

# OMAN MEDICAL SPECIALTY BOARD



المجلس العماني للإختصاصات الطبية  
OMAN MEDICAL SPECIALTY BOARD

# ***HISTOPATHOLOGY***

**RESIDENCY TRAINING PROGRAM**

**CURRICULUM**

**2007-2008**

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## **VISION**

The residency programme in Histopathology aspires to produce histopathologists of international standard whose main function will be to provide state of the art diagnostic service in surgical pathology to support patient care. By continuing professional development and through research in the field, these pathologists will also contribute to keep the standard of the health care system of the country.

## **MISSION**

Residency programme in Histopathology intends primarily to prepare Omani medical graduates to become medical experts in the field of Histopathology and Cytopathology, dedicated to patient care.

The training will be designed in such a way that the residents will also be good communicators, collaborators with problem solving skills and laboratory managers well versed in total quality management of clinical laboratories.

At the end of the programme, Sultanate of Oman will have specialists committed to scholarly practice of Pathology observing medical ethics and dedicated to lifelong learning and development of the country's health care.

## **GENERAL OBJECTIVES**

At the end of the programme, the resident should be competent to undertake responsibilities in Histopathology Laboratory Services with regard to the following:

- I. Develop knowledge and skills in diagnostic histo-cytopathology to:
  - Identify and differentiate visual clues to independently report on routine histopathology samples including frozen sections and on cytopathology samples.
  - Be able to choose, limit and interpret further tests such as histochemistry, immunohistochemistry, electron microscopy, cytogenetics, etc. to the right sample.
  - Offer expert opinion or guidance on patient management to clinician through multi-disciplinary meetings.
  - Offer guidance regarding choice of and limitations of biopsy material.
  - Perform autopsies, identify gross and microscopic abnormalities, interpret them to find cause of death.
  - Be able to take photographs including photomicrography.
  - Know self limitations and when to seek second opinion for safe medical practice.
  
- II. Develop sufficient knowledge in laboratory procedures to:
  - Have thorough knowledge regarding basic laboratory procedures, special techniques including histo- and immuno-histochemical stains and immunofluorescent techniques.
  - Be able to troubleshoot problems in accession, staining/artifact etc to ensure high quality material for interpretation and reporting.
  
- III. Develop skills and attitude to be a good communicator to:
  - Maintain good interpersonal relationship
  - Be able to work as part of a team
  - Discuss with clinicians on patient care
  
- IV. Develop teaching skills and skills for research activities to:
  - Teach and conduct practical demonstrations for undergraduate students.
  - Learn to conduct slide seminars among peers and juniors.

- Be able to conduct short projects under supervision and to write case reports and scientific papers.
- V. Develop skills in information technology with special emphasis on its application in laboratory and hospital to:
- Develop basic skills in handling and using Hospital Information System related computer system (HIMS) as well as personal computers for preparing data, charts, presentations by power point, digital photomicrography and storage, internet search etc.
  - Know and understand telepathology
- VI. Procure basic knowledge on ethical and legal aspects pertaining to clinical practice to:
- Know the rules and regulations pertaining to the country and its culture.
  - Understand the emotional and practical implications of a diagnosis on a patient.
  - Conduct oneself according to the social norms of the country.
- VII. The ability to be a good laboratory manager to:
- Manage staff by learning to assess manpower, to write job description and to organize staff pattern.
  - Manage stock/equipments by developing knowledge in indenting materials and equipments, in choosing and calibrating equipments and in preventive maintenance.
  - Maintain health and safety in the laboratory.
  - Supervise quality control activities and audits.

## **SPECIALTY ADMISSION REQUIREMENTS**

1. A medical degree (MD/MBBS) or equivalent
2. Successful completion of rotation internship for 12 months or according to prevailing rules
3. Passing an admission examination/interview
4. Provision of names of two consultant physicians as referees
5. Provision of a letter to join full time training, for the whole period of the program (5 years)
6. Signed statement for the candidate to comply with rules and regulations of the training program of Oman Medical Specialty Board

# **STRUCTURE OF THE TRAINING PROGRAM**

## **Duration of the Program**

The duration of the program is 5 years

## **General Outline of Rotations**

65 Blocks for 5 Years

Each Block = 4 Weeks = 28 Days

Each year, four (4) weeks Annual Leave + one (1) week Study leave as per OMSB by-laws.

