chemical Pathology was developed in 2024 by a working group led by Dr Ana Rakovac, National Specialty Director, and the RCPI Education Department. The Curriculum undergoes an annual review process by the National Specialty Director and the RCPI Education Department. The Curriculum is approved by the Specialty Training Committee and the Faculty of Pathology.

Version	Date Published	Last Edited By	Version Comments
1.0	July 2024	Keith Farrington	New OBE Curriculum

National Specialty Director's Foreword

Dear prospective and current Trainees, Dear Trainers,

It is always a good idea to check if one is on the right path. RCPI's move to outcome-based education Curriculum gave us a challenge and the opportunity to do just that. The first edition of the OBE Curriculum is in front of you. It was created with input from current Trainees and consultants in chemical pathology as well as RCPI educational specialists.

Chemical pathology is the branch of pathology which deals with the diagnosis and management of disease by measurement of chemicals present in body fluids and tissues. Chemical pathology laboratories are run by chemical pathologists, consultants ensuring the quality of the results, appropriateness of diagnostic service and usefulness of advice to clinicians. To do this well, a consultant chemical pathologist needs to marry the knowledge of medicine and science, thoroughly understanding the pathophysiology of multiple diseases, the science behind the testing methods, the mathematics and statistics behind the testing evaluation and comparisons, the guidelines leading the treatment and the impact testing has on clinical management, having patient outcomes and safety as the first and foremost goal. To lead the laboratory and communicate well with clinician colleagues, the Trainee also needs to acquire insight into one's leadership and clear communication techniques.

So, if you are interested in the why and the how of diagnostics and the management of complex systems, if you can think thoroughly, if you can combine clinical insights with laboratory data, make sound judgments and express your thoughts clearly, this is the specialty for you. If you feel lacking in any of those areas—well, practice makes perfect, and we hope this Curriculum provides a clear guide on how to learn all the skills needed.

If the guide is not clear, please let us know—we aim to review it yearly and improve it as we go along.

Happy learning!

Dr Ana Rakovac

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 Chemical Pathology 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 Director in Chemical Pathology.

1.2. Purpose of the Curriculum

The purpose of the Curriculum is to define the relevant processes, contents, outcomes, and requirements to be achieved. The Curriculum is structured to delineate the overarching goals, outcomes, expected learning experiences, instructional resources and assessments that comprise your Higher Specialist Training (HST) programme. It provides a feedback framework for 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.

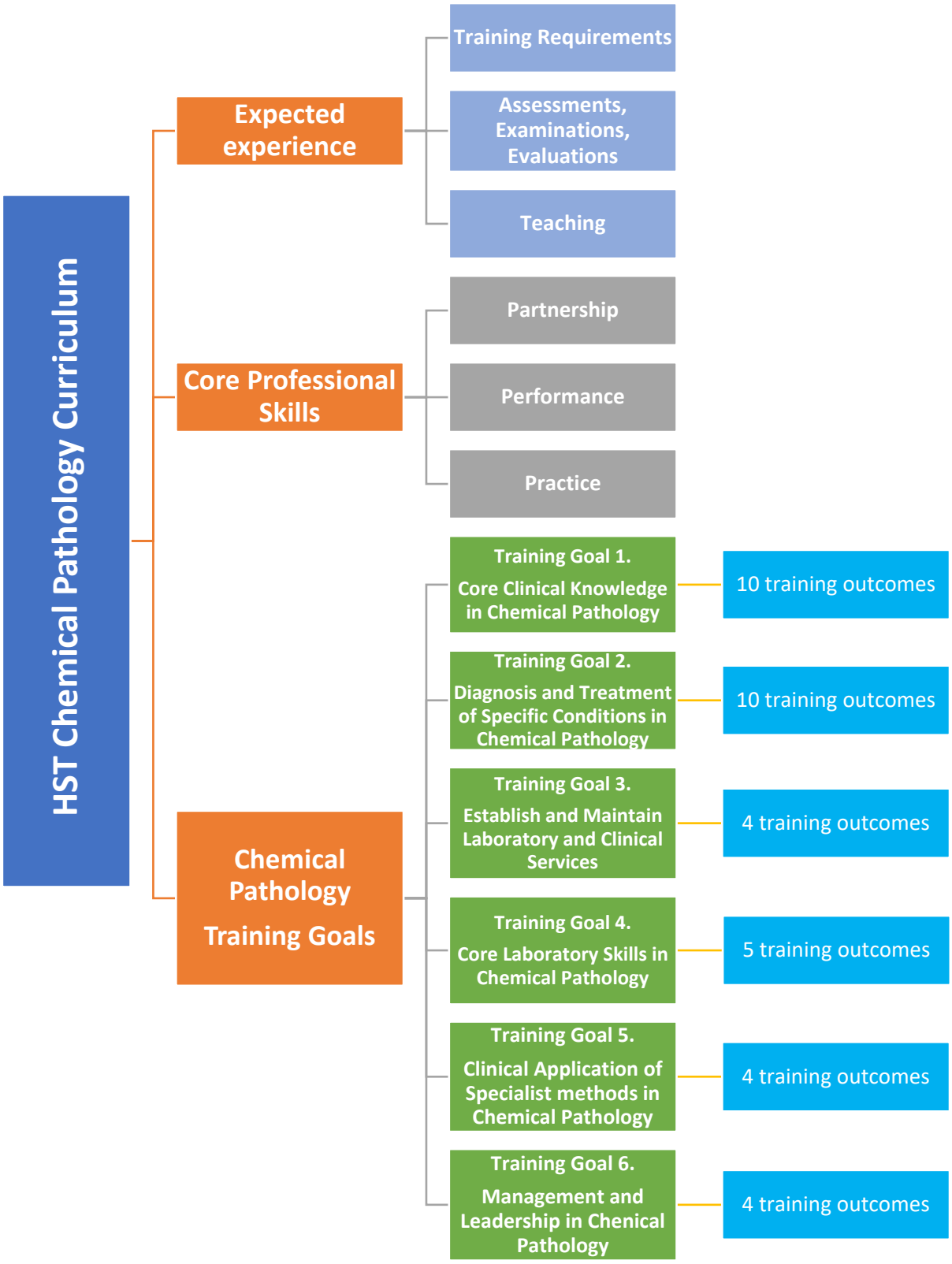
It is important to note that ePortfolio is a digital repository designed to reflect Curriculum requirements. It facilitates recording of progress through HST and evidence that training is valid and appropriate. While a complete ePortfolio is essential for HST certification, Trainees and Trainers should 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

