Division of Graduate Dental Studies

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PERIODONTOLOGY

Residency Training Programme leading to the degree of Master of Dental Surgery (MDS)

2002

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2 INTRODUCTION

The Periodontology Residency training programme is a 3-year programme leading to the Master of Dental Surgery in Periodontology.

The Programme is administered by the Division of Graduate Dental Studies, Faculty of Dentistry. The Clinical component of the programme will be conducted at the Faculty of Dentistry, National University of Singapore and the National Dental Centre. The didactic component will be conducted at the Faculty of Dentistry. The Resident will spend approximately 2 days per week at the National Dental Centre. Teaching will be undertaken by staff in the Faculty of Dentistry, National Dental Centre and Private Practitioners specializing in the area of Periodontology and Implant Dentistry.

The course will consist of a **didactic**, **clinical** and **research** component. Each resident is expected to participate in seminars, case presentations, literature review and required assignments in Core oral science courses, Periodontology and Implant Dentistry courses. Residents are expected to treat and document at least **40** cases presenting with a range of complexities of periodontal problems, some of which involve multi-disciplinary care including patients requiring implants. Residents are required to carry out an original research in the field of Periodontology under the supervision of a staff member. This is to be supported by a thesis to be submitted at the end of the course and the defense of the thesis in an oral examination, in partial fulfillment of the MDS in Periodontology.

Besides the core course requirements, each resident may take elective courses as part of the General education requirement to broaden the scope of the resident's intellectual pursuit. As part of the training, residents will also be involved in teaching the undergraduates during the second and third year of the course.

Assessment of the resident's competence will be based on continuous assessment and a final examination.

3 OBJECTIVES OF COURSE

The **primary objective** of the MDS course in Periodontology is to train a clinically proficient, scientifically orientated, analytical, empathetic and ethical periodontist committed to the improvement of periodontal health in the community.

The **learning outcomes expected** from the Postgraduate on completion of the course are:

1 To achieve mastery of knowledge in the diverse disciplines involved in providing care for patients with periodontal disease

2 To understand the interrelationship between periodontal health and other oral/systemic problems and to be able to work efficiently as a team in improving the quality of life of patients presenting with periodontal disease

3 To critically evaluate scientific literature, discovering and disseminating knowledge

4 To have an in-depth knowledge of basic science applicable to Periodontology

5 To implicate the evidence available from the literature in routine treatment planning

6 To be cognizant of the basic concepts of research methodology and be able to conduct good quality periodontal research independently

7 To be proficient in delivering high quality periodontal therapy as an integral component of overall oral health care through the surgical or the non-surgical approach based on sound clinical judgment and scientific principles

8 To be clinically competent in the treatment planning, placement and maintenance of implants within the concept of comprehensive treatment plan

9 To be able to communicate with patients effectively to improve the oral health status and adherence with health care recommendations

4 OUTLINE OF PROGRAMME & PRE-REQUISITES

The proposed programme is based on a 40-week term per year with 40 hours a week. There will be a total of 4800 scheduled hours over the period of 3 years. The didactic component takes up about 25% of the scheduled time; 50% of the allocated time will be spent in clinically related work; at least 15% of the time will be assigned for research; the remaining 10% of the time will be scheduled for teaching and electives.

Clinical Requirements

On completion of the course, each resident is expected to have completed at least 20 cases, 10 of which should have maintenance care of at least 1 year. This would include a range of clinical presentations at different levels of complexity, some of which are multi-disciplinary in nature. All cases will be documented in a clinical log book. Each resident should be exposed to multi-disciplinary management of Perio-Prosthodontic cases including the placement of implants, Perio-Orthodontic cases, Perio-Endo cases, Perio-oral Maxillofacial cases, Perio-Oral medicine cases, management of physically/ intellectually disabled and the medically compromised.

By the end of the course, each resident should be proficient in diagnosis and treatment planning, non-surgical and surgical management of patients presenting with varying complexity of periodontal disease. In addition to non-surgical periodontal therapy, each resident is expected to perform a range of 50-80 periodontal surgical procedures with varying complexity which should include crown lengthening, periodontal flap surgery, gingivectomy, gingival grafts and guided tissue regenerative procedures. Each resident is expected to have placed a minimum of **15** oral implants at the end of the course. The resident should be able to exercise discriminate judgment in the appropriate use of chemotherapeutic agents and local drug delivery as part of the management strategy in periodontal therapy. The resident should be able to apply defined quality standards to his/her clinical performance and to implicate quality management into the treatment plan.