### **For R1:**

|                          |          |
|--------------------------|----------|
| Surgical Pathology       | 23 weeks |
| Basic Laboratory Methods | 4 weeks  |
| Cytopathology            | 8 weeks  |
| Hematology               | 6 weeks  |
| Biochemistry             | 2 weeks  |
| Microbiology             | 4 weeks  |
| <b>Total of 47 weeks</b> |          |

### **For R2:**

|                              |          |
|------------------------------|----------|
| Surgical Pathology (Routine) | 26 weeks |
| Autopsy                      | 8 weeks  |
| Cytology                     | 12 weeks |
| <b>Total of 46 weeks</b>     |          |

### **For R3:**

|                          |          |
|--------------------------|----------|
| Surgical Pathology       | 22 weeks |
| Medical Autopsy          | 8 weeks  |
| Cytology                 | 16 weeks |
| <b>Total of 46 weeks</b> |          |

### **For R4 and R5:**

|  |          |
|--|----------|
| Surgical Pathology<br>(including Elective courses) | 30 weeks |
| Cytology   | 16 weeks |
| <b>Total of 46 weeks</b>                           |          |

# **Specific Objectives of Each Rotation**

## **Objective of Year 1**

### 1. General Pathology

I. a.) Be able to possess a basic level of knowledge with regard to common diseases under the following headings:

- Epidemiology
- Aetiology
- Pathogenesis
- Clinical Features
- Natural History
- Management options
- Major complications of therapy

b.) To have basic knowledge of the utility of molecular pathology and cytogenetics in surgical pathology diagnosis; and to identify areas where such procedures are required for diagnosis

### II. Laboratory Procedures in Histopathology

a.) Sufficient knowledge in the basic staining techniques used in the lab (H&E, Special stains i.e. histochemical stains, immunohistochemistry using the common antibodies, Fluorescence, Electron microscopy)

b.) To have sufficient practical experience in using the microtome for section cutting

c.) To have sufficient practical experience in using the cryostat

d.) Knowledge in gross pathology:

- Proper specimen handling (observation for a period of 2 weeks.)
- Open fresh and fixed specimens
- Know where and how to obtain fresh tissue for touch preparation, freezing, EM etc
- Inking of excision margins
- Be able to describe and take appropriate blocks for histopathological examination.

### III. Knowledge in microscopy:

- Know how to set up a microscope correctly with ordinary light, polarization and dark field illumination
- Recognize normal histology and normal variations of common tissue types
- Familiarity with basic immunohistochemical markers for major tissue and tumour types and interpretation of a basic panel of immunohistochemical markers on undifferentiated tumour
- Be able to diagnose by tissue morphology the common disease seen in the laboratory e.g. Acute appendicitis, tuberculosis, chronic cholecystitis, phases of endometrial cycle, products of conception, features of malignant tumours, common benign tumours e.g. Fibroadenomas, polyps etc.

## 2. Biochemistry

### **Objectives:**

OMSB trainees in histopathology will be enrolled in two weeks training period at the department of chemical pathology (Royal Hospital or SQUH). At the end of the programme, the candidates should have:

- a sufficient knowledge of various tumour markers and paraneoplastic syndrome
- a good background of certain topics such as assessment of organ function, investigations of endocrine disorders, infertility, and indicators of anaemia

### **Learning activities:**

- to have an approach to the laboratory structure as a model of referral laboratory in tertiary care hospital
- to have a background knowledge the methodology and analytic basis of tumour markers, hormones and paraproteins

### **Attitude:**

They should be aware of indicators of tests

## 3. Haematology

### **Objectives:**

At the end of one month training in haematology, the trainee should be able to:

- a. Identify normal blood cells in a peripheral smear
- b. Identify the following abnormal haematological conditions in a peripheral smear:
  - i.) iron deficiency anemia, G6PD deficiency, Thalassemia, Sickle Cell Disease, Leukaemias
  - ii.) haemolytic – AIHA, HS, Microangiopathies
  - iii.) Thrombocytopenia
- c. Interpret a normal and abnormal automated complete blood count (CBC) results
- d. Identify common parasites in a blood film
- e. Interpret normal and abnormal bone marrow aspirate especially in the following conditions:
  - Leukaemia/lymphoma
  - Myeloproliferative disease
  - MDS
  - Myeloma
- f. Explain the principles of flow cytometry and its usefulness in the diagnosis of leukaemia
- g. Understand the ABO and Rh, MNS, blood groups, cross matching principles and their relevance in blood transfusion reaction
- h. Know the principles and relevance of Coombs' test.
- i. Know the importance of antibody screening.

