

**“This prospectus is made under the provisions of the Universities Act, the Postgraduate Institute of Medicine Ordinance, and the General By-Laws No. 1 of 2016 and By-Laws No. 2 of 2016 for Degree of Doctor of Medicine(MD) and Board Certification as a Specialist”**

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**POSTGRADUATE INSTITUTE OF MEDICINE  
UNIVERSITY OF COLOMBO**



**PROSPECTUS**

**SUBSPECIALTY TRAINING  
AND  
BOARD CERTIFICATION  
IN ORBIT AND OCULOPLASTY**

**2011**

**BOARD OF STUDY IN OPHTHALMOLOGY**

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# **Prospectus Post MD (Ophthalmology) Subspecialty Training in “Orbit and Oculoplasty” Leading to Board Certification**

## **1. Background and Justification**

The eye lid is an important protective covering of the eye. Many disease conditions affecting the structure of the eye lids or their functions can threaten sight. A proper understanding of the anatomy and physiology of the eye lid cannot be acquired in isolation and should be made in the broader context of the structures which are closely related to it.

The diagnosis and management of orbital diseases need not only knowledge but skills and ingenuity. The incidence and prevalence of such diseases vary with age, sex and the race. Orbital diseases may arise primarily within the orbit or spread from adjacent structures or from distant sites via the circulation.

Orbital diseases threaten sight by affecting the cornea at the front part of the eye, or the optic nerve at the back. It is well established that early diagnosis and management of orbital diseases will restore visual functions. However, an accurate diagnosis of the condition may require the expertise of a broad spectrum of specialists such as a Pathologist, a Neurosurgeon, an Otorhinolaryngologist, a Plastic surgeon, a Neuroradiologist and a Neuroanaesthesiologist.

At present in view of the major developments in the knowledge and the availability of new technologies in the diagnosis and management of orbital diseases and oculoplasty, a dedicated and well trained surgeon would contribute immensely to a significant reduction in the morbidity seen in this area of Ophthalmology.

## **2. Eligibility Requirement**

The candidate who enters the above subspecialty training program should have successfully completed the M.D. (Ophthalmology) examination conducted by the PGIM.

## **3. Admission process**

Admission will be made by the Board of Study in Ophthalmology for the training slots allocated for the subspecialty based on the trainees' order of merit at the MD Part II examination.

## **4. Programme duration**

The total duration shall be 3 years after the successful completion of the MD Examination

### 4.1 Two years will be in Sri Lanka

- a) 1<sup>st</sup> year [12 months] of training will be in Sri Lanka, in General Ophthalmology in a unit approved by the Board of Study in Ophthalmology.
- b) 2<sup>nd</sup> year of training [12 months] will be in a specialized unit [once established] in Sri Lanka.

### 4.2 One year will be in a center of repute overseas approved by the Board of Study

A short exposure to field of Facio Maxillary, Surgery, Neurosurgery, Autolaryngiology and Neuroimaging is required.

Facio-Maxillary	for one month
Autolaryngiology	for two weeks
Neuroimaging	for two weeks
Neuro surgery	to attend combined surgery sessions

## **5. Course Syllabus - Orbital Diseases & Oculo Plasty**

### **Part 1 – Basic Anatomy & Physiology**

#### **Applied Anatomy of the Orbit**

Size, shape, relations

Orbital walls

Apex of the orbit

Orbital fissures

Surgical space in the orbit

Orbital fat

Apertures

#### **Anatomy of the Sinuses & Cranial Cavity**

Anterior & middle cranial fossae

Base of the skull

Frontal, Maxillary, Ethmoid, Sphenoid Sinuses

Nasal cavity

#### **Anatomy of Ocular Adnexia**

Eye lids –Skin and subcutaneous tissues Orbicularis, m

Meibomian glands, glands of Zeiss,.