To complete the HST Training Programme in Chemical Pathology, Trainees are expected to observe the following rotations requirements.

Over the course of HST, Trainees are expected to complete:

- 60 months (5 x 12 months) experience in Chemical Pathology Posts
- At the start of each post, Trainees are expected to fill out a Personal Goals form with their Trainer and upload it on ePortfolio; the form should be agreed and signed by both Trainee & Trainer
- Specified Laboratory Experience

Failure to demonstrate satisfactory progress at end of year review or in relation to examinations may result delay training or prevent its completion.

2.2. Clinics list, Ward Rounds and Consultations

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 Specialist Registrar should gain regarding clinics attendance, ward rounds, laboratory activities and consultations.

CLINICAL ACTIVITIES			
Clinic	**Timeline**	**Expected Experience**	**ePortfolio Form**
Diabetes	Years 1-5	Attend at least 2 per month in appropriate posts (to include 5 type 1* clinics per programme)	Clinics
Lipid/CVD Risk Factors	Years 1-5	Attend at least 2 per month in appropriate posts	
Metabolic Bone	Years 1-5	Attend at least 2 per month in appropriate posts	
*Endocrine (Pituitary, Adrenal, Thyroid, Fertility, Paediatric)	Years 1-5	Attend as appropriate (As agreed with Trainer)	
*Haematology/Oncology	Years 1-5	Attend as appropriate (As agreed with Trainer)	

*Metabolic (including Paediatrics)	Years 1-5	Attend as appropriate (As agreed with Trainer)	
*Nephrology (including Transplant & Dialysis)	Years 1-5	Attend as appropriate (As agreed with Trainer)	
CONSULTATIONS, MDT, PROCEDURES, LABORATORY			
Type	**Timeline**	**Expected Experience**	**ePortfolio Form**
Consultations	Years 1-5	At least 2 per month	Clinical Activities
Appropriate specialist rounds (*e.g.*, ICU, Nutrition)	Years 1-5	At least 6 pr year in appropriate posts	
MDT/ Meetings	Years 1-5	At least 2 per month	
Laboratory Liaisons	Years 1-5	As appropriate	
Examinations			Examinations
FRCPath Part I		1	
FRCPath Part II		1	
Audit			Audit/QA
Preparation of QC material (Observe)	Programme	1	
Discussion of EQA report	Programme	At least 2 per month	
Discussion of IQC failure	Programme	At least 1 per month	
Audit of QMA	Programme	At least 1 per month	
Procedures			Procedures, Skills, & DOPS
Basic Laboratory Techniques[1]	Programme	Free Count	
POCT/NPT[2]	Programme	Free Count	
Molecular Diagnostics[3]	Programme	Free Count	
Clinical Diagnostic procedures[4]	Programme	Free Count	
Validation of methods	Programme	Free Count	
Reporting of results	Programme	Free Count	

*Not Chemical Pathology run clinics

[1]For example, use of pipette, use of balance, pH meter, preparation of buffer, use of spectrophotometer, assay calibration, basic calculations (e.g., molarity, dilutions, basic calculations on laboratory middleware) PEG precipitation, use of centrifuge, experience with specimen reception and operation of automated analysers

[2]For example, measurement of glucose using meter, urinalysis, urine pregnancy test, use of blood gas machine, use of bilirubinometer, HbA1c measurement, ketone measurement, urine toxicology testing

[3]For example, DNA, extraction, PCR, Agarose gel electrophoresis

[4]For example, performance of sweat test, dynamic function tests

2.3. In-house Commitments

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

- Attend at least **1 Grand Rounds per month**
- Attend at least **1 MDT Meeting per week**
- Attend at least **1 Seminar, teaching session or journal club per month**
- Attend at least **1 Lecture / Webinar per quarter**

2.4. Evaluations, Assessments and Examinations

Specialist Registrars are expected to:

- **Complete 4 quarterly evaluation per training year** (1 evaluation per quarter)
- **Complete 1 end of year evaluation at the end of each training year**
- **Regularly update your ePortfolio – this is your record of training and is a vital resource**
- **Complete all relevant workplace based assessments in partnership with your Trainer**