#### 4. Microbiology

##### **Objectives:**

At the end of the course, the candidate should have the basic knowledge of common infected agents.

- Bacteria: their structure, gross characteristics and their antibiotics susceptibilities.
- Viruses: diagnostic methods of viral infection
- Fungi: common fungi of clinical importance for example Candida
- Helminthic infections
- Mode of transmission of common infections
- An overview of the common organisms implicated in hospital infections and methods of combating this, for example a typical Mycobacteria, Cytomegalovirus, Pneumocystis carinii, etc.
- Basic knowledge of some serological tests: agglutination, ELISA, Immunofluorescens.

##### **Learning Activities:**

The candidate should be able to handle specimens received in the microbiology laboratory taking precautions of cross infections and advise with regards to sample collection and transport. They should be able also to identify common cultures seen in day to day practice and know how to do common used stains. For example Grams, ZN, etc.

##### **Attitude:**

They should be aware of the implications in diagnosing infections / transmissible / communicable diseases and its impact on the patients

### **Objective of Year 2**

#### 1. Surgical Pathology

- To have adequate knowledge of normal histology and anatomy
- To be able to describe grossly both small and large specimen
- To be able to perform cut-ups of most specimens and to seek supervision for appropriate samples
- To be able to photograph certain specimens
- To have adequate knowledge of common pathological lesions, be able to write good microscopic description and arrive to conclusion
- To be able to describe adequately and formulate a list of differential diagnoses in difficult cases
- To be able to use relevant histochemical stains for appropriate cases
- To have knowledge of indications and interpretation of immunohistochemistry
- To be able to incorporate certain points in pathology report relevant for patient management
- To have sufficient knowledge of health and safety precautions within the department
- To understand recognized classification of staging for common malignant tumours like TNM staging.

## 2. Cytology

- To be familiar with cytology preparation techniques (cytospin, filters, cell block, stains and thinprep)
- To have knowledge of the criteria of satisfactory and unsatisfactory specimens
- To be able to identify an abnormal Cervical smears and diagnose inflammatory and pinpoint premalignant and malignant conditions
- To begin screening of non-gynecological, including sputum, bronchal washing, brushing and lavage, body fluids and urine cytology and then discuss them with trainers

## 3. Forensic Pathology

- To attend autopsy in Royal Oman Police Hospital mortuary
- To acquire skills and knowledge in forensic autopsy
- To perform ten autopsies
- To be able to interpret gross pathology on table
- To be able to correlate findings in order to reach to direct cause of death
- To be able to select tissue for microscopically examination
- To have knowledge of sufficient pathology of sudden unexpected natural deaths
- To commence research project
- To develop program and skills for practice problem based learning
- To have adequate knowledge of using computers
- To understand web base information retrieval
- To participate in quality assurance meeting (internal and external programs)

## **Objective of Year 3**

### 1. Surgical Pathology

- To have comprehensive knowledge of surgical pathology
- To formulate comprehensive differential diagnoses for most cases and to understand the clinical relevance of these differential diagnoses
- Writing up of surgical reports, including accurate microscopic description diagnosis and incorporating of information of relevance to patient management
- Able to perform frozen sections and provide a diagnosis to the clinician with the attending pathologist
- Knowledge of the uses of and indication for special techniques such as immunohistochemistry, immunofluorescence, EM and molecular pathology
- Attend or make presentation at departmental or hospital clinical multidisciplinary meetings

