

# **PROGRAMME STANDARDS:**

## **DENTAL SPECIALTIES**

**Second Edition (2024)**

**This document was endorsed by the Malaysian Dental  
Council (MDC) at its  
13th Meeting on 23 May 2024**

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<b>Stage of Accreditation Application</b>	<b>Effective Date</b>
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This programme standard was revised by a committee appointed by Joint Technical Committee for Evaluation of Dental Specialty Programmes (JTCEDSP) consisting of:

<b>DESIGNATION</b>	<b>NAME</b>
<b>Chairman</b>	: Prof. Dr. Zamri bin Radzi Dean Dental Faculty, University of Malaya (UM)
<b>Members</b>	: Prof. Dato' Dr. Mohamed Ibrahim bin Abu Hassan Dean Dental Faculty, MAHSA University (MAHSA)
	: Prof. Dr. Dalia binti Abdullah Lecturer Dental Faculty, National University of Malaysia (UKM)
	Assoc. Prof. Dr. Mohd Fadhli Khamis Dean School of Dental Science, University Sains Malaysia (USM)
	Dr. Ainnuddin Yushar bin Yusof Dean Dental Faculty, Universiti Sains Islam Malaysia (USIM)
	Assoc. Prof. Dr. Budi Aslinie Md Sabri Lecturer Dental Faculty, University Technology MARA
	Assoc. Prof. Dr. Siti Mazlipah binti Ismail Lecturer Dental Faculty, University of Malaya (UM)
	En.Mohd. Ishak bin Mohd.Hussaini Director Accreditation Division (Science and Medicine) Malaysian Qualifications Agency (MQA)
	Dr. Nurul Syakirin binti Abdul Shukor Secretary Malaysian Dental Council
<b>Secretariat</b>	: Accreditation and Globalisation Oral Health Section Oral Health Programme, MOH:
	Dr. Akmal Aida binti Othman Deputy Director
	Dr. Ainon Natrah binti Aminnudin Senior Principal Assistant Director
	Dr. Ili Mazlina binti Mukhtar Principal Assistant Director

## **INTRODUCTION TO POSTGRADUATE DENTAL PROGRAMMES**

### **INTRODUCTION**

In Malaysia, all clinical dental specialties programmes will be a total of four (4) years, comprising one (1) year prerequisite master's coursework programme and three (3) years of specialty training.

The programme titles and abbreviations for the three (3) years specialty training as in Appendix SI-1. These clinical doctorate programmes are at Malaysian Qualification Framework (MQF) Level 8.

### **PROGRAMME DELIVERY**

A variety of techniques should be used in the delivery of the programme, subject to the overall programme structure. These may include the following:

- i. Lecture, seminar, laboratory.
- ii. Action learning, such as clinical-related practices, clinical teaching, simulation and practical.
- iii. Collaborative Learning, such as projects, assignments, and report.
- iv. Self-directed learning.
- v. Cooperative learning, such as problem-based learning and project-based learning.
- vi. Technology-based delivery, such as online methods, Tele-conferences, Game-based methods and Mobile systems.
- vii. Experiential methods, such as Field work, project-based learning, and On-site learning or visits.
- viii. Work-based learning (WBL) methods such as practicum and clinical attachment.

However, the above list is not exhaustive.

### **ASSESSMENTS METHODS**

Assessment, in general, serves the purposes to:

- i. promote learning,
- ii. measure performance, by awarding grades which indicate whether and how well a particular trainee has attained the stated learning outcomes,
- iii. determine whether a particular trainee is sufficiently well prepared in a subject area to proceed to the next level of instruction,
- iv. provide feedback to trainees which indicates the levels of attainment, and
- v. provide feedback to teaching staff to identify and diagnose ineffective teaching methods/ techniques.

## **STANDARDS FOR MASTER'S DEGREE FOR THE 1+3 PROGRAMME (GENERAL)**

### **Master programme (Level 7, MQF)**

#### **1) PURPOSE OF THE STANDARDS**

The programme standard is designed to serve as a basis for quality assurance and as a national reference for Master programmes in Dentistry.

#### **2) NOMENCLATURE**

Nomenclature of one (1) year master programme can be decided by the HEP. The programme is at MQF Level 7.

The HEP that offers a one-year's master programme ONLY has to declare to their candidates that they are not offering the three-years specialty programme.

#### **3) ENTRY REQUIREMENTS**

An applicant for admission to the one-year master's program will have the following:

- i. Bachelor of Dental Surgery or equivalent qualification,
- ii. A minimum of two (2) years clinical practice after a basic degree,
- iii. Registered with the Malaysian Dental Council (MDC) and holds current Annual Practising Certificate (APC) for local candidates,
- iv. Proof of registration with the dental regulatory body in another country for international candidates, and
- v. Health and other requirements as required by HEP.

#### **4) PROGRAMME LEARNING OUTCOMES (PLO)**

At the end of the programme, graduates must be able to:

- i. Demonstrate knowledge and understanding in the relevant field/s or practice (Cluster 1);
- ii. Critically apply knowledge to resolve practical problems (Cluster 2);
- iii. Prepare research proposal and/or conduct research with minimal supervision (Cluster 2);
- iv. Apply practical skills in the relevant fields (Cluster 3.1);
- v. Conduct problem solving or investigation to resolve issues in the dental practice (Cluster 3.2);
- vi. Communicate and interact effectively with peers in the field/s as well as the general audience (Cluster 3.3);
- vii. Select suitable digital and analytical tool techniques to resolve problems (Cluster 3.4 & Cluster 3.5);
- viii. Demonstrate leadership qualities through collaboration with peers and others (Cluster 3.6);
- ix. Demonstrate commitment to lifelong learning and personal development (Cluster 4);

- and
- x. Adhering to legal, ethical, professional, and sustainable practice (Cluster 5)

These PLOs were adopted from the MQA Standard for Master and Doctoral Degree and the cluster for MQF 2.0 to suit this master programme. These adopted PLOs;

- a) did not include entrepreneurship,
- b) include a PLO for research (PLO iii), and
- c) merged the digital and numeracy skills into one PLO (PLO vii).

## 5) STUDENT LEARNING TIME (SLT)

The master's programme shall consist of:

No	Course	SLT (hours)
1.	Basic Science	800 - 1000
2.	Research Methodology and Biostatistics	
3.	Electives - any course as determined by the HEP.	
4.	Foundation of specialty	800 - 1000
<b>Total</b>		<b>1600 - 2000</b>

This SLT table applies to all master's programmes excluding the Master of Dental Public Health (MDPH) programme (refer to the MDPH foundation course).

## 6) ASSESSMENT METHOD

- 6.1 Must consist of formative and summative assessments.

Summative assessments are used to evaluate student learning, skill acquisition, and academic achievement at the conclusion of a defined instructional period, typically at the end of a project, unit, course, semester, programme.

It aims to measure and evaluate students' overall achievement, based on the goals of learning outcomes with grades/scores, which are given to evaluate their performance.

The results are usually defining; for instance, they can determine whether a student passes the course, gets a promotion, or secures admission.

The goal of summative assessment, usually but not necessarily found in high-stakes examinations is to measure the level of success, performance quality, proficiency, or how well students have achieved the learning outcomes at the end of an instructional unit or a course/module/programme by comparing them against some standard or benchmark.

- 6.2 Coursework and research components must be assessed.

- 6.3 The basic science course must have a final written examination (excluding the Master of Dental Public Health programme).

- 6.4 The research component (Research Methodology and Biostatistics course) shall be assessed based on project or proposal.
- 6.5 The elective and foundation of specialty courses must have summative assessment.

## 7) HUMAN RESOURCE

### 7.1 Programme director

The programme director must be a **registered/recognised** specialist by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification.

### 7.2 Teaching staff

- 7.2.1 Teaching staff shall be from the related specialties.
- 7.2.2 Clinical academic staff must have **approved** postgraduate qualifications by the HEP (University), with minimum clinical experience of 3 years after acquiring specialist qualification.
- 7.2.3 The academic staff shall possess a valid practising certificate (for clinical academic staff).
- 7.2.4 International academic staff involved in clinical teaching shall have a valid TPC as stated in the Guidelines for Application for TPC Dental Act 2018.
- 7.2.5 Academic staff in Private Higher Education Institutions (PHEI) must have a valid teaching permit.
- 7.2.6 HEP must show evidence of adequate teaching and support staff with relevant experience and qualifications.
- 7.2.7 The qualification and experience requirements of research supervisors for master and doctoral degrees by coursework and mixed mode are stated as follows:
  - 7.2.7.1 The main supervisor is a registered/recognised specialist by MDC, or; where the supervisor is a non-specialist and has a master or a PhD qualification in the field, the supervisor must have at least five (5) years' experience in teaching, or have had at least 2 years' experience as a co-supervisor, or has retained a co-supervisor who has experience graduating research students.
  - 7.2.7.2 The supervisors must go through structured supervisory training. Those who has experienced graduating trainees (in any mode of study) as main supervisors are exempted.
  - 7.2.7.3 Supervisor from the industry or practitioner must have at least a bachelor's degree and at least five (5) years of experience in the field at a level appropriate for the dissertation/thesis AND be appointed only as a co-supervisor. Those with specialised qualifications (including non-dental) may be exempted from the supervisory training. Terms of reference must be provided.

**PROGRAM STANDARD FOR  
FOUNDATION SPECIALITY TRAINING  
IN MASTER PROGRAMME FOR THE  
1+3 PROGRAMME**

## PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN DENTAL PUBLIC HEALTH (MASTER PROGRAMME)

### A. OUTCOMES AND CONTENTS OF LEARNING

The programme is designed to equip the student with fundamental knowledge and skills in Dental Public Health. The programme will also prepare the student for further study in a doctorate degree in Dental Public Health.

The scope and content of the programme shall encompass the following:

- i. Principles of Public Health
- ii. Research (Research Methodology and Research Proposal/Research Report)
- iii. Fundamentals of Biostatistics
- iv. Electives
- v. Specialty courses:
  - o Epidemiology of Oral Diseases and Conditions
  - o Social and Behavioural Sciences in Dentistry
  - o Oral Health Promotion
  - o Prevention of Oral Diseases
  - o Ethics and Jurisprudence in Dental Public Health
  - o Management of Oral Health Care and Services

### B. MINIMUM CLINICAL EXPERIENCE

None

### C. ADDITIONAL REQUIREMENTS

#### Training Period

The training period shall be one (1) academic year full-time. The total Student Learning Time (SLT) for the programme shall consist of 1600 - 2000 hours or 40 – 50 credits. The recommended components of the programme are presented in the table below.

No.	Course Component	SLT (hours)
1.	Principles of Public Health	120 - 160
2.	Research:	
	2.1) Research Methodology	120 -160
	2.2) Research Proposal OR Research Report*	200 - 360
3.	Fundamentals of Biostatistics	120 - 160
4.	Electives <sup>#</sup>	80 - 120
5.	Specialty (Dental Public Health)	800 - 1200
	<b>Programme SLT</b>	<b>1600 - 2000</b>

\* The HEP can determine whether the output of the course is a research proposal or research report. If the research report is the desired output, this component shall not exceed 30% of the total SLT.

# Electives may be chosen from courses under another programme including General Public Health, Clinical Dentistry (e.g., Periodontology, Orthodontics), or non-Dental (e.g., computer science).

## Assessment

Principles of Public Health and the Specialty courses must be assessed by both continuous assessment (CA) and final examination (FE). Research (Research Methodology and Research Proposal/Research Report), Fundamentals of Biostatistics and Elective courses may be assessed by 100% CA or both CA and FE. If the assessment includes both CA and FE, the contribution of CA will be determined by the respective HEP.

No.	Course	Assessment Method (%)	
		CA	FE
1.	Principles of Public Health	40-50	60-50
2.	Research: 2.1 Research Methodology 2.2 Research Proposal/Research Report	*30-100	*0-70
3.	Fundamentals of Biostatistics		
4.	Electives		
5.	Specialty (Dental Public Health)	40-50	60-50

\*Subject to change depending on HEP

The total summative marks determine pass/fail based on the marking/grading system of the respective HEP.

The trainee must pass all courses independently.

## C. ACKNOWLEDGEMENT

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This document was reviewed in 2024 by the DentSEdC in Dental Public Health chaired by Prof Dr Zamros Yuzadi Mohd Yusof and its members were, YBhg Dato' Datin Paduka Dr. Nooral Zeila Junid, Associate Professor Dr Norkhafizah Saddki, Associate Professor Dt Tanti Irawati Rosli, Brigadier Jeneral Dr Normah Samsuri, Dr Salleh Zakaria and Dr Aminuddin Mohd Natar.

## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN ENDODONTICS (MASTER PROGRAMME)**

### **A. OUTCOMES AND CONTENTS OF LEARNING**

The training provided in this component should be designed to enhance the trainee's knowledge and skills related to the field of endodontics. It should cover the foundation topics that include the biological basis of disease management, as well as the clinical and technical aspects of endodontic treatment.

a) Outcomes of the 1-year foundation programme related to endodontics.

At the end of 1-year training, the trainee will be able to:

#### Knowledge

1. Integrate relevant knowledge in anatomy and physiology of the oral and peri-oral tissues with particular emphasis on endodontic related tissues (C5);
2. Relate the aetiology of pathobiology of diseases of the oral and peri-oral tissues to its clinical presentation (C5);
3. Justify the use of materials and instrument relevant to endodontics based on its physical, chemical and biological properties (C4);
4. Appraise the treatment procedures and options in non-surgical root canal treatment (C5);
5. Justify the procedures to optimise the working field (restoration removal, caries control, banding, build-up, rubber dam isolation) (C6).

#### Psychomotor skill

1. Perform all appropriate history taking and clinical examinations proficiently to diagnose the related oral and related medical conditions for all walk-in/general dental practice/primary care patients (P5);
2. Provide appropriate clinical care for patients at the level of a skilled general dental practitioner including emergency treatment for the relief of acute pain (P5);
3. Plan and co-ordinate overall treatment and care of patients and appreciate when it is appropriate to refer to the relevant specialist (P5);
4. Proficient in using a variety of hand and automated instruments and materials for endodontic treatment in pre-clinical settings (P5).

#### Affective skill

1. Show professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking an holistic approach to solving problems and designing treatment plans (A5)
2. Assess critically scientific papers and available evidence relevant to endodontics using a variety of information sources (C6, A4)

b) Content:

1. Patient assessment and medical history
2. Diagnosis of pulp and peri-radicular pathoses and the different diagnosis of other

- conditions with similar presentations.
3. Assessment of endodontic and restorative case difficulty.
  4. Evaluation of previous endodontic treatment.
  5. Introduction to medico-legal issues in endodontics.
  6. Differential diagnosis of oro-facial pain.
  7. Conventional and contemporary techniques for endodontic imaging
  8. Embryology and developmental defects affecting the teeth.
  9. Local anaesthesia
  10. Infection control in dental practice.
  11. Applied pharmacology and therapeutics.
  12. Physical, chemical and biological properties of endodontic instruments and material
  13. Procedures to optimise the working field (restoration removal, caries control, banding, buildup, rubber dam isolation).
  14. Management of endodontic emergencies that includes pulp therapy - including: dentine desensitisation and protection, indirect pulp capping, direct pulp capping, partial pulpotomy, pulpotomy, partial pulpectomy, pulpectomy and associated endodontic procedures.
  15. Microbiology and immunology of pulp and periapical diseases.
  16. Methods of debridement and obturation of root canals.
  17. Methods for isolation of teeth during endodontic treatment.
  18. The management of traumatic injuries to the teeth and mouth - including crown fractures, crown/root fractures, root fractures, concussion, subluxations, luxations, avulsions, alveolar bone fractures, abrasions, contusions and lacerations.
  19. Aetiology and treatment of discoloured teeth.
  20. Diagnosis and management of cracks in teeth.
  21. The nature of endodontic infections and strategies for their removal/ disruption
  22. Indications for root canal surgery including overview of current and historic methods.

## **B. MINIMUM CLINICAL EXPERIENCE**

The 1-year training must incorporate:

- i) Pre-clinical tasks which include:
  1. Working under magnification
  2. Techniques for non-surgical root canal treatment (manual and automated instrumentation) – at least on 20 extracted teeth (various type of teeth)
  3. Restoration of the endodontically treated tooth – at least one post preparation and placement followed by temporary crown.
- ii) Clinical requirements:

The trainees should treat/manage a minimum of 30 patients (general dental management cases) that includes 10 cases of endodontic-related emergencies.

## **ACKNOWLEDGEMENT**

The development of the guidelines for specialty training in Endodontics was initiated by the Dental Specialty Education Committee (DentSEdC) subsequent to recent guidance from the Joint Technical Committee for Evaluation of Dental Specialty Programme (JTCEDSP). This document has been developed by a working party from the DentSEdC in Endodontics, chaired by Associate Professor Dr. Dalia Abdullah with members comprising Dr. Lam Jac Meng, Dr. Majinah Ahmad, Associate Professor Dr. Mariam Abdullah, Brigadier General Datin (Dr.) Roza Anon Mohamad Ramlee and Dr. Saw Lip Hean.

This document was reviewed in 2024 by the DentSEdC in Endodontics chaired by Professor Dr. Dalia Abdullah with members comprising Associate Professor Dr. Mariam Abdullah, Brigadier General Datin (Dr.) Roza Anon Mohamad Ramlee, Dr. Lam Jac Meng, Dr Afzan Adilah Ayoub, Dr Nur Laila Sofia bt Ahmad and Dr Nor Sitah bt Markom.

## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN FORENSIC ODONTOLOGY (MASTER PROGRAMME)**

### **A. OUTCOMES AND CONTENTS OF LEARNING**

The trainee is expected to achieve the following competencies on completion of the course.

#### **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO1: Demonstrate critical and in-depth knowledge and understanding in the relevant field.

The trainee must be able to:

- i. relate relevant biology, anatomy, and physiology of normal and abnormal intra- and extra-oral structures and tissues to gender and race (C5);
- ii. relate knowledge of embryology and anatomy of human craniofacial structures in dental profiling involving skeletons of a baby or toddler (C5);
- iii. relate dental anatomy, histology and embryology with human identification and age assessment for isolated dental or tooth evidence found at the crime scene (C5);
- iv. appraise age changes to teeth and jaws (C5);
- v. appraise history of forensic odontology and forensic medicine (C5);
- vi. appraise medico-legal autopsy and post-mortem changes (C5);
- vii. consider hazards of the mortuary and crime scene (C5);
- viii. relate knowledge of dental materials and prosthetics to dental profiling and human identification (C5);
- ix. appraise the principles of radiographic quality assurance and the practice of applied quality control (C5);
- x. interpret imaging, photography and radiological evidences (C4);

#### **CLUSTER 2: COGNITIVE SKILLS**

PLO2: synthesise knowledge in the field of forensic odontology

The trainee must be able to:

- i. appraise the conventional and contemporary techniques for Forensic Odontology imaging (including software) and photography (C5);
- ii. describe the liaison with police and the legal profession (C2);
- iii. discuss the Criminal Procedure Code (CPC) as well as the Dental in relation to the forensic odontology work and cases done (C5)
- iv. relate Malaysian Law regarding forensic odontology cases (C5)
- v. summarise the management of the crime scene, disaster victim identification and exhumation process (C5);

## **CLUSTER 2: COGNITIVE SKILLS**

PLO3: Prepare research proposal and/or conduct research with minimal supervision.

The trainee must be able to:

- i. compose research proposal (P7);
- ii. display presentation skills in communicating research ideas to professional colleagues or at specialists' meetings (P5).

## **CLUSTER 3: FUNCTIONAL WORK SKILLS WITH FOCUS ON**

### **CLUSTER 3.1 PRACTICAL SKILLS**

PLO4: construct proficient case management in the field of forensic odontology based on scientific evidence.

The trainee must be able to:

- i. perform medico-legal and dental autopsy (P4);
- ii. perform age estimation of the living and deceased person, either for identification or due to lack of proper legal documentation (P4);
- iii. perform forensic photography on living and deceased persons – extraoral, intra-oral and bitemark injuries (P4);
- iv. analyse digital images of radiographs and photographs (P4);
- v. organise a standard set of photographs illustrating progress through a course of cases (P4);
- vi. perform comparative identification process (P4);
- vii. perform reconstructive identification process including gender, ethnic and age estimation (P4);

### **CLUSTER 3.2 INTERPERSONAL SKILL**

PLO5: generate solutions to problems using scientific and critical thinking skills.

The trainee must be able to:

- i. search a variety of information sources to obtain scientific papers and other evidences, such as forensic guidelines (P4, A4);
- ii. appraise systematically current evidence and appreciate how research activity can be translated to practice (A5);

### **CLUSTER 3.3 COMMUNICATION SKILL**

PLO6: provide expert advice to society in the relevant field

The trainee must be able to:

- i. display confidence, insight and empathy in formulating and presenting strategies and plans to investigate officer (IO) and family members (A5);
- ii. serve all cases/subjects with dignity and respect (A5);

- iii. recognise the medico-legal importance of patients' records and forensic reports (A3);

#### **CLUSTER 3.4 DIGITAL SKILL & CLUSTER 3.5 NUMERACY SKILL**

PLO7: Use suitable digital technologies in forensic odontology practice; (Psychomotor)/ Evaluate critically scientific numerical and graphical data to support evidence-based practice in the forensic odontology field; (High cognitive)

The trainee must be able to:

- i. organise and undertake a forensic audit project, including implementation of outcomes and re-audit (P3);

#### **CLUSTER 3.6 LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8: display leadership qualities through communicating and working effectively with peers and stakeholders.

The trainee must be able to:

- i. build rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. display appropriate both verbal and non-verbal communication/presentation skills (A5);

#### **CLUSTER 4: PERSONAL AND ENTREPRENEURIAL SKILL**

PLO9: exhibit attributes of independent lifelong learners

The trainee must be able to:

- ii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs (A5).

#### **CLUSTER 5: ETHICS AND PROFESSIONALISM**

PLO10: Adhere to legal, ethical and professional codes of practice.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues (A5);
- ii. comply with the standards of practice in dentistry as determined by the Malaysian Dental Council (A4);
- iii. practice ethical principles in the preparation of forensic and research reports (A5);
- iv. practice medicolegal principles in relation to patients' records (A5).

#### **Minimum course contents**

1. Basic medical and dental science subjects
  - a. Pathology and oral pathology
  - b. Anatomy, oral anatomy and comparative anatomy
  - c. Applied Biomaterials

- d. Biochemistry and molecular genetics
- 2. Forensic Odontology training includes
  - a. History of Forensic Odontology
  - b. Human Identification of unknown body;
  - c. Metric and non-metric measurement of dental morphology
  - d. Age estimation;
  - e. Dental profiling in post-mortem
  - f. Sex and race determination of an unknown body
  - g. Imaging and software in Forensic Odontology
  - h. Forensic Radiography in Forensic Odontology
  - i. Forensic Dental Photography
  - j. Imaging in Forensic Odontology (2D and 3D)
- 3. Research activity
  - a. Literature review/ Critical review
  - b. Clinical audit of dental records

## **B. MINIMUM CLINICAL EXPERIENCE**

The programme must provide sufficient forensic experience for the trainee to have a basic understanding of managing Forensic Odontology cases. The trainee must complete the following cases:

<b>Scope of Forensic Odontology Cases</b>	<b>Minimum Clinical (Forensic) Experience</b>
1. Human identification	● 2 cases/P4
2. Post mortem dental profiling, which includes age estimation, gender and ethnic determination of an unknown body	● 2 cases/P4
3. Age assessment for living individuals	● 2 cases/P4
4. The use of dental imaging in forensic cases	● 5 cases/P4
5. Prepare forensic report	● 3 cases/P3

The range of minimal forensic work experience is recorded by maintaining a cumulative record of the number of procedures undertaken within specified categories.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to continue with speciality training must be documented.

Trainees must pass a competency test on the use of dental imaging techniques.

## **C. ADDITIONAL REQUIREMENTS**

### **MODELS OF LEARNING IN FORENSIC ODONTOLOGY SPECIALTY COURSE**

Delivery methods shall cover the three main domains, i.e. cognitive, psychomotor and affective, through a variety of techniques. These may include but are not limited to the

following:

- i. Forensic skills development under direct supervision in the mortuary, field case-work and forensic laboratory. Students shall attend the training workshops and web-based resources identified by faculty.
- ii. Candidates shall keep evidence of cases and activities attended, including onsite/fieldwork/project-based. The candidates shall report a summary of knowledge and skills development and learning issues and keep up to date in the logbook/portfolio.

#### **D. ACKNOWLEDGEMENT**

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This document was reviewed in 2024 by the DentSEdC Forensic Odontology chaired by Dr. Norhayati Jaffar with members comprising Assoc. Prof. Dr. Mohd Fadhli Khamis, Dr. Nor Atika Md Ashar, Prof Dr. Mohd Yusmiadil Putera bin Mohd Yusof, Dr Hairuladha bin Abdul Razak and Brig Jen Dr Wan Azmil bin Wan Mohamad Annuar.

## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN ORAL MAXILLOFACIAL PATHOLOGY AND ORAL MEDICINE (MASTER PROGRAMME)**

### **FORMAT**

#### **A. OUTCOMES AND CONTENTS OF LEARNING**

##### **Scope of foundation courses:**

- i. Fundamentals in oral maxillofacial pathology  
Oral maxillofacial pathology is a specialised field of histopathology concerned with the microscopic examination of tissues, taken either as biopsy samples or resection specimens from the oral and maxillofacial region for the purpose of diagnosis, prognosis and directing appropriate treatment.
- ii. Fundamentals in oral medicine  
Oral medicine is a specialty concerned with the diagnosis and management of patients with oral and maxillofacial disease including medically related disorders, salivary gland disorders, potentially malignant disorders, orofacial pain, orofacial infectious diseases, and chemosensory disorders, whose primary treatment modality is non-surgical.