Orbital septum. Retractors. Tarsus Muller's muscle, Whitnall's ligament,

Lacrimal punctae, canaliculi, nasolacrimal ducts,

Lacrimal gland

Lacrimal drainage system

Periorbital tissue

#### **Relations of Orbital Contents**

Optic nerve

Vessels

Nerves

Muscles

## **Part 2 - Examination Techniques**

Visual Acuity

External Examination (Inspection for Proptosis, enophthalmos, Globe displacement)

Lid movements, Levator functions, eye lid / eye brow malpositions,

Pupillary reaction

Ocular Motility

Assessment of Proptosis – Exophthalmometry

Assessment of Intraocular pressure

Fundoscopy

Slit lamp Biometry

Ultrasound Scan of the Orbit

Patency of Lacrimal drainage system (dye testing lacrimal probing and irrigation),

External Photography

## **Part 3 – Orbital Disorders Diagnostic Approach**

Inspection

Proptosis, Enophthalmos

Unilateral or Bilateral

Palpation – Consistency – Reducibility in Vascular lesions

Retro-ocular Resistance - In solid tumours

Orbital Rim

Localized masses

Enlarged lymph nodes

Ocular movements – FDT

Examine for effects of orbital disease

Functional effects – Reduce sensation

Mass effects – Displacement

    Bone expansion

    Cicatrization

Localization – Apical

    Intraconal

    Optic Nerve

Diffuse  
Periorbital  
Systemic Examination

### **Special Investigations**

Haematological  
Hormonal Assay  
Plain X ray – Different views for demonstration of sinuses, floor of sellae,  
Orbital rim, Zygomatic Arch, Optic Foramen, Size of the Orbit  
Ultrasonography  
Neuroimaging (CT, MRI, MRA, DSA)  
Histological Examination – FNA  
Incisional Biopsy  
Excisional Biopsy  
Core Biopsy  
Endoscopic  
Immunohistochemistry  
US Guided FNA

## **Part 4 - Orbital Disorders**

### **Disorders occurring predominantly in children**

Congenital Anomalies-Anophthalmos. Microphthalmos. Craniofacial Clefts.  
Cranio Synostosis and others (Crouzons, Apert syndromes ), cryptophthalmos,  
Histiocytic Disorders  
Inflammation / Infection  
Harmatoma / Neural Tumours  
Rhabdomyosarcoma  
Secondary orbital tumours  
Metastatic tumours



## **Disorders occurring predominantly in adults**

### Inflammatory – Infections

- Acute Orbital / Preseptal Cellulitis
- Orbital Abscess
- Cavernous Sinus Thrombosis

### Sub Acute Inflammatory Conditions

Associated Systemic Diseases – Thyroid Ophthalmopathy  
Underlined Immunopathological mechanisms

### Painful Ophthalmoplegia – Nasopharyngeal tumours

- Tolosa -Hunt Syndrome
- Gradenigo's Syndrome
- Giant Cell Arteritis
- Paracella Syndrome
- Vascular Malformations

### Chronic Inflammatory – Orbital Pseudotumour

### Neoplastic -

Optic nerve glioma, meningioma, neuroblastoma

Secondary orbital tumours metastatising from cancers of the breast ,  
lung, prostate colon and melanoma

Vascular Tumours - haemangioma heamangipericytom

Lacrimal gland tumours

### Traumatic

Le – Port I, II, III

Fracture of orbital walls

Orbital foreign bodies

Orbital haemorrhage

Contracted Sockets

## **Orbital Involvement in Diseases of Paranasal Sinuses**

### **Diseases of Lacrimal System**

Physiology of Lacrimal System

Symptoms of Lacrimal System – Test for Lacrimal secretion & excretion

Congenital Anomalies of the Lacrimal Drainage System

Acquired anomalies of the Lacrimal Drainage System

### **Lacrimal gland lesions**

Inflammatory – Dacryoadinitis

Infiltrations

Neoplastic – Benign mixed tumour

Malignant adenoid cystic carcinoma, malignant mixed tumour lymphoma

### **Diseases affecting Eye Lids**

Congenital anomalies, (coloboma, distichiasis, epicanthus, telecanthus, Blepharophimosis ankyloblepharon, epiblepharone, Goldenhar syndrome, )

Entropion

Ectropion

Symblepharon

Trichiasis

Lid retraction

Traumatic lid injuries - involving lid margin, lacrimal trauma, With tissue loss

Lid Tumours - Benign  
Malignant

Congenital abnormalities – Coloboma

Blepharophimosis  
Ankyloblepharon. Euryblepharon. Eouicanthus  
Facial Palsy

## **Part 5 - Surgical Procedures**

### **Orbital Surgery**

Introduction

Knowledge of the main compartments and their boundaries is needed in choosing the most direct approach

