

(A) INTRODUCTION

Definition

This training programme outlines the requirements and guidelines for the training and eventual graduation of a Consultant Chemical Pathologist.

Objective(s) of Training

The objective is to train chemical pathologists

- to lead and manage a reliable clinical chemistry laboratory
- to effectively contribute the investigation and management of patients, especially in the area of metabolic medicine.

By end of the training, trainee is expected to acquire comprehensive skills and knowledge in:

a. Specialized factual knowledge of:

- biochemistry, physiology & general pathology
- the biochemical basis of disease
- the application of results of laboratory tests to the investigation and management of patients, particularly those with biochemical problems,
- analytical techniques,
- efficient laboratory administration and management,
- the investigation of clinical and laboratory problems.

b. Interpretative skills

so that a clinically useful opinion can be derived from laboratory data.

c. Technical knowledge

gained from close acquaintance with laboratory technology, so that methodology appropriate to a clinical problem can be chosen, and so that quality control and quality assurance procedures can be implemented.

d. Data Management skills

To evaluate information derived from the population served and from the technical procedures applied in the laboratory. These skills should include familiarity with IT and the use of spreadsheets, databases and statistical packages etc.

e. Familiarity with all aspects of health and safety requirements for laboratories.

f. Management and communication skills

The trainee must gain experience, under supervision, in planning departmental policies and develop the leadership skills necessary to implement them.

g. Research and development experience

Original thought and critical assessment of published work are important to allow the trainee to contribute in a team, and individually, to the development of the service.

(B) PROGRAMME OVERVIEW

Traineeship Duration for Seamless Training

5 years

(C) ADMISSION REQUIREMENTS

Entry Criteria/ Pre-requisites

Applicants must fulfill the following entry criteria/ pre-requisites as stated below:

Prior to commencing specialist training, trainees should have completed

1. at least one year of pre-registration experience (Housemanship)
2. following qualification as a medical practitioner; at least one year of post-Housemanship experience, with preferably six months in a surgical discipline.

(D) TRAINING SYLLABUS

In lieu of a Singapore-based exit examination in Chemical Pathology, the training programme is based on the training requirements for preparing the medical trainee to attempt either

1. the Fellowship examinations, FRCPA (Pathological Sciences, Part I and Part II) of the Royal College of Pathologists of Australasia, or
2. the Fellowship examinations, FRCPath (Part 1 and Part 2) of the Royal College of Pathologists, UK

For either scheme, the training will generally be over a period of 5 years.

FRCPA training and examination track

The RCPA Trainee Handbook, available on the college website, contains updated information on:

- Details and Format of the examination process
- Knowledge and Experience to be attained in Chemical Pathology
- Table of Tasks, Learning Outcomes, Activities and Assessment in Chemical Pathology

1. FRCPA Pathological Sciences

This is to be taken by end of second year of training. The trainee should have a deep understanding of the scientific basis of pathological practice and basic mechanism of disease processes. He must also be familiar with the areas of advancing knowledge in the practice of pathology.

2. FRCPA Part I Examination

The trainee is expected to take this examination at the end of the third year of training. By then he should have a sound understanding of and practical familiarity with:

- a. The instruments, techniques and analytical procedures being performed in an approved laboratory

He must be familiar with the use, method of analysis, analytical procedure and interpretation of all tests commonly performed in the clinical chemistry laboratory. In addition he must be aware of the commonly performed tests and developments in this area, relating to alternative methods of analysis, new instrumentation and new tests.

The trainee's technical knowledge and practical competence should be of a standard such that the non-medical laboratory staff will both seek and value their advice on technical matters. He should not only be

familiar with the equipment within their own laboratory, but also be aware of recent advances in laboratory instrumentation.

- b. The interpretation of laboratory results with respect to both the patient's disease and test reliability.

The trainee must be skilled at interpreting laboratory data, particularly as they contribute to the solving of clinical problems. These skills can only be gained through involvement at the laboratory – clinical interface, with experience in co-operating with clinical staff in the investigation and management of patients. He should know when it is appropriate to initiate clinical contact on the basis of abnormal laboratory results as well as being receptive to enquiries from the clinical staff.

- c. Laboratory Management

Knowledge of the administration of the laboratory so that it can operate efficiently and effectively will be expected. Topics such as staff relationships, motivation and training, laboratory safety, equipment and chemical purchasing, budgets, allocation of resources, and forward planning should be covered.

- d. Research

It is expected that he will have undertaken some original investigative work during this period of training, and have been peripherally involved in a number of other research projects. He is encouraged to present formal papers at recognised conferences and to publish his original research work.

3. FRCPA Part II Examination

The trainee is expected to take the part II examination at the end of the fifth year of training. The trainee should refer to the RCPA website and RCPA Trainee Handbook for updated information regarding requirements for submissions of case write-ups and review papers on topics nominated by the Chief Examiner.

By the end of advanced training, the trainee should have a thorough and deeper understanding of chemical pathology as applied to the clinical situation. The Part II exam moves from technical/scientific elements to an integration of this knowledge with clinical and managerial elements. The scientific/technical elements are assumed to be in place, and will not be further examined except in the context of addressing a particular clinical problem. The ultimate goal of this examination is to determine whether the candidate has the knowledge, skills and communication ability necessary to function as a consultant.

FRCPath (Chemical Pathology) training and examination track

The examination is the appropriate professional qualification for medical trainees to progress to the Certificate of Completion of Specialist Training (CCST) in Chemical Pathology, to ultimately enable them to practise chemical pathology at consultant or consultant-equivalent level and to acquire management skills sufficient to lead a department, thereby ensuring that they are able to provide a competent, effective service so that maximum benefit may be gained for patient care.

Trainees are advised to refer to the College website on www.rcpath.org.uk

The FRCPath examination is a key assessment tool (but not the only one) used at 3 stages of training.

After registration there will be a period of General Specialist Training (GST) before entering Higher Specialist Training (HST), of not less than one year and not more than three years. The Part 1 FRCPath should be taken after a minimum of three years' training of which two years should be in HST. The Part 2 (Written Option) is taken between the 2nd and 4th year of HST and the Part 2 (Oral) examination is taken at 4 to 5 years of HST. The CCST will be awarded on the recommendation of the College, normally following the attainment of the College's membership and satisfactory completion of training.

1. FRCPath Part 1 Examination

The trainee is expected to take this examination at around 2 years of HST and will be assessed on the following:

- Core knowledge base
- Basic Laboratory Skills
- Integration of laboratory data with clinical situations

The core curriculum is published by the College Advisory Training Team (CATT) for Clinical Biochemistry. Broad topic areas include:

- Laboratory management competencies
- Analytical techniques and instrumentation
- Analytical methodology
- The chemical pathology of disease – biochemical basis, diagnosis and principles of management, and the basis of metabolic medicine

The examination comprises written papers, practical papers and an oral examination.

2. FRCPath Part 2 (Written Option)

The trainee is expected to take this examination between the 2nd and 4th years of HST and will be assessed on the following:

- a. Ability to formulate questions that can be answered by laboratory means
- b. Ability to undertake self-directed laboratory work
- c. Ability to write up work in standard scientific format

The examination is in the form of either a dissertation, portfolio of papers or evidence of a higher degree.

3. FRCPath Part 2 (Oral) Examination

The trainee is expected to take this examination between years at 4 to 5 years of HST and will be assessed on the following:

- a. Clinical patient management (Medical)
- b. Laboratory problem solving (Scientist)
- c. Laboratory management
- d. Readiness for independent practice

The examination is in the form of a prepared and extended oral examination.

Other Training Requirements

1. Teaching

The AST will be expected to take an active part in teaching of Nurses, undergraduates and Medical Officers.

2. Clinical Rotations

Clinical Rotations are an essential part of training in Chemical Pathology and trainees should be involved in clinical rotations, keeping in view RCPA and RCPATH requirements.

3. Research and Presentations

The AST will present posters and free paper publications of research projects at local, regional and international relevant meetings.