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

2.5. Research, Audit and Teaching Experiences

Specialist Registrars are expected to complete the following activities:

- Deliver a minimum of **12 teaching sessions** (to include tutorials, lectures, bedside teaching, etc.) over the course of 5 years of HST
- Deliver **1 oral or poster presentation**, per each year of HST
- Complete **1 Audit or Quality Improvement Project**, per year of HST
- Attend a minimum of **1 National or International Meeting**, per each year of HST
- Complete **1 research project**, over the course of 5 years of HST
- Complete **1 publication** (may include peer reviewed research, case report or patient information that demonstrates effective written communication or scientific writing,) over the course of 5 years of HST

2.6. Teaching Attendance

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

2.7. Overview 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
Clinics	Attend outpatient Clinics as agreed with your Trainer and record attendance per each post on ePortfolio	Clinics
Deliver Teaching	Record on ePortfolio all the occurrences where you have delivered Tutorials (at least 1 per Year), Lectures (at least 1 per Year), a	Delivery of Teaching
Research	Desirable Experience: actively participate in research, seek to publish a paper and present research at conferences or national/international meetings	Research Activities
Publication	Complete 1 publication during the training programme	Additional Professional Activities
Presentation	Deliver 1 oral or poster 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	Attend at least 1 Grand Rounds per month, Attend at least 1 MDT Meeting (see above) per week, Attend at least 1 Seminar/Journal Club/Educational session per month, Attend at least 1 Lecture/Webinar per quarter Record attendance on ePortfolio	Attendance at In-House Activities
National/International Meetings	Attend 1 per year of training	Additional Professional Activities
Teaching Attendance	Attend courses and Study Days as detailed in the Teaching Appendix	Teaching Attendance
Examinations	FRCPath I & II	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.	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 Assessments, 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
- Promote the concept of planetary health and sustainability in all professional encounters

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. SPECIALTY SECTION – CHEMICAL PATHOLOGY SPECIALTY SECTION

This section includes the Chemical Pathology 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 suitable and **recommended** training/learning opportunities and assessment methods.*

In order to achieve the Outcomes it is recommended to agree on the most appropriate type of training and assessment methods with the assigned Trainer.

Training Goal 1 – Core Clinical Knowledge in Chemical Pathology/Chemical Pathology of Disease

By the end of HST Trainees should have a comprehensive knowledge of topics underpinning the chemical pathology of disease including ability to advise on appropriate diagnostic pathways and initial clinical management.

Outcome 1 – Demonstrate appropriate knowledge of water and electrolyte disorders (sodium, potassium, chloride, calcium, phosphate, magnesium) and acid base disorders

The Trainee will be expected to demonstrate knowledge on causes and diagnosis of fluid balance and electrolyte disturbances and provide appropriate advice for their investigations and management. Trainees need to be proficient in investigations as well as acute and chronic management of water depletion and excess, hypo/hypernatraemia, hypo/hyperkalaemia, hypo/hypercalcaemia, hypo/hyperphosphataemia and hypo/hypermagnasaemia. Trainee needs to be highly skilled in using the knowledge of physiology of acid-base status as well as pathophysiology of acid-base disturbances in interpreting results (including near-patient testing results) and advising on management.

Training/Learning Opportunities
Clinic Attendance
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

Outcome 2 – demonstrate appropriate knowledge of renal, glomerular, and tubular disorders

The Trainee will be expected to describe the structure, function and disorders of the kidneys and urogenital tract, understand the endocrine functions of the kidney, including the renin-aldosterone system, vitamin D and erythropoietin, diseases of the renal tract, including intrinsic and extrinsic disorders, and the effects of drugs and toxins, acute kidney injury and chronic kidney disease, consequences of renal disease and the biochemical tests for assessing renal function. Consequently, the Trainee will be expected to provide appropriate advice for investigation and management of the above.

Training/Learning Opportunities
Clinic Attendance
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods

Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 3 – DEMONSTRATE APPROPRIATE KNOWLEDGE OF DIABETES MELLITUS AND ABILITY TO MANAGE TYPE 2 DIABETES INDEPENDENTLY

The Trainee should be able to describe different types of diabetes mellitus, their pathogenesis and presentations, criteria for diagnosis (including in pregnancy) and available therapies. The Trainee should also be able to describe analytical issues in diabetes diagnosis, including the process of haemoglobin non-enzymatic glycation and influence of Hb variants on analysis as well as alternative diagnostic methods available (fructosamine, OGTT…). The Trainee should be able to independently care clinically for patients with type 2 diabetes, managing to achieve appropriate level of glycaemic control by adjusting treatment, screen for long-term complications and identify and manage co-morbidities. The Trainee should be able to diagnose, including near-patient testing methods, and advise on initial management of diabetes-related emergencies: diabetic ketoacidosis acidosis and hyperosmolar hyperglycaemic state. The Trainee should be able to work as part of multidisciplinary team for the acute and long-term care of patients with diabetes.