Orbital Biopsy – Frozen sections

Direct

US guided FNAB

Orbitotomy – Anterior[Superior approach transcutaneous transconjunctival], Medial, Lateral and Inferior for removal of mass lesions

Orbital Decompression – Endoscopic

Direct

Repair of orbital fractures - Le port fracture treatment including dental stabilization. Open reduction with rigid fixation with microplating system

Combined surgical procedures with faciomaxillary team in fractures involving zygomatic complex

Combined surgical procedures with Neurosurgical team in mass lesions involving orbital apex region with intracranial extensions

Optic nerve sheath decompression  
Orbital implants  
Enucleation  
Evisceration  
Anophthalmic socket  
Exenteration  
Socket reconstruction

**Post operative care**-Measures to be taken to reduce oedema, infection and haemorrhage

**Complications of orbital surgery**-Good preoperative evaluation. Choice of appropriate approach. Adequate exposure. Good haemostasis. To avoid complication

## **Oculoplasty**

### **Principles of eye lid surgery**

Patient preparation-Proper selection.  
Adequate preoperative evaluation.  
Lid position.  
Lid movements [Levator function. Bell's phenomenon. Jaw –winking. Laxity of lower lid retractors]  
Brow position.  
Upper lid skin crease.  
Medial and lateral canthus  
Meticulous surgical technique.

Incisions –

Wound closure –different suture techniques  
Skin grafts-Full thickness grafts. Split skin grafts. Skin graft fixation  
Grafts for reconstruction of posterior eye lid lamellar  
To recognize indications and to perform basic biopsy techniques lateral tarsorrhaphy

Entropion-Involutorial  
Sutures  
Wies  
Quickert  
Jones  
Lateral canthoplasty  
Blepharoplasty  
Simple eye lid reconstruction

Botulinm toxin injection

Entropion Cicatricial  
Tarsal fracture  
Anterior lamellar repositioning  
Tarsal Wedge resection  
Mucous membrane graft

Ectropion-Involutorial  
Horizontal lid shortening  
Stabilization of medial canthal tendon  
Medial wedge resection  
Cicatricial Ectropion  
Z- plasty  
Skin graft  
Paralytic –Medial canthoplasty  
Lateral canthal sling

Management of burns of eye lids

Ptosis  
Fasanella –Servat  
Levator aponeurosis repair  
Levator resection-Anterior/posterior  
Brow suspension

Blepharoplasty  
Eye lid Reconstruction  
Anterior Lamellar-Rotational flap  
Transposed flap  
Posterior Lamella-Use of grafts

Medial canthal repair

Eye lash abnormalities –Trichiasis/Districhiasis

Training Settings/units and educational resources

It is patient based practical training. To gain experience in Patient evaluation, preoperative assessment and post operative follow up will be done at the routine clinics. Surgical skills training will be monitored at the operating theatre sessions, Process of learning will be from basic level goals to standard level and from there on to the advanced level. It will also include lectures and tutorials conducted by the trainer.

## **6- Course Evaluation**

Programme evaluation to assess educational process, resources available and learning environment. Key factors for programme evaluation would be description of the programme and the performance of the trainee.

6.1 Portfolio – Surgical Log Entry, Case Records, Reflective writing,

Preferably 1 Publication and 1 Presentation ((Annexure 1)

6.2 Dissertation and Viva (Annexure 2)

### 6.3 Feedback from trainers and Trainees (progress reports)

Systematic and regular feedback (at least once in six months) should be obtained from the Trainees and trainers.