### 2. Cytology

- Have knowledge of criteria for satisfactory and unsatisfactory specimen
- Be familiar with cytological preparatory techniques (cytospin, filter, Cell block, stain and liquid based cytopreparation)
- Be able to identify an abnormal Cervical smear and diagnose inflammatory, premalignant and malignant condition
- To know basic interpretation of non-gynaecological cytology as in R2 and including fine needle aspirate

3. EM
  - Be able to understand the principles of EM and how tissue is prepared for E/M assessment
  - Understand and recognize the tissue specific features on E/M
4. Communicator / Scholar / Professional / Manager
  - Commence research project
  - Understand electronic and web based information retrieval
  - Develop program and skills for practice based learning and improvement
  - Understand Laboratory management, cost effectiveness, safety, Compliance
  - Understand professional ethics and ethics related to human tissue and research
  - Understand quality assurance and quality control.
5. Autopsy
  - Be able to perform an autopsy and produce report including macroscopic and microscopic description (External elective)
6. Examination
  - Complete part I examination in histopathology

### **Objective of Year 4**

1. Surgical Pathology
  - To have completed systematic study of all major tissue systems
  - Have a good understanding of normal and abnormal pathology, common and rare diseases including epidemiology, pathology and special techniques required for diagnosis and prognosis
2. Cytology
  - Be able to confidently interpret both gynaec and non-gynaec cytology including effusions, urine, bronchial washing and brushes and FNA cytology
3. EM & Molecular Pathology
  - Consolidate above knowledge
  - External elective on molecular pathology
4. Communicator / scholar / professional / manager
  - Build on skills developed previously
  - Continue working on research project
  - Write at least one case report

### **Objective of Year 5**

1. Surgical Pathology
  - At the end of training programme, the resident would be expected to independently report all surgical specimens
  - Recognize one's limitations and seek appropriate consultation when required
  - Understand the clinical implications (treatment and legal) of any pathology report
  - Promptly and accurately perform frozen sections and make a diagnosis
  - Independently evaluate immuno-peroxidase stains, immuno- fluorescence

2. Cytology
  - Independently report all cytopathology specimen
3. EM
  - Be able to assess both surgical and cytopathology specimens and in particular be able to assess electron microscopy of renal specimens
4. Communicator / scholar / professional / manager
  - To have completed a research task and presented it to members of scientific meeting of Histopathology
  - Complete understand of accreditation, quality control and quality assurance
  - Undertake to present independently at clinicopathological meetings and conferences
5. Examination
  - Complete Part II examination, in histopathology

## **GRADED RESPONSIBILITIES FOR EACH ACADEMIC YEAR**

### **Year 1**

- To be involved in the processing of surgical specimens and staining methods
- Write reports on simple routine cases
- Learn the importance of ancillary tests
- Be aware of different resource materials and how to use them
- Start basic preparation for Part I

### **Year 2**

- To do surgical cut up of simple cases, and larger resections under supervision
- To write microscopy reports of the commonly received specimens
- To learn to use the appropriate ancillary tests, and interpretation of the same
- To attend frozen sections
- To learn basics in cytology
- To attend CME programmes, conferences, prepare short presentations
- To prepare systematically for Part I

### **Year 3**

- Independently do cut up on incisional biopsies and resected (large) specimens
- Write microscopy reports of the grossed sections and sign out with the supervising reporting pathologist
- Initiate and interpret special procedures such as special stain, and immunohistochemistry
- Report on cytology with pathologist
- Develop an understanding of usefulness of molecular biology, cytogenetic and electron microscope
- Take part on research in conjunction with the pathologists
- Attend CPD meeting, conference, prepare presentation
- Complete Part I examination on histopathology

### **Year 4**

- Perform surgical cut up and report and sign out routine cases. Difficult and malignant cases consult the supervising pathologist for reporting
- Initiate and interpret special stains and immunohistochemistry
- Perform frozen section and prepare specimens for immediate diagnosis
- Report daily cytology (gynaec and non-gynaec cases during cytology rotation)
- To be involved in quality control
- Consolidate your knowledge on molecular pathology, cytogenetics and flow cytometry
- Continue with the research
- Present and attend CME, clinicopathological meetings and histopathology /cytopathology conference

## **Year 5**

- Independently report all surgical specimens which will then be countersigned by the trainers
- Perform on frozen section and report to clinician under supervision of pathologist
- Independently report all cytology reports which will then be countersigned by the trainers
- Independently evaluate immunohistochemical markers and immunofluorescent antibodies
- Complete the assigned research in a written format for presentation/publication
- Attend relevant meetings, conferences, etc.
- Complete Part II examination in histopathology

## **Teaching Methods**

During each rotation, the trainee will be exposed by the trainers to report in surgical pathology, cytopathology and related techniques. Important systemized topics will be covered by didactic lectures and slide sessions. The trainee will enhance knowledge by participating in journal club, workshops, seminars and symposiums.