Training/Learning Opportunities
Clinic Attendance
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 4 – DEMONSTRATE APPROPRIATE KNOWLEDGE OF ENDOCRINOLOGY DISORDERS (INCLUDING PITUITARY, THYROID, REPRODUCTIVE, DYNAMIC FUNCTION TESTING)

The Trainee should have thorough knowledge of endocrine physiology, including feedback loops and the production, control and effects of hormones in hypothalamus-pituitary-end gland axis (thyroid, adrenal, gonads) as well as renin-angiotensin-aldosterone system. The Trainee should be able to create investigation plans and interpret results of investigations in endocrinology, including dynamic function tests and imaging. The Trainee should be able to investigate and manage common thyroid disorders, including subclinical presentations and advise on investigation and management of discordant thyroid test results. The Trainee should be proficient in diagnosis of secondary hypertension, as well advise on testing and treatment. The Trainee should be able to identify biochemical patterns of endocrine emergencies and advise on initiation of treatment.

Training/Learning Opportunities
Clinic Attendance

Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 5 – DEMONSTRATE APPROPRIATE KNOWLEDGE OF GASTROENTEROLOGY AND HEPATOBILIARY DISORDERS

The Trainee should understand the physiology of digestion and absorption as well as the role of the gut as an endocrine organ and advise on appropriate investigations, including the biochemical investigations in screening for gut neoplasms and inflammatory bowel disease. The Trainee should understand the physiology of the hepatobiliary system and pancreas, its diseases (MASLD, hepatitis, cirrhosis, cholestasis, gallstones, neoplasia, acute and chronic pancreatitis…) and be able to explain causes and create investigation plans as well as interpret results, particularly of investigation of pathological fluids (ascites).

Training/Learning Opportunities
Clinic Attendance
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 6 – DEMONSTRATE APPROPRIATE KNOWLEDGE OF CARDIOVASCULAR DISEASE AND ITS INVESTIGATION

The Trainee is expected to understand and direct appropriate testing in the diagnosis of acute coronary syndromes and heart failure, including the biomarkers used for diagnostic purposes (troponins, natriuretic peptides). The Trainee should also understand the major risk factors for atherosclerotic cardiovascular disease (ASCVD), in particular the role of dyslipidaemias and the aetiopathogenesis of hypertension.

Training/Learning Opportunities
Clinic Attendance
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)

WBA
FRCPath Examination

OUTCOME 7 – DEMONSTRATE APPROPRIATE KNOWLEDGE OF INVESTIGATIONS IN RESPIRATORY DISEASE

The Trainee is expected to understand respiratory disease biochemical markers and genetic testing involved in their diagnosis, including alpha1 antitrypsin and cystic fibrosis as well as biochemical investigation of pleural fluid and its interpretation. In addition, the Trainee should understand the application of blood gas analysis in the stratification of respiratory failure.

Training/Learning Opportunities
Clinic Attendance
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 8 – DEMONSTRATE APPROPRIATE KNOWLEDGE OF INVESTIGATIONS IN NEUROLOGICAL AND NEUROMUSCULAR DISEASE

The Trainee should understand the physiology of formation and composition of cerebrospinal fluid (CSF), the use of nasal fluid to determine existence of CSF leak and interpret CSF findings in common conditions (subarachnoid haemorrhage, infections, tumours) as well as CSF tumour markers and dementia screens. The Trainee should demonstrate knowledge of pathophysiology, investigation and management of rhabdomyolysis and myopathies.

Training/Learning Opportunities
Clinic Attendance
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 9 – DEMONSTRATE APPROPRIATE KNOWLEDGE OF INVESTIGATIONS IN MONITORING CANCER TREATMENT

The Trainee should be able to advise on appropriate use of biochemical biomarkers in diagnosis and monitoring of malignancies.

Training/Learning Opportunities
Clinic Attendance
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days
Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

Training Goal 2 – Diagnosis and Treatment of Specific Conditions in Chemical Pathology

By the end of HST Trainees are expected to be proficient in diagnosing and managing common disorders diagnosed and managed (where appropriate) by chemical pathologists. Trainees are expected to attain sufficient capability to provide direct clinical care to patients in the following areas: type 2 diabetes mellitus, cardiovascular risk management and disorders of lipid metabolism, disorders of calcium and bone metabolism, including osteoporosis, and porphyrias. In all other areas, Trainees are expected to gain experience in direct patient care either by attending clinics managed by other specialties or by the way of clinical liaison or multidisciplinary meetings but are not expected to be delivering direct clinical care.

OUTCOME 1 – TO BE ABLE DIAGNOSE AND MANAGE DISORDERS OF LIPID METABOLISM AND ASSESS CARDIOVASCULAR RISK

The Trainee should understand the physiology of lipid metabolism, the genetic and non-genetic causes of lipid disorders, form appropriate investigation pathways for inherited and acquired lipid disorders, and manage lipid disorders independently according to recommended guidelines. The Trainee needs to be up to date with pharmacology of lipid-lowering agents and ways to assess cardiovascular risk as well as assess patients directly. The Trainee needs to understand the genetic basis of inherited lipid disorders, in particular familial hypercholesterolaemia, and be able to advise on cascade screening of affected family members, where appropriate.

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 2 – TO BE ABLE TO DIAGNOSE, MANAGE AND CONSULT ON THE MANAGEMENT OF PORPHYRIAS

Trainee needs to be proficient in diagnosis of acute and cutaneous porphyrias, using both biochemical and genetic diagnostic methods and assessing patients. Trainee needs to be skilled in providing advice on the most appropriate treatment as well as advise on the cascade genetic screening of family members.