Trainees also should be given the opportunity to write a report on their own on the programme

## 7. Assessment Procedure

7.1 Portfolio - Case Records 05 patients (Annex 1), Reflective writing, Preferably 1 Publication and 1 Presentation

7.2 Dissertation (Annex 2) based on the Research project

7.3 Pre Board Certification Assessment (PBCA)

7.3.1 SEQ Paper – 2 hours – 4 Questions

7.3.2 Clinical Examination (3 short cases) – two examiners

7.3.3 Viva Portfolio and Dissertation

7.3.4 Presentation to the BOS indicating the training received and future vision

### **Marking Scheme**

7.3.1, 7.3.2 and 7.3.3 shall be marked with a numeric mark and converted in to a closed mark using the scale given below (the numeric mark does not range from 0-100)

<b>Closed Mark</b>		<b>Numeric Mark</b>
9+	-	55 – 59
9	-	50 – 54
8+	-	45 – 49
8	-	40 –

## **8. Requirements for Board Certification**

8.1 Completion of post MD Training Period acceptable to the Board of Study

**AND**

8.2 A closed mark of 9 or above for 7.3.1, 7.3.2 and 7.3.3 of the PBCA

**AND**

8.3 Completion of 7.3.4 and acceptance by the Board of Study

Board certification shall be deferred if above requirements are not completed. Such candidates following a counseling session/s should complete the failed component/s (10.1/10.2/10.3) again within a minimum period of 3-6 months. On successful completion at the first attempt after counseling, the date of Board certification shall be backdated. If unsuccessful, the date of Board certification will be the date of passing the subsequent assessment following further training for a minimum period of six months in a unit allocated by the BOS.

## **9. Method of Delivery and Learner Support System**

Clinical ward based training/discussion, tutorials, small group discussions



## **10. Training Setting/Units and Educational Resources**

Teaching will be done by the trainers approved by the board of study of Ophthalmology and the resources such as clinics, theater and library will be used as learning methods. Regular case discussions, Journal Clubs ,presentations on new surgical methods will be held regularly.

## **11. Details of Trainers**

The current panel of Board approved trainers who are Board Certified Consultants with MD and Foreign Qualifications such as FRCS (UK) employed by the Ministry of Health. They provide an honorary service for which no payment is made by the University/ PGIM

## **ANNEX 1**

### **Submission of the Case Book**

A case book encompassing the management of ten selected cases under the supervision of the Consultant Ophthalmologist should be submitted three months before applying for Board Certification.

The ten case reports must preferably include cases in which some new treatment methods have been carried out. The treatment method should be finished.

The requirements for a case record book are;

(1) Recommend use of A4 size paper

The book should be with a hard cover:

(2) Record should include a full diagnosis and treatment plan of the cases

(3) The aim and objectives of treatment should be clearly stated together with the reason for adapting the method used

(4) The records presented should fully explain the reasons for adapting the procedure and results. Also discuss the alternative methods available

(5) Problems encountered during the treatment must be discussed

(6) cases should be adequately illustrated by either black and white or colour prints

(7) Record book should be accompanied by a signed statement from the supervising consultant confirming the trainees involvement of the selected cases.

## **ANNEX 2**

### **Guidelines for the preparation of the Dissertation**

The objective of this exercise is to expose the trainee to the procedure of identification of a problem, conducting a literature search, planning an "experimental" protocol, conducting the study, management of data (collection, analysis and presentation) and presenting rational conclusions with discussion. The Dissertation would consist of either a Orbit or Ocularplasty presentation limited to 8000 words and should include a minimum of 20 relevant recent references from the literature. The following guidelines should be used in planning and preparation of the dissertation.

1. The book should be submitted in ring bound or plastic edge bound form. This facilitates correction, which may be recommended by the assessors. The final form of the book may be in the sewn and bound form with a hard cover and this final bound book should be handed over to the PGIM seven days before commencement of the examination.
2. The book should be prepared in the English Language. Trainees are strongly advised to ensure that correct grammar is used and to check the text in the book and correct spelling mistakes, typographic errors, etc.
3. The book should be prepared on white A4 paper and typed on one side of the paper only, with minimum margins of 40 mm on the left-hand side (binding edge) and 20 mm on the other three sides (free edges). Use double spacing throughout the book. Any standard type of lettering is accepted but the same style and size should be used consistently throughout the book except when bold type for headings and italics for emphasis are used. Trainees are strongly advised to use a Word Processor for the typing of the book.

4. Pages, subsections, tables and figures should be numbered using Arabic numerals.
5. Pages should be numbered consecutively.
6. Subsections should be numbered as indicated in this section. (1, 2, 3, and 4 are subsections of section 1)
7. Tables and figures should be numbered sequentially and arranged in the appropriate place in the text.
8. The only exception to using Arabic numerals is when quoting from other sources where Roman numerals may be used.