(E) INSTITUTIONAL REQUIREMENTS (FACILITIES & RESOURCES)

- The Pathology Department should see a full range of elective and emergency surgical cases.
- There should be a 24-hour Emergency Department.
- There should be intensive care facilities.
- There should be adequate paraclinical support.
- There should be adequate trained staff, including full-time chemical pathologists.
- The hospital must have library with a wide range of appropriate journals and medical texts.
- On-line access should be provided.
- There should be regular journal clubs, joint conferences and audit reviews.

(F) SUPERVISION OF TRAINEES

All AST trainees will be supervised by a designated consultant/ supervisor but in general all the consultant staff will be duty bound to take an active part in teaching. Assessment of progress and log should take place at least 6 monthly.

The supervisors should be full-time and in full Practice.

Advanced Specialist Trainees (4th and 5th year trainees) can be appointed to supervise Basic Specialist Trainees (1st and 2nd year trainees) as they would have just completed their intermediate examinations and could impart their knowledge to their juniors. However, formal appointment of ASTs as supervisors for BSTs should only be carried out if the current supervisor to supervisee ratio could not be met. In addition, appointed ASTs will only be allowed to supervise 1 BST at any one time.

For departments with ASTs as supervisors, the AST's supervisor would be the Countersigning Officer for the BST supervised by the AST. In this arrangement, specialist-supervisors (consultant / senior consultants) would be allowed to supervise up to 3 trainees concurrently, with a ratio of 1 AST and 2 BSTs

Associate Consultants/supervisor may supervise up to a maximum of 2 BSTs or 1 BST and 1 AST (with minimum of 2 years' training gap eg. First year Associate Consultant may supervise 1st year AST.

(G) ASSESSMENT AND FEEDBACK

Logbook

All trainees are expected to keep a log book which will be reviewed on a monthly basis by the main supervisor. The log book will have a record of cases managed or consulted. Notes should be made regarding difficult or complicated cases. CME activities should also be recorded.

All other teaching experiences e.g. conferences, seminars, papers presented should also be recorded.

Assessment and Feedback

Trainees are appraised 6 monthly.

During the appraisal, interviews with the trainees should be conducted to ensure that the training objectives for each rotation have been adequately met, as well as to monitor for any difficulties in workload and training activities. Feedback forms should also be provided at the end of each posting, and the programme supervisor is responsible for collating the results and instituting the appropriate changes to the training programmes. The time and effort committed by an AST towards supervising a BST should be taken into account in the appraisal of the appointed AST.

(H) EXIT EXAMINATION

In lieu of a Singapore-based exit examination in Chemical Pathology, the proposed training programme is based on the training requirements for preparing the medical trainee to attempt either

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For either scheme, the training will generally be over a period of 5 years.

Exit Examination Format

FRCPA training and examination track

Complete FRCPA Part II Examination.

Submission of case write-ups and review papers are a component of the Part II examination. The trainee should refer to the RCPA website and RCPA Trainee Handbook for updated information regarding requirements for submissions of case write-ups and review papers on topics nominated by the Chief Examiner.

FRCPath training and examination track

Complete FRCPath Part 2 Examination.

Complete the research required for the Part 2 examination. The trainee should refer to the College website on www.rcpath.org.uk

(I) GENERAL GUIDELINES

Please refer to Annex 1 for General JCST Guidelines on the following :

- Leave Guidelines
- Training Deliverables
- Retrospective Recognition
- Changes to Training Period
- Part-time Training
- Overseas Training
- Withdrawal of Traineeship
- Exit Certification

(J) APPLICATION FOR SEAMLESS TRAINEESHIP

Eligible doctors may enquire with the Joint Committee on Specialist Training (JCST) Secretariat on the next Seamless intake exercise.

Shortlisted applicants will be required to attend an interview.

All successful applicants will be issued with an offer letter of traineeship and are required to revert with their acceptance of traineeship offer to JCST. All successful applicants must be formally registered as a Trainee with the JCST Secretariat prior to commencement of traineeship.