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 3 – TO BE ABLE TO DIAGNOSE AND MANAGE METABOLIC BONE DISORDERS INCLUDING OSTEOPOROSIS

In addition to understanding calcium, phosphate and magnesium disorders (Training Goal 1, Outcome 1) and possessing a detailed practical knowledge of the relevant laboratory investigations, the Trainee will need to understand the pathophysiology, causes, investigation pathways (including imaging) and therapeutic options in metabolic bone disorders (including osteoporosis, hypoparathyroidism and hyperparathyroidism—primary, secondary and tertiary, Paget's disease of bone, abnormal alkaline phosphatase, calcium and bone mineral disorders, and vitamin D deficiency) and manage them independently.

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 4 – TO BE ABLE TO CONSULT IN DIAGNOSIS AND MANAGEMENT OF NUTRITIONAL DISORDERS

The Trainee needs to be able to direct investigations and management in vitamin and calorie-deficient states, particularly in refeeding syndrome. Where possible, it is desirable that Trainee gains experience in obesity management—however, there is a present a paucity of dedicated obesity clinics in available training sites and experience will need to be obtained in type 2 diabetes and lipid clinics.

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 5 – TO DEMONSTRATE ADEQUATE KNOWLEDGE OF PAEDIATRIC CHEMICAL PATHOLOGY AND BE ABLE TO DIAGNOSE INBORN ERRORS AND METABOLISM DISORDERS (IEM)

The Trainee should understand the biochemical basis of inborn errors of metabolism and demonstrate knowledge on presentation and diagnosis of common IEMs (phenylketonuria, galactosaemia, homocystinuria, branch-chain amino acid disorders, fatty acid oxidation disorders, lysosomal, metals, mitochondrial, glycogen storage disorders, mucopolysaccharide, organic acid, peroxisomal, purine disorders…). The Trainee should be proficient in analysis and interpretation of amino acids, organic acids, carnitines and acylcarnitines, enzyme activity, mucopolysaccharides, tissue culture and DNA

investigations. The Trainee should be able to advise on emergency management of common and important metabolic presentations, including metabolic acidosis, hypoglycaemia, hyperammonaemia.

The Trainee should understand the differences in metabolism and reference ranges in childhood vs adulthood and should be able to advise on general paediatric chemical pathology cases, including in primary care.

The Trainee should be proficient in diagnosis of cystic fibrosis using biochemical and genetic methods.

The Trainee should understand the methodology of newborn screening programme.

The Trainee should aim to attend both paediatric and adult metabolic clinics.

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Laboratory benchwork
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 6 – TO BE ABLE TO DIAGNOSE AND CONSULT ON MANAGEMENT OF TRACE ELEMENT DISORDERS

The Trainee should be proficient in diagnostic techniques for assessment of trace element deficiency/excess or toxicology syndromes (zinc, copper, aluminium) and provide advice on diagnostic pathways.

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 7 – TO BE ABLE TO ADVISE ON APPROPRIATE INVESTIGATIONS IN TOXICOLOGY

In the absence of a dedicated clinical toxicology laboratory in Ireland, the Trainee is expected to gain knowledge on currently available laboratory methods (ethanol, salicylates, paracetamol) as well as the near-patient testing methods for illicit substances and their method limitations. It is desirable for the Trainee to gain knowledge on the state-of-the-art methods in toxicology (HPLC-MS/MS) by visiting one of the non-clinical toxicology laboratories in Ireland for additional insight (State Laboratory or HSE National Drug Treatment Centre in Pearse St.)

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 8 – TO BE ABLE TO ADVISE ON THERAPEUTIC DRUG MONITORING

The Trainee should be familiar with the principles of pharmacokinetics and its effects on half-life, dosage prediction of the commonly monitored medications (digoxin, lithium, antiepileptics, methotrexate, immunosuppressants, and antibiotics) as well as with metabolic effects/side-effects of drugs; *e.g.,* thyroid dysfunction with lithium or amiodarone.

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 9 – TO BE ABLE TO DIAGNOSE AND CONSULT ON ABNORMALITIES IN SERUM, URINE AND CSF PROTEINS

The Trainee should be able to understand the principles of measurement of serum proteins, their functions and properties (albumin, immunoglobulins, protease inhibitors, transport proteins, caeruloplasmin, clotting factors, complement, and hormone binding proteins) and be competent in diagnosis of hypoalbuminaemia, paraproteinaemias, cryoglobulinaemia as well as the acute phase response, immunoglobulin deficiencies, alpha-1-antitrypsin deficiency, cytokines . The Trainee should prove the ability to assess and appropriately interpret both gel and capillary serum protein electrophoresis, immunofixation and immunosubtraction as well as serum light chain analysis and demonstrate the ability to distinguish acute-phase changes from abnormalities due to underlying disease

The Trainee should be able to assess urine proteins in health and disease and interpret common laboratory tests for proteinuria. The Trainee should be able to interpret CSF protein analysis, for example in dementia screening.