This foundation specialty training is applicable for admission to the 3-year Clinical Doctorate Degree Programmes in Oral Maxillofacial Pathology and Oral Medicine, or Oral Medicine.

##### **Learning outcomes**

Upon completion of the 1-year training, students should be able to:

1. integrate knowledge in the relevant biology, anatomy, pathophysiology, and histopathology of intra- and extra-oral structures and tissues related to oral and maxillofacial diseases (C5);
2. distinguish the various clinical presentations of relevant orofacial diseases and related systemic conditions (C4);
3. demonstrate the principles of laboratory techniques within surgical pathology (tissue fixation, specimen dissection, macroscopic description, and tissue processing) (C3, P4);
4. justify the use of instruments and equipment relevant to diagnostic surgical pathology (C4);
5. appraise the various routine, special and immunohistochemical stains in surgical pathology (C6);
6. demonstrate the ability to recognise normal histology and straightforward pathological entities (C3, P4)
7. perform relevant history taking and examination in the diagnosis of oral and maxillofacial diseases (P5); and
8. justify the selection of relevant investigative procedures to aid the diagnosis of oral and maxillofacial diseases (C6).

##### **Contents of course:**

- i. Fundamentals in oral and maxillofacial pathology
  - Normal histology
  - Basic pathology of diseases
  - Diagnostic surgical oral pathology

- ii. General principles of laboratory techniques
  - Specimen fixation
  - Dissection and macroscopic description of tissue specimen
  - Histologic processing, routine, special and immunohistochemical stains in surgical pathology
- iii. Clinical diagnostics
  - Principles of clinical diagnostics
  - Patient examination and diagnostic procedures

## **B. MINIMUM CLINICAL EXPERIENCE**

- i. Grossing of simple tissue biopsy specimen (including) experience in histopathology reporting – 5 cases\*
  - ii. Clinical examination and diagnosis of common oral lesions – 5 cases\*
- \*ONE (1)** case form each of these categories must be assessed in the form of a competency test.

## **C. ACKNOWLEDGEMENT**

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## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN ORAL MAXILLOFACIAL RADIOLOGY (MASTER PROGRAMME)**

### **A. OUTCOMES AND CONTENT OF LEARNING**

The training provided in this component should be designed to enhance the trainee's knowledge and skills related to the field of oral maxillofacial radiology (OMFR). It should cover the foundation topics that include the basic sciences of clinical imaging; the pathological and functional aspects of disease; current clinical practice as related to dental radiology.

a) Outcomes of the 1-year foundation programme related to OMFR.

At the end of 1-year training, the trainee will be able to:

#### Knowledge

1. Integrate relevant knowledge in anatomy of OMF region and the radiographic projection suitable for the diagnostic purposes (C5);
2. Relate the radiographic features of the OMF lesions, aetiology of diseases and its clinical presentation (C5);
3. Justify the types of radiographic projection, intervals and radiographic parameters to specific character of the lesion, affected structures, type of patients and clinical interest. (C4);
4. Appraise the radiographic procedures and options in non-compliance patients (C6)
5. Justify the procedures to optimize the benefit of radiation exposure for patients and the treatment outcome while minimizing the risk (C6).

#### Psychomotor skill

1. Perform all radiographic examinations independently to obtain the radiographic information of OMF conditions (P5);
2. Provide appropriate radiographic approach for non-compliant patients (P5);
3. Plan and coordinate appropriate radiographic procedures and patient care and be able to decide advanced imaging techniques. (P5);
4. Organize various radiographic equipment and machines for both *in vivo* and *ex vivo* procedure proficiently (P5).

#### Affective skill

1. Show professional judgment to allow radiographic procedures according to specific OMF conditions based on international guidelines or national regulations (A5)
2. Assess international and national guidelines and regulations and available evidence relevant to radiology (C6, A4)

b) Detailed content:

1. Knowledge in clinical justification based on patients previous imaging records and medical history of dental radiology
2. Basic sciences of dental radiology
3. Concepts and terminology of diagnostic radiology
4. Indications of the various diagnostic techniques in all age groups
5. Knowledge of the responsibilities of a radiologist to the patient and the need for informed consent
6. Knowledge in the various contrast media and drugs (including intravenous sedation) and monitoring used by dental radiologists in day-to-day practice, and

- be aware of indications, contra-indications, doses (adult and pediatric) and the management of reactions and complications
7. Principles of radiation protection and be familiar with the legal framework for protection against ionizing radiation.
  8. Safety requirements for imaging with non-ionising radiation (eg ultrasound and magnetic resonance)
  9. Basic radiological and radiographic procedures
  10. Basic reporting (under supervision)
  11. Clinical audit in OMFR
  12. Radiographic diagnosis of various oral maxillofacial lesions.

## **B. MINIMUM CLINICAL REQUIREMENT**

The 1-year training must incorporate:

- i) Pre-clinical tasks which include:
  1. Decide appropriate intraoral and extraoral radiographic procedures for specific conditions.
  2. Perform intraoral and extraoral radiographic procedures.
  3. Prepare radiological reports.
- ii) Clinical requirements:

The students should perform 50 intraoral radiographs, 20 panoramic radiographs, 5 other conventional extraoral radiographs and 5 CBCT.

Interpret 50 intraoral radiographs, 20 panoramic radiographs, 5 other conventional extraoral radiographs and 5 CBCT.

## **C. ACKNOWLEDGEMENT**

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## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN ORAL AND MAXILLOFACIAL SURGERY (MASTER PROGRAMME)**

### **A. OUTCOMES AND CONTENTS OF LEARNING**

#### **Scope**

#### **Principles and Primary Core Treatment of Oral and Maxillofacial Surgery**

This course provides a thorough practical and theoretical understanding of various aspects of primary care in oral and maxillofacial surgery (OMFS). It will provide the postgraduates with the opportunity to grasp the essential fundamental knowledge, basic surgical skills and hands-on oral surgery cases supervised by a specialist in oral and maxillofacial surgery within the respective HEP. Postgraduates will be guided via comprehensive assessment, treatment planning, diagnosis, surgical procedure and reflective practice. Postgraduates will be exposed to management of basic oral surgery procedures as well as exposure to various academic-based components forming foundation for the subsequent three-year speciality programme in oral and maxillofacial surgery.

#### **Course Learning Outcomes**

At the end of the course, students should be able to:

- i. Integrate relevant knowledge in basic science to be applied in clinical oral surgery (C5);
- ii. Perform significant history taking and systemic examination to recognize signs and symptoms of patients presented in oral and maxillofacial clinic (P5);
- iii. Decide on appropriate clinical and radiological investigations related to dentoalveolar surgery on the outpatient basis (C6);
- iv. Recognize abnormalities in the mouth, jaws and surrounding structures related to oral and maxillofacial surgery (C3);
- v. Appraise the different outcome measures of surgical treatment and their assessment in implant surgery and other common oral and maxillofacial conditions (C6);
- vi. Perform minor oral surgical procedures and management of their complications (P5);
- vii. Perform oral surgery treatment for patients with different medically compromised complexity by modification of treatment managements (P5);
- viii. Perform basic surgical skills relevant to the field of oral and maxillofacial surgery (P5);
- ix. Show professional judgement to implement clinical solution in response to oral and maxillofacial conditions (A5)

#### **Components In Oral and Maxillofacial Surgery**

- i. Dento-alveolar surgery
- ii. Pre-prosthetic surgery & implantology
- iii. Other oral and maxillofacial conditions:
  - Head & Neck Infections
  - Maxillofacial Trauma
  - Oral medicine and oral manifestations of diseases
  - Head and neck benign and malignant tumours
  - TMJ diseases and disorders
  - Orthognathic and OSA

- Congenital abnormalities: cleft & craniomaxillofacial
- Regional reconstructive surgery

## **B. MINIMUM CLINICAL EXPERIENCE**

The student assessment could include:

- i. Applied basic medical science and surgery: competency tests, clinical exams, case reports
- ii. Dentoalveolar surgery: competency test, log books

## **C. ACKNOWLEDGEMENT**

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This document was reviewed in 2024 by the DentSEdC in Oral and Maxillofacial Surgery, chaired by Professor Dr Firdaus Hariri and its members were, Professor Dr Roszalina Ramli, Dr Azmeel Mazlee Anuar, Dr Sharifah Tahirah Bt Syed Alwi Aljunid, Dr Md Arad Jelou, Kolonel Dr Ahmad Fahmi Bin Mohamad Bustaman and Dr Shamsul Anuar Ahmad.

## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN ORTHODONTICS (MASTER PROGRAMME)**

### **A. OUTCOMES AND CONTENTS OF LEARNING**

At the end of the course, the student should be able to:

- 1) Explain the concept of craniofacial growth and development; and occlusion (C4)
- 2) Demonstrate skill to diagnose patients' malocclusions and dental abnormalities (C3, P4)
- 3) Justify patient management based on investigation and clinical assessment (C4)

### **Module of orthodontics**

- 1) Growth and development  
This module should cover the following areas:
  - Embryology, craniofacial growth, and development
  - Development of dentition
  - Biology of tooth movement
  - Occlusion
- 2) Malocclusion  
This module should cover the following areas:
  - Aetiology
  - Class I, Class II and Class III malocclusion
- 3) Diagnostic procedures  
This module should cover the following the areas:
  - Orthodontic records
  - Growth prediction
  - Orthodontic clinical examination and diagnosis
  - Orthodontic indices

### **B. MINIMUM CLINICAL EXPERIENCE**

- i. Preclinical requirements  
This course must incorporate preclinical tasks which include:
  1. Wire bending exercises
  2. Cephalometry and growth prediction
  3. Orthodontic photography
  4. Construction of orthodontic study model
  5. Straight wire Typodont training
- ii. Clinical requirements:  
The students should achieve a minimum of 10 complete diagnostic cases.

### **C. ACKNOWLEDGEMENT**

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This document was reviewed in 2024 by the DentSEdC in Orthodontics chaired by Professor Dr. Rohaya Megat Abdul Wahab and its members were Professor Dr. Siti Adibah Othman, Associate Professor Dr. Maryati Md Dasor, Dr. Mohd Zambri Mohamed Makhbul, Dr. Yatimah Othman, Colonel (Dr) Mizalazrin Madzlan, and Dr. Evelyn Lee Gaik Lyn.

## PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN PAEDIATRIC DENTISTRY (MASTER PROGRAMME)

### A. OUTCOMES AND CONTENTS OF LEARNING

#### Foundation for Specialty in Paediatric Dentistry

The foundation for specialty in Paediatric Dentistry should be designed to enhance the trainee's knowledge and skills related to the field of Paediatric Dentistry. It should cover the fundamental topics that include the biological basis of disease management, as well as the clinical and technical aspects of prevention and treatment of orofacial diseases in children and children with special healthcare needs under the age of 16. The course shall also emphasise the importance of continuous enhancement of knowledge, teamwork and engagement with society in general.

#### Learning Outcomes

At the end of 1-year training, the trainee will be able to:

- i. relate relevant fundamental knowledge of healthy health development and disease processes in children and children with special healthcare needs from infancy to adolescence in the context of Paediatric Dentistry (C5);
- ii. integrate knowledge of child psychology in behaviour guidance strategies for children in the context of Paediatric Dentistry (C5);
- iii. justify the importance of different dental and medical procedures performed for the care of patients in the context of Paediatric Dentistry (C4);
- iv. perform the various dental or medical procedures on typodont teeth or mannequins (P6)
- v. demonstrate ability to cooperate with healthcare professionals to plan, assist or implement programmes that are beneficial to patients and the community (P4, A4);
- vi. demonstrate the ability to pursue independent study for the professional enhancement of knowledge and clinical competencies using a variety of sources (C6, A4)

#### Course Content

##### Fundamental Knowledge in Paediatric Dentistry

No.	Modules	Topics
1.	Children's Growth & Development	<ul style="list-style-type: none"><li>● General human growth and development</li><li>● Craniofacial growth and development</li><li>● Development of human dentition</li><li>● Developmental milestones from infancy to adolescence</li></ul>
2.	Children's Psychology and Behaviour Management	<ul style="list-style-type: none"><li>● Child psychology</li><li>● Assessing children's behaviour</li><li>● Dental personnel, dental environment, parents and social factors influencing children's behaviour</li></ul>

		<ul style="list-style-type: none"> <li>• Non-pharmacological behaviour management strategies to manage children's behaviour</li> <li>• Conscious sedation and general anaesthesia for children's dental treatment</li> </ul>
3.	Clinical Assessment, Diagnosis and Treatment Planning related to Paediatric Dentistry	<ul style="list-style-type: none"> <li>• History taking and treatment planning</li> <li>• Dental radiography in children</li> <li>• Pain and infection control in children</li> <li>• Anxiety, fear and phobia management of children</li> </ul>
4.	Pathogenesis, Prevention and Treatment of Oral Diseases (Primarily diseases of teeth and their investing tissues)	<ul style="list-style-type: none"> <li>• Diet and dental caries</li> <li>• Preventive strategies in caries management</li> <li>• Paediatric operative techniques for restorations of teeth</li> <li>• Paediatric endodontics to manage diseased or traumatised teeth</li> </ul>

## B. MINIMUM CLINICAL EXPERIENCE

### Preparatory Clinical Skills in Paediatric Dentistry

No.	Procedures	Minimum Preclinical Exposures
1.	Intra-coronal restoration	<p><b>TWO</b> (2) Class I and Class II restorations on primary typodont molars, respectively</p> <p><b>ONE</b> (1) competency test of a class II cavity preparation with restoration</p> <p>[Restorative material used can be either amalgam, composite or glass ionomer cement based on the indications specified by the Higher Education Provider (HEP)]</p>
2.	Extra-coronal restoration	<p><b>TWO</b> (2) paediatric strip- crowns on maxillary primary typodont incisors and two stainless steel crowns on primary typodont molars</p> <p><b>ONE</b> (1) competency test of the paediatric strip-crown restoration and stainless-steel crown, respectively</p>
3.	Endodontic	<p><b>TWO</b> (2) pulpotomies and pulpectomies on extracted primary molars, respectively</p> <p><b>ONE</b> (1) access-cavity procedure on a maxillary permanent central incisor, a maxillary permanent premolar and a permanent molar, either maxillary or</p>

		<p>mandibular molar, respectively</p> <p><b>ONE</b> (1) root canal procedure up to the stage of canal obturation on a maxillary permanent incisor and a permanent molar, either maxillary or mandibular molar, respectively</p> <p><b>ONE</b> (1) Regenerative Endodontic procedure on a maxillary permanent incisor</p> <p><b>ONE</b> (1) apical plug placement procedure (apexification) on a maxillary permanent incisor</p>
4.	Trauma	<p>A wire-composite splint on the four maxillary typodont incisors</p> <p>One restorative procedure on a maxillary incisor tooth with an incisal-proximal fracture (Class IV) – either reattachment of fracture fragment or restoration</p>
5.	Interceptive orthodontic	Placement of a band on a primary molar typodont tooth, impression taking and transferring of the band into the impression
6.	Oral Surgery	<p>Basic Suturing techniques</p> <p>Jaw fixation and splinting techniques with arch bar and wires</p> <p>Phlebotomy technique</p> <p>IV-cannula insertion technique</p> <p>IV-fluid set-up and maintenance technique</p>
7.	Behaviour Management	<p>Nitrous oxide-oxygen conscious sedation training exposure</p> <p><b>ONE</b> (1) competency test (students can perform the procedure on each other)</p>
8.	Examination and Diagnosis with Treatment Planning	<p>Knowledge exposure and practical training</p> <p><b>ONE</b> (1) competency test</p>
9.	Cross-infection Control Hand scrub	Knowledge exposure and practical training

	and operation theatre gowning technique	
10.	Hospital Exposure	Exposure to the hospital environment

\* Note: The procedures outlined in this standard are the minimum competencies expected of students at the 1-year Master's programme level and must be reflected in the trainee's training. HEP can set any additional procedures or requirements necessary for their respective course.

### **C. ACKNOWLEDGEMENT**

The development of the standards for foundation specialty training in the Master's programme for the 1+3 Doctor in Paediatric Dentistry was initiated by the Dental Specialty Education Committee (DentSEdC) subsequent to the recent guidance from the Joint Technical Committee for Evaluation of Dental Specialty Programme (JTCEDSP). This document has been developed by a working party from the DentSEdC in Paediatric Dentistry chaired by Associate Professor Dr S. Nagarajan M.P. Sockalingam and its members are Professor Dr Sabri Musa, Professor Dr Noraini Nun Nahar Yunus, Dr Ganasalingam Sockalingam, Dr Laila Abdul Jalil, Dr Annapurny Venkiteswaran and Dr Zahani Mohamed Yusoff.

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## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN PERIODONTOLOGY (MASTER PROGRAMME)**

### **A. OUTCOMES AND CONTENTS OF LEARNING**

The training provided should be designed to enhance the student's knowledge and skills related to the field of periodontics. It should cover the foundation topics that include the biology of the oral tissues with emphasis on the periodontium, basic knowledge of health and disease of the periodontium and its management, as well as the clinical and technical aspects of periodontal treatment.

#### **a) Outcomes of the 1-year master programme related to periodontics.**

At the end of 1-year training, the student will be able to:

1. Relate knowledge when executing patient treatment in the specialty of Periodontology.
2. Choose relevant investigations for patient management in the specialty of Periodontology.
3. Manage patient effectively in the specialty of Periodontology.

#### **b) Competencies:**

1. Apply relevant knowledge in anatomy and physiology of the oral and peri-oral tissues with particular emphasis on periodontium and related tissues (C4, A3);
2. Devise solutions/treatment plan, to problems in the periodontics using scientific and critical thinking skills (C3, A4);
3. Provide appropriate clinical care for patients at the level of a skilled general dental practitioner including emergency treatment for the relief of acute pain (P4);
4. Assess critically scientific papers and available evidence relevant to periodontics using a variety of information sources (C4, A4)
5. Conduct research with supervision and adhere to the legal ethical and professional code of practice in the relevant field (A4, P4).

#### **c) Contents include:**

1. Examination & diagnosis, risk assessment & treatment planning
2. Periodontal Instrumentation (Basic and surgical) & Root surface debridement
3. Structure and Function of Periodontium
4. Classification & Natural History of Periodontal Disease
5. Epidemiology & Indices
6. Aetiology & Microbiology of Periodontal Disease
7. Pathogenesis of Periodontal Disease: Cellular & Molecular Aspects
8. Disease Assessment
9. Periodontal Diagnostic Procedures
10. Prognosis, Treatment Planning and Risk Assessment
11. Foundation of knowledge, skill, and limitations in other restorative dentistry cases (endodontic, conservative and prosthodontics).

## **B. MINIMUM CLINICAL EXPERIENCE**

- i) Pre-clinical tasks which include:
  - 1. Techniques for non-surgical periodontal procedures.
  - 2. Overview of Restorative dentistry component: simple endodontics, restorative and prosthodontics of treatment.
  
- ii) Clinical requirements:

The students should treat and manage a minimum of 4-5 moderate to severe periodontal diseases patients.

## **C. ACKNOWLEDGEMENT**

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## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN PROSTHODONTIC (MASTER PROGRAMME)**

### **A. OUTCOMES AND CONTENTS OF LEARNING**

At the end of one year training, the trainee will be able to:

- i. Relate relevant foundation knowledge and in-depth understanding in basic sciences and clinical dentistry for management of oral rehabilitation in the context of Prosthodontics ( C5).
- ii. Justify the use of dental materials, equipment, and technology for related laboratory procedures and patient management (C5).
- iii. Perform appropriate preclinical and clinical skills in in the field of Prosthodontic and relevant restorative dentistry ( P5).
- iv. Gather and document appropriate relevant history, clinical examination, diagnose, plan and provide clinical care at the level of a skilled general dental practitioner (P5,C5).
- v. Demonstrate appropriate verbal and non-verbal communication, ethics and professionalism skills with patients, dental auxiliaries, and relevant individuals during training and clinical practice (A5).
- vi. Demonstrate the ability to pursue lifelong learning and provide evidence based clinical solutions in response to problem by adopting holistic approach (A4).

### **Content in Prosthodontics programme**

The course should be structured to include Fixed and Removable Prosthodontics and other related fields mainly Operative Dentistry, Endodontics, and Periodontics. The method of teaching and learning may consist of seminars, journal club, case presentation, simulation clinics, and clinical management or blended learning (for selected topics or cases).

Fundamental Knowledge in Prosthodontics specialty

Modules

#### **1. Prosthodontics (Fixed and Removable Prosthodontics)**

- Topics
- Principles of tooth preparation for intra-coronal and extra-coronal restorations
- Provisional restorations and materials
- Principles of Removable partial denture design
- Planning and preparation for fixed prosthodontics
- Treatment planning in removable prosthodontics
- Treatment options for missing teeth
- Preparation for Endo treated tooth (Post & Core) - types and techniques.

- Pontic design and edentulous ridge
- Other types of prosthesis
- Update on dental technology.

## **2. Occlusion**

### Topics

- Anatomy of the occlusal system, mandibular movements, and occlusal concepts.
- Occlusal analysis
- Articulator
- Occlusion in removable and fixed prosthodontics

## **3. Tooth surface loss (TSL)**

### Topics

- Aetiology, diagnosis, and treatment planning
- Techniques for management of TSL

## **4. Endodontics**

### Topics

- Biology and physiology of the pulp dentin complex.
- Pulp and periapical pathology.
- Endodontics management (including instrumentation, medicaments, and materials)

## **5. Periodontics**

### Topics

- Pathogenesis of periodontal disease
- Periodontal screening, periodontal examination, diagnosis, and treatment planning
- Classification of periodontal diseases
- Prognosis, Treatment Planning and Risk Assessment

## **6. Operative dentistry**

### Topics

- Aetiology, pathogenesis, and management of caries
- Management of deep carious lesion
- Pain management in dentistry
- Crack tooth syndrome.

## **7. Dental materials**

### Topics

- Tooth coloured material – Composite, Glass ionomer, compomer.
- Amalgam and Alloys
- Ceramic
- Impression Materials
- Acrylic-based Materials
- Endodontic materials
- Adverse effects/controversies of dental materials
- Dental cements

## 8. Adhesive dentistry

### Topics

- History and classifications
- Current concept of bonding to dentine and enamel

## B. MINIMUM CLINICAL EXPERIENCE

### PROSTHODONTIC MODULES

No.	Procedures	Minimum Preclinical Exposures
1.	Fixed and Removable Prosthodontics	1. FIXED PROSTHODONTICS <ul style="list-style-type: none"> <li>i. PFM three-unit bridge               <ul style="list-style-type: none"> <li>- tooth preparation, provisional bridge</li> </ul> </li> <li>ii. All-ceramic crown               <ul style="list-style-type: none"> <li>- tooth preparation and provisional crown</li> </ul> </li> <li>iii. Onlay/Inlay – tooth preparation</li> <li>iv. Veneer</li> <li>v. Post and core</li> </ul> 2. REMOVABLE PROSTHODONTICS <ul style="list-style-type: none"> <li>- Co-cr denture design</li> </ul> 3. Competency test: <ul style="list-style-type: none"> <li>A. Fixed Prosthodontics               <ul style="list-style-type: none"> <li>- crown preparation and bridge preparation</li> </ul> </li> <li>B. Removable Prosthodontics               <ul style="list-style-type: none"> <li>- Surveying &amp; Denture Design</li> </ul> </li> </ul>
2.	Occlusion	1. Diagnostic wax-up teeth on stone models. 2. Model occlusion analysis
3.	Endodontics	Root canal treatment on one (1) anterior and 2 (two) posterior extracted teeth using various hand preparation techniques for canal preparation (for

		example, modified double flare technique, hand protaper technique, or other techniques etc.)  Preclinical on extracted anterior/premolar/molar tooth (access cavity, canal preparation, and obturation).
4.	Periodontics	Examination & diagnosis, risk assessment & general treatment planning.
5.	International Caries Detection and Assessment System (ICDAS) and International Caries Classification and Management System (ICCMS)	Knowledge exposure and practical training

#### **GENERAL DENTAL PRACTICE CLINIC / PROSTHODONTICS CLINIC**

No.	Procedures	Minimum Preclinical Exposures
1.	General Dental Practice Clinic / <b>Prosthodontics Clinic</b>	Knowledge exposure and clinical training  Clinical Logbook / Minimum 2 (TWO) clinical portfolios/ case study write-up.

#### **C. ACKNOWLEDGEMENT**

The development of the standards for specialty training in Prosthodontics was initiated by the Dental Specialty Education Committee (DentSEdC) subsequent to recent guidance from the Joint Technical Committee for Evaluation of Dental Specialty Programmes (JTCEdSP). This document has been developed by a working party from the DentSEdC in Prosthodontics chaired by Professor Dr. Noor Hayaty Abu Kasim with members comprising Dr. Balkis Ghazali, Dr. Kamarul Hisham Kamarudin, Dr. Mohd Muzafar Hamiruddin, Associate Professor Dr. Rohana Ahmad and Associate Professor Dr. Zaihan Ariffin.

This document was reviewed in 2024 by the DentSEdC in Prosthodontics chaired by Associate Professor Dr. Zaihan Ariffin, and its members were Associate Professor Dr. Norasmatul Akma Ahmad, Dr. Yanti Johari, Dr. Kamarul Hisham Kamarudin, Dr. Saridatun Nur Abd Salam, Lt. Kol (Dr) Marissa Baharom and Dr. Mohd Muzafar Hamirudin.

## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN RESTORATIVE DENTISTRY (MASTER PROGRAMME)**

### **A. OUTCOMES AND CONTENTS OF LEARNING**

The training provided in this component should be designed to enhance the trainee's knowledge and skills related to the field of restorative dentistry. It should cover the foundation topics that include the biological basis of disease management, as well as the clinical and technical aspects of restorative dental treatment.

#### **a) Outcomes of the 1-year foundation programme related to restorative dentistry**

At the end of 1-year training, the trainee will be able to:

##### Knowledge

1. Relate relevant fundamental knowledge of biomedical, technological, and clinical sciences to physiological and pathological conditions in the context of restorative dentistry (C5). – Cluster 1
2. Select dental materials, equipment, and technology for patient management and associated laboratory procedures (C4). – Cluster 2

##### Psychomotor skill

1. Display practical preclinical and laboratory skills in the field of Restorative Dentistry (P5).- Cluster 3.1
2. Organise and record relevant history, conduct a thorough physical examination, diagnose, plan and deliver clinical care, and appraise various outcome measures at the level of a skilled general dental practitioner (P5). – Cluster 3.1

##### Affective skill

1. Display professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking a holistic approach to solving problems and designing treatment plans (A5).--Cluster 3.2
2. Display appropriate verbal and non-verbal communication skills with patients, dental auxiliaries, and relevant individuals during training and clinical practice (A5). – Cluster 3.3
3. Organise an independent study for the professional enhancement of knowledge and clinical competencies using a variety of sources (A4). – Cluster 4

#### **b) Content**

1. Fixed and Removable Prosthodontics
  - Principles of tooth preparation for intra-coronal and extra-coronal restorations
  - Provisional restorations and materials
  - Principles of Removable partial denture design

2. Occlusion
  - Anatomy of the occlusal system, mandibular movements, and occlusal concepts.
  - Occlusal analysis
  - Bite registration and facebows records.
  - Articulator
  - Diagnostic wax-up
  - Occlusal splints
  
3. Tooth surface loss (TSL)
  - Aetiology, diagnosis, and treatment planning
  - Techniques for management of TSL
  
4. Endodontics
  - Biology and physiology of the pulp dentin complex.
  - Microbiology in endodontics.
  - Pulp and periapical pathology
  - Endodontics management (including instrumentation, medicaments, and materials)
  - Restoration of root treated tooth
  - Clinical outcome, prognosis, and retreatment
  
5. Periodontics
  - Pathogenesis of periodontal disease
  - Periodontal screening, periodontal examination, diagnosis, and treatment planning
  - Systemic diseases and periodontal disease
  - Plaque control
  - Non-surgical periodontal therapy
  - Prognosis of periodontal disease
  
6. Operative dentistry
  - Aetiology, pathogenesis, and management of caries
  - Principles of aesthetics in dentistry
  - History taking and treatment planning
  
7. Dental materials
  - Tooth coloured material – Composite, Glass ionomer, compomer etc
  - Dental Bonding agents
  - Amalgam and Alloys
  - Ceramic
  - Impression Materials
  - Die materials
  - Acrylic-based Materials
  - Endodontic materials

## B. MINIMUM CLINICAL EXPERIENCE

The 1-year training must incorporate:

### a) Preclinical tasks which include:

No.	Procedures	Procedures
1.	Fixed Prosthodontics	<p>Tooth preparation:</p> <ul style="list-style-type: none"> <li>• ONE (1) PFM three-unit bridge and provisional restoration.</li> <li>• ONE (1) All-ceramic crown and provisional restoration.</li> <li>• ONE (1) Full metal crown and provisional restoration.</li> <li>• ONE (1) Casted post &amp; core (up to wax pattern)</li> <li>• ONE (1) Onlay</li> <li>• ONE (1) All ceramic veneer</li> </ul> <p>Competency test:</p> <ul style="list-style-type: none"> <li>• Crown preparation and provisional restoration</li> </ul>
2.	Removable prosthodontics	<ul style="list-style-type: none"> <li>• Surveying &amp; Co-cr denture design</li> </ul> <p>Competency test:</p> <ul style="list-style-type: none"> <li>• Denture Design</li> </ul>
3.	Occlusion	<ol style="list-style-type: none"> <li>1. Diagnostic wax-up teeth on stone models.</li> <li>2. ONE (1) hard acrylic occlusal splint.</li> </ol>
4.	Endodontics	<p>Techniques for non-surgical root canal treatment on at least:</p> <ul style="list-style-type: none"> <li>• TWO (2) anterior extracted teeth</li> <li>• TWO (2) posterior extracted teeth</li> </ul> <p>Competency test:</p> <ul style="list-style-type: none"> <li>• Extracted molar tooth - access cavity, canal preparation, and obturation.</li> </ul>
5.	Periodontics	<ul style="list-style-type: none"> <li>• Full periodontal charting.</li> <li>• Root surface debridement.</li> </ul> <p>Competency test:</p> <ul style="list-style-type: none"> <li>• Root surface debridement.</li> </ul>
5.	International Caries Detection and Assessment System (ICDAS)	Knowledge exposure and practical training

	and International Caries Classification and Management System (ICCMS)	
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**b) Clinical requirements:**

Trainees should treat and manage a minimum of 4 moderate to high complexity endodontic, periodontic and/or prosthodontic cases. These may be standalone cases or involve a multidisciplinary approach.

**C. ACKNOWLEDGEMENT**

The development of the standards for foundation specialty training in Restorative Dentistry was initiated by the Dental Specialty Education Committee (DentSEdC) subsequent to the recent guidance from the Joint Technical Committee for Evaluation of Dental Specialty Programme (JTCEDSP). This document has been developed by a working party from the DentSEdC in Restorative Dentistry chaired by chaired by Associate Professor Dr Hadijah Abdullah, with members comprising Professor Dr. Seow Liang Lin, Colonel Dr. Mohamad Asri bin Din, Associate Professor Dr. Rathna Devi Vaithilingam, Dr Rohani Mahmood and Dr. Jasmina Qamaruz Zaman.

This document was reviewed in 2024 by the DentSEdC in Restorative Dentistry chaired by Dr. Roshima bt Mohd Sharif, Associate Professor Dr Noor Azlin Yahya, Dr Jasmina Qamaruz Zaman, Dr Faizah bt Abdul Fatah, Dr. Ithnaniah bt Abdul Wahab, Brigadier Jeneral (Dr) Mohamad Asri bin Din and Dr. Army Empol.

## **PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN SPECIAL CARE DENTISTRY (MASTER PROGRAMME)**

### **A. OUTCOMES AND CONTENTS OF LEARNING**

#### **Scope**

The scope of Special Care Dentistry encompasses a comprehensive, holistic approach to the care of patients who are categorized as having compromised physical, intellectual, medical, psychiatric conditions, or a combination of these factors that directly or indirectly affect their oral health. It includes the delivery of oral health care, focusing on individuals with special needs aged **16 years and above**. The programme should include multidisciplinary involvement of other dental, medical specialties and other healthcare professionals/providers. Close cooperation with other stakeholders such as government agencies and non-governmental organisations should be encouraged.

#### **Course Learning Outcomes**

At the end of the course, the graduate must be able to:

- i. demonstrate mastery of knowledge in the field of Special Care Dentistry
- ii. apply practical skills in Special Care Dentistry
- iii. relate ideas to societal issues in Special Care Dentistry
- iv. adhere to legal, ethical and professional codes of practice
- v. solve clinical-related problems based on scientific evidence and critical thinking skills

#### **Competencies**

Upon completion of the course, the graduate is expected to be able to:

- i. Integrate the knowledge of the biological sciences, pharmacology and therapeutics and understand their relevance to the management of special care patients (C5)
- ii. Demonstrate a knowledge and understanding of the epidemiology of different impairments and of oral disease in patients with special needs. (C3)
- iii. Demonstrate and coordinate the knowledge and understanding of the conditions leading to impairment and disability. (C3, P4)
- iv. Describe, identify and detect the common oral manifestations of systemic disease including the treatment of specific conditions such as gingival hyperplasia in a patient with epilepsy on anticonvulsant medication or periodontal disease in Downs Syndrome patients etc. (C5, P4)
- v. Integrate the knowledge of barriers and access to care experienced by people with disabilities with the dental management of such patients. (C5)
- vi. Demonstrate an understanding of inequalities in health, oral health and health promoting strategies. (C3)
- vii. Justify the understanding of the implications of consent for examination and treatment and demonstrate an awareness of variations in Malaysia legislation. (C6, C3)
- viii. Demonstrate knowledge of the management of medical emergencies in practice. (C3, P4)
- ix. Adapt the understanding of the methods of needs assessment and individuals' priorities in order to promote positive oral health gain. (P4)

## **Components in Special Care Dentistry (May be integrated In other courses within the master programme)**

### **Applied Biology and Systemic Disease and Behavioural Sciences**

1. Normal and abnormal craniofacial development.
2. Normal and abnormal development of the dento-alveolar region
3. Impact of genetic conditions where there is an orofacial component.
4. Pharmacology and therapeutics
5. Side effects of drug interactions with medications which can be prescribed
6. Common oral complications of medically prescribed medications
7. Pathophysiology of the body systems in relation to special care dentistry e.g respiratory, cardiovascular, endocrine etc
8. Oral implications of infectious diseases
9. Definition of impairment and disability
10. Medically compromising conditions leading to disability
11. Conditions that may lead to medical emergencies in dental setting
12. Theories of behaviour, phobias and anxiety
13. Inequalities in health
14. Barriers to care (definitions, physical and attitude)
15. Quality of life and oral health related impacts
16. Management of challenging behaviour

### **Ethics, Governance and Public Health Policy in Special Care Dentistry**

1. Consent (definition, assessing the competence and capacity to consent, documenting consent)
2. Legislation related to disability
3. Decontamination and infection control in dentistry
4. Basic Life support skills
5. Justification and planning for clinical holding

### **B. MINIMUM CLINICAL EXPERIENCE**

1. Completed and passed the simulation exercise and clinical session recorded in practice log-book:
  - i. Practical training/exposure:
    - a. Non-pharmacological techniques on behavioural guidance
    - b. Pharmacological techniques on behavioural guidance
  - ii. Clinical session (observation) – Total of 15 cases
    - a. Management of patients with physical disability
    - b. Management of patients with intellectual disability
    - c. Management of patients with psychiatric/psychological issues
    - d. Management of medically compromised patients
    - e. Management of frail geriatric patients

- iii. Medical posting (observation) which may include:
  - a. Rehabilitation Medicine
  - b. Palliative
  - c. Neurology
  - d. Geriatric
  - e. Psychiatric

## **C. ACKNOWLEDGEMENT**

The development of the standards for the foundation specialty training in Special Care Dentistry was initiated and developed by a working party from the DentSEdC in Special Needs/Care Dentistry, chaired by Dr Siti Zaleha Hamzah, with members comprising Dr Norjehan Yahaya, Dr Dasera Raj Vedha Raj, Dr Maryani Mohamed Rohani, Associate Professor Dr Mas Suryalis Ahmad and Assistant Professor Dr Farah Natashah Mohd.

This document was reviewed in 2024 by the DentSEdC in Special Care Dentistry, chaired by Associate Professor Dr. Mas Suryalis Ahmad, and its members were Associate Professor Dr. Farah Natasha Mohd, Dr.Maryani binti Mohamed Rohani, Dr.Norjehan Yahaya, Dr. Dasera Raj Vedha Raj, Dr.Wan Syasliza Mohamed Thani and Dr. Eileen Yap Ai Ling.

**STANDARDS FOR SPECIALTY  
TRAINING OF CLINICAL DOCTORATE  
DEGREE PROGRAMME  
(GENERAL)**

## **STANDARDS FOR SPECIALTY TRAINING OF CLINICAL DOCTORATE DEGREE PROGRAMME (GENERAL)**

### **Doctorate programme (Level 8, MQF)**

#### **1) PURPOSE OF THE STANDARDS**

The standards are designed to serve as a basis for quality assurance and as the national reference for specialty doctorate postgraduate programmes. It will be used by the evaluation panel to evaluate and recommend the accreditation of the specialty programmes offered in Malaysia.

#### **2) REVIEWING AND UPDATING THE STANDARDS**

Formal review, updating and validation of the content will be undertaken by the respective DentSEdC every five (5) years.

#### **3) NOMENCLATURE OF PROGRAMME AND MQF LEVEL**

The three-year specialty training programme will lead to the award of a doctorate degree. The approved programmes titles and abbreviations for doctorate degrees can be found in Appendix S1-I of the Code of Practice for Programme Accreditation - Postgraduate Dental Degree Programmes. The programme is equivalent to Level 8 in the Malaysian Qualifications Framework (MQF).

#### **4) ENTRY REQUIREMENTS**

An applicant for admission to the 3-year specialty program will have the following:

- i. Bachelor of Dental Surgery or equivalent qualification,
- ii. Master's degree in dental sciences or equivalent qualification as required by HEP. The Master programme must have a total Student Learning Time (SLT) ranging from 1600 – 2000 hours. A minimum of 800 – 1000 hours of this programme must include foundation specialty component, or equivalent, which contributes towards the specialty training,
- iii. The candidate must enrol into the three-year programme directly upon graduation from the master programme, or not more than two (2) years after graduation,
- iv. Registered with the Malaysian Dental Council (MDC) and holds current Annual Practising Certificate (APC) for local candidates,
- v. Proof of registration with the dental regulatory body in another country for international candidates,
- vi. A minimum of two (2) years clinical practice after a basic degree, excluding the Master's training, and
- vii. Health and other requirements as required by HEP.

## **5) STUDENT LEARNING TIME (SLT)**

Three (3) years doctorate programme shall abide to the guide provided below:

- i. Minimum SLT : 6400 hrs
- ii. Maximum SLT : 8000 hrs
- iii. Coursework for all doctorate programme: 60 – 70% of total SLT (except for DrDPH).
- iv. The research component for DrDPH programme shall comprise 40-50%, because research is one of the core competencies required of the Dental Public Health specialist.

## **6) PROGRAMME LEARNING OUTCOMES**

At the end of the programme, graduates should be able to:

- i. Demonstrate a critical and in-depth knowledge and understanding in the relevant field, (Cluster 1)
- ii. Synthesise existing and new knowledge in one or more discipline areas to resolve practical problems, (Cluster 2)
- iii. Conduct rigorous and independent research or investigation with minimal supervision, (Cluster 2)
- iv. Adapt evidence based clinical procedures or oral health promotion and/or behaviour change techniques for proficient patient management in the relevant field, (Cluster 3.1)
- v. Display interpersonal skill in resolving issues in the dental practice or the society, (Cluster 3.2)
- vi. Communicate and interact effectively and interact with patients, specialists and general audience, (Cluster 3.3)
- vii. Select suitable digital and analytical tool techniques to resolve problems, (Cluster 3.4 & C3.5)
- viii. Demonstrate intellectual leadership qualities and management skills, (Cluster 3.6)
- ix. Demonstrate commitment to lifelong learning and personal development, (Cluster 4)
- i. Adhere to ethical, professional and sustainable practices. (Cluster 5)

These PLOs were adopted from the MQA Standard for Master and Doctoral degree and the MQF 2.0 to suit this programme. These adopted PLOs;

- a) did not include entrepreneurship,
- b) include a PLO for research (PLO iii), and
- c) merged the digital and numeracy skills into one PLO (PLO vii).

## **7) MODELS OF LEARNING**

The programme must be designed to enable the trainees to attain the skills representative of a specialist proficient in the theoretical and practical aspects of the relevant fields.

Training could be undertaken in the following ways;

- i. Guided theoretical learning scheduled accordingly throughout the programme. This

process aims to develop an understanding of the subject by critical appraisal and synthesis of literatures through individual and group activities, and independent learning;

- ii. Technical skills development through simulation, laboratory or other relevant exercises;
- iii. Clinical skills development through supervised clinical practice. This learning process may include;
  - o Pre-management case discussions may be used to facilitate development of independent decision-making in diagnosis, treatment planning, and treatment execution.
  - o Post-treatment case discussions may be used to facilitate group reflection and integration with theoretical knowledge.
- iv. Research exposure through participation in a research project (clinical, experimental or literature research) which is reported formally in a thesis, or as a manuscript prepared for submission or as published paper(s).
- v. Community-based experiential learning and attachments.

## **8) SUPERVISION STRUCTURE**

The HEP shall appoint a Programme Director who co-ordinates the training together with all designated teaching staff.

In the early stages of the training, trainees should be closely assessed to determine their competence base. The level of supervision initially should be close to ensure patient safety and allow the gauging of ability and potential for independent progression. As supervised tracking shows development of competence, the level of supervision may be tapered down in proportionate measure, ultimately leading to independent practice within the training period. The trainees should be exposed to a variety of philosophies within the discipline through multiple clinical supervisors.

Flexibility is encouraged for the provision of training in a variety of approved settings such as other teaching institutions, community clinics and private practice, particularly during the later stages of the programme.

## **9) FEEDBACK ON LEARNING**

Assessment of competence will be through multiple assessment methods through multiple assessors. Assessment methods may include clinical examination, direct observation of procedural skills in daily clinical session, case-based discussion, logbook records, multi-source feedback and reflective summaries. Satisfactory progress in the assessment process and success in an exit assessment by examination is required before award of degree.

A record of all appraisals will be kept in the logbook where relevant, which will be used as part of continuous assessment. Keeping the logbook and portfolio of cases completed and up to date is a trainee responsibility.

The logbook may include the following:

- i. Details of consultation clinics

- ii. Details of patients and procedures
- iii. Details of teaching experience
- iv. Journal/study groups
- v. Professional courses
- vi. Details of field postings or attachment (local or abroad)
- vii. Audit

## **10) ASSESSMENT**

### **10.1 Theory and Clinical/Field Work Assessment**

The purpose of clinical assessment is to ensure that trainees have achieved the appropriate knowledge and skills specified in the learning outcomes.

Assessment of trainees will take two forms:

#### **i) Continuous Assessment**

The continuous assessment will be based on theory assessment, field work, and patient management during clinical sessions throughout the entire duration of training. Trainees are assessed on work that they are doing on a day-to-day basis and that the assessment is integrated into their daily work.

Some of the assessment methods could include:

- Progress tests
- Oral presentation
- Preclinical competency tests
- Clinical competency tests
- Performance during case-based discussion
- Multi-source feedback from supervisors, support staff, peer and patients
- Performance at seminars/journal clubs
- Performance of daily clinical work
- Performance in community-based projects
- Performance during field attachments
- Written assignment/reports
- Workplace-based assessment using logbook or portfolio

However, the above list is not exhaustive.

Format of theory assessment could include:

- Multiple choice question [e.g. One Best Answer (OBA), True/False, Single Response Answer (SRA)]
- Written paper [e.g. Short Answer Question (SAQ), Modified Essay Question (MEQ), essay]

These assessment methods may either be formative or summative.

#### **ii) Final Assessment**

Formal completion of training will be marked by satisfactory summative assessment in

a professional examination.

## 10.2 Research Assessment

A supervisor shall be appointed for each trainee to guide him/her in the research activities. Both the supervisor and the programme head must monitor the trainee's assessment to ensure satisfactory progress. This must be monitored through:

- i. Regular consultation (formal and informal)
- ii. Research progress (using appropriate mechanisms)
- iii. Presentation / colloquium / seminar / workshop

Assessment of research must include:

- i. For formative assessment:
  - Monitoring of research progress periodically (for example, through a progress report, or a proposal defence, or candidature defence). This will assess the knowledge, critical thinking, practical, technical, professional, scientific and problem-solving skills of the trainee.
  - Research Presentation / Colloquium / Seminar / Workshop. This will enhance the trainee's communication skills, teamwork, leadership, organisational skills, lifelong learning and professionalism.
- ii. For summative assessment:
  - thesis; and
  - viva voce.

## 10.3 Examiners

At least one (1) external examiner must be appointed for each theory/clinical and research component.

## 10.4 Criteria for graduation

The trainee must pass the theory/clinical and research component independently.

## 11) HUMAN RESOURCE

### 11.1 Programme director

The programme director must be a **full-time, registered/recognised** specialist in the field by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification.

In cases of newly introduced specialty, the programme director may be a **registered/recognised** specialist by HEP or MDC in a related field with minimum clinical experience of 5 years after acquiring specialist qualification.

11.2 Minimum core teaching staff shall consist of a programme director and at least two (2) **registered/recognised** specialists by MDC (specialists in the field or related field – as specified in the respective programme standards) and must be full-time/full-time

equivalent.

### 11.3 Other clinical teaching staff

11.3.1 Other teaching staff (clinical supervisor) shall be from the related specialties.

11.3.2 Clinical academic staff must have **approved** postgraduate qualification by the HEP (University), with minimum clinical experience of 3 years after acquiring specialist qualification.

11.3.3 The academic staff shall possess a valid practising certificate (for clinical academic staff).

11.3.4 International academic staff involved in clinical teaching shall have a valid TPC as stated in Guidelines for Application for TPC Dental Act 2018.

11.3.5 Academic staff in Private Higher Education Institutions (PHEI) must have a valid teaching permit.

11.3.6 HEP must show evidence of adequate teaching and support staff with relevant experience and qualification.

### 11.4 The number of teaching staff must be sufficient to ensure conduct of the following;

- i. All guided teaching activities, including case conferences, seminars and others,
- ii. Review of patient evaluation, treatment planning, management, complications and outcomes of cases,
- iii. Supervision of all clinical activities,
- iv. Research activities,
- v. Assessment activities.

Supervision must be structured, and supervisor(s) must be present for teaching and direct supervision of all patient care. The optimal ratio for academic staff to trainee for clinical session (or project) is 1:6.

### 11.5 Research supervisor

The qualification and experience requirements of research supervisors for master and doctoral degrees by coursework and mixed mode are stated as follows:

- a) The main supervisor is a **registered/recognised** specialist by MDC; or, where the supervisor is a non-specialist and has a master or PhD qualification in the field, the supervisor must have at least five (5) years' experience in teaching, or have had at least 2 years' experience as a co-supervisor, or has retained a co-supervisor who has experienced graduating research students.
- b) The supervisors must go through structured supervisory training. Those who has experienced graduating postgraduate students (in any mode of study) as main supervisors are exempted.
- c) Supervisor from the industry or practitioner must have at least a bachelor's degree and at least five (5) years of experience in the field at a level appropriate for the dissertation/thesis AND be appointed only as a co-supervisor. Those with specialist qualification may be exempted from the supervisory training. Terms of reference must be provided.

Supervision must be structured. The optimal ratio for academic staff to trainee for research is 1:6 (as main supervisor).

For DrDPH programme, considering the research component is heavier, the ratio for full-time academic staff to trainee is 1:4 (as main supervisor).

**PROGRAM STANDARD FOR  
SPECIALITY TRAINING IN DOCTORATE  
PROGRAMME**

**PROGRAMME STANDARD FOR  
DOCTOR IN DENTAL PUBLIC  
HEALTH**

## **PROGRAMME STANDARD FOR DOCTOR IN DENTAL PUBLIC HEALTH**

### **1. SCOPE OF DENTAL PUBLIC HEALTH**

The scope of the DrDPH Programme shall encompass the following:

- i. Needs assessment and surveillance of the population's health and well-being
- ii. Planning, implementation, monitoring and evaluation of the public oral health programme, services and other activities
- iii. Promotion and protection of population oral health and well-being
- iv. Exposure to quality improvement initiatives to maintain and improve standards for oral health based on research evidence
- v. Management, analysis and interpretation of health and health-related data using information and communication technology (ICT)
- vi. Policy and strategy development and interpretation
- vii. Community empowerment for improvement of oral health and reduction of social inequalities
- viii. Strategic leadership for oral health and well-being across sectors
- ix. Ethical management of self, people, resources and practice within the Malaysian legal framework
- x. Research and development
- xi. Clinical dental prevention
- xii. Engagement of individuals towards self-care and attainment of oral health and general wellness

This training will produce specialists in Dental Public Health who will be eligible to be registered in the Specialist Division of the Dental Register. It will also provide a basis for the individual to develop into a life-long learner who is capable of self-reflection and self-directed learning which will lead to ongoing development in the field of Dental Public Health.

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

The focus of dental public health as a specialty encompasses the interaction of oral health and general public health. Trainees will be exposed to various community health activities in partnership with health and health-related agencies. A multidisciplinary approach toward holistic management of patients shall be incorporated into the programme with relevant disciplines of dentistry and medicine.

### **3. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The training programme must be designed to build on the knowledge and skills of the master programme and those gained during practice after graduation. This shall be oriented to the accepted standards of dental public health practice as set out in the specific standards contained in this document.

The programme must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research and service. Planning for,

evaluation of, and improvement of educational quality for the programme must be broad-based, systematic and continuous.