9 The contents and arrangement of pages:

The contents should be given under the following headings:

Title and Authors name

Declaration by candidate

Dedication - Optional

Abstract

Table of contents

List of Symbols, abbreviations (if any) Introduction

General and specific objectives Review of literature Materials and methods Results Discussion

Limitations of the study Recommendations Acknowledgments

References

9.1 Title: a brief and specific statement.

9.2 Abstract: Brief summary of the whole paper and not merely the conclusions in 500 words. Structured abstracts are preferred.

9.3 Introduction: state the information and facts known on the topic/problem selected for study. This would include a literature survey and a critical comment on the various aspects of these studies. From the

information available the justification for the study can be stated. The objectives of the study should then be presented.

9.4 Material and Methods: Describe exactly what was done in specific terms and in sufficient details so that the study could even be repeated by another investigator.

The sections to be included are:

Study design

Setting

Subjects

Materials and equipment Procedures and protocols Types of measurements of observations Methods of data analysis.

9.5 Results and inferences: Summarize the data with a figure, table or by graph when necessary

9.6 Discussion: Interpret the results so as to provide answers to the study question(s). Comment on the relevance of these answers to the present knowledge of the subject. Consider alternate interpretations. Comment on interesting or unexpected observations and about the method. Always comment on further follow-up research available on the subject.

9.7 Conclusion: List the main points in the discussion section as conclusion.

9.8 Acknowledgements: Thank people for funding, facilities, equipment, materials or assistance. This statement should be brief.

9.9 References: List all references that are cited in the text. The Vancouver system of listing references should be used.

## Reference Style:

Type the references in double spacing in the Vancouver style (using superscript numbers and listing full references at the end of the paper in the order in which they appear in the text). Online citations should include date of access. Use Index Medicus for journal names. If necessary, cite personal communications in the text but do not include in the reference list. Unpublished work will not be accepted. References should be listed in the following style:

### Journal

Seitzman GD, Gottsch JD, Stark WJ. Caract surgery in patients with Fuch's corneal dystrophy: Expanding recommendations for cataract surgery without simultaneous keratoplasty. *Ophthalmology* 2005; 112:441-446

### Book

Sadler TW. *hangman's Medical Embryology* (5th edn). Williams & Wilkins: Baltimore, 1985; 224-226.

### Book chapter

Desmet VJ, Caller F. Cholestatic syndromes of infancy and childhood. In *Hepatology: a Text Book of Liver Disease*, Zakim D, Boyer TD (eds), vol 2. W.B. Saunders: Philadelphia, 1990; 1355-1395.

### Website

The Oncology Website, <http://www.mit.com/oncology/> [24 April 1999].

Trainees are advised to consult the "uniform requirements for manuscripts submitted to biomedical journals" published in the *New England Journal of Medicine* 1997; **336**: 309-315, for further information.

9.10 Dedication of the dissertation to a person(s) is optional.

9.11 Acknowledgments should be limited to those who have significantly contributed to the training of the Postgraduate and the preparation of the dissertation.

9.12 Table of contents: All sections of the book should be listed using Arabic numerals. The starting and end page numbers should be listed along the right margin.

9.13 List of symbols and abbreviations:

Trainees are strongly advised to use only symbols and abbreviations, which are accepted for use in scientific and medical literature. In the event of an uncommon symbol or abbreviation, which needs to be used, a brief explanatory note should be included in the list. All symbols and abbreviations with the complete terms or wording should be given in the respective lists in alphabetical order.

(Note: Units of measurements- Measurements of length, weight, and volume should be reported in metric units (meter, kilogram, litre) or their decimal multiples, Temperature should be given in degrees Celsius, Blood Pressure should be given in mm of mercury.

It is preferable if haematological and clinical chemistry measurements are reported in the metric system in terms of the International System of Units (SI). It is recommended that uniformity be maintained throughout the book. The candidate is advised to use conversion tables.

A panel nominated by the board of study will assess the candidate's dissertation and its acceptance will determine the successful completion of the training programme.

In the event of dissertation not being accepted the candidate will be notified whether a completely new dissertation is to be prepared or whether modification of the existing one will suffice for re-submission.

A copy of the Dissertation submitted should be retained by the candidate as a safeguard in case of loss or damage to the original.