Entrance Requirements

Holder of a degree in Dental Surgery with two years experience in full-time clinical practice after graduation; the period of internship is considered “full-time clinical practice”. (For purpose of pursuing residency training programmes for Master of Dental Surgery (MDS) examination, holders of degrees registrable by Dental Boards in India,

Indonesia and Philippines and other qualifications approved by the Board of Graduate School of Dental Studies are acceptable and can be admitted to the programme). A TOEFL score of 550-600 or IELTS score of 7 & above are needed.

5 COURSE CONTENTS

Didactic Course

I **Core Oral science course**

The aim is to provide comprehensive working knowledge of various areas of the biological sciences that interrelate to Periodontology. The topics include

1 Biostatistics & Epidemiology
2 Research Methodology
3 Bone and connective tissue biology
4 Functional Head and neck anatomy
5 Oral Pathology and Oral Medicine
6 Oral Immunology & Microbiology
7 Dental Radiology
8 Dental Pharmacology , pain and sedation
9 Occlusion, oral facial pain & disorders
10 Emergency care and CPR
11 Behavioural Management
12 Dental Photography
13 Evidence Based dentistry
14 Dental Ethics
15 Basic Teaching methodology

II **Periodontology Course**

The course aims to provide a comprehensive working knowledge on the art and science of Periodontology and Implant dentistry. He/she should be able to critically evaluate the literature with emphasis on the evidence-based approach. The didactic course comprise of the following

1 Aetiology of periodontal disease / Microbiology
2 Pathogenesis & Immunology of Periodontal disease
3 Epidemiology of Periodontal disease
4 Diagnosis of periodontal disease – conventional and advanced techniques Treatment Planning
5 Behavioural aspects of Oral hygiene education & motivation
6 Biological and scientific basis of non-surgical periodontal therapy

7 Biological and scientific basis of different types of periodontal surgical procedures (access flaps, crown lengthening)
8 Aesthetic & Plastic Periodontal surgery
9 Guided Tissue regeneration (including ridge augmentation)
10 Maintenance therapy
11 Antimicrobial agents and chemotherapeutics
12 Wound healing
13 Periodontal Medicine
14 Biomaterials – bone grafts, Membranes, growth factors, cytokines etc.
15 Interrelationship between Periodontology and other clinical disciplines: Perio-Ortho, Perio-Restorative, Perio-endo interface
16 Periodontal Practice management

III **Implant Dentistry**

The didactic course will be conducted in the form of seminars, lectures, group discussion, Problem solving, review of literature and case presentation. The topics covered include:

1 Biological basis for tissue integration
Concepts of osseointegration
Choice of materials
Concepts of soft tissue integration

2 Examination, Diagnosis, Treatment planning for dental implants

3 Surgical Procedures in Implant surgery
Stage I surgery (fixture installation)
Stage 2 surgery (fixture uncovering)

4 Post-operative Management
Immediate post-operative care
Provisional prostheses
Management of surgical complications

5 Maintenance care
Aetiology and pathogenesis of peri-implant infections

Diagnosis, prevention and management of peri-implant infections
Guided Bone regeneration - Bone grafting, membranes
Sinus Lift surgery
Soft Tissue grafts
Vestibuloplasties
Management of soft tissue deficiencies

7 Immediate Implant placement

8 Single tooth implant placement

9 Prosthodontics aspects
   a. Occlusion
   b. Aesthetics

10 Miscellaneous

Clinical Course

The clinical course aims to train the individual to be competent in the clinical skills in periodontal therapy and implant dentistry as an integral component of comprehensive oral health care. The clinical training involves:

1 Periodontal diagnosis & Treatment Planning
2 Non-Surgical periodontal therapy (oral hygiene education and motivation, scaling, root planing, local drug delivery, anti-microbial therapy)
3 Surgical periodontal therapy (conventional access periodontal flap, osseous surgery, mucogingival surgery, GTR procedures, bone grafting procedures)
4 Clinical oral implant dentistry (implant surgery, peri-implant disease, implant prosthesis)
5 Clinical oral medicine (relating to the periodontium)
6 Interdisciplinary relationship
7 TMD & occlusal therapy
8 Periodontal management of the medically compromised
9 Use of microscopes in diagnosis and therapy

Research

Each resident is required to carry out an original research project in a periodontally related field. This may be laboratory, animal or clinical research. Depending on the nature of the research project, the resident may be required to attend special courses/ attachment in relation to the project especially to develop adequate methodology.