The cluster of learning outcomes (domains of competencies) are as follows;

### **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO1: Demonstrate a critical and in-depth knowledge and understanding of the relevant field (Cluster 1)

The trainee must be able to:

- i. Relate relevant knowledge in the field of Dental Public Health in the planning, implementation, monitoring and evaluation of oral health programmes at the individual and community level (C6)
- ii. Consider the role of health determinants in disease initiation and progression, disease prevention, health-promoting behaviour, and oral health service organization and delivery (C6)
- iii. Consider the latest techniques and technologies as part of a comprehensive long-term treatment for patients at individual and community levels (C6)

### **CLUSTER 2: COGNITIVE SKILLS**

PLO2: Synthesise existing and new knowledge in one or more discipline areas to resolve practical problems

The trainee must be able to:

- i. Select interventions and strategies to prevent and control oral disease based on the comprehensive knowledge of the efficacy, effectiveness and efficiency of the various interventions (C6)
- ii. Appraise the role and function of the national, state and district healthcare management system (C6)
- iii. Evaluate the different processes involved in the formulation of health policies on the performance of the health system (C6)
- iv. Evaluate the different processes involved in health impact assessment related to dentistry at the community level (C6)
- v. Appraise the oral health care financing system (C6)
- vi. Appraise the principles of health care economics to appropriate dental issues (C6)
- vii. Appraise the context, meaning and implementation of the clinical standards and governance (C6)

### **CLUSTER 2: COGNITIVE SKILLS**

PLO3: Conduct rigorous and independent research or investigation with minimal supervision (Cluster 2)

The trainee must be able to:

- i. Design a research project to address important Dental Public Health issues (P7)
- ii. Manage research activities based on sound methodological principles (P7)

- iii. Display integrity in the design, conduct and criticism of research (P5)
- iv. Adapt research findings to inform stakeholders in the formulation of public health policies and practices (P6)
- v. Display effective presentation skills in communicating research work at scientific meetings (P5)

### **CLUSTER 3.1: PRACTICAL SKILLS**

PLO4: Adapt evidence-based clinical procedures and/or oral health promotion and/or behaviour change techniques for proficient patient management in the relevant field (Cluster 3.1)

The trainee must be able to:

- i. Perform an oral health needs assessment of the population through situational analysis (P5)
- ii. Revise adequacy and allocation of resources to optimise execution of oral health programmes for the population (P6)
- iii. Design intervention and strategies for the prevention and control of oral diseases and promotion of oral health (P7)
- iv. Organise the implementation of oral health programmes (P5)
- v. Monitor the effectiveness of oral health programme (P6)
- vi. Evaluate outcomes of oral health programmes (P6)
- vii. Formulate a health policy/guideline for effective interventions to promote oral health (P5)
- viii. Evaluate an existing health policy/performance indicator (P5)
- ix. Design clinical intervention programmes for high-risk individuals or groups (P7)
- x. Adapt comprehensive risk-assessment for oral diseases among high-risk individuals in the clinical and community settings (P6)
- xi. Perform personalized preventive clinical dental intervention and behavioural management in high-risk patients (P5)
- xii. Organise and undertake a clinical audit (P4)

### **CLUSTER 3.2: INTERPERSONAL SKILLS**

PLO5: Display interpersonal skills in resolving issues in the dental practice and/or the society (Cluster 3.2)

The trainee must be able to:

- i. Collaborate sensitively and effectively with persons from diverse socio-economic backgrounds and lifestyle preferences enabling empowerment (A5)
- ii. Display ability as a resource person for professional and community groups concerning evidence-based oral health preventive and promotive interventions (A5)

### **CLUSTER 3.3: COMMUNICATION SKILLS**

PLO6: Communicate and interact effectively with patients, specialists and the general audience (Cluster 3.3)

The trainee must be able to:

- i. Display effective communication and negotiation skills with strategic partners in promoting oral health for the community (P5)
- ii. Display the ability to involve the community in improving their oral health and well-being through a shared decision-making process (A5)

#### **CLUSTER 3.4 & 3.5: DIGITAL AND NUMERACY SKILLS**

PLO7: Select suitable digital and analytical tool techniques to resolve problems (Cluster 3.4 & C3.5)

The trainee must be able to:

- i. Consider a variety of information sources to obtain scientific papers and other evidences such as guidelines (C6)
- ii. Appraise systematically scientific evidence on different approaches in improving oral health (C6)

#### **CLUSTER 3.6: LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8. Demonstrate intellectual leadership qualities and management skills (Cluster 3.6)

The trainee must be able to:

- i. Display good leadership qualities through strategic communication with colleagues, other healthcare professionals, relevant agencies, patients and the community; and practice effective teamwork in promoting oral health (A5)
- ii. Make decisions aligned with vision, values and evidence (P5)
- iii. Perform as an effective team member (P5)
- iv. Demonstrate multi-sectoral working ability (P4)

#### **CLUSTER 4: PERSONAL SKILLS**

PLO9: Demonstrate commitment to lifelong learning and personal development (Cluster 4)

The trainee must be able to:

- i. Appraise and evaluate dental public health practice and procedures periodically to maintain competencies (C6)
- ii. Practice the process of revalidation and the assessment of individual performance (A5)
- iii. Display skills of self-reflection and self-appraisal used to identify continuing professional development needs (A5)

#### **CLUSTER 5: ETHICS AND PROFESSIONALISM**

PLO10. Adhere to ethical, professional and sustainable practices (Cluster 5)

The trainee must be able to:

- i. Display ethical behaviour and professional conduct as reflected in the code of

- professional conduct of the dental professional (A5)
- ii. Display good values and attitudes in managing community oral health problems and in conducting research (A5)
- iii. Display ability to adhere to the Dental Act, guidelines, standard operating procedures and relevant legislations in the practice of dentistry and public health (P5)

#### 4. MINIMUM CLINICAL AND LABORATORY EXPERIENCE

Minimum requirements can be fulfilled through simulation/ practical/ internship /project/ task-based/ discussion/report etc. A single activity may be used to assess more than 1 learning outcome/requirement.

No.	Scope of DPH competency	*Minimum requirement
1.	Appraise the role and function of the national, state and district healthcare management system	1
2.	Appraise the principles of health care economics to appropriate dental issues	1
3.	Perform an oral health needs assessment of the population through situational analysis	3
4.	Revise adequacy and allocation of resources to optimise the execution of oral health programmes for the population	1
5.	Design interventions and strategies for the prevention and control of oral diseases and the promotion of oral health	1
6.	Organise the implementation of an oral health programme	1
7.	Monitor the effectiveness of an oral health programme	1
8.	Evaluate outcomes of oral health programmes	3
9.	Formulate a health policy/ guideline for effective interventions to promote oral health	1
10.	Evaluate an existing health policy/performance indicator	1
11.	Design clinical intervention programmes for high-risk individuals or groups	2
12.	Adapt comprehensive risk assessment for oral diseases among high-risk individuals in the clinical and community settings	2
13.	Perform personalised preventive clinical dental intervention and behavioural management in high-risk patients	5
14.	Design a research project to address important Dental Public Health issues	1
15.	Manage research activities based on sound methodological principles	1
16.	Display integrity in the design, conduct and criticism of research	1

No.	Scope of DPH competency	*Minimum requirement
17.	Adapt research findings to inform stakeholders in the formulation of public health policies and practices	1
18.	Display effective presentation skills in communicating research work at scientific meetings	1
19.	Display effective negotiation skills with strategic partners in promoting oral health for the community	1
20.	Display the ability to involve the community in improving their own oral health and well-being through a shared decision-making process	1
21.	Display ability to adhere to the Dental Act, guidelines, standard operating procedures and relevant legislations in the practice of dentistry and public health	1
22.	Make decisions aligned with vision, values and evidence	1
23.	Perform as an effective team member	1
24.	Demonstrate multi-sectoral working ability	1
25.	Consider a variety of information sources to obtain scientific papers and other evidences such as guidelines	3
26.	Appraise systematically scientific evidence on different approaches in improving oral health	3
27.	Formulate guidelines for effective interventions to promote oral health	1
28.	Organise and undertake programme/ clinical audit project(s)	1

## 5. CLINICAL FACILITIES

The HEP must provide adequate and appropriate physical and clinical facilities and resources to support the process of learning and research activities for the programme. These include;

- i. Physical facilities in the form of classroom, seminar Room and discussion room
- ii. Clinical facilities for dental treatment of patients including undertaking clinical prevention
- iii. IT facilities to support the process of teaching and learning

## 6. MINIMUM CORE TEACHING STAFF

The minimum core teaching staff shall consist of a programme director (which must be a **full-time, registered/recognised** DPH specialist by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least two (2) registered/recognised DPH specialists by the MDC, and must be full-time/full-time equivalent.

## **7. ADDITIONAL REQUIREMENTS**

### **7.1 MODELS OF LEARNING IN DENTAL PUBLIC HEALTH**

The programme is designed to enable the trainees to attain the skills representative of a specialist proficient in the theoretical and practical aspects of dental public health.

The majority of the curriculum could be undertaken through work-based experiential learning in the following ways;

- i. Guided theoretical learning scheduled accordingly throughout the programme. This process aims to develop an understanding of the subject by critical appraisal and synthesis of literature through individual and group activities, and independent learning.
- ii. Community-based learning by carrying out supervised projects. Some projects may be of general public health in nature, but the majority will need to be dental public health projects.
- iii. Attachment at health or health-related agencies in relation to research, audit and management of activities.
- iv. Research exposure through participation in a research project (clinical, experimental or literature research) which is reported formally in a thesis, or as a manuscript prepared for submission or as a published paper(s).
- v. Clinical skills development through supervised clinical practice.

### **7.2 ASSESSMENT**

Assessment must include theory, clinical, work-based and research components. The course assessment is on the application of knowledge and will be based on reports, reflections, case reports, etc.

- i. Theory
  - These may include written assessment, case-based discussion, critical appraisal of research papers, and oral examination.
- ii. Clinical
  - Performance during case-based discussion
  - Performance of clinical work
- iii. Workplace/Community-based
  - Workplace-based assessment using a logbook or a portfolio with feedback from multiple sources
  - Regular updates and reflection on a portfolio of DPH practice projects
  - Oral presentation
  - Written assignment
  - Seminar paper

The assessment list above is not exhaustive.

### **7.3 DENTAL PUBLIC HEALTH FIELD ATTACHMENT**

The programme must provide sufficient experience for the trainee to be exposed to a various range of health activities at the federal, state and district levels. The range of experience is recorded by maintaining a logbook. The trainee must be monitored by field supervisors throughout the attachment.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period

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This document was reviewed in 2024 by the DentSEdC in Dental Public Health chaired by Prof Dr Zamros Yuzadi Mohd Yusof and its members were, YBhg Dato' Datin Paduka Dr. Nooral Zeila Junid, Associate Professor Dr Norkhafizah Saddki, Associate Professor Dr Tanti Irawati Rosli, Brigadier Jeneral Dr Normah Samsuri, Dr Salleh Zakaria and Dr Aminuddin Mohd Natar.

# **PROGRAMME STANDARD FOR DOCTOR IN ENDODONTOLOGY**

## **PROGRAMME STANDARD FOR DOCTOR IN ENDODONTOLOGY**

### **1. SCOPE OF ENDODONTICS**

The scope of endodontics encompasses the comprehensive diagnosis and management of patients who require low to high complexity endodontic treatment. The management of cases include;

- i. Treatment of pulp and periradicular conditions with emphasis on pulp sensibility testing and radiology,
- ii. Dentine desensitisation and protection, pulp capping, partial and total pulpotomy, partial and total pulpectomy,
- iii. The biomechanical debridement and subsequent filling of root canals,
- iv. The surgical removal of pathological periapical tissues and the surgical placement of root end fillings,
- v. Restoration of the natural appearance of the crown when discoloured,
- vi. Management of cracked tooth problems,
- vii. Repositioning of luxated teeth, replantation and subsequent treatment of avulsed teeth, intentional replantation of teeth,
- viii. Transplantation of teeth, repair of traumatic or resorptive root perforations, apexification/management of immature roots, treatment of root fractures,
- ix. Endodontic re-treatment procedures, hemisection, root resection, recognition and treatment of resorptive defects and other areas related to the pulp, the periradicular tissues and their associated pathoses and,
- x. Treatment procedures related to coronal restorations by means of post and/or cores involving the root canal space.

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

Prosthodontics, periodontics, paedodontics and orthodontics should all receive some time allocation during the training programme. Close cooperation with the relevant field of specialty such as pain clinics, oral pathology and oral medicine should be encouraged.

### **3. CONTENTS OF LEARNING AND DOMAINS OF COMPETENCIES**

The training programme must be designed to build on the knowledge and skills of the undergraduate programme. This should be oriented to the accepted standards of endodontic practice as set forth in the specific standards contained in this document.

The programme must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research and service. Planning for, evaluation of and improvement of educational quality for the program must be broad-based, systematic and continuous.

The cluster of learning outcomes (domains of competencies) are as follows;

## **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO1: Demonstrate a critical and in-depth knowledge and understanding in endodontology.

The trainee must be able to:

- i. integrate relevant knowledge in biology, anatomy, physiology of normal and abnormal intra- and extra-oral structures and tissues in pain management, including prevention and control (C5);
- ii. weigh the primary and supplementary techniques for local anaesthesia of the pulp (C6);
- iii. select dental materials, equipment and technology to achieve each treatment goal (C6);
- iv. choose current best evidence for effectiveness of various treatment modalities (C6);
- v. evaluate prognostic and risk factors for various modalities (C6);
- vi. justify the use of appropriate pharmaceutical agents where necessary (C4);
- vii. evaluate the factors which make a tooth unrestorable (C6);
- viii. appraise the principles and practice of restoring root treated teeth (C6);
- ix. relate the principles of occlusion and its influence on clinical practice (C6);
- x. consider the multidisciplinary of clinical cases which may require varied treatment modalities (C6);
- xi. relate technical requirements of treatment of pulp and periapical diseases to biology, anatomy, physiology, pathology and microbiology (C6);
- xii. summarize application of tissue regeneration/engineering in clinical practice (C6);
- xiii. evaluate the physical, chemical and biological properties of clinical instruments and materials (C6);
- xiv. appraise conventional and contemporary imaging techniques (C6);
- xv. appraise the different outcome measures of treatment and their assessment (C6);
- xvi. consider risks and limitations associated with non-surgical and surgical procedures (C6);
- xvii. select the procedures for the emergency management of acute dental pain and sepsis (C6)

## **CLUSTER 2: COGNITIVE SKILLS**

PLO2: Synthesise existing and new knowledge in one or more discipline areas to resolve practical problems.

The trainee must be able to:

- i. consider a variety of information sources to obtain scientific papers and other evidence such as guidelines (C6, A4);
- ii. display professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking a holistic approach (A5);
- iii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of treatment demonstrating self-direction and autonomy (C6, A5);
- iv. appraise systematically current evidence and appreciate how research activity can inform practice (C6);
- v. perform and sustain a critical argument in writing and through oral presentations (A5).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO3: Conduct rigorous and independent research or investigation with minimal supervision.

The trainee must be able to:

- i. compose written reports/articles, including preparing and altering manuscripts, where appropriate (C6);
- ii. perform research activities (P5);
- iii. display integrity in the design, conduct and criticism of research (C5);
- iv. display presentation skill in communicating research work to professional colleagues or at specialists' meetings (C6, P5).

## **CLUSTER 3.1: PRACTICAL SKILLS**

PLO4: Adapt evidence based clinical procedures for proficient patient management in endodontics

The trainee must be able to:

- i. take a thorough history to identify the aetiological factors for the patients' concerns such as tooth wear, parafunction (P5);
- ii. execute a thorough examination of the patient's oral condition, occlusion, existing prostheses and restorative needs of the remaining tooth structure (P5);
- iii. perform appropriate investigations (e.g. radiographic, sensitivity and vitality tests, haematological and microbiological tests and appropriately articulated study casts) (P5);
- iv. evaluate existing prosthesis and related tissues and structures and radiographic interpretation (P5);
- v. construct the appropriate diagnosis(es) based on the examination and investigation (P5);
- vi. derive the likely prognosis and outcomes of the various treatment options and relating this to the prognosis without treatment (P5);
- vii. formulate treatment plan based on appropriate diagnoses (P5);
- viii. display skills to manage medically compromised patients (P5);
- ix. advise patients on the possible and probable outcomes of the treatment options, as well as the need for future supportive care, prevention and maintenance (P5);
- x. delineate strategies and plans according to the skills of other clinicians involved in the care of the patient (P5);
- xi. integrate methods and technologies to prevent infection during treatment procedures, between patients and staff and during transport of materials and prostheses between the laboratory and the clinic (P5);
- xii. display skills to manage multidisciplinary cases (P5);
- xiii. perform endodontic treatment (non-surgical, surgical, primary and re-treatment) of moderate to high complexity cases using a range of techniques (P5);
- xiv. assess all treatment outcomes (P5);
- xv. display proficiency in the application of endodontic materials, instruments and techniques for managing post-treatment complications (P5);
- xvi. alter treatment plan in the face of unfavourable findings or setbacks, including the

- decision to abort treatment (P6);
- xvii. display efficiency and confidence in the management of dental trauma (P5);
  - xviii. construct case reports including a standard set of photographs to illustrate the course of treatment (P7).

### **CLUSTER 3.2: INTERPERSONAL SKILLS**

PLO5: Display interpersonal skill in resolving issues in the dental practice

The trainee must be able to:

- i. display a caring and patient-centred approach to treatment planning (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. serve all patients with dignity and respect (A5);
- iv. recognise the impact of the patient's oral and general health status and the proposed advice on their quality of life (A3);
- v. recognise the need for supportive care, prevention and maintenance (A3);
- vi. adhere to the limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A4).

### **CLUSTER 3.3: COMMUNICATION SKILLS**

PLO6: Communicate and interact effectively and interact with patients, specialists and general audience

The trainee must be able to:

- i. display skill to communicate individually with patients and other professionals and in general educational and professional settings (A5)
- ii. display appropriate both verbal and non-verbal communication /presentation skills (A5);

### **CLUSTER 3.4 & 3.5: DIGITAL AND NUMERACY SKILLS**

PLO7: Select suitable digital and analytical tool techniques to resolve problems

The trainee must be able to:

- i. design a proposal for clinical audit based on the principles of clinical effectiveness (C5)
- ii. Select appropriate tools/methodologies to support and enhance clinical/research activities (C5/P5).
- iii. compose critical evaluation of numerical and graphical data (C5).

### **CLUSTER 3.6: LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8: Demonstrate intellectual leadership qualities and management skills

The trainee must be able to:

- i. build a rapport to work effectively as part of a team and manage members appropriately (A5);

- ii. practice methods of administration/negotiation in order to achieve an appropriate outcome (A5);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. display empathy, sensitivity and awareness in communicating with patients and colleagues (A5).
- v. perform clinical practice and research based on good governance (A5);
- vi. explain the role of the Malaysian Dental Council (MDC) and Dental Specialty Board (DSB) in the process of professional self-regulation (A4);
- vii. display proficiency in general patient management (P5);

#### **CLUSTER 4: PERSONAL SKILLS**

PLO9: Demonstrate commitment to lifelong learning and personal development

The trainee must be able to:

- i. appraise and evaluate clinical practice and procedures periodically to maintain competencies (A6);
- ii. practice the process of revalidation and the assessment of individual clinical performance (A5);
- iii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs e.g. becoming a member of a professional society (A5)
- iv. organise and manage the working environment and schedule (A4).

#### **CLUSTER 5: ETHICS AND PROFESSIONALISM**

PLO10: Adhere to ethical, professional and sustainable practices

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues and the place of their specialty in the overall healthcare spectrum (A5);
- ii. adhere to the standards of practice in dentistry as determined by the Malaysian Dental Council (A4);
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care, in relation to the oral health needs of populations, the needs of patients under treatment (A5);
- iv. practice ethical principles in the preparation of clinical and research reports (A5);
- v. practice medico-legal principles in relation to patients' records (A5)

#### **4. MINIMUM CLINICAL AND LABORATORY EXPERIENCE**

The programme must provide sufficient clinical experience for the trainee to be proficient in the comprehensive treatment of a wide range of endodontic cases. The procedures are as listed below. The trainee must treat **at least** a total of 100 teeth, of which must include the following treatment:

<b>Scope of endodontic treatment</b>	<b>Minimum Clinical Requirements</b>
1. Moderate to high complexity non-surgical root canal treatment	• 30 teeth (completed)
2. Moderate to high complexity non-surgical retreatment	• 30 teeth
3. Surgical endodontics (Clinical exposure as operator or assistant is accepted.)	• 5 cases [Must perform at least one (1) case as operator]
4. Management of traumatised teeth (including emergency cases)	• 5 cases
5. Management for non-vital immature teeth	• 5 cases
6. Restoration of endodontically treated teeth including bleaching, post core, simple crowns/bridges	• 10 teeth
7. Interdisciplinary endodontic, which may include: <ul style="list-style-type: none"> <li>• Replacement of poorly restorable teeth</li> <li>• Endodontically-related measures in connection with crown lengthening and forced eruption procedures</li> <li>• Reimplantation</li> <li>• Management of endo-perio cases</li> <li>• Regenerative endodontics</li> </ul>	• 5 cases

The range of clinical experience is recorded by maintaining a cumulative record of the number of treatment procedures undertaken within specified categories. The following listings are not considered to be totally prescriptive, if further detail to an entry is considered appropriate this can be added.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented.

## **5. CLINICAL FACILITIES**

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include;

- i. Physical facilities to permit trainee to operate under circumstances prevailing in the practice of endodontics.
- ii. Clinical facilities specifically identified for the advanced education program in endodontics. The facility must be fully equipped with dedicated endodontic armamentarium and materials to allow the standard of contemporary endodontic practice at the advanced level.
- iii. Laboratory facilities specifically identified to support the fabrication of most prostheses required in the program.
- iv. Laboratory bench spaces to accommodate the number of students/residents enrolled in the program.

## 6. MINIMUM CORE TEACHING STAFF

The minimum core teaching staff shall consist of a programme director (which must be **a full-time, registered/recognised** endodontist by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least two (2) registered/recognised endodontists by the MDC, and must be full-time/full-time equivalent.

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European Society of Endodontology. 2010. Accreditation of postgraduate speciality training programmes in Endodontology. Minimum criteria for training Specialists in Endodontology within Europe. International Endodontic Journal, 43, 725 -737

Referral for Restorative Dental Specialist Services in The Ministry Of Health (MOH)

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### DETAILED COURSE CONTENT

- 1) Patient assessment and medical history.
- 2) History of the discipline and a thorough knowledge of the endodontic literature
- 3) Management of medically compromised patients.
- 4) Diagnosis of pulp and peri-radicular pathoses and the different diagnosis of other conditions with similar presentations.
- 5) Evaluation of previous endodontic treatment.
- 6) Differential diagnosis of oro-facial pain.
- 7) Radiographic techniques and radiology.
- 8) Management and treatment planning of complex cases, including multidisciplinary treatment planning.
- 9) Embryology and developmental defects affecting the teeth.
- 10) Local anaesthesia and sedation.
- 11) Infection control in dental practice.
- 12) Applied pharmacology and therapeutics.
- 13) Endodontic materials and instruments.
- 14) Pulp therapy - including: dentine desensitisation and protection, indirect pulp capping, direct pulp capping, partial pulpotomy, pulpotomy and partial pulpectomy.
- 15) Pulpectomy and associated endodontic procedures.
- 16) Microbiology and immunology of pulp and periapical diseases.
- 17) Endodontic management of necrotic pulps and pulpless teeth with associated periapical pathosis via root canal therapy and surgical techniques, including the management of immature teeth, infections, canal obstructions, and iatrogenic problems.
- 18) Methods of debridement and obturation of root canals.
- 19) Methods for isolation of teeth during endodontic treatment.
- 20) Management of endodontic emergencies.
- 21) The management of traumatic injuries to the teeth and mouth - including crown fractures, crown/root fractures, root fractures, concussion, subluxations, luxations, avulsions, alveolar bone fractures, abrasions, contusions and lacerations.
- 22) Replantation and transplantation of teeth and their subsequent management.
- 23) Aetiology, recognition and treatment of resorptive defects.
- 24) Aetiology and treatment of discoloured teeth.
- 25) Diagnosis and management of cracks in teeth.
- 26) Combined endodontic-periodontic pathosis (conservative and surgical management).
- 27) Management of root perforations and other iatrogenic complications during endodontic treatment.
- 28) Paediatric endodontics.
- 29) Compromised endodontic procedures (e.g. devitalisation, mummification, etc) and their associated problems.
- 30) Methods of restoring endodontically treated teeth.