## **CONTENTS OF THE DETAILED SYLLABUS**

1. General Pathology
2. Respiratory System
  - a. Larynx
3. Cardiovascular System
4. Head & Neck
  - a. Ear
  - b. Ocular Pathology
5. Gastrointestinal System
6. Liver (including Gallbladder and Biliary Tree)
7. Gallbladder & Bile Duct
8. Pancreas
9. Endocrine System
  - a. Thyroid
  - b. Parathyroid
  - c. Adrenal Gland
  - d. Pituitary Gland
10. Kidney and Urinary System
  - a. Renal and Urinary System
11. Male Reproductive System
12. Female Reproductive System
  - a. Pregnancy, Trophoblastic Disease and Placenta
13. Breast
14. Nervous System (including Peripheral Nerves)
15. Musculoskeletal System
16. Soft Tissue
17. Lymphoreticular System
  - a. Lymph Node
  - b. Bone Marrow
  - c. Spleen
18. Skin (Dermatopathology)
19. Peritonium, Retroperitonium and Related Structures
20. Mediastinum
21. Laboratory Management, Quality Monitoring, Health & Safety

**COURSES, CONFERENCES, WORKSHOPS REQUIRED**  
**DURING RESIDENCY**

- R1– Minimum one (1) local seminar/symposium related to the subject
- R2– Attend all seminars/symposium organized by Histopathology Department of hospitals (training centres of OMSB)
- R3- Above plus at least one (1) international conference on Surgical Pathology □ one (1) on Cytology (e.g. Arab Division IAP) conferences/tutorials
- R4 & R5 – Above plus short course as advised by the Scientific Committee

## **EXTERNAL ELECTIVE**

### Autopsy

1. To have sufficient knowledge on medical autopsy procedures
2. To be aware of the health and safety requirements of performing autopsies in the mortuary
3. To be aware of the difference between coroner's, forensic and hospital autopsies
4. To observe at least three full autopsies prior to performing it independently
5. To perform at least two full autopsies under supervision. It is not necessary to saw the skull as this is usually done by mortuary technician
6. To perform minimum of twenty autopsies independently
7. To acquire adequate skills of autopsy on special organs e.g. brain, femur, spinal cord, testis
8. To be able to take relevant sections from various organs
9. To be able to take bone marrow biopsy from the cadaver
10. To be able to describe and discuss the case with the physicians undergraduate/medical students
11. To be able to interpreting postmortem microscopy with supervision initially and independently later
12. To be able to write full postmortem report and maintain the direct cause of death using 1a, 1b and 2
13. To have brief knowledge of how to participate in an inquest

### Molecular Pathology

1. To be familiar with the biological principles of diagnostic molecular techniques
2. To observe the procedure of polymerase chain reaction (PCR), Fluorescent in-situ hybridization (FISH) and southern blot
3. to understand advantages and disadvantages of the above techniques
4. to be aware of indications of molecular studies in both surgical pathology and cytopathology

### Electron Microscopy

1. To understand briefly principle of electron microscopy
2. To observe preparation techniques of semithin section
3. To be familiar with two types of electron microscopy images
4. to acquire adequate knowledge of electron microscopic features of certain diseases especially in the field of kidney (biopsies and tumours), muscle, liver (metabolic disorders), blood, some pediatric and adult solid tumours, and metabolic disorders pathology

## **OUTLINE RESEARCH REQUIREMENTS**

Research activities of residents in histopathology are intended:

- to develop an enquiring inquisitive attitude to disease processes
- to broaden the knowledge in applying epidemiological or statistical data or newer techniques in understanding and analyzing common disease processes encountered or in seeking their causes and pathogenesis
- to be able to identify rare pathological conditions and publish them