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

OUTCOME 10 – TO BE ABLE TO DIAGNOSE AND CONSULT ON DETECTION OF PREGNANCY, BIOCHEMICAL CHANGES IN HEALTHY PREGNANCY AS WELL AS BIOMARKERS OF DISEASE IN PREGNANCY

The Trainee should be able to understand maternal and foetal physiology, detection of pregnancy as well as detection of pregnancy complications, including pre-eclampsia. The Trainee should be familiar with the physiological changes in reference ranges of common analytes in pregnancy as well as with the effects of pregnancy on existing disease. The Trainee should be well versed in assessment and management of hyperglycaemia in pregnancy and options for prenatal screening. The Trainee should understand the role of biochemistry testing in the assessment of fertility and assisted reproduction.

Training/Learning Opportunities
Clinic attendance/ appropriate ward rounds
Laboratory clinical liaison (review queue, clinical enquiry review)
Self-directed learning (Relevant text, guidance)
Study Days

Recommended Assessment Methods
Feedback opportunities (to include record of self-directed learning, where appropriate)
WBA
FRCPath Examination

Training Goal 3 – Establish and Maintain Laboratory and Clinical Services

By the end of HST Trainees will be able to contribute setting up new laboratory and clinical services and maintaining/managing such services.

OUTCOME 1 – TO BE PROFICIENT IN THE COMMISSIONING OF CHEMICAL PATHOLOGY SERVICES

The Trainee should understand the governance, resourcing and financing of laboratory services and demonstrate the ability to identify a service need and construct an appropriate business plan, while using resources effectively.

Training/Learning Opportunities
Contribution to service development (Case studies)
Audits (clinical & laboratory)
Business case writing and tender preparation and evaluation

Recommended Assessment Methods
Feedback opportunities
WBA

OUTCOME 2 – TO PARTICIPATE ACTIVELY IN MULTIDISCIPLINARY TEAM MEETINGS (MDT)

The Trainee should be able to actively convey clinical and laboratory knowledge in aid of patient management by serving as a bridge between the laboratory and the clinician colleagues, effectively interacting and contributing to improved patient outcomes.

Training/Learning Opportunities
Attending Multidisciplinary Team Meetings

Recommended Assessment Methods
Feedback opportunities
WBA

OUTCOME 3 – TO BE PROFICIENT IN CLINICAL LIAISON AND IN RESPONDING TO LABORATORY-RELATED QUERIES

The Trainee should learn to communicate effectively in liaison encounters, by learning to identify the caller and their relationship to the patient accurately, sharing patient information only when satisfied of appropriateness of the interaction and conveying appropriate clinical advice, possibly after a departmental discussion. Same scrutiny should be applied to laboratory-related queries with the focus always primarily on patient safety.

Training/Learning Opportunities
Case Recording

Recommended Assessment Methods
Feedback opportunities
WBA

OUTCOME 4 – TO BE PROFICIENT IN THE EVALUATION AND DEVELOPMENT OF LABORATORY AND CLINICAL SERVICES

The Trainee should demonstrate ability in performing an assessment of need, assessment of risk as well as root cause analysis. The Trainee should understand hospital and departmental governance, develop adequate people management skills, learn the principles of laboratory accreditation, and demonstrate efficiency in continuous improvement of laboratory and clinical services, by focusing first and foremost on improved patient outcomes and patient safety.

Training/Learning Opportunities
Case Recording
Attendance at quality and management meetings
Audits (clinical & laboratory)
QI Activities

Recommended Assessment Methods
Feedback opportunities
WBA

Training Goal 4 – Core Laboratory Skills in Chemical Pathology

By the end of HST Trainees are expected to demonstrate an understanding of factors affecting the operation and management of a clinical laboratory

OUTCOME 1 – DEMONSTRATE AN UNDERSTANDING OF TOTAL QUALITY MANAGEMENT IN A CHEMICAL PATHOLOGY LABORATORY, INCLUDING PROFICIENCY IN THE UNDERSTANDING AND PROVISION OF QUALITY ASSURANCE (INTERNAL QUALITY CONTROL, IQC, AND EXTERNAL QUALITY ASSESSMENT, EQA)

The Trainee should understand the laboratory quality management system, the roles of various personnel members, principles of assessment and management of risk. The Trainee demonstrate aptitude in interpreting internal quality control and external quality assurance reports, assessing non-conformances and their clinical risk, root cause analysis and remedial action.

Training/Learning Opportunities
Laboratory Activities

Recommended Assessment Methods
Feedback opportunities
WBA

OUTCOME 2 – DEMONSTRATE AN UNDERSTANDING OF BASIC AUTOMATED AND SPECIALIST TECHNIQUES, METHODS, AND PROCESSES RELEVANT TO CHEMICAL PATHOLOGY

The Trainee should be able to describe the whole pre-analytical, analytical, and post-analytical process from sample requirement and collection, including order of draw, transport and arrival to the lab, automated laboratory processes, laboratory information technology. The Trainee should understand the sources of common laboratory errors and interferences.

Training/Learning Opportunities
Laboratory Activities

Recommended Assessment Methods
Feedback opportunities
WBA including DOPS

OUTCOME 3 – TO BE PROFICIENT IN CALCULATIONS AND STATISTICAL METHODS USED IN A CHEMICAL PATHOLOGY LABORATORY

The Trainee should be proficient in statistics to understand methods for collecting, analysing, interpreting, and presenting empirical data underpinning method validation and verification as well as quality assessment.