- 31) Principles of implantology.
- 32) Principles of tissue regeneration techniques.
- 33) Advanced instrumentation techniques.
- 34) Use of the dental operating microscope.
- 35) Report writing.
- 36) Record keeping for specialist practice

## GLOSSARY OF TERMS

### 1. Levels of Endodontic Case Difficulty:

The endodontic case complexity is defined based on three levels:

1.1 **Low complexity (Level 1 care)** outlines the skill sets and competencies that are covered by teaching and training in the dental undergraduate programme (i.e. competent to perform root canal therapy of single rooted teeth and uncomplicated multi-rooted teeth). Achieving a predictable treatment outcome should be attainable by a competent practitioner with limited experience. Factor(s) that contribute to case selection include(s):

- i. Patient factor:
  - a) No medical problem (ASA Class 1\*)
  - b) No history of anaesthesia problem
  - c) Cooperative and compliant
  - d) No limitation in mouth opening
  - e) No gag reflex
  
- ii. Diagnostic factor
  - a) Signs and symptoms consistent with recognized pulpal and periapical conditions
  - b) Minimal difficulty in obtaining/interpreting radiographs
  
- iii. Tooth factor
  - a) Anterior/premolar tooth type
  - b) Tooth has slight inclination ( $<10^\circ$ )
  - c) Tooth has normal original crown morphology
  - d) Crown allows for routine rubber dam placement
  - e) Root morphology with slight or no curvature ( $<10^\circ$ )
  - f) Root has closed apex ( $<1\text{mm}$  in diameter)
  - g) Radiographically, canal(s) visible and not reduced in size
  - h) No resorption evident
  
- iv. Additional factor
  - a) Trauma history with uncomplicated crown fracture of mature or immature teeth
  - b) No previous endodontic treatment
  - c) No or mild periodontal disease

1.2 **Moderate complexity (Level 2 care)** is defined as procedural and/or patient complexity requiring a clinician with enhanced skills and experience who may or may not be on a specialist register. This care may require additional equipment or environment standards but can usually be provided in primary care. Achieving a predictable treatment outcome will be challenging for a competent, experienced practitioner. Providers of Level 2 care on referral may need a formal link to a

specialist, to quality assure the outcome of pathway delivery. Factor(s) that contribute to case selection include(s):

- i. Patient factor:
  - a) One or more medical problems (ASA Class 2\*)
  - b) Vasoconstrictor intolerance
  - c) Anxious but cooperative
  - d) Slight limitation in mouth opening
  - e) Gags occasionally with radiograph/treatment
  
- ii. Diagnostic factor
  - a) Extensive differential diagnosis of usual signs and symptoms required
  - b) Moderate difficulty in obtaining/interpreting radiographs (e.g. high floor of mouth, narrow or low palatal vault, presence of tori)
  
- iii. Tooth factor
  - a) Tooth type – First molar
  - b) Tooth has moderate inclination ( $10^{\circ}$ - $30^{\circ}$ )
  - c) Crown has full coverage restoration or porcelain restoration
  - d) Tooth is an abutment for a bridge
  - e) Tooth has moderate deviation from normal tooth/root form (e.g. taurodontism, microdens)
  - f) Tooth has extensive coronal destruction
  - g) Simple pretreatment modification is required for rubber dam isolation
  - h) Root morphology with moderate curvature ( $10^{\circ}$ - $30^{\circ}$ )
  - i) Root with apical opening of 1-1.5mm in diameter
  - j) Radiographically, canal(s) visible but reduced in size
  - k) Minimal apical resorption
  
- iv. Additional factor
  - a) Trauma history with complicated crown fracture of mature teeth
  - b) Previous access without complications
  - c) Concurrent moderate periodontal disease

**1.3 High complexity case (Level 3 care)** is that which requires specialist practitioner due to complex clinical or patient factors. Achieving a predictable treatment outcome will be challenging for even the most experienced practitioner with an extensive history of favorable outcomes. This care can be provided in a primary care, dental hospital or in a secondary care setting depending on the needs of the patient and/or local arrangements, which may include current training commitments. Factor(s) that contribute to case selection include(s):

- i. Patient factor:
  - a) Complex medical history/serious illness/disability (ASA Class 3-5\*)
  - b) Difficulty achieving anesthesia
  - c) Uncooperative
  - d) Significant limitation in mouth opening

- e) Extreme gag reflex which has compromised past dental care
- ii. Diagnostic factor
    - a) Confusing and complex signs and symptoms, difficult to diagnose
    - b) Has history of chronic oral/facial pain
    - c) Extreme difficulty in obtaining/interpreting radiographs (e.g. superimposed anatomical structure)
  - iii. Tooth factor
    - a) Tooth type – second or third molar
    - b) Tooth has extreme inclination ( $>30^\circ$ )
    - c) Restoration present does not reflect original anatomy/alignment
    - d) Tooth has significant deviation from normal tooth/root form (e.g. fusion, dens in dente)
    - e) Extensive pretreatment modification is required for rubber dam isolation
    - f) Root morphology with extreme curvature ( $>30^\circ$ ) or S-shaped curve
    - g) Tooth with anomalies [e.g. Mandibular premolar or anterior with 2 roots, maxillary premolar with 3 roots, very long tooth ( $>25\text{mm}$ )]
    - h) Root with open apex ( $>1.5\text{mm}$  in diameter)
    - i) Radiographically, canal(s) not visible or shows indistinct canal path
    - j) Presence of resorption (e.g. extensive apical resorption, internal resorption, external resorption)
  - iv. Additional factor
    - a) Trauma history with complicated crown fracture of immature teeth, horizontal root fracture, alveolar fracture, intrusive, extrusive or lateral luxation or avulsion
    - b) Previous access with complications (e.g. perforation, non-negotiated canal, ledge, separated instrument)
    - c) Previous surgical or non-surgical endodontic treatment completed
    - d) Concurrent severe periodontal disease
    - e) Cracked teeth with periodontal complications
    - f) Combined endodontic/periodontic lesion
    - g) Root amputation prior to endodontic treatment

\*American Society of Anaesthesiologists (ASA) Classification System

Class 1: No systemic illness. Patient healthy.

Class 2: Patient with mild degree of systemic illness, but without functional restrictions e.g. well-controlled hypertension

Class 3: Patient with severe degree of systemic illness which limits activities but does not immobilize the patient.

Class 4: Patient with severe systemic illness that immobilizes and is sometimes life-threatening.

Class 5: Patient will not survive more than 24 hours whether or not surgical intervention takes place.

**PROGRAMME STANDARD FOR  
DOCTOR IN  
FORENSIC ODONTOLOGY**

# **PROGRAMME STANDARD FOR DOCTOR IN FORENSIC ODONTOLOGY**

## **1. SCOPE OF FORENSIC ODONTOLOGY**

Forensic odontology is defined by the World Dental Federation as: “A branch of dentistry that deals with the proper handling and examination of dental evidence and with the proper evaluation and presentations of the dental findings in the interest of justice”. Thus, this dental discipline is mainly concerned with the expression of an expert opinion based on scientific principles in the interest of law.

Therefore, the scope of training in forensic odontology shall prepare the trainees to be proficient in handling forensic cases, which requires the trainees to deal with a very thorough, meticulous examination and subsequent investigation of any dental evidence recovered from the referred cases; this could vary from a single fragmented tooth or broken denture found at the crime scene or even just abraded skin surfaces due to teeth marks on either a living or deceased person. The trainees will analyse and give his/her expert opinion according to the findings from the examination and investigation, which will then be converted into a proper forensic report. The training shall also prepare the trainees to be proficient in delivering their expert opinions in cases where they may be subpoenaed to the court as expert witnesses to assist in the case proceeding if the presiding judge needs further clarification.

## **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

The programme shall include multidisciplinary involvement of other forensic science specialists, health care professionals, law enforcement agencies and other government and non-governmental organisations.

## **3. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The trainee is expected to achieve the following competencies on completion of the programme:

### **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO1: Demonstrate a critical and in-depth knowledge and understanding in the relevant field

The trainee must be able to:

- i. relate relevant biology, anatomy, and physiology of normal and abnormal intra- and extra-oral structures and tissues to gender and race (C6);
- ii. relate knowledge of embryology and anatomy of human craniofacial structures in dental profiling involving skeletons of a baby or toddler (C6);
- iii. relate dental anatomy, histology and embryology with human identification and age assessment for isolated dental or tooth evidence found at the crime scene (C6);
- iv. appraise age changes to teeth and jaws (C6);
- v. formulate a differential diagnosis of soft tissue injuries and the causative agents (C6);
- vi. appraise causes of teeth and bone fractures (C6);

- vii. evaluate signs of soft tissue injuries, including child and adult abuse (physical and sexual) (C6);
- viii. differentiate biology of wound healing and tissue reaction patterns following trauma and emergency trauma management (C6);
- ix. appraise clinical features which may indicate an unfavourable tissue response to trauma management (C6);
- x. relate dental, medical and social history factors to the presenting condition and its previous management (C6);
- xi. evaluate decision-making theory and contributory factors (C6);
- xii. differentiate between human and various animals' teeth (C6);
- xiii. appraise history of forensic odontology and forensic medicine (C6);
- xiv. appraise medico-legal autopsy and post-mortem changes (C6);
- xv. consider hazards of the mortuary and crime scene (C6);
- xvi. recognise bite marks and other wounds to the external surface of the bodies (either alive or dead) (C6);
- xvii. relate knowledge of dental materials and prosthetics to dental profiling and human identification (C6);
- xviii. appraise anatomical reconstruction of facial features (C6);
- xix. appraise the sensitivity and specificity of forensic tests (C6);
- xx. appraise the principles of radiographic quality assurance and the practice of applied quality control (C6);
- xxi. interpret imaging, photography and radiological evidences (C6);

## **CLUSTER 2: COGNITIVE SKILLS**

PLO2: synthesise knowledge in the field of forensic odontology

The trainee must be able to:

- i. appraise the conventional and contemporary techniques for Forensic Odontology imaging (including software) and photography (C6);
- ii. describe the organisation of police forces (C2);
- iii. describe the liaison with police and the legal profession (C2);
- iv. discuss the Criminal Procedure Code (CPC) as well as the Dental in relation to the forensic odontology work and cases done (C6)
- v. relate Malaysian Law regarding forensic odontology cases (C6)
- vi. summarise the management of the crime scene, disaster victim identification and exhumation process (C6);
- vii. select recording methods and preparation of reports before, during and after the investigation (C6);
- viii. discuss the roles of the expert witness (C6);
- ix. appraise the legal implications of mass disasters and repatriation (C6);
- x. evaluate the authenticity of dental diseases, dental treatments and dental records in fraud cases (C6).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO3: conduct research independently

The trainee must be able to:

- i. compose written reports/articles, including preparing and altering manuscripts, where appropriate (P7);
- ii. perform research activities with minimal supervision (P5);
- iii. display integrity in the design, conduct and criticism of research (P5);
- iv. display presentation skills in communicating research work to professional colleagues or at specialists' meetings (P5).

## **CLUSTER 3: FUNCTIONAL WORK SKILLS WITH FOCUS ON**

### **CLUSTER 3.1 PRACTICAL SKILLS**

PLO4: Construct proficient case management in the field of forensic odontology based on scientific evidence.

The trainee must be able to:

- i. assemble field-kits (P5);
- ii. perform a complete and accurate examination of the oral mucosa and related structures, periodontium, and dental hard tissues and make appropriate diagnoses (P5);
- iii. perform a complete and accurate examination of any existing dental treatment, prosthesis and related tissues and structures (P5);
- iv. perform medico-legal and dental autopsy (P5);
- v. perform deoxyribonucleic acid analyses (DNA) for human identification (P4);
- vi. perform age estimation of the living and deceased person, either for identification or due to lack of proper legal documentation (P5);
- vii. recognise the signs of abuse and neglect in victims (either physical or sexual) (P5);
- viii. assess and interpret craniofacial injuries (P5);
- ix. assess and interpret soft tissue injuries regarding the causative agent) (P5);
- x. perform impression taking on the living and deceased person – intra-oral and bitemark injuries (P5);
- xi. perform impression-taking on non-human subjects (animal or inanimate objects) related to bitemark evidence investigation (P5);
- xii. perform forensic photography on living and deceased persons – extraoral, intra-oral and bitemark injuries (P5);
- xiii. construct study model and their duplications (P5);
- xiv. analyse digital images of radiographs and photographs (P5);
- xv. organise a standard set of photographs illustrating progress through a course of cases (P5);
- xvi. manage mass disaster investigations (P5);
- xvii. perform comparative identification process (P5);
- xviii. perform reconstructive identification process including gender, ethnic and age estimation (P5);

- xix. manage sexual assault cases (P5);
- xx. differentiate between human and non-human oral maxillofacial structures, either loose or intact, to facilitate the ongoing investigation of the case (comparative dental anatomy) (P5);
- xxi. construct forensic reports and give testimony in court (P5)

### **CLUSTER 3.2 INTERPERSONAL SKILL**

PLO5: generate solutions to problems using scientific and critical thinking skills.

The trainee must be able to:

- i. search a variety of information sources to obtain scientific papers and other evidences, such as forensic guidelines (A4);
- ii. display professional judgement to implement forensic solutions in response to problems by developing an evidence-based plan and taking a holistic approach (A5);
- iii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of investigation demonstrating self-direction (A5);
- iv. appraise systematically current evidence and appreciate how research activity can be translated to practice (A5);
- v. perform and sustain a critical argument in writing and through oral presentations (A5); and
- vi. formulate relevant paperwork deemed essential to the enrichment and further establishment of the forensic odontology speciality in future (A4).

### **CLUSTER 3.3 COMMUNICATION SKILL**

PLO6: provide expert advice to society in the relevant field.

The trainee must be able to:

- i. display confidence, insight and empathy in formulating and presenting strategies and plans to investigate officer (IO) and family members (A5);
- ii. serve all cases/subjects with dignity and respect (A5);
- iii. act on limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A3);
- iv. act ethically in seeking the best interdisciplinary approach for forensic cases (A5);
- v. recognise the medico-legal importance of patients' records and forensic reports (A3);

### **CLUSTER 3.4 DIGITAL SKILL & CLUSTER 3.5 NUMERACY SKILL**

PLO7: Use suitable digital technologies in forensic odontology practice; (Psychomotor)/ Evaluate critically scientific numerical and graphical data to support evidence-based practice in the forensic odontology field; (High cognitive)

The trainee must be able to:

- i. organise forensic practice and research based on good governance (P4);
- ii. comprehend the role of the Malaysian Dental Council (MDC) and DSEC in the process

- of professional regulation (A2)
- iii. organise and undertake a forensic audit project, including implementation of outcomes and re-audit (P4);

### **CLUSTER 3.6 LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8: display leadership qualities through communicating and working effectively with peers and stakeholders.

The trainee must be able to:

- i. build rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. adapt methods of administration/negotiation to achieve an appropriate outcome (A5);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. display appropriate both verbal and non-verbal communication/presentation skills (P5);
- v. display empathy, sensitivity, and awareness in communicating with patients and colleagues (P5, A5);
- vi. plan, conduct and execute any related training in the forensic odontology field to any relevant party (P5); and
- vii. display leadership skills in managing a forensic odontology team, either locally or internationally (P4).

### **CLUSTER 4: PERSONAL AND ENTREPRENEURIAL SKILL**

PLO9: exhibit attributes of independent lifelong learners.

The trainee must be able to:

- i. appraise and evaluate forensic practice and procedures periodically to maintain competencies (A5);
- ii. practise the process of revalidation and the assessment of individual forensic performance (A5);
- iii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs (A5).

### **CLUSTER 5: ETHICS AND PROFESSIONALISM**

PLO10: Adhere to legal, ethical and professional codes of practice.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues (A5);
- ii. comply with the standards of practice in dentistry as determined by the Malaysian Dental Council (A4);
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist services (A5);
- iv. practice ethical principles in the preparation of forensic and research reports (A5);
- v. practice medicolegal principles in relation to patients' records (A5).

#### 4. MINIMUM CLINICAL AND LABORATORY EXPERIENCE

The programme must provide sufficient forensic experience for the trainee to be proficient in the comprehensive management of a wide range of Forensic Odontology cases. The trainee must complete the following cases:

Scope of Forensic Odontology Cases	Minimum Clinical (Forensic) Experience
1. Human identification, including mass disaster Identification.	20 cases/P5
2. Post mortem dental profiling, which includes age estimation, gender and ethnic determination of an unknown body.	15 cases/P5
3. Bitemark and other wounds to the external bodies (either dead or alive).	3 cases/P5
4. Age assessment for living individuals.	10 cases/P5
5. DNA procurement from dental tissue and saliva as one of the methods for identification.	3 cases/P5
6. Trauma/Abuse/Injury cases in the forensic context.	5 cases/P5
7. Fraud/Negligence/Malpractice in dentistry.	3 cases/P5
8. Dental autopsy.	3 cases/P5

The range of minimal forensic work experience is recorded by maintaining a cumulative record of the number of procedures undertaken within specified categories.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented.

#### 5. CLINICAL FACILITIES

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include;

- i. Physical facilities to permit trainees to operate under the circumstances prevailing in the practice of forensic odontology;
- ii. Facilities specifically identified for the advanced education program in forensic odontology;
- iii. The facility must be fully equipped with a dedicated armamentarium and materials to allow the standard of practice at the advanced level;
- iv. Laboratory facilities specifically identified to support the fabrication of dental casts and

- analyses with contemporary techniques required in the program;
- v. Laboratory bench spaces to accommodate the number of students/residents enrolled in the programme.

## **6. MINIMUM CORE TEACHING STAFF**

The minimum core teaching staff shall consist of a programme director (which must be **a full-time, registered/recognised** Forensic Odontologist by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least two (2) registered/recognised specialists (in the field or related field) by MDC and must be full-time/full-time equivalent.

## **7. ADDITIONAL REQUIREMENTS**

### **MODELS OF LEARNING IN FORENSIC ODONTOLOGY**

Delivery methods shall cover the three main domains, *i.e.* cognitive, psychomotor and affective, through a variety of techniques. These may include but are not limited to the following:

- a. Forensic skills development under direct supervision in the mortuary, field case-work and forensic laboratory. Students shall attend the training workshops and web-based resources identified by faculty. Mock trial shall be conducted to prepare candidates to appear as expert witnesses.
- b. Work-based learning methods
  - i. Candidates shall be posted with other forensic science disciplines. Evidence of skills development shall be kept in the portfolio/logbook.
  - ii. Candidates may be posted with other ministries for attachment. Evidence of skills development shall be kept in the portfolio/logbook.
  - iii. Trauma and wound healing observation shall be done in Oral and Maxillofacial Surgery posting.

## **REFERENCES**

- Graduate Diploma Forensic Odontology Handbook Programme, University of Adelaide, Australia, 2016
- Master of Science in Forensic Dentistry, Handbook University Western Cape South Africa, 2013
- Royal College of Pathologists of Australasia, Forensic Odontology Curriculum, 2016.
- National Specialist Register Paperwork, August 2012.

## **ACKNOWLEDGEMENT**

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This document was reviewed in 2024 by the DentSEdC in Forensic Odontology, chaired by Dr. Norhayati Jaffar with members comprising Assoc. Prof. Dr. Mohd Fadhli Khamis, Dr. Nor Atika Md Ashar, Prof Dr. Mohd Yusmiadil Putera bin Mohd Yusof, Dr Hairuladha bin Abdul Razak and Brig Jen Dr Wan Azmil bin Wan Mohamad Annuar.

**Minimum course contents**

1. Basic medical and dental science subjects
  - a. Pathology and oral pathology
  - b. Anatomy, oral anatomy and comparative anatomy
  - c. Applied Biomaterials
  - d. Biochemistry and Molecular genetics
2. Applied forensic science and Law subjects
  - a. Forensic Pathology
  - b. Forensic Anthropology-including craniofacial superimposition
  - c. Forensic Genetics- including direct supervision under forensic geneticist
  - d. Forensic Radiology
  - e. Forensic Sciences – Criminology and Crime scene, Fingerprint, Questioned document
  - f. Law of Malaysia
    - i. Criminal procedure code
    - ii. Personal Data Act
    - iii. Police Act
    - iv. Malaysian Judiciary system
3. Research project/paper
  - a. The project shall bear originality, novelty, scholarly reporting and significant contribution to science.
  - b. The quality of the project shall be publishable in peer-reviewed journals.
4. Biostatistics and research methods
5. Forensic Odontology training includes
  - a. Identification of unknown body;
    - i. Single and Multiple (disaster)
  - b. Age estimation;
    - i. Unknown body and Living person (no legal documents)
  - c. Dental profiling in post-mortem;
  - d. Sex and race determination of an unknown body;
  - e. Investigation and interpretation of bite marks and lip prints;
    - i. Dead body, Alive person and Abuse cases (adult or children)
    - ii. Animal bites
  - f. DNA procurement from dental tissue and saliva as one of the methods for identification;
  - g. Determining legal significance of dentomaxillofacial traumatology.
  - h. Litigation case;
  - i. Fraud, Dental Malpractice and Negligence

**PROGRAMME STANDARD FOR  
DOCTOR IN ORAL MAXILLOFACIAL  
PATHOLOGY AND ORAL MEDICINE**

## **PROGRAMME STANDARD FOR DOCTOR IN ORAL MAXILLOFACIAL PATHOLOGY AND ORAL MEDICINE**

### **1. SCOPE OF SPECIALIST TRAINING IN ORAL MAXILLOFACIAL PATHOLOGY AND ORAL MEDICINE**

Oral maxillofacial pathology is a specialized field of histopathology concerned with the microscopic examination of tissues, taken either as biopsy samples or resection specimens from the oral and maxillofacial region for the purpose of diagnosis, prognosis and directing appropriate treatment.

Oral medicine is a specialty concerned with the diagnosis and management of patients with oral and maxillofacial disease, and head and neck pain syndromes whose primary treatment modality is non-surgical. The cases may include, but not limited to oral mucosal diseases, medically related disorders, salivary gland disorders, potentially malignant disorders, temporomandibular disorders, orofacial pain, and orofacial infectious diseases.

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

The programme should include multidisciplinary involvement with other dental specialties such as oral and maxillofacial surgery, oral and maxillofacial imaging, and special care dentistry. Close cooperation with other relevant specialties such as paediatric dentistry, periodontology and prosthodontics is encouraged.

### **3. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The specialist training period will follow as a continuum after the one (1) year Master programme. The domains of competence and the related learning outcomes for the 3-year oral maxillofacial pathology and oral medicine training are described here. The list however is not exhaustive.

The trainee is expected to achieve the following competencies upon completion of the DrOMPPathMed programme:

#### **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO1: Demonstrate a critical and in-depth knowledge and understanding in oral maxillofacial pathology and oral medicine.

The trainee must be able to:

- i. integrate relevant biology, anatomy, pathophysiology and histopathology of intra- and extra-oral structures and tissues related to presenting conditions (C5);
- ii. differentiate various clinical presentations of relevant orofacial conditions (C4);
- iii. appraise information gathered through dental, medical and social history, likely to be relevant to the presenting condition in order to arrive at the diagnosis, prognosis and proposed management (C5);
- iv. evaluate the sensitivity and specificity of relevant diagnostic tests (C5);
- v. recommend current best evidence for diagnostic investigations both at the chairside and/or through microscopic examination (C5);
- vi. choose current best evidence for effectiveness of various treatment modalities (C6);

- vii. evaluate the prognostic and risk factors for various management modalities (C5); and
- viii. formulate the best pharmacological and therapeutic management of diseases or conditions (C6).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO2: Synthesise knowledge in the field of oral maxillofacial pathology and oral medicine.

The trainee must be able to:

- i. consider a variety of information sources to obtain scientific papers and other evidence such as clinical guidelines (C5);
- ii. adapt professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking a holistic approach (C6);
- iii. evaluate critically the scope and limitations of the various treatment modalities, balancing the risks and benefits of treatments (C5);
- iv. appraise systematically current evidence and appreciate how research activity can inform practice (C5); and
- v. defend a critical argument through writing and oral presentations (C5).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO3: Conduct research independently.

The trainee must be able to:

- i. compose written reports/articles, including preparing and altering manuscripts, where appropriate (C6);
- ii. perform research activities with minimal supervision (P5);
- iii. display integrity in the design, conduct and criticism of research (P5); and
- iv. display presentation skill in communicating research work to professional colleagues or at specialists' meetings (P5).

## **CLUSTER 3: FUNCTIONAL WORK SKILLS WITH FOCUS ON**

### **CLUSTER 3.1 PRACTICAL SKILLS**

PLO4: Adapt evidence based clinical procedures for proficient patient management in oral maxillofacial pathology and oral medicine.

The trainee must be able to:

- i. perform thorough history-taking to identify the associated systemic and non-systemic aetiological factors for the patients' concerns (P5);
- ii. perform thorough intraoral and extraoral head and neck examination (P5);
- iii. perform appropriate investigations relevant to the practise of oral maxillofacial pathology and oral medicine (P5);
- iv. integrate clinical findings and results of investigations (P5);
- v. construct the appropriate diagnosis based on the examination and investigation (P5);
- vi. formulate treatment plan based on appropriate diagnoses (P5);

- vii. display patient management skills including advising patients on possible and probable outcomes, as well as the need for future supportive care, prevention and maintenance (P5);
- viii. display skills to manage medically compromised patients/medically related disorders (P5);
- ix. display skills to manage multidisciplinary cases (P5);
- x. modify treatment plan in the face of unfavourable findings or setbacks (P6);
- xi. integrate methods and technologies to prevent infection during treatment procedures, between patients and staff, and during the transport of specimens (P5);
- xii. construct clear and concise written histopathological reports containing all the appropriate information and interpretation (P7); and
- xiii. construct clinical case reports including evidence to illustrate the course of treatment (P7).

### **CLUSTER 3.2 INTERPERSONAL SKILL**

PLO5: Display interpersonal skill in resolving issues in the dental practice.

The trainee must be able to:

- i. display a caring and patient-centred approach to treatment planning (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. serve all patients with dignity and respect (A5);
- iv. recognise the impact of the patient's oral and general health status and the proposed advice on their quality of life (A3);
- v. recognise the need for supportive care, prevention, and maintenance (A3); and
- vi. adhere to the limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A4).

### **CLUSTER 3.3: COMMUNICATION SKILLS**

PLO6: Communicate and interact effectively and interact with patients, specialists, and general audience.

The trainee must be able to:

- i. display skill to communicate individually with patients and other professionals and in general educational and professional settings (A5); and
- ii. display appropriate verbal and non-verbal communication/presentation skills (A5).

### **CLUSTER 3.4 & 3.5: DIGITAL AND NUMERACY SKILLS**

PLO7: Select suitable digital and analytical tool techniques to resolve problems.

The trainee must be able to:

- i. select appropriate tools/methodologies to support and enhance clinical/research activities (C5/P5);
- ii. compose critical evaluation of numerical and graphical data (C5); and
- iii. design a clinical/laboratory audit to for improvement of services (C4).

### **CLUSTER 3.6 LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8: Demonstrate leadership qualities through communicating and working effectively with peers and stakeholders.

The trainee must be able to:

- i. build rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. practice methods of administration/negotiation in order to achieve an appropriate outcome (A5);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. display empathy, sensitivity and awareness in communicating with patients and colleagues (A5);
- v. practice good governance in clinical and research activities (A5);
- vi. recognize the role of the Malaysian Dental Council (MDC) and Dental Specialist Evaluation Committee (DSEC) in the process of professional self-regulation (A3); and
- vii. display leadership skills as a professional team to facilitate the delivery of patient care (A5).