Research activities can be scheduled as follows:

### R1 & R2 – Laying the foundation

- by attending journal clubs and exposing oneself to the current scientific activities in the field
- by reading case reports published in indexed Histopathology Journals, cases reported from Histopathology departments of the training centres in Oman medical Journals
- by noting down salient points from review articles on common diseases in Oman from indexed journals

### R3

#### (A) – Write case reports

- by getting guidance from concerned trainers
- by preparing case reports for publication along with the concerned reporting pathologist

#### (B) 1. Choose a disease process for detailed study (in consultation with the designated trainer who will act as guide)

- by utilizing epidemiological or statistical data
  - by applying newer techniques
  - in collaboration with other departments
2. Prepare brief outline to show how the study will be conducted
- giving the aims of the study
  - materials and methods which will be used for the study
  - available literature on which the study is based or hypothesis, if any
  - target time period for completion

#### 3. Start the study with the approval from the concerned

### R4

- by the middle of R4, analysis of data or results should be over
- discuss with the concerned guide for preparation of discussion
- by the end of R4, the paper should be ready for presentation or publication (to be decided by the guide in consultation with the concerned head of the parent department involved)

### R5

- by the middle of R5, the resident should have at least 1 case report to his/her credit and either a paper or presentation in a national conference on the chosen work during R4

## **THE PARTICIPATING TRAINING CENTERS**

1. Sultan Qaboos University Hospital
2. Royal Hospital
3. Khoula Hospital
4. Royal Oman Police Hospital
5. Armed Forces Hospital

## **MEMBERS OF TEACHING FACULTY**

- A) SULTAN QABOOS UNIVERSITY HOSPITAL
- 1- Prof Anand Date (Professor & HoD)
  - 2- Dr. Aisha Al Hamdani (Consultant)
  - 3- Dr. Anna Saparamadu (Consultant)
- B) ROYAL HOSPITAL
- 1- Dr. S. Thomas (Sr. Consultant & HoD)
  - 2- Dr. Fatma Ramadhan (Sr. Consultant)
  - 3- Dr. Dushyanti Samarasinghe (Sr. Specialist)
  - 4- Dr. Indira Praseeda (Sr. Specialist)
  - 5- Dr. Gunmala Bhatnagar (Specialist)
  - 6- Dr. Isra Al Ahdal (Specialist)
- C) KHOULA HOSPITAL
- 1- Dr. Leena Devi (Sr. Specialist)
  - 2- Dr. Hunaina Al Kindi (Sr. Specialist)
  - 3- Dr. Mina George (Specialist)
- D) ARMED FORCES HOSPITAL
- 1- Dr. Sarah Kuruvila (Pathologist & HoD)
- E) ROYAL OMAN POLICE HOSPITAL
- 1- Dr. Ahmed Al Sabri (Consultant Forensic Pathologist & Head of Forensic Medicine)

# **SPECIALTY EXAMINATION**

The programme involves five years of fulltime training with evaluation.

The board evaluation consists of three components:

1. End of training year examination
2. Primary specialty board examination (Part I OMSB) at the end of 3<sup>rd</sup> year
3. Final specialty board examination (Part II OMSB) at the end of 5<sup>th</sup> year training period

## ***I. END OF TRAINING YEAR EXAMINATION***

End of R1: Written examination only  
MCQ's and short answer questions, focusing on general Pathology and clinical aspects (3 hours)

End of R2: Written Examination– MCQ's and short answer questions (3 hours)  
Practical Examination

End of R4: Practical Examination

## ***II. PRIMARY SPECIALTY BOARD EXAMINATION (PART I OMSB)-R3***

Candidates are allowed a total of three attempts to pass the examination.

Examination consists of:

- Written examination – MCQ's and short answer questions
- Practical examination– Surgical pathology and cytology (to be held on 2 days)
- Oral

## ***III. FINAL SPECIALTY BOARD EXAMINATION (PART II OMSB) - R5***

The examination is given to candidates after the successful completion of training as evidenced by acceptable final in-training evaluation.