The Resident is required to:

i) develop a research protocol and formulate hypotheses following an adequate literature search

ii) obtain permission for the performance of the research project with either human or human boards along the line of good clinical / research practice guidelines

iii) keep adequate logs and reports pertaining to the research

iv) assure use of appropriate statistical analyses in the handling of the data; the resident may if judged necessary consult with a statistician in this aspect

v) interpret and perform analysis of the data according to international standards and within the framework of the whole research project

All residents must attend local and regional research meetings and present a paper on their research at least once during the 3-year programme

Elective Courses

This additional component of the course is to give the individual a global aspect of higher education and research and to explore his interest beyond the boundaries of Periodontology. The resident is allowed to take electives in other areas of interest (eg Molecular Biology, Microbiology, Psychology, Pharmacology, Bioengineering, clinical disciplines in Prosthodontics, Orthodontics, Oral Maxillofacial surgery, Oral medicine, Endodontics) which may be related to the individual's research or clinical interest.

6 ASSESSMENT

The individual's performance will be evaluated using different approaches based on continuous assessment and formal examination.

Written Assignments

End of term paper

Case presentations

Literature reviews

Research Thesis

Clinical logbook

Competency tests

Presentation of 5 completed cases displaying a range of clinical experience (a minimum of one implant case, one case involving management of a medically compromised patient, 2 cases of moderately advanced periodontal disease)

Each Resident is expected to achieve a good pass for all the continuous assessment. The individual should demonstrate professionalism in the clinical management of patients. A student may be asked to retake or terminate the course in the event of unsatisfactory performance.

A Resident may also be reprimanded or expelled in the event of professional misconduct.

A Resident will be required to successfully complete clinical competency assessment in scaling & root planing, periodontal surgery and implant dentistry before he/she could independently carry out these procedures with minimal clinical supervision. These competencies may be taken at different times during the Residency programme

PART I MDS EXAMINATION

The candidate must pass the Part I MDS examination, which consists of basic medical sciences. This examination will be held in January/February of Year 1. A second examination will be held in May/June of Year 1. Should the candidate fail at the second attempt, he/she would have to leave the program.

Candidates who have passed the Part I MDS or its equivalent will be exempted from this examination.

PART II MDS EXAMINATION

The Part II MDS examination will be conducted in May/June of Year 3. Residents will only be permitted to sit for the examination after having met the requirements set by the Committee. The final exam comprises of a written paper; a research thesis & oral examination of the Research thesis; oral examination & presentation of the 5 fully documented completed cases.

AWARD OF MDS (PERIODONTOLOGY)

The degree of Master of Dental Surgery in Periodontology will be awarded to the candidate on -

1 passing the Part I and Part II examinations; and
2 successful defence of thesis.

7 COURSE SCHEDULE

	Year 1	Year 2	Year 3
Didactic	Core Oral Science Course Basic & advanced Periodontology Implant dentistry Multi-disciplinary topics Case presentations Literature reviews	Teaching methodology course Literature reviews Seminars Case Presentations & discussion	Literature reviews Seminars Journal club Case presentations & discussion
Clinical/ Practical	Basic Periodontal therapy Periodontal surgical techniques Implant dentistry Technique Periodontics clinics	Periodontics clinics Implant dentistry clinics	Periodontics clinics Implant dentistry clinics
Research	Research Methodology Basic Biostatistics Preparation & presentation of research protocol	Implementation of research project	Completion of research project and theses
Assessment	Term test Competency tests (timing flexible) Assignments	Term test Competency tests (timing flexible) Assignments	Assignments Final Exam
Miscellaneous		Elective Course Teaching	Elective course Teaching