### **CLUSTER 4: PERSONAL SKILLS**

PLO9: Demonstrate commitment to lifelong learning and personal development.

The trainee must be able to:

- i. appraise and evaluate clinical and laboratory practice and procedures to maintain competencies (C6);
- ii. practise the process of revalidation and the assessment of individual clinical and laboratory performance (A5);
- iii. display skills of self-reflection and self-appraisal to identify continuing professional development needs (A5); and
- iv. organise and manage the working environment and schedule (A4).

### **CLUSTER 5: ETHICS AND PROFESSIONALISM**

PLO10: Adhere to legal, ethical, and professional codes of practice.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues (A5);
- ii. comply to the standards of practice in dentistry as determined by the MDC (A4);
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care (A5);
- iv. recognise own limits and refer patient when necessary (A3);
- v. practice ethical principles in the preparation of clinical, histopathology and research reports (A5); and
- vi. practice medicolegal principles in relation to patients' records (A5).

#### 4. MINIMUM CLINICAL AND LABORATORY EXPERIENCE

The programme must provide sufficient clinical experience for the trainee to be proficient in the comprehensive treatment of a wide range of oral medicine cases and producing oral histopathology reports. The trainee must complete the following requirements:

Scope of Oral Maxillofacial Pathology and Oral Medicine	Minimum Requirements
1. Oral maxillofacial pathology cases Reporting of surgical pathology cases, including smears	1000 cases
2. Oral medicine cases May include, but not limited to: <ul style="list-style-type: none"><li>• oral mucosal diseases</li><li>• potentially malignant disorders</li><li>• orofacial pain and temporomandibular disorders</li><li>• salivary gland diseases</li><li>• medically related disorders</li><li>• orofacial infectious diseases</li></ul>	200 cases

Clinical experience **MUST** also include each of these selected medical attachments with a minimum duration of **ONE (1)** month:

- i. Anatomic pathology
- ii. Dermatology

The medical attachments **MAY** also be extended to the following disciplines:

- i. Otolaryngology
- ii. Medical radiology
- iii. Oncology
- iv. Internal medicine
- v. Infectious diseases
- vi. Neurology

The range of clinical experience is recorded by maintaining a cumulative record of the number of treatment procedures undertaken within specified categories.

Although a minimum number of cases has been prescribed, a satisfactory level of competence may differ according to individual trainees, their learning environment and diversity in the type of cases seen. The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented as evidence of satisfactory progress.

## **5. CLINICAL AND DIAGNOSTIC LABORATORY FACILITIES**

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include;

- i. physical facilities to permit trainee to operate under circumstances prevailing in the practice of oral maxillofacial pathology and oral medicine;
- ii. facilities specifically identified for the advanced education program in oral maxillofacial pathology and oral medicine; The facility must be fully equipped with dedicated armamentarium and materials to allow the standard of practice at the advanced level;
- iii. laboratory facilities specifically identified to support diagnostic histopathology and research activities; and
- iv. workstation spaces to accommodate the number of students/residents enrolled in the program.

## **6. MINIMUM CORE TEACHING STAFF**

Minimum core teaching staff shall consist of a programme director who is a registered/recognised specialist by MDC (in Oral Pathology and Oral Medicine), and at least TWO (2) registered/recognised specialists by MDC, and must be full-time/full-time equivalent. These TWO (2) specialists must comprise at least ONE (1) specialist in Oral Pathology and Oral Medicine, or Oral Pathology.

## **ADDITIONAL REQUIREMENTS**

Delivery methods must cover the three main domains *ie* cognitive, psychomotor, and affective through a variety of techniques. These may include but are not limited to the following:

- i. Theoretical learning during formal and timetabled periods. This should be geared towards developing an understanding of the subject by critical appraisal and synthesis of the classical and contemporary literature through individual and group activities, involving discussion, debate, seminars, project assignments and validated self-directed and independent study.
- ii. Technical and analytical skills development in the grossing of tissue specimen to aid histopathological diagnosis and report writing.
- iii. Clinical skills development through diagnosis and management of patients with oral diseases and case discussions.
- iv. Workplace-based learning methods
  - o Candidates shall be posted to accredited laboratory and clinical centres under the supervision of experienced honorary consultants with an option of an overseas attachment. Evidence of skills development shall be kept in a portfolio/logbook.
- v. Research exposure through participation in a research project (clinical, experimental or literature research) which is reported formally in a thesis, or as a manuscript prepared for submission or as published paper(s).

## REFERENCES

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RCPA Anatomical Pathology Trainee Handbook, 2019  
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## ACKNOWLEDGEMENT

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This document was reviewed in 2024 by DentSEdC in Oral Pathology and Oral Medicine chaired by Dr. Masitah Hayati Harun, and its members were Associate Professor Dr Nik Mohd Mazuan Nik Mohd Rosdy, Associate Professor Dr Zuraiza Mohamad Zaini, Professor Dr Rosnah Mohd Zain, Dr Ajura Abdul Jalil, Dr Sumairi Ismail, and Colonel (Dr) Liana Ma Abdullah.

**PROGRAMME STANDARD FOR  
DOCTOR IN ORAL AND  
MAXILLOFACIAL RADIOLOGY**

## **PROGRAMME STANDARD FOR DOCTOR IN ORAL MAXILLOFACIAL RADIOLOGY**

### **1. SCOPE OF ORAL MAXILLOFACIAL RADIOLOGY**

Oral and maxillofacial radiology relies on fundamental principles from physics, chemistry, and biology, covering both normal and abnormal aspects. A solid understanding of diagnostic imaging modalities in dentistry and healthcare is foundational to this field. Practitioners must possess a deep knowledge of normal anatomy, disease origins, progression, and effects in the head, neck, and the rest of the body. Equally important is expertise in using radiation, magnetic fields, and other imaging agents cautiously to minimize risks to patients, operators, and the public.

The scope of training in oral maxillofacial radiology shall prepare the trainees to

- i. have mastered the basic sciences of dental radiology (physics, radiological anatomy and radiological techniques)
- ii. conduct a clinical head and neck examination and utilize the information to determine appropriate imaging investigations
- iii. prescribe, make or supervise the making of radiographs and utilize other imaging techniques relevant to dentistry;
- iv. advise on radiation protection and safety;
- v. interpret radiographs and other diagnostic imaging studies;
- vi. prepare written interpretations and consultative reports; and
- vii. communicate effectively with colleagues and evaluate critically the scientific literature in order to contribute to maintaining competency.
- viii. understand and experience the clinical manifestations of OMF diseases and manifestations of systemic diseases
- ix. plan appropriate radiologic studies.
- x. serve as a resource person to the referring clinician with respect to selecting the optimum examination.
- xi. obtain advanced education in head and neck anatomy, and oral and maxillofacial pathology.

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

Oral maxillofacial surgery, restorative, periodontics, paedodontics and orthodontics should all receive some time allocation during the training programme.

### **3. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The training programme must be designed to build on the knowledge and skills of the undergraduate programme. This should be oriented to the accepted standards and practice as set forth in the specific standards contained in this document.

The programme must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research and service. Planning for, evaluation of and improvement of educational quality for the program must be broad-based,

systematic and continuous.

The domains of competencies are as follows;

### **DOMAIN 1: KNOWLEDGE**

PLO1: synthesise knowledge in the field of OMFR.

The trainee must be able to:

- i. integrate relevant knowledge of abnormal soft and hard tissue of oral maxillofacial structures with intraoral and extraoral radiographic projection (C5);
- ii. integrate relevant knowledge in anatomy and pathology with radiographic features in various diagnostic images of oral maxillofacial region (C5)
- iii. weigh the benefit of radiation dose and radiation risk for various patient conditions (C6);
- iv. select appropriate radiographic equipment to obtain optimum radiographic diagnostic value (C6);
- v. choose current best evidence to maximize radiation protection while producing optimum radiographic diagnostic value of various projections / modalities (C6);
- vi. Estimate dose absorption and radiation risk for various projections of various imaging modalities (C6);
- vii. Justify the use of appropriate radiographic procedures for specific clinical conditions and presentations (C4);
- viii. Evaluate the exposure parameters which improve the diagnostic quality (C6);
- ix. Appraise the principles of radiation physics in relation to the practice of radiation protection (C6);
- x. Relate the principles of radiation physics and its effects on radiographic quality (C6);
- xi. Recommend suitable radiographic projections / modalities according to multidisciplinary of clinical cases (C6);
- xii. Relate different radiographic features of various oral maxillofacial abnormalities /lesions with knowledge in anatomy and pathology (C6);
- xiii. Recommend the use of contrast media in 2D and 3D soft tissue radiographic investigation (C6);
- xiv. Evaluate the various X-ray machine specifications in relation to radiation safety and radiographic quality (C6);
- xv. appraise conventional, digital and advanced imaging techniques (C6);
- xvi. appraise different radiographic features of various oral maxillofacial lesions (C6);
- xvii. Criticize risks and limitations associated with different radiographic projections and modalities (C6);
- xviii. Select the appropriate radiographic projections or procedures for special cases and conditions (C6).

### **DOMAIN 2: PSYCHOMOTOR SKILLS**

PLO2: perform a thorough radiographic analysis to identify the aetiological factors in regards to the patients' concerns

The trainee must be able to:

- i. performs clinical justification prior to radiographic taking (P5);

- ii. display skills to decide the types of radiographic projections for multidisciplinary cases (P5);
- iii. alter the possible radiographic technique based on patient's condition (P6);
- iv. alter radiographic techniques/projection according to accessibility of radiographic facilities (P6);
- iv. display confidence in explaining the expected radiographic information obtained from various radiographic techniques to other clinicians (P5);
- iv. change the requested radiograph according to appropriate clinical indication (P6).
- v. reorganizes the appropriate radiographic procedure suitable to the patient clinical presentation and indication (P5)
- i. integrate the knowledge of radiation physics and radiation biology to advise patients on the potential benefits and radiation risk of various radiographic procedures. (P5)
- ii. integrate the knowledge of radiation physic and radiation biology in performing radiation safety for children, pregnant patient and reproductive age group (P5);
- iii. arrange and plan the role of radiology staff (operator, trainer and observer) according to their competency to avoid poor diagnostic quality radiographs (P7);
- ix. initiate the radiation protection measures by applying the three cardinal principles which are exposure time, distance to X-ray source, and radiation shieldings (thyroid collar, lead apron) (P7);
- x. performs a thorough examination of the patient's oral condition (e.g. edentulous, torus), occlusion, existing removable prostheses and metal object (jewelleries, spectacles mask, ear bud) prior to radiographic procedures (P5);
- xi. perform cross-infection protocols during radiographic procedures (P5);
- xii. revise and change radiographic procedures to prevent cross-infection in radiology facilities (P5);
- xiii. perform the appropriate radiographic technique regarding to the requested investigation (P5);
- xxi. assess the quality of all radiographs investigations prior to lesion analysis (P5).
- xx. perform lesion analysis of various oral and maxillofacial bone and soft tissue lesions (P5)
- xv. construct potential differential diagnoses based on clinical, radiographic and histopathological examination results.
- xvi. derive the most likely radiographic impression based on radiographic features, clinical and histopathological examination results (P5).
- xvii. display skills to manage and perform sialography procedure (P5);
- xviii. display skills to manage and perform radiographic procedure for uncooperative patients (P5)
- xix. construct radiology reports by integrating information obtained from various radiographic and clinical investigations (P7).
- xiv. arrange for special investigations (MRI, contrast enhanced-CT, MSCT, ultrasound, angiography, SPECT and PET) in the presence of soft tissue structures involvement (P7)
- xxii. display proficiency in the application of radiographic instruments, techniques and machines for post-mortem cases (P5).
- xxv. organize clinical audits to improve radiology services (P5).

## **DOMAIN 2: PSYCHOMOTOR SKILLS**

PLO3: conduct research independently.

The trainee must be able to:

- i. composes written reports/articles, including preparing and altering manuscripts, where appropriate (P7);

- ii. perform research activities (P5);
- iii. display integrity in the design, conduct and criticism of research (P5);
- iv. display presentation skill in communicating research work to professional colleagues or at specialists' meetings (P5).

### **DOMAIN 3: SOCIAL RESPONSIBILITY**

PLO4: provide expert advice to society in the field of oral maxillofacial radiology.

The trainee must be able to:

- i. displays a caring and patient-centred approach to radiographic services (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. serve all patients with dignity and respect (A5);
- iv. recognise the impact of the unnecessary radiation exposure on patient's radiation safety (A3);
- v. recognise the need for supportive care and prevention in relation to radiology facilities (A3);
- vi. adhere to the limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A4).

### **DOMAIN 4: ETHICAL AND PROFESSIONALISM**

PLO5: adhere to legal, ethical and professional codes of practice.

The trainee must be able to:

- i. displays appropriate attitude and understanding of ethical and societal issues and the place of their specialty in the overall healthcare spectrum (A5);
- ii. adhere to the standards of practice in dentistry as determined by the Malaysian Dental Council (A4)
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care, in relation to the oral health needs of populations, the needs of patients under treatment (A5);
- iv. practice ethical principles in the preparation of clinical and research reports (A5);
- v. practice medico-legal principles in relation to patients' records (A5).

### **DOMAIN 5: LEADERSHIP, COMMUNICATION AND TEAMWORK**

PLO6: display leadership qualities through communicating and working effectively with peers and stakeholders.

The trainee must be able to:

- i. builds a rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. adapt methods of administration/negotiation in order to achieve an appropriate outcome (P6);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other

- members of the workplace team (A5);
- iv. display appropriate both verbal and non-verbal communication /presentation skills (P5);
  - v. display empathy, sensitivity and awareness in communicating with patients and colleagues (P5, A5).

#### **DOMAIN 6: PROBLEM SOLVING AND CRITICAL THINKING**

PLO7: generate solutions to problems using scientific and critical thinking skills.

The trainee must be able to:

- i. considers a variety of information sources to obtain scientific papers and other evidences such as guidelines (C6, A4);
- ii. display professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking an holistic approach (P5);
- iii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of treatment demonstrating self-direction and autonomy (C6, A5);
- iv. appraise systematically current evidence and appreciate how research activity can inform practice (C6);
- v. perform and sustain a critical argument in writing and through oral presentations (P5).

#### **DOMAIN 7: LIFELONG LEARNERS**

PLO8: exhibit attributes of independent lifelong learners.

The trainee must be able to:

- i. appraises and evaluate clinical practice and procedures periodically to maintain competencies (C6);
- ii. practice the process of revalidation and the assessment of individual clinical performance (A5);
- iii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs e.g. becoming a member of a professional society (A5).

#### **DOMAIN 8: MANAGEMENT SKILL**

PLO9: display skills in clinical governance.

The trainee must be able to:

- i. organise clinical practice and research based on good governance (C5);
- ii. comprehend the role of the Malaysian Dental Council (MDC) and Dental Specialty Board (DSB) in the process of professional self-regulation (C2);
- iii. organise and undertake a clinical audit project including implementation of outcomes and re-audit (P4);
- iv. display proficiency in general patient management (P5);
- v. organises and manage the working environment and schedule (P4).

### **4. MINIMUM CLINICAL EXPERIENCE (ORAL MAXILLOFACIAL RADIOLOGY)**

The programme must provide sufficient clinical experience for the trainee to be proficient in OMF Radiology practices of a wide range of OMF soft and hard tissue lesions and

abnormalities. The procedures are as listed below:

### Scope of oral maxillofacial radiology cases

Scope of Oral Maxillofacial Radiology cases	Minimum Clinical Experience
1. Sialography procedures	3 cases/P4
2. Intraoral radiography projections	100 cases/P4
3. TMJ projections	5 cases/P4
4. OMV	5
5. lateral Cephalometric	5
6. Other skull views	5
7. Dental Panoramic Tomography	20
8. CBCT	20 cases/P4
9. Prepare radiology report	70 cases/P3

The range of radiology work experience is recorded by maintaining a cumulative record of the number of procedures undertaken within specified categories.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented.

## 6. CLINICAL FACILITIES

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include;

- i. Physical facilities to permit trainees to operate under circumstances prevailing in the practice OMFR.
- ii. Facilities specifically identified for the advanced education program in OMFR;
- iii. The facility must be fully equipped with dedicated armamentarium and materials to allow the standard of practice at the advanced level.
- iv. Laboratory facilities (HPE and micro-CT) specifically identified to support hard tissue analyses required in the program;
- v. Bench spaces to accommodate the number of students/residents enrolled in the program

## 7. MINIMUM CORE TEACHING STAFF

The minimum core teaching staff shall consist of a programme director (which must be a **full-time, registered/recognised** specialists in xxxx, by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least TWO (2) registered/recognised specialists by MDC (in xxxx), and must be full-time/full-time equivalent.

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- ii. Accreditation Standards for Advanced Dental Education Programs in Oral and Maxillofacial Radiology Commission on Dental Accreditation 211 East Chicago Avenue Chicago, Illinois 60611-2678 (312) 440-4653 <https://coda.ada.org/>
- iii. Master of Science Dentistry, Handbook University Western Cape South Africa, 2012
- iv. Curriculum for Specialist Training in Dental and Maxillofacial Radiology Examination Board for the Diploma in Dental Radiology of the Royal College of Radiologists on behalf of the Dental and Maxillofacial Radiology Subcommittee of the Specialty Advisory Committee for the Additional Dental Specialties British Society for Dental and Maxillofacial Radiology. October 2010.

## **ACKNOWLEDGMENT**

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This document underwent extensive revision by esteemed OMF Radiologists, including Prof. Dr. Phrabhakaran Nambiar and Dr. Ahmad Badruddin Bin Ghazali.

## APPENDIX

### COURSE CONTENT

1. Basic medical and dental science subjects
  - a. Head and neck anatomy
  - b. Oral pathology
2. Research project/paper
  - a. The project shall bear originality, novelty, scholarly reporting and significant contribution to science.
  - b. The quality of the project shall be publishable in peer-reviewed journals.
3. Biostatistics and research methods
4. Radiation physics and radiation protection course that covering the following topics
  - a. structure of matter: the atom, atomic X-ray levels, electromagnetic radiation
  - b. The X-ray tube: X-ray circuit, components and functions
  - c. Physics of X-ray production
  - d. Interaction of radiation with matter (e.g Photoelectric effect, Compton scattering)
  - e. Production of X-ray images
  - f. Factors affecting the quality of X-ray images
  - g. Measurement of absorbed dose
  - h. Effects of ionizing radiation and its significance to radiation protection measures to the patient, personnel and public.
  - i. Current ionizing radiation regulations
5. Infection control in OMFR
6. Radiographic techniques
  - a. Introduction to OMF Radiology
  - b. Intraoral radiographic anatomy
  - c. Intraoral radiographic techniques
  - d. Type of image receptors digital and conventional
  - e. Processing procedure digital and conventional
  - f. Extraoral radiographic anatomy
  - g. Extraoral radiographic techniques
7. Radiographic consideration in uncooperative and disabled patient (alternative to radiographic technique)
8. Advance Imaging modalities
  - a. CBCT anatomy and technique
  - b. Principles of CT, MRI and ultrasound
  - c. Sialography anatomy and technique
7. Radiographic features of Dental and Maxillofacial lesions and anomalies
  - a. Principles of image interpretation
  - b. Systematic approach to image interpretation
  - c. Radiographic features of dental anomalies
  - d. Radiographic features of jaw lesions
  - e. Radiographic features of craniofacial structures
  - f. Radiographic features of TMJ
  - g. Radiographic features of paranasal sinuses and nasal cavity
  - h. Radiographic features of soft tissue

- i. Radiographic features of salivary glands
  - j. Radiographic features of neurological disorders
- 
- 8. Radiographic features of systemic and metabolic disorders
  - 9. Radiographic features of traumatic injuries
  - 10. Artificial intelligence in OMFR
  - 11. Application of OMF imaging in dental implant
  - 12. Application of OMF imaging in orthodontic
  - 13. Application of OMF imaging in endodontic
  - 14. Application of OMF imaging in OMFS.
  - 15. Report Writing
  - 16. Record keeping and clinical audit

**PROGRAMME STANDARD FOR  
DOCTOR IN ORAL AND  
MAXILLOFACIAL SURGERY**

## **PROGRAMME STANDARD FOR DOCTOR IN ORAL AND MAXILLOFACIAL SURGERY**

### **1. SCOPE OF ORAL AND MAXILLOFACIAL SURGERY**

Oral and maxillofacial surgery is the surgical specialty concerned with the diagnosis, treatment and prevention of diseases affecting the region of mouth, jaws, face and neck.

The scope of the specialty of oral and maxillofacial surgery includes, but is not necessarily confined to:

- i. craniomaxillofacial trauma,
- ii. cancers of the head and neck,
- iii. diseases of the salivary glands,
- iv. surgical treatment of facial disproportion – both congenital and acquired,
- v. cleft lip and palate,
- vi. aesthetic facial surgery,
- vii. facial pain,
- viii. disorders of the temporomandibular joint (TMJ),
- ix. surgical removal of impacted and buried teeth, cysts and benign tumours of the jaws,
- x. pre-prosthetic surgery including the placement of osseointegrated implants,
- xi. management of infections of the head and neck including life-threatening fascial space infection,
- xii. conditions of the oral mucosa such as mouth ulcers and dentoalveolar infection.

### **4. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

Multidisciplinary interrelationship with various relevant field of specialty in both dentistry and medicine are required for the fulfilment of this programme.

#### **2.1 Dentistry**

Other specialties in dentistry should receive time allocation during the training programme. Close cooperation with the relevant fields or specialties such as Oral Pathology and Oral Medicine, Oral and Maxillofacial Imaging, Orthodontics, Restorative Dentistry and Special Care Dentistry are encouraged.

##### **2.1.1 Medicine**

Trainee must undergo medical and surgical attachment for a minimal duration of six (6) months. This training **MUST** be under responsibility and coordination of the respective Oral and Maxillofacial Surgery Department.

The minimum requirement in the selected fields include general medical postings, surgical postings, accident and emergency and anaesthesiology.

The trainee **MUST** show log book proof of these attachments. The log book requirement will be stipulated in section 16.2.

### **5. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The training programme must be designed to build on the knowledge and skills of the undergraduate programme. This should be oriented to the accepted standards of oral and maxillofacial surgery practice as set forth in the specific standards contained in this document.

The programme must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research and service. Planning for, evaluation of and improvement of educational quality for the program must be broad-based, systematic and continuous.

The domains of competencies are as follows;

### **CLUSTER 1: KNOWLEDGE & UNDERSTANDING**

PLO1: demonstrate knowledge in the field of oral and maxillofacial surgery.

The trainee must be able to:

- i. integrate relevant knowledge in biology, anatomy, physiology of normal and abnormal intra- and extra-oral structures and tissues in pain management, including prevention and control (C5);
- ii. evaluate the primary and supplementary techniques for anaesthesia (general and local) for the management of the oral and maxillofacial region (C6);
- iii. select dental materials, equipment and technology to achieve each treatment goal (C6);
- iv. choose current best evidence for effectiveness of various treatment modalities (C6);
- v. evaluate prognostic and risk factors for various modalities (C6);
- vi. justify the use of appropriate pharmaceutical agents where necessary (C4);
- vii. evaluate the factors which make oral and maxillofacial structures salvageable (C6);
- viii. appraise the principles and practice of restoring and rehabilitating structures of the oral and maxillofacial region (C6);
- ix. relate the principles of occlusion and its influence on clinical practice (C6);
- x. consider the multidisciplinary of clinical cases which may require varied treatment modalities (C6);
- xi. relate technical requirements of treatment in oral and maxillofacial surgery diseases to biology, anatomy, physiology, pathology and microbiology (C6);
- xii. synthesize the management of medically compromised patients in oral and maxillofacial cases (C6);
- xiii. appraise tissue regeneration/engineering in clinical practice (C6);
- xiv. evaluate the physical, chemical and biological properties of clinical instruments and materials (C6);
- xv. appraise conventional and contemporary imaging techniques (C6);
- xvi. appraise the different outcome measures of treatment and their assessment (C6);
- xvii. consider risks and limitations associated with non-surgical and surgical procedures (C6);
- xviii. select the procedures for the emergency management in acute oral and maxillofacial conditions and its associated medical emergencies (C6).
- xix. synthesize solution to medico-legal issues related to oral and maxillofacial conditions (C6)

### **CLUSTER 2: COGNITIVE SKILLS**

PLO2: critically apply knowledge to resolve practical problems.

PLO3: prepare research proposal and/or conduct research with minimal supervision.

The trainee must be able to:

- i. compose written reports/articles, including preparing and altering manuscripts, where

- appropriate (P7);
- ii. perform research activities (P5);
- iii. display presentation skill in communicating research work to professional colleagues or at specialists' meetings (P5).

### **CLUSTER 3.1: PRACTICAL SKILLS**

PLO4: apply practical skills in the field of oral and maxillofacial surgery

The trainee must be able to:

- i. take a thorough history to identify the aetiological factors for the patients' concerns of oral and maxillofacial related problems (P5);
- ii. execute a thorough examination of the patient's general, extra oral and intra oral condition (P5);

### **CLUSTER 3.2: INTERPERSONAL SKILLS**

PLO5: conduct problem solving or investigation to resolve issues in oral and maxillofacial surgery practice.