Candidates are allowed a total of three attempts to pass the examination after completion of training.

Examination consists of:

- Practical examination – 3 days
  - Day 1:
    - Surgical Pathology H&E (20 slides in 3 hours)
  - Day 2:
    - 2 Sessions
      - Frozen sections (6 cases in 1 hour)
      - Long cases in H&E, IMFeg. Renal cases, liver, etc. (for 2 hours)
  - Day 3:
    - 2 Sessions
      - Cytology Cases (12 cases in 2 hours)
      - Gross description (photographs, on gross cable/pots) for 1-2 hours
- Viva – 30 minutes

## **ASSESSMENT**

Throughout the training programme, all trainees undergo periodic assessments to assess whether they have reached specified standards in the training program during each rotation. The eligibility of individual trainee to progress to the next stage is determined by these assessments.

1. Monthly Evaluation

2. End of Rotation Evaluation

At the end of each rotation the supervising consultant/s shall complete the evaluation form to assess their performance. The candidate must be made aware of the evaluation report.

3. Annual Review and Promotion

Evidence of the quality, extent and variety of work will be reviewed annually and a decision regarding further progress will be made. Promotion to the subsequent level of training will depend on satisfactory annual overall evaluation and passing of the examination.

## **EXIT QUALIFICATIONS**

### **CERTIFICATION**

Candidates passing the final specialty examination and successfully completing 5 years of training with five annual examination (and submitting a paper/research work).

## **LIST OF BOOKS & JOURNALS RECOMMENDED**

### BOOKS FOR REFERENCE

1. Walter & Israel/General Pathology
2. Robbin's Pathological Basis of Diseases
3. Rosai and Ackerman's Surgical Pathology (2 Volume Set)
4. Sternberg's Diagnostic Surgical Pathology (2 Volume Set)
5. Theory and Practice of Histological Techniques – banersoft
6. The Hospital Autopsy, Julian L. Burton
7. Autopsy Pathology, Walter Finkbeiner
8. Cytopathology (Gray/Mackee)
9. Orell / Manual & Atlas of Fine Needle Aspiration

### PERIODIC BOOKS

1. Recent Advances in Histopathology
2. Progress in Pathology

### JOURNALS

1. Histopathology
2. Americal Journal of Surgical Pathology
3. Human Pathology
4. Pathology Case Review
5. Continuing Professional Development "Pathology"
6. Current Diagnostic Pathology
7. New England Journal of Medicine/Lancet/BMJ

# **SPECIFIC STANDARDS OF ACCREDITATION**

## **GUIDELINES FOR ACCREDITATION OF TRAINING CENTRES FOR POST-GRADUATE TRAINING IN HISTOPATHOLOGY**

### **Objective:**

To provide wide exposure to Histopathology and Cytopathology material through routine bench work, teaching programmes, library facilities and other resources.

The establishment of criteria for recognition of institutions for training is based on the fact that training has to be done in multiple centres and the candidates thus trained will appear for a national examination.

### **Institution:**

The hospital resources should be assessed in terms of:

1. Staffing  
One or more full time Senior Pathologists responsible for diagnostic services.  
The Senior Pathologists should have MRCPPath / FRACPath / MD Path with minimum 3 years experience
2. Formal teaching  
Senior Pathologists and other (medical/technical) staff of the institution should be committed to an on going teaching programme.
  - protected teaching time daily/weekly
  - the teaching can be in the form of didactic lectures, slide discussions, seminars, case presentation etc. (details to be submitted later)
  - adhoc teaching
3. Turnover of specimens and other facilities
  - a.) Turnover of laboratory samples  
Should receive and process a variety of samples depending on the availability of specialities in that institution
  - b.) The laboratory should have the basic requirements for practical training of the trainee in histopathology and cytopathology
  - c.) Specialised techniques e.g. EM, IF etc., available should be taught and highlighted during the rotations at the respective hospitals
4. Library facilities
  - a.) Access to basic textbooks necessary for bench work should be available in each accredited unit
  - b.) Internet facilities, if possible

# **Evaluation Forms**

**6<sup>th</sup> month/Annual Resident Evaluation Form**

**Rotation Evaluation**

**Consultant/Staff Evaluation**