Training/Learning Opportunities
Laboratory Activities
Statistics course

Recommended Assessment Methods
Feedback opportunities
WBA

OUTCOME 4 – TO BE PROFICIENT IN THE VALIDATION AND VERIFICATION OF AUTOMATED AND SPECIALIST METHODS IN GENERAL CHEMICAL PATHOLOGY INCLUDING NEAR-PATIENT TESTING

The Trainee needs to be able to oversee planning and performance of validation/verification experiments, including precision and accuracy assessment, limits of detection and quantitation, recovery and interference assessments, application of appropriate reference intervals, implementation of metrological traceability, use of international reference preparations, calibrants, controls with assigned values, and external quality assurance specimens with unknown values.

Training/Learning Opportunities
Laboratory Activities
Yearly accreditation process

Recommended Assessment Methods
Feedback opportunities
WBA

OUTCOME 5 – TO BE FAMILIAR WITH DISCIPLINE SPECIFIC MEDICO-LEGAL AND ETHICAL MATTERS E.G. CHAIN OF CUSTODY

The Trainee needs to be familiar with the legal framework required for processing of forensic samples (chain of custody.)

Training/Learning Opportunities
Laboratory Activities
Visit to State Laboratory or HSE National Drug Treatment Centre in Pearse St

Recommended Assessment Methods
Feedback opportunities
WBA

Training Goal 5 – Clinical Application of Specialist Methods and Services in Chemical Pathology

By the end of HST Trainees will be able to interpret and evaluate data produced in the laboratory by specialist methods, and apply this to patient care appropriately.

Outcome 1 – To be proficient in the clinical application of mass spectrometry

The Trainee should be able to understand the theory behind the analytical method of mass spectrometry and various separation techniques used with it (high performance liquid chromatography, gas chromatography, inductively coupled plasma MS…) as well as ways to identify interferences and resolve reporting issues.

Training/Learning Opportunities
Laboratory Activities/Result interpretation related to mass spectrometry
Self-directed learning
Clinic attendance
Attendance at appropriate courses

Recommended Assessment Methods
Feedback opportunities
WBA

Outcome 2 – To be proficient in the clinical application of chromatography

The Trainee should be able to understand the theory behind the analytical method of chromatography (thin-layer, gas, ion exchange, HPLC *etc.*,) and its application in clinical use.

Training/Learning Opportunities
Laboratory Activities/Result interpretation related to chromatography
Self-directed learning
Clinic attendance
Attendance at appropriate courses

Recommended Assessment Methods
Feedback opportunities
WBA

Outcome 3 – To be proficient in the clinical application of screening tests in Chemical Pathology including newborn screening

The Trainee should be proficient in understanding the principles behind screening programmes, principles of primary and secondary prevention, regulation of screening programmes in Ireland, including newborn screening and national bowel screening. The Trainee should be able to advise on investigation and management of hyperlipidaemia, including cascade screening in case of familial hypercholesterolaemia. The Trainee should understand the technology behind newborn screening and the public health repercussions of it. The Trainee should be familiar with clinical and biochemical investigations in screening for diabetes complications.

Training/Learning Opportunities
Laboratory Activities/Result interpretation related to screening tests

Clinic attendance
Self-directed learning
Attendance at appropriate courses

Recommended Assessment Methods
Feedback opportunities
WBA

OUTCOME 4 – TO BE PROFICIENT IN THE CLINICAL APPLICATION OF MOLECULAR DIAGNOSTIC TESTING

The Trainee should understand the basic principles of genetics and molecular diagnostic testing, including inheritance and penetrance models, and be familiar with methods for targeted and whole-genome sequencing, e.g., PCR, Sanger, DNA arrays whole-genome and whole-exome sequencing. The Trainee should understand the process of genetic variant classification and the methods available to test variant pathogenicity. The Trainee should be familiar with the application of bioinformatics, in particular, creating and clinically interpreting genome sequencing data.

Training/Learning Opportunities
Laboratory Activities/Result interpretation related to molecular diagnostic
Clinic attendance
Self-directed learning
Attendance at appropriate courses

Recommended Assessment Methods
Feedback opportunities
WBA

Training Goal 6 – Management and Leadership in Chemical Pathology including Clinical Risk Management

By the end of HST Trainees are expected to demonstrate ability to lead a high quality chemical pathology laboratory, focused on provision of patient care, with a strong emphasis on research and development.

OUTCOME 1 – TO BE ABLE TO PROVIDE CLINICAL LEADERSHIP FOR CHEMICAL PATHOLOGY LABORATORY SERVICES

The Trainee should aim to identify their own leadership style and develop it through application of academic rigour, practical experience and in-depth self-analysis by getting involved in leading projects in the laboratory appropriate to the stage of training.

Training/Learning Opportunities
Preparing and chairing meetings (depending on the stage of training)
Presentations
Teaching
Audit
RCPI Mandatory Teaching

Recommended Assessment Methods
Feedback opportunities
WBA

OUTCOME 2 – TO BE PROFICIENT IN CHEMICAL PATHOLOGY LABORATORY ACCREDITATION

The Trainee should demonstrate understanding of the role of accreditation in ensuring quality of laboratory service and results and be familiar with current Irish National Accreditation Board standards (ISO 15189:2022).

Training/Learning Opportunities
Participation in laboratory accreditation
Regular attendance at quality meetings in chemical pathology laboratory and near-patient testing department
RCPI Mandatory Teaching

Recommended Assessment Methods
Regular Informal feedback
WBA

OUTCOME 3 – TO BE ABLE TO MAINTAIN AND SAFELY MANAGE A CHEMICAL PATHOLOGY LABORATORY

The Trainee should be familiar with health and safety legislation in Ireland and its application in the chemical pathology laboratory.

Training/Learning Opportunities
Laboratory Activities (laboratory management meetings and whole-department management meetings)
RCPI Mandatory Teaching
Mandatory HSE courses in chemical handling

Recommended Assessment Methods
Feedback opportunities
WBA

OUTCOME 4 – TO BE ABLE TO CRITICALLY APPRAISE RELEVANT PEER-REVIEWED LITERATURE AND WRITE CONCISE CASE REPORTS AND RESEARCH ARTICLES.

The Trainee should become skilled in critical appraisal and scientific writing, focusing on publishing in peer-reviewed journals.

Training/Learning Opportunities
Research activities
Journal clubs
Study days
Grand rounds

Recommended Assessment Methods
Feedback opportunities
WBA
FRCPath Part 2 Module 2

5. 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.

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

RCPI Taught Programme

The new 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.

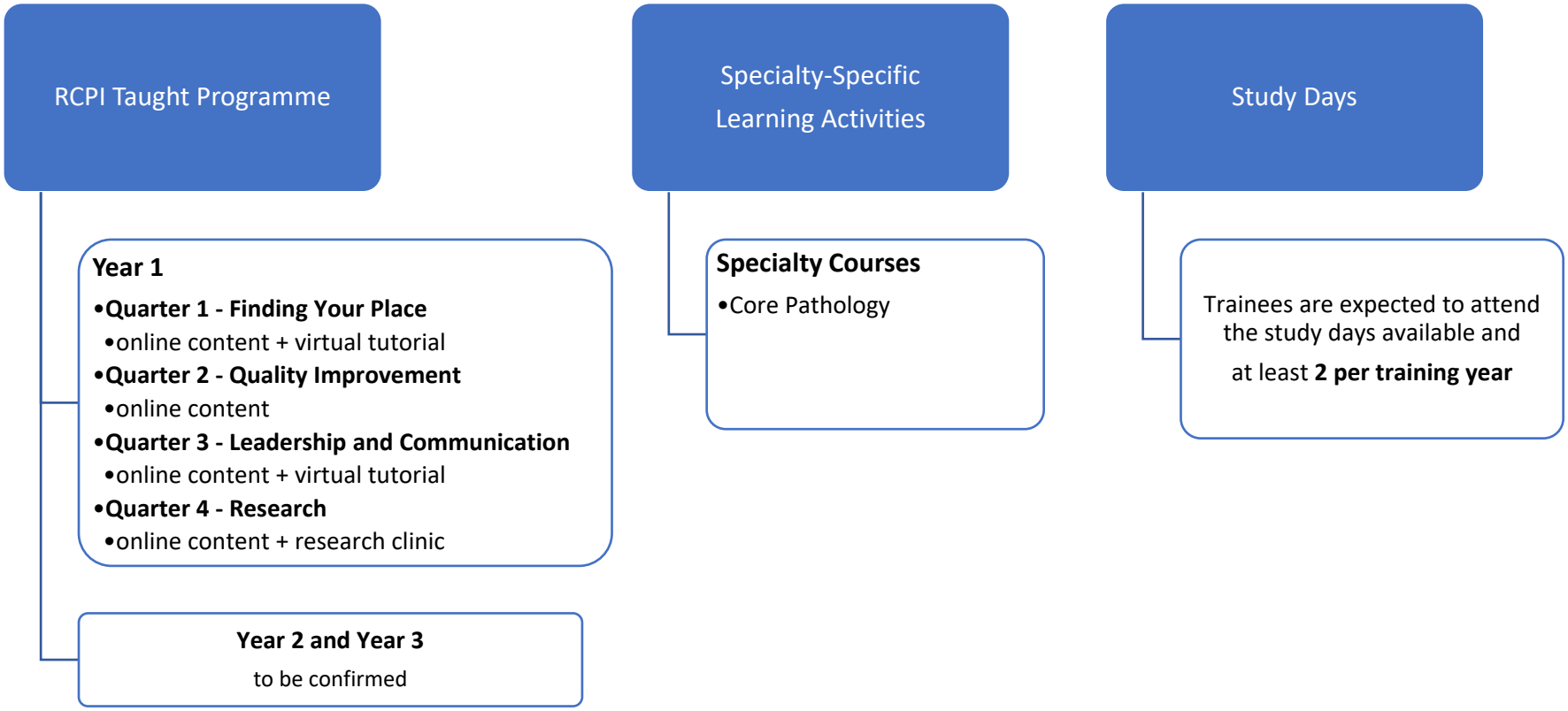
Trainees should always refer to their training Curriculum for a full list of requirements for their HST programme. When not sure, Trainees should contact their Programme Coordinator.

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 2 per training year**.

Chemical Pathology Teaching Attendance Requirements



Recommended Reading

- Tietz Textbook of Clinical Chemistry and Molecular Diagnostics
- Crook, MA. Clinical Biochemistry and Metabolic Medicine, 2012
- Deacon's Calculations in Laboratory Science
- Clinical Biochemistry: Metabolic and Clinical Aspects 3rd Ed. WJ Marshall, M Lapsley, AP Day, RM Ayling