The trainee must be able to:

- i. perform appropriate investigations (e.g. imaging, biopsy, haematological and microbial tests, dental-related tests, as well as other relevant test specific to the condition) (P5);
- ii. evaluate existing tissue structures and its surrounding region as well as radiographic interpretation (P5);
- iii. construct the appropriate diagnosis(es) based on the examination and investigation (P5);
- iv. derive the likely prognosis and outcomes of the various treatment options and relating this to the prognosis without treatment (P5);
- v. formulate treatment plan based on appropriate diagnoses (P5);
- vi. display skills to manage medically compromised patients (P5);
- vii. advise patients on the possible and probable outcomes of the treatment options, as well as the need for future supportive care, prevention and maintenance (P5);
- viii. delineate strategies and plans according to the skills of other clinicians involved in the care of the patient (P5);
- ix. integrate methods and technologies to prevent infection during treatment procedures, between patients and staff and during transport of materials and prostheses between the laboratory and the clinic (P5);
- x. display skills to manage multidisciplinary cases (P5);
- xi. perform comprehensive oral and maxillofacial surgery treatment (non-surgical and surgical; which include initial, primary, secondary and re-treatment) of moderate to high complexity cases using a range of techniques (P5);
- xii. display proficiency in the application of relevant materials (therapeutic and non-therapeutic), instruments and techniques for managing post-treatment complications (P5);
- xiii. alter treatment plan in the face of unfavourable findings or setbacks, including the decision to abort treatment (P6);
- xiv. construct case reports including a standard set of photographs to illustrate the course of treatment (P7).

- xv. display ability to write a comprehensive medical report for legal, insurance claims and other purposes (P5).

### **CLUSTER 3.3: COMMUNICATION SKILLS**

PLO6: communicate and interact effectively with peers in the field/s as well as general audience

The trainee must be able to:

- i. display a caring and patient-centred approach to treatment planning (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. serve all patients with dignity and respect (A5);
- iv. recognise the impact of the patient's oral and general health status and the proposed advice on their quality of life (A3);
- v. recognise the need for supportive care, prevention and maintenance (A3);
- vi. adhere to the limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A4).

### **CLUSTER 3.4: DIGITAL SKILL**

### **CLUSTER 3.5: NUMERACY SKILLS**

PLO7: select suitable digital and analytical tool techniques to resolve problems

The trainee must be able to:

- i. consider a variety of information sources to obtain scientific papers and other evidences such as guidelines (C6, A4);
- ii. display professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking a holistic approach (P5);
- iii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of treatment demonstrating self-direction and autonomy (C6, A5);
- iv. appraise systematically current evidence and appreciate how research activity can inform practice (C6);
- v. perform and sustain a critical argument in writing and through oral presentations (P5).

### **CLUSTER 3.6: LEADERSHIP, AUTONOMY & RESPONSIBILITY**

PLO8: demonstrate leadership qualities through collaboration with peers and others.

The trainee must be able to:

- i. build a rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. adapt methods of administration/negotiation in order to achieve an appropriate outcome (P6);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. display appropriate both verbal and non-verbal communication /presentation skills (P5);
- v. display empathy, sensitivity and awareness in communicating with patients and colleagues (P5, A5).

## CLUSTER 4: PERSONAL SKILLS

PLO9: demonstrate commitment to lifelong learning and personal development.

The trainee must be able to:

- i. appraise and evaluate clinical practice and procedures periodically to maintain competencies (C6);
- ii. practice the process of revalidation and the assessment of individual clinical performance (A5);
- iii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs e.g. becoming a member of a professional society (A5).
- iv. organise clinical practice and research based on good governance (C5);
- v. comprehend the role of the Malaysian Dental Council (MDC) and Dental Specialty Board (DSB) in the process of professional self-regulation (C2);
- vi. organise and undertake a clinical audit project including implementation of outcomes and re-audit (P4);
- vii. display proficiency in general patient management (P5);
- viii. organise and manage the working environment and schedule (P4).

## CLUSTER 5: ETHICAL AND PROFESSIONALISM

PLO10: adhering to legal, ethical, professional and sustainable practice.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues and the place of their specialty in the overall healthcare spectrum (A5);
- ii. adhere to the standards of practice in dentistry as determined by the Malaysian Dental Council (A4);
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care, in relation to the oral health needs of populations, the needs of patients under treatment (A5);
- iv. practice ethical principles in the preparation of clinical and research reports (A5);
- v. practice medico-legal principles in relation to patients' records (A5).

## 6. MINIMUM CLINICAL AND LABORATORY EXPERIENCE

The programme must provide sufficient clinical experience for the trainee to be proficient in the comprehensive and holistic management of oral and maxillofacial conditions. The procedures are as listed below:

### 4.1 Requirement in oral and maxillofacial surgery

The trainee MUST acquire minimum competency in core oral and maxillofacial surgery procedure as listed below:

Scope of OMFS	Minimum Clinical Requirements
i. Dentoalveolar surgery: <ul style="list-style-type: none"><li>• Impacted and retained teeth surgery</li><li>• Minor soft and hard tissue surgery</li></ul>	50

ii. Maxillofacial trauma:	
• Reduction and fixation of bone fractures	
➤ Open reduction	5
➤ Close reduction	5
• Soft tissue injuries	20
ii. Case completion (peri-operative management which may include the above)	10
iii. Management of craniofacial anomalies, TMJ and orthognathic surgery	5 cases
iv. Management of benign oral and maxillofacial tumours	5 cases
v. Management of oral and maxillofacial malignancies	5 cases
vi. Advanced management of dental implant patients (e.g. sinus lift, bone augmentation) *Beginning from year 1 master program	5 cases
vi. Oral and maxillofacial infections	10 cases
vii. Harvesting of autogenous bone graft (which should include extraoral donor site)	5 cases
viii. Management of oro-facial pain and oral medicine	20 cases
ix. Multidisciplinary management of medically compromised patients	30 cases

The range of clinical experience is recorded by maintaining a cumulative record of the number of treatment procedures undertaken within specified categories. The above listings are not considered to be totally prescriptive, if further detail to an entry is considered appropriate this can be added.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented.

In addition to the stipulated clinical and research supervision ratio in general section, the suggested optimal ratio for supervision in operation theatre is 1:1 for complex cases.

## 4.2 Requirement in medicine and surgery

The trainee MUST show evidence of postings which include the following components:

### 4.2.1 General medicine

- 4.2.1.1 Management of endocrine diseases
- 4.2.1.2 Management of haematological disorders
- 4.2.1.3 Management of cardiology and respiratory diseases
- 4.2.1.4 Peri-operative management of paediatric patients

### 4.2.2 General surgery

- 4.2.2.1 Homeostasis and fluid management
- 4.2.2.2 Management of head injury
- 4.2.2.3 Neurosurgical management
- 4.2.2.4 Wound management
- 4.2.2.5 Management of definitive airway
- 4.2.2.6 Eye assessment related to OMF injuries
- 4.2.2.7 Management of head and neck injuries and pathologies

- 4.2.3 Accident and Emergency (A&E)
  - 4.2.3.1 Early management of head injuries
  - 4.2.3.2 Early management of trauma
  - 4.2.3.3 Early management of maxillofacial trauma
  - 4.2.3.4 Early management of airway
  - 4.2.3.5 Acute homeostasis and fluid management
  - 4.2.3.6 Haemostasis
  - 4.2.3.7 Advanced Trauma Life Support (ATLS)/ACLS/equivalent
- 4.2.4 Anaesthesiology
  - 4.2.4.1 Management of airway and intubation
  - 4.2.4.2 Sedation and its peri-operative care
  - 4.2.4.3 General anaesthesia and its peri-operative care
  - 4.2.4.4 Intensive care management
  - 4.2.4.5 Management of acute pain

## 7. CLINICAL FACILITIES

Oral and maxillofacial surgery is a specialty of dentistry. The higher education provider (HEP) of this programme MUST be under the purview of a school/faculty of dentistry of an institute of higher learning.

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include:

- i. Oral and Maxillofacial Surgery Clinic/Department
  - Human resource as stipulated in main document
  - OMFS clinic must be within the training hospital compound/premises
  - Resuscitation and emergency facilities
  - Must have dental/oral maxillofacial laboratory facilities
  - Dental radiology
- ii. The training hospital
  - Dedicated beds for OMFS patients
  - Core medical and surgical department should exist in training hospital
    - Medical
      - a) General medicine - (resident physician)
      - b) Paediatric medicine
    - Surgical
      - a) General surgery - (resident general surgeon)
      - b) Neurosurgery - capability for neurosurgical care
      - c) Otorhinolaryngology (ENT) – resident ENT
      - d) Ophthalmology – resident/visiting
    - Accident and Emergency (A&E) department
    - Radiology department
      - a) Resident radiologist
    - Anaesthesiology and intensive care
      - a) Fully functional operating theatre
      - b) Dedicated OMFS operating time/slot
      - c) Resident anaesthetist
      - d) Intensive care unit (ICU) facilities
      - e) Acute pain services

## **8. MINIMUM CORE TEACHING STAFF**

The minimum core teaching staff shall consist of a programme director (which must be a **full-time, registered/recognised** specialist in Oral and Maxillofacial Surgery by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least TWO (2) registered/recognised Oral and Maxillofacial Surgery specialists by MDC, and must be full-time/full-time equivalent.

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This document was reviewed in 2024 by the DentSEdC in Oral and Maxillofacial Surgery, chaired by Professor Dr Firdaus Hariri and its members were, Professor Dr Roszalina Ramli, Dr Azmeel Mazlee Anuar, Dr Sharifah Tahirah Bt Syed Alwi Aljunid, Dr Md Arad Jelon, Kolonel Dr Ahmad Fahmi Bin Mohamad Bustaman and Dr Shamsul Anuar Ahmad.

## **GLOSSARY OF TERMS**

### **1. Levels of Oral and Maxillofacial Surgery Case Difficulty (Based on procedural complexity level):**

#### **Level 1**

- Dento-alveolar trauma
- Soft and hard tissue biopsy
- Facial pain
- Surgical removal of impacted and buried teeth, cysts and benign tumours of the jaws
- Pre-prosthetic surgery including the placement of osseointegrated implants
- Conditions of the oral mucosa such as mouth ulcers and dentoalveolar infection

#### **Level 2**

- Maxillofacial trauma: mandibular, isolated maxillary region, Le Fort I, Le Fort II
- Diseases of the minor salivary glands
- Single jaw orthognathic surgery
- Aesthetic facial surgery
- Conservative management for disorders of the temporomandibular joint (TMJ)
- Management of minor to moderate infections of the head and neck

#### **Level 3**

- Craniomaxillofacial trauma: Le Fort III, pan facial
- Cancers of the head and neck
- Diseases of the major salivary glands
- Complex facial disproportion: bimaxillary orthognathic, distraction osteogenesis
- Cleft lip and palate, craniofacial syndromes
- Surgical management of disorders of the temporomandibular joint (TMJ)
- Management of serious infections of the head and neck including life- threatening fascial space infection

# **PROGRAMME STANDARD FOR DOCTOR IN ORAL MEDICINE**

## **PROGRAMME STANDARD FOR DOCTOR IN ORAL MEDICINE**

### **1. SCOPE OF SPECIALIST TRAINING IN ORAL MEDICINE**

Oral Medicine is a specialty concerned with the diagnosis and management of patients with oral and maxillofacial diseases, and head and neck pain syndromes including temporomandibular disorders whose primary treatment modality is non-surgical. The cases may include, but not limited to oral mucosal diseases, medically related disorders, salivary gland disorders, potentially malignant disorders, orofacial pain, orofacial infectious diseases, and chemosensory disorders.

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

The programme could include multidisciplinary involvement with other dental specialties such as oral and maxillofacial surgery, oral and maxillofacial radiology, special care dentistry, paediatric dentistry, periodontology, and prosthodontics. There are many opportunities of co-management with the medical specialties including dermatology, rheumatology, internal medicine, and many others. Close cooperation with those relevant fields of specialty should be encouraged.

### **3. CONTENT OF LEARNING & DOMAINS OF COMPETENCIES**

The specialist training period will follow as a continuum after the one (1) year Master programme. The domains of competence and the related learning outcomes for the 3-year oral medicine training are described here. The list however is not exhaustive. The trainee is expected to achieve the following competencies upon completion of the DrOrMed programme:

#### **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO1: Demonstrate a critical and in-depth knowledge and understanding in oral medicine.

The trainee must be able to:

- i. integrate relevant biology, anatomy, pathophysiology and histopathology of intra- and extra-oral structures and tissues related to presenting conditions (C5);
- ii. differentiate various clinical presentations of relevant orofacial conditions (C4);
- iii. appraise information gathered through dental, medical and social history, likely to be relevant to the presenting condition in order to arrive at the diagnosis, prognosis and proposed management (C5);
- iv. evaluate the sensitivity and specificity of relevant diagnostic tests (C5);
- v. recommend current best evidence for diagnostic investigations by the chairside, diagnostic imaging modalities and/or through laboratory examinations (C6);
- vi. choose current best evidence for effectiveness of various treatment modalities (C6);
- vii. evaluate the prognostic and risk factors for various management modalities (C5); and
- viii. formulate the best pharmacological and therapeutic management of diseases or conditions (C6).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO2: Synthesise knowledge in the field of oral medicine.

The trainee must be able to:

- i. consider a variety of information sources to obtain scientific papers and other evidence such as clinical guidelines (C5);
- ii. adapt professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking a holistic approach (C6);
- iii. evaluate critically the scope and limitations of the various treatment modalities, balancing the risks and benefits of treatments (C5);
- iv. appraise systematically current evidence and appreciate how research activity can inform practice (C5); and
- v. defend a critical argument through writing and oral presentations (C5).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO3: Conduct research independently.

The trainee must be able to:

- i. compose written reports/articles, including preparing and altering manuscripts, where appropriate (C6);
- ii. perform research activities with minimal supervision (P5);
- iii. display integrity in the design, conduct and criticism of research (P5); and
- iv. display presentation skill in communicating research work to professional colleagues or at specialists' meetings (P5).

## **CLUSTER 3: FUNCTIONAL WORK SKILLS WITH FOCUS ON**

### **CLUSTER 3.1 PRACTICAL SKILLS**

PLO4: Adapt evidence based clinical procedures for proficient patient management in oral medicine.

The trainee must be able to:

- i. perform complete history taking from patients including risk factors for conditions relevant to mode of presentation and complaint (P5);
- ii. perform appropriate clinical examination on patients in relation to pathophysiological and anatomical basis for clinical signs (P5);
- iii. display the ability to select relevant investigations pertinent to patient management (P5);
- iv. perform appropriate investigations within the scope of oral medicine practice (P5);
- v. integrate patient's history, clinical findings and results of investigations (P5);
- vi. formulate appropriate and accurate differential diagnosis with apposite prioritisation after deliberation of common and rare conditions (P5);
- vii. formulate treatment plan based on appropriate diagnoses (P5);
- viii. display patient management skills including advising patients on possible and probable outcomes, as well as the need for future supportive care, prevention and maintenance (P5);

- ix. display skills to manage medically compromised patients/medically related disorders (P5);
- x. revise treatment plan in the face of unfavourable findings or setbacks (P6);
- xi. integrate methods and technologies to prevent infection during treatment procedures, and between patients and staff (P5); and
- xii. construct clinical case reports including evidence to illustrate the case profile and course of treatment (P7).

### **CLUSTER 3.2 INTERPERSONAL SKILL**

PLO5: Display interpersonal skill in resolving issues in the dental practice.

The trainee must be able to:

- i. display a caring and patient-centred approach to treatment planning (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. serve all patients with dignity and respect (A5);
- iv. recognise the impact of the patient's oral and general health status and the proposed advice on their quality of life (A3);
- v. recognise the need for supportive care, prevention, and maintenance (A3); and
- vi. adhere to the limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A4).

### **CLUSTER 3.3: COMMUNICATION SKILLS**

PLO6: Communicate and interact effectively and interact with patients, specialists, and general audience.

The trainee must be able to:

- i. display skill to communicate individually with patients and other professionals and in general educational and professional settings (A5); and
- ii. display appropriate verbal and non-verbal communication/presentation skills (A5).

### **CLUSTER 3.4 & 3.5: DIGITAL AND NUMERACY SKILLS**

PLO7: Select suitable digital and analytical tool techniques to resolve problems.

The trainee must be able to:

- i. select appropriate tools/methodologies to support and enhance clinical/research activities (C5/P5);
- ii. compose critical evaluation of numerical and graphical data (C5); and
- iii. design a clinical audit to for improvement of services (C4).

### **CLUSTER 3.6 LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8: Demonstrate leadership qualities through communicating and working effectively with peers and stakeholders.

The trainee must be able to:

- i. build rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. practice methods of administration/negotiation in order to achieve an appropriate outcome (A5);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. display empathy, sensitivity and awareness in communicating with patients and colleagues (A5);
- v. practice good governance in clinical and research activities (A5);
- vi. recognize the role of the Malaysian Dental Council (MDC) and Dental Specialist Evaluation Committee (DSEC) in the process of professional self-regulation (A3); and
- vii. display leadership skills as a professional team to facilitate the delivery of patient care (A5).

### **CLUSTER 4: PERSONAL SKILLS**

PLO9: Demonstrate commitment to lifelong learning and personal development.

The trainee must be able to:

- i. appraise and evaluate clinical and laboratory practice and procedures to maintain competencies (C6);
- ii. practise the process of revalidation and the assessment of individual clinical and laboratory performance (A5);
- iii. display skills of self-reflection and self-appraisal to identify continuing professional development needs (A5); and
- iv. organise and manage the working environment and schedule (A4).

### **CLUSTER 5: ETHICS AND PROFESSIONALISM**

PLO10: Adhere to legal, ethical, and professional codes of practice.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues (A5);
- ii. comply to the standards of practice in dentistry as determined by the MDC (A4);
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care (A5);
- iv. recognise own limits and refer patient when necessary (A3);
- v. practice ethical principles in the preparation of clinical and research reports (A5); and
- vi. practice medicolegal principles in relation to patients' records (A5).

#### 4. MINIMUM CLINICAL EXPERIENCE

The programme must provide sufficient clinical experience for the trainee to be proficient in the comprehensive treatment of a wide range of oral medicine cases. The trainee must complete the following requirements:

- i. Experience in examination and diagnosis of a minimum of 400 new cases\* comprising the following categories:
  - o oral mucosal disorders
  - o medically complex patients
  - o salivary gland disorders
  - o orofacial pain and temporomandibular disorders, and
  - o orofacial neurosensory disorders/genetic disorders

\* Cases refer to any specific disease/condition. One patient may present with multiple presentations, and these can be regarded as different cases for examination and diagnosis.
- ii. Experience managing at least five patients in each of these categories with a total of 40 patients\*:
  - o oral mucosal disorders
  - o medically complex patients
  - o salivary gland disorders, and
  - o orofacial pain and temporomandibular disorders

\*These 40 cases are mutually inclusive of the minimum 400 new cases stipulated.

Clinical experience in the specific dental field itself is highly recommended to ensure the trainee appreciate the multidisciplinary approach and considerations in the patient management:

- i. Oral and maxillofacial surgery
- ii. Oral and maxillofacial radiology
- iii. Special care dentistry

Clinical experience MUST also include at least TWO of these selected medical attachments with a minimum duration of ONE (1) month for each posting:

- i. Rheumatology
- ii. Dermatology
- iii. Radiology
- iv. Oncology
- v. Otorhinolaryngology
- vi. Internal medicine
- vii. Psychiatry
- viii. Neurology or pain clinic
- ix. Infectious diseases
- x. Nutrition/Dietetics

The range of clinical experience is recorded by maintaining a cumulative record of the number of treatment procedures undertaken within specified categories.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented.

## 5. CLINICAL AND HOSPITAL/HEALTH CENTRE FACILITIES

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include;

- i. physical facilities to permit trainee to operate under circumstances prevailing in the practice of oral medicine;
- ii. facilities specifically identified for the advanced education program in oral medicine; The facility must be fully equipped with dedicated armamentarium and materials to allow the standard of practice at the advanced level;
- iii. hospital or health centres which contains outpatient and in-patient medical specialties services; and
- iv. laboratory facilities specifically identified to support research activities.

## 6. MINIMUM CORE TEACHING STAFF

The minimum core teaching staff shall consist of a programme director (which must be a **full-time, registered/recognised** specialists in Oral Pathology and Oral Medicine, or Oral Medicine by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least TWO (2) registered/recognised specialists by MDC (in Oral Pathology and Oral Medicine, or Oral Medicine), and must be full-time/full-time equivalent.

## 7. ADDITIONAL REQUIREMENTS

Delivery methods must cover the three main domains ie cognitive, psychomotor, and affective through a variety of techniques. These may include but are not limited to the following:

- i. Theoretical learning during formal and timetabled periods. This should be geared towards developing an understanding of the subject by critical appraisal and synthesis of the classical and contemporary literatures through individual and group activities, involving discussion, seminars, project assignments, journal club or clinical meetings and validated self-directed and independent study.
- ii. Clinical skills development through history taking, clinical investigations, diagnosis, and treatment of patients with orofacial diseases and related disorders. Clinical skills also include minor oral surgery procedures especially soft tissue biopsies.
- iii. Workplace-based learning methods  
Candidates shall be posted to clinical centres under the supervision of experienced honorary consultants with an option of an overseas attachment. Evidence of skills development shall be kept in a portfolio/logbook. These clinical settings include:
  - o Oral Medicine and other related dental specialty, as listed in item 4. This may include outpatient and inpatient hospital settings.
  - o Medical Specialty outpatient and inpatient hospital settings, which involves posting in various medical specialties as listed in item 4.
- iv. Research exposure through participation in a research project (clinical, experimental or literature research) which is reported formally in a thesis, or as a manuscript prepared for submission or as published paper(s).

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This document was reviewed in 2024 by DentSEdC in Oral Pathology and Oral Medicine chaired by Dr. Masitah Hayati Harun, and its members were Associate Professor Dr Nik Mohd Mazuan Nik Mohd Rosdy, Associate Professor Dr Zuraiza Mohamad Zaini, Professor Dr Rosnah Mohd Zain, Dr Ajura Abdul Jalil, Dr Sumairi Ismail and Colonel (Dr) Liana Ma Abdullah.

# **PROGRAMME STANDARD FOR DOCTOR IN ORTHODONTICS**

## **PROGRAMME STANDARD FOR DOCTOR IN ORTHODONTICS**

### **1. SCOPE OF ORTHODONTICS**

The scope of orthodontics encompasses the comprehensive diagnosis and management of patients who require simple to complex orthodontic treatment comprising of;

- i. an understanding in breadth and depth of Orthodontics knowledge.
- ii. appropriate knowledge, attitudes and skills of an Orthodontist with an emphasis on evaluation, diagnosis and formulation of the orthodontic treatment plan utilizing digital technologies.
- iii. full range of technical and clinical skills in Orthodontics to execute simple and complex treatment procedures and evaluate orthodontic progress and treatment outcomes.
- iv. the skill to communicate effectively and professionally and collaborate with other dental specialties personnel for multidisciplinary clinical management of patients.
- v. attitudes necessary for the achievement and delivery of the highest standards of orthodontic care, in relation to the oral health needs of populations, the needs of patients under treatment and to his or her own personal development.
- vi. understanding of research to critically assess classical or new research work, ability to carry out a research project and analyse the quantitative and/or qualitative data.
- vii. maintaining responsibilities related to continuing professional development and instil a life-long learning philosophy.
- viii. Knowledge in the practice of clinical governance.
- ix. appropriate attitude and understanding of ethical and societal issues and the position of their specialty in the overall healthcare spectrum.
- x. maintaining standards of practice in dentistry and orthodontics as determined by the Malaysian Dental Council (MDC).

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

- i. Orthodontics and Restorative dentistry; integration of orthodontics with restorative and periodontal management.
- ii. Orthodontics, Oral and Maxillofacial Surgery, other dental and medical disciplines; management of craniofacial disharmony and deformities that require surgery.
- iii. Orthodontics and Paediatric Dentistry; interceptive management.

### **3. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The training programme must be designed to build on the knowledge and skills of the undergraduate programme. This should be oriented to the accepted standards of orthodontic practice as set forth in the specific standards contained in this document. The programme must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research and service. Planning for, evaluation of and improvement of educational quality for the programme must be broad-based, systematic and continuous.

The domains of competences are as follows;

## **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO1: Demonstrate a critical, in-depth knowledge and understanding in Orthodontics.

The trainee must be able to:

- i. adapt relevant knowledge in biology, anatomy, physiology of normal growth and development of dental structures in relation to the management of the orthodontic patients (C6);
- ii. deduce anomalies of dentition, facial structure and functional condition and detect malocclusion, deviations of development of dentition, facial growth and occurrence of functional abnormalities (C6);
- iii. justify the use of orthodontic records to diagnose, formulate treatment plan and assess treatment progress (C4);
- iv. appraise the best option of dental/orthodontic materials, equipment, technology and biomechanics to achieve treatment aims and objectives (C6);
- v. evaluate risk and benefit analysis in various treatment modalities (C6);
- vi. recommend various types of techniques and biomechanics for the management of orthodontic cases (C6);
- vii. relate the knowledge and role of comprehensive and adjunctive orthodontics management in conjunction with other disciplines (C6);
- viii. analyse and interpret the conventional and contemporary techniques of dental imaging (C6);
- ix. appraise the use of orthodontic indices in identifying treatment needs and outcomes (C5);
- x. evaluate the limitation of orthodontic treatment (camouflage vs orthognathic surgery) in management of craniofacial discrepancies and anomalies (C6);
- xi. integrate scientific evidence-based knowledge in managing and solving problems in orthodontics (C6);
- xii. combine the knowledge analysis and interpretation of research data to spark innovative ideas in specialty of orthodontics (C6);
- xiii. compose detailed knowledge of all aspects of research writing (C5).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO2: Synthesise existing and new knowledge in one or more discipline areas to resolve practical problems.

The trainee must be able to:

- i. consider a variety of information sources to obtain scientific papers and other evidences such as guidelines (C6, A4);
- ii. display professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking a holistic approach (P5);
- iii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of treatment demonstrating self-direction and autonomy (C6, A5);
- iv. appraise systematically current evidence and appreciate how research activity can influence clinical practice (C6);
- v. perform and sustain a critical argument in writing and through oral presentations (P5).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO3: Conduct rigorous and independent research or investigation with minimal supervision.

The trainee must be able to:

- i. display integrity in the design, conduct and criticism of research (P5);
- ii. perform research activities with minimal supervision (P5);
- iii. compose written dissertation and articles, including preparing manuscripts (P7);
- iv. display presentation skill in communicating research work to professional colleagues or at conferences (P5).

## **CLUSTER 3.1: PRACTICAL SKILLS**

PLO4: Adapt evidence based clinical procedures for proficient patient management in orthodontics.

The trainee must be able to:

- i. develop treatment plan based on appropriate diagnoses obtained from (P5);
  - a. a thorough clinical assessment and examination of a patient's extra and intra oral presentations, occlusion, and habits.
  - b. dental records (orthodontic study model, radiographs, photographs),
  - c. appropriate investigations; sensibility tests, and/or related dental imaging.
- ii. manage various types of malocclusions with different treatment mechanics and modalities (P5);
- iii. manage craniofacial anomalies and syndromic patients such as craniosynostosis and cleft lip and palate (P5);
- iv. integrate methods and technologies to prevent cross infection during treatment procedures and delivery of impression materials and appliances (P5);
- v. display and demonstrate skills to manage interdisciplinary cases (P4);
- vi. perform the orthodontic treatment using different range of techniques and biomechanics (P2);
- vii. grade and assess the orthodontic treatment needs, complexity and outcomes (P5);
- viii. design and construct appropriate retention appliances and regime (P7);
- ix. manage the orthodontic complications and iatrogenic effects (soft tissues and hard tissue damage) (P5).

## **CLUSTER 3.2: INTERPERSONAL SKILLS**

PLO5: Display interpersonal skill in resolving issues in orthodontic practice.

The trainee must be able to:

- i. display a caring and patient-centred approach to treatment planning (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. treat all patients with dignity and respect (A5);
- iv. recognise the impact of the patient's oral and general health status and the proposed

- advice on their quality of life (A3);
- v. recognise the need for supportive care, prevention and maintenance (A3);
- vi. adhere to the limitations of knowledge and practical experience, in the assessment and management of interdisciplinary cases (A4).

### **CLUSTER 3.3: COMMUNICATION SKILLS**

PLO6: Communicate and interact effectively and interact with patients, specialists and general audience.

The trainee must be able to:

- i. display appropriate both verbal and non-verbal communication /presentation skills (P5);
- ii. display empathy, sensitivity and awareness in communicating with patients and colleagues (A5).

### **CLUSTER 3.4 AND 3.5: DIGITAL SKILLS AND NUMERACY SKILLS**

PLO7: Select suitable digital and analytical tool techniques to resolve problems.

The trainee must be able to:

- i. display the use of a wide range of suitable digital technologies and appropriate software to enhance study, research and practice pertaining to Orthodontics (P4);
- ii. adapt applications and systems to address defined and new situations or problems (P6);
- iii. show skills to design and plan evaluation activities using quantitative or statistical tools (P2);
- iv. apply mathematical and other quantitative, qualitative tools to analyse and evaluate numerical and graphical data for study or work (A3);
- v. select existing or formulate new appropriate tools or methodologies to support and enhance research activities (P5);
- vi. perform critical evaluation of numerical and graphical data to support the evidence based in Orthodontics (P5).

### **CLUSTER 3.6: LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8: Demonstrate intellectual leadership qualities and management skills.

The trainee must be able to:

- i. build a rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. adapt methods of administration or negotiation in order to achieve an appropriate outcome (P6);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. organise clinical practice and research based on good governance (C5);
- v. comprehend the role of the Malaysian Dental Council (MDC) in the process of professional regulation (C2);
- vi. organise and undertake a clinical audit project including implementation of outcomes

- and re-audit (P4);
- vii. display proficiency in general patient management (P5);
- viii. organise and manage the working environment and schedule according to the code of ethics (P4).

#### **CLUSTER 4: PERSONAL SKILLS**

PLO9: Demonstrate commitment to lifelong learning and personal development.

The trainee must be able to;

- i. appraise and evaluate clinical practice and procedures periodically to maintain competencies (C6);
- ii. practise the process of revalidation and the assessment of individual clinical performance (A5);
- iii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs (A5).

#### **CLUSTER 5: ETHICAL AND PROFESSIONALISM**

PLO10: Adhere to ethical, professional and sustainable practices.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues and the position of their specialty in the overall healthcare spectrum (A5);
- ii. adhere to the standards of practice in dentistry as determined by the Malaysian Dental Council (A4);
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care, in relation to the oral health needs of populations, the needs of patients under treatment (A5);
- iv. practice ethical principles in the preparation of clinical and research dissertation (A5);
- v. practice medico-legal principles in relation to patients' records (A5).

#### **4. MINIMUM CLINICAL AND LABORATORY EXPERIENCE**

The programme must provide sufficient clinical experience for the trainee to be proficient in the comprehensive treatment of a wide range of orthodontic cases. The following is the minimum expected exposure for the case mix before the trainee graduates. The trainee must treat **at least** a total of 120 cases, of which **80** (minimum) must be **new** patients.

The following are the minimum case types:

Type of malocclusion	Minimum Clinical Requirement
1. Class I malocclusion	10 cases
2. Class II division 1 malocclusion	10 cases
3. Class II division 2 malocclusion	2 cases
4. Class III malocclusion	6 cases

These cases must include interdisciplinary management of the following case complexities in any combination of the above case types. The specific requirements for the case complexities are as follows;

Scope of case complexity	Minimum Clinical Requirement
1. Interdisciplinary cases, which may include: a. Cleft cases b. Restorative /periodontology /paediatric dentistry management c. Orthognathic cases	10 cases
2. Specific requirement	
a. Dental anomalies e.g. hypodontia, impacted teeth	2 cases
b. Severe skeletal discrepancy requiring orthognathic intervention	1 case
c. Cleft lip and/or palate	1 case

The orthodontic experience shall include a minimum of the following:

Scope of orthodontic experience	Minimum Clinical Requirement
1. Fixed appliances a. may be in combination with the list below depending on the case complexity b. at least 1 case of self-ligating appliances	100 cases
2. Removable appliances (including Functional appliances)	3 cases
3. Adjunct anchorage devices (e.g. headgear, TADs, TPA, Lingual arch etc)	10 cases
4. Completed the case that the trainee started i.e. debond	30 cases
5. Transfer cases	20 cases
6. Removable Retainer	20 cases
7. Fixed Retainer	1 case

NB: for the first cohort of a new programme the number of transfer cases may be an exception.

This requirement was made considering the common case types within the country. The requirement for each trainee may be considered based on the combination of case complexity and treatment.

The range of clinical experience is recorded by maintaining a cumulative record of the number of treatment procedures undertaken within specified categories.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented.

## 5. CLINICAL FACILITIES

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain them on a continuing basis. These include;

- i. Physical facilities to permit trainee to operate under circumstances prevailing in the practice of orthodontics;
- ii. Clinical facilities specifically identified for the advanced education programme in orthodontics. The facility must be fully equipped with dedicated orthodontic armamentarium and materials to allow the standard of contemporary orthodontics practiced at an advanced level;
- iii. Laboratory facilities specifically identified to support the fabrication of most removable and fixed appliances required in the programme;
- iv. Laboratory bench spaces to accommodate the number of students/residents enrolled in the program.

## 6. MINIMUM CORE TEACHING STAFF

The minimum core teaching staff shall consist of a programme director (which must be a **full-time, registered/recognised** orthodontists by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least TWO (2) registered/recognised orthodontists by MDC, and must be full-time/full-time equivalent.

In addition to the minimum core teaching staff in the general standard, the clinical supervisors must comply to the following criteria:

- i. Clinical academic staff have approved postgraduate qualification in Orthodontics by the MDC.
- ii. International academic staff involved in clinical teaching shall have a valid TPC (Specialist in Orthodontics) as stated in Guidelines for Applications for TPC Dental Act 2018.

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# **PROGRAMME STANDARD FOR DOCTOR IN PAEDIATRIC DENTISTRY**

## **PROGRAMME STANDARD FOR DOCTOR IN PAEDIATRIC DENTISTRY**

### **1. SCOPE OF PAEDIATRIC DENTISTRY**

The scope of Paediatric Dentistry training encompasses:

- i. Provision of comprehensive preventive and therapeutic oral health diagnosis, care and consultative expertise for infants, children, and adolescents under 16 years of age, including children with special care needs;
- ii. Treatment and care that can be undertaken wholly by the paediatric dentists or managed as part of multi-disciplinary care with other health disciplines or in selected instances; appropriate referral made to the relevant health disciplines based on the complexity of cases;
- iii. Hospital-based work for paediatric patients such as on-call duty, admission, pre, peri and post-operative care and discharge;
- iv. Continuous enhancement of knowledge and relevant clinical skills throughout their careers;
- v. Engagement and teaching of dental care for children within the speciality as well as for general dentists and other healthcare workers.

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

The curriculum of the training programme provides trainees with the necessary exposure in the areas of Preventive Dentistry, Orthodontics, Endodontics, Oral Maxillofacial Surgery, Special Needs Dentistry and relevant medical disciplines that relate to the practice of Paediatric Dentistry.

### **3. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The training programme must be designed to build on the knowledge and skills of the undergraduate programme. This should be oriented towards the accepted standards of Paediatric Dentistry practice as set forth in the specific standards contained in this document.

The programme must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research and service. Planning for, evaluation of and improvement of educational quality for the programme must be broad-based, systematic, continuous and designed to promote achievement of programme goals related to education, patient care, research and service.

The domains of competences are as follow:

#### **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO 1: Demonstrate a critical and in-depth knowledge and understanding in Paediatric Dentistry

The trainee must be able to:

- i. relate the relevant knowledge in biology, anatomy, physiology of normal and abnormal dental and maxillofacial structures in health and disease (C5);

- ii. relate the impact of various medical diseases on dental and maxillofacial structures (C6)
- iii. evaluate the impact of various medical diseases on the delivery of oral health care for children and adolescents (C6);
- iv. evaluate tools to facilitate communication with both children and adolescents who are normal and with special health care needs (C6);
- v. evaluate the various health educational and promotional activities that can be implemented for the prevention of oral and dental diseases in children and adolescents (C6);
- vi. evaluate the impact of the physical, behavioural, emotional and cognitive development of children from infancy to adolescence on the delivery of oral health care (C6);
- vii. evaluate the non-pharmacological and pharmacological behaviour management techniques used in Paediatric Dentistry to facilitate the delivery of oral health care (C6);
- viii. evaluate the epidemiology, assessment, investigation, diagnosis and management of:
  - a. dental caries in the primary and permanent dentitions based on currently available evidence (C6);
  - b. non-carious tooth surface loss in children and adolescents based on currently available evidence (C6);
  - c. developmental dental anomalies in children and adolescents based on currently available evidence (C6);
  - d. common periodontal disease in children and adolescents based on currently available evidence (C6);
  - e. various oral mucosal and jaw lesions and their related pathologies in children and adolescents based on currently available evidence (C6);
  - f. malocclusion in children and adolescents based on currently available evidence (C6);
  - g. dental and dentoalveolar trauma in children and adolescents based on currently available evidence (C6);
  - h. oral and maxillofacial injuries in children and adolescents based on currently available evidence (C5);
- ix. relate the role of the paediatric dentist in multidisciplinary diagnostic and management teams managing children and adolescents with complex dental, maxillofacial and craniofacial related problems (C6);
- x. apply the signs and symptoms suggestive of child abuse and neglect in the management of such children concerning child protection and welfare (C3);
- xi. use the principles of Paediatric Basic Life Support and its application in medical emergencies (C3);
- xii. apply the various guides that can be given to children and adolescents related to smoking, drugs, alcohol and substance abuse (C3);
- xiii. use the relevant forensic odontological principles applicable in the practice of paediatric dentistry (C3)

## **CLUSTER 2: COGNITIVE SKILLS**

PLO 2: Synthesise existing and new knowledge in one or more discipline areas to resolve practical problems.

The trainee must be able to:

- i. consider a variety of information bases to obtain scientific papers and other evidence,

- such as guidelines (C6, A4);
- ii. display professional judgement to implement clinical solutions in response to problems by developing holistic, evidence-based treatment plans (A5);
- iii. evaluate the scope and limitations of the various investigative and treatment techniques critically in the context of balancing the risks and cost benefits (C6, A5);
- iv. appraise systematically current evidence and appreciate how research activities can inform practice (C6);
- v. perform and sustain a critical argument in writing and through oral presentations (A5).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO3: Conduct rigorous and independent research or investigation with minimal supervision.

At the end of the training, the trainee must be able to:

- i. compose written reports/articles, including preparing and altering manuscripts, where appropriate (C6);
- ii. perform research activities with minimal supervision (P5);
- iii. display integrity in the design, conduct, and criticism of research (C5);
- iv. display presentation skills in communicating research work to professional colleagues or at specialists' meetings (C6, P5).

## **CLUSTER 3.1: PRACTICAL SKILLS**

PLO4: adapt evidence-based clinical procedures for proficient patient management in Paediatric Dentistry

The trainee must be able to:

- i. diagnose normal and abnormal orofacial structures in both healthy and diseased children and adolescents (P5);
- ii. Integrate the various domains of child psychology in understanding the needs, behavioural patterns and anxiety concerns related to oral health care of children and adolescents (P5);
- iii. perform the non-pharmacological and/or pharmacological behaviour management interventions such as conscious sedation to manage undesirable behaviours and anxiety-related concerns in patients for safe and effective delivery of oral health care in general dental settings (P5);
- iv. display the ability to recognise complications and emergencies which may arise during the administration of oral and inhalation sedation (P5);
- v. display the ability to recognise the undesirable behaviours and anxiety-related concerns that are not manageable either with non-pharmacological or pharmacological interventions in general dental settings and refer such cases to hospitals/institutions that provide such oral health care under general anaesthesia (P5);
- vi. display the ability to recognise patients with underlying medical diseases/conditions that may be at risk of developing medical emergencies in general dental settings and refer such cases to hospitals/institutions that provide such oral health care (P5);
- vii. perform comprehensive dental care, which includes preventive, restorative and endodontic treatment on infants, children and adolescents and those with special care needs who require such treatment either in isolation or as part of multi-disciplinary management in a general dental setting or under general anaesthesia (P5);

- viii. perform preventive, interceptive and surgical treatment in managing malocclusion in the primary and mixed dentition stages (P5);
- ix. perform treatment for traumatic dental injuries to the primary and young permanent teeth (P5);
- x. perform dental treatment for non-carious tooth surface loss conditions such as abrasion, attrition and erosion in children and adolescents (P5);
- xi. perform dental rehabilitative treatment for hereditary and acquired dental developmental disorders (P5);
- xii. perform minor oral surgical procedures for either diagnosis or treatment of common dental, mucosal or dentoalveolar lesions seen in children and adolescents (P5);
- xiii. perform treatment of dentoalveolar trauma and peri-oral trauma in children and adolescents either through surgical or nonsurgical intervention (P5);
- xiv. display the ability to recognise possible child abuse and neglect cases in the clinic and refer appropriately to relevant authorities for further actions (P4);
- xv. display the ability to recognise oral maxillofacial injuries which require prompt referral (P4);
- xvi. perform various oral health disease risk assessments for identification of patients at risk of disease (P5);
- xvii. organise comprehensive oral health-related preventive advice to patients and parents to either prevent or halt the progression of suspected oral health-related diseases (P5);

### **CLUSTER 3.2: INTERPERSONAL SKILLS**

PLO5: Display interpersonal skills in resolving issues in the dental practice

The trainee must be able to:

- i. display a caring and patient-centred approach to treatment planning (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. serve all patients with dignity and respect (A5);
- iv. recognise the impact of the patient's oral and general health status and the proposed advice on their quality of life (A3);
- v. recognise the need for supportive care, prevention and maintenance (A3);
- vi. adhere to the limitations of knowledge and practical experience in assessing and managing interdisciplinary cases (A4).

### **CLUSTER 3.3: COMMUNICATION SKILLS**

PLO6: Communicate and interact effectively and interact with patients, specialists and general audience

The trainee must be able to:

- i. display skill to communicate individually with patients and other professionals and in general educational and professional settings (A5)
- ii. display appropriate both verbal and non-verbal communication /presentation skills (A5);

### **CLUSTER 3.4 & 3.5: DIGITAL AND NUMERACY SKILLS**

PLO7: Select suitable digital and analytical tool techniques to resolve problems

The trainee must be able to:

- i. design a proposal for clinical audit based on the principles of clinical effectiveness (C5)
- ii. Select appropriate tools/methodologies to support and enhance clinical/research activities (C5/P5).
- iii. compose critical evaluation of numerical and graphical data (C5).

### **CLUSTER 3.6: LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8: Demonstrate intellectual leadership qualities and management skills

The trainee must be able to:

- i. build a rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. practice methods of administration/negotiation to achieve an appropriate outcome (A5);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. display empathy, sensitivity and awareness in communicating with patients and colleagues (A5).
- v. perform clinical practice and research based on good governance (A5);
- vi. explain the role of the Malaysian Dental Council (MDC) and Dental Specialty Board (DSB) in the process of professional self-regulation (A4);
- vii. display proficiency in general patient management (P5);

### **CLUSTER 4: PERSONAL SKILLS**

PLO9: Demonstrate commitment to lifelong learning and personal development

The trainee must be able to:

- i. appraise and evaluate clinical practice and procedures periodically to maintain competencies (A6);
- ii. practice the process of revalidation and the assessment of individual clinical performance (A5);
- iii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs, e.g. becoming a member of a professional society (A5)
- iv. organise and manage the working environment and schedule (A4).

### **CLUSTER 5: ETHICS AND PROFESSIONALISM**

PLO10: Adhere to ethical, professional and sustainable practices

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues and the place of their specialty in the overall healthcare spectrum (A5);
- ii. adhere to the standards of practice in dentistry as determined by the Malaysian Dental Council (A4);
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care, in relation to the oral health needs of populations, the needs of patients under treatment (A5);
- iv. practice ethical principles in the preparation of clinical and research reports (A5);
- v. practice medico-legal principles in relation to patients' records (A5)

#### 4. MINIMUM CLINICAL AND LABORATORY EXPERIENCE

The programme must provide sufficient clinical experience for the trainees to be proficient in the comprehensive treatment of a wide range of dental and orofacial diseases or conditions in infants, children, and adolescents under 16 years of age including children with special care needs. Trainees must show evidence of cases treated throughout their three years of clinical training in the form of clinical logbooks. The clinical cases should be written as reflective case summary portfolio. Each trainee needs to produce a logbook that consists of a minimum of 100 portfolios of patients (new and recall) which the trainee has treated. The cases recorded in the logbook must exhibit evidence of different scopes of treatment provided to the patients.

A trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness of the trainee to practice independently as a specialist must be documented.

Each trainee must achieve a minimal number of a set of clinical procedures outlined in the expected Minimal Clinical Experience, as shown in the table below, before the trainee is allowed to sit for the Final Professional Examination:

The Minimum Clinical Experience expected of the trainee must include the following:

No	Scope of Treatment Procedures	No. of expected (cases/ patients/ experiences) [Minimum Clinical Experience]
1.	Examination and diagnosis with complete treatment planning	<b>Thirty</b> (30) new cases of healthy patients <b>Five</b> (5) new cases of medically compromised patients or special needs patients
2.	Comprehensive Dental Care (CDC)	<b>Ten</b> (10) cases of CDC carried out on healthy patients <b>Five</b> (5) cases of CDC carried out on medically compromised or special needs patients
3.	Non-pharmacological behaviour management	<b>Twenty</b> (20) clinical experiences as part of the integrated clinical management of patients
4.	Pharmacological behaviour management (conscious sedation)	<b>Five</b> (5) clinical experiences as part of the integrated clinical management of patients
5.	Dental treatment under general anaesthesia	<b>Ten</b> (10) cases [In five (5) of the cases, the trainee has to be the main operator]
6.	Traumatic dental injury	<b>Five</b> (5) cases
7.	Pulp therapy on either primary or young permanent dentition	<b>Five</b> (5) cases
8.	Oral lesions (other than dental caries and gingivitis)	<b>Five</b> (5) cases

9.	Interceptive orthodontics in developing dentition	<b>Four</b> (4) cases of interceptive orthodontics
10.	Dento-alveolar surgery	<b>Three</b> (3) cases
11.	Non-surgical management of jaw bone fractures/ Management of oral and perioral soft tissue trauma	<b>Ten</b> (10) cases
12.	Dental developmental disorders or anomalies	<b>Three</b> (3) cases
13.	Admission, consenting and discharge of patients	<b>Twenty</b> (20) cases

## 5. CLINICAL FACILITIES

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include:

- i. Physical facilities within the HEP Institution to permit the trainee to operate under the circumstances prevailing in the practice of Paediatric Dentistry.
- ii. External clinical facilities specifically identified for the advanced clinical training in Paediatric Dentistry.
- iii. Laboratory facilities specifically identified to support the needs of the programme.

## 6. MINIMUM CORE TEACHING STAFF

The minimum core teaching staff shall consist of a programme director (which must be **a full-time, registered/recognised** specialists in Paediatric Dentistry by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least TWO (2) registered/recognised specialists in Paediatric Dentistry by MDC, and must be full-time/full-time equivalent.

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# **PROGRAMME STANDARD FOR DOCTOR IN PERIODONTOLOGY**

## **PROGRAMME STANDARD FOR DOCTOR IN PERIODONTOLOGY**

### **1. SCOPE OF THE PERIODONTICS**

The scope of the programme encompasses:

- i. Prevention, diagnosis and treatment of diseases of the periodontium and dental implants.
- ii. Maintenance of health, functions and aesthetics of all supporting structures and tissue.
- iii. Tissue regeneration, management of muco-gingival conditions and periodontal-endodontic lesions
- iv. Provision of dental implants as an integral component of comprehensive periodontal therapy.

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

Multidisciplinary approach toward holistic management of patients shall be incorporated in the programme for relevant disciplines of dentistry and medicine.

### **3. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The training programme must be designed to build on the knowledge and skills of the undergraduate programme and those gained during practice after graduation. This should be oriented to the accepted standards of periodontics practice as set forth in the specific standards contained in this document.

The programme must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research, and service. Planning for, evaluation of and improvement of educational quality for the programme must be broad-based, systematic, and continuous.

The domains of competencies are as follows.

#### **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO1: Demonstrate a critical and in-depth knowledge and understanding in periodontics.

The trainee must be able to:

- i. integrate relevant knowledge in biology, anatomy, physiology of normal and abnormal structures in periodontal and peri-implant tissues. (C5)
- ii. weigh the primary and supplementary techniques for local anaesthesia of the periodontal tissues (C6)
- iii. select dental materials, equipment, and technology to achieve each treatment goal (C6)
- iv. choose current best evidence for effectiveness of various treatment modalities (C6)
- v. evaluate prognostic and risk factors for various modalities (C6)

- vi. justify the use of appropriate pharmaceutical agents where necessary (C4)
- vii. evaluate the factors which make a tooth not saveable (C6)
- viii. appraise the principles and practice of periodontally compromised teeth (C6)
- ix. relate the principles of occlusion and its influence on clinical practice (C6)
- x. consider the multidisciplinary of clinical cases which may require varied treatment modalities (C6)
- xi. relate technical requirements of treatment of periodontal diseases to biology, anatomy, physiology, pathology, and microbiology (C6)
- xii. summarize application of tissue regeneration/engineering in clinical practice (C6)
- xiii. evaluate the physical, chemical, and biological properties of clinical instruments and periodontal materials (C6)
- xiv. appraise conventional and contemporary imaging techniques (C6)
- xv. appraise the different outcome measures of treatment and their assessment (C6)
- xvi. consider risks and limitations associated with non-surgical and surgical procedures (C6)
- xvii. select the procedures for the emergency management of acute periodontal disease and sepsis (C6).

#### **CLUSTER 2: COGNITIVE SKILLS**

PLO2: Synthesise existing and new knowledge in one or more discipline areas to resolve practical problems.

The trainee must be able to:

- i. consider a variety of information sources to obtain scientific papers and other evidence such as guidelines (C6, A4);
- ii. display professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking a holistic approach (P5)
- iii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of treatment demonstrating self-direction and autonomy (C6, A5)
- iv. appraise systematically current evidence and appreciate how research activity can inform practice (C6);
- v. perform and sustain a critical argument in writing and through oral presentations (P5).

#### **CLUSTER 2: COGNITIVE SKILLS**

PLO3: Conduct rigorous and independent research or investigation with minimal supervision.

The trainee must be able to:

- i. compose written reports/articles, including preparing and altering manuscripts, where appropriate (P7)
- ii. perform research activities (P5)
- iii. display integrity in the design, conduct and criticism of research (P5)
- iv. display presentation skill in communicating research work to professional colleagues or at specialists' meetings (P5).

#### **CLUSTER 3.1: PRACTICAL SKILLS**

PLO4: Adapt evidence based clinical procedures for proficient patient management in

periodontics.

The trainee must be able to:

- i. take a thorough history to identify the aetiological factors for the patients' concerns (P5)
- ii. execute a thorough periodontal examination of the patient (P5)
- iii. perform appropriate investigations (e.g. radiographic, sensitivity and vitality tests, haematological and microbiological tests (P5)
- iv. evaluate existing periodontium and related structures and radiographic interpretation (P5)
- v. construct the appropriate diagnosis(es) based on the examination and investigation (P5)
- vi. derive the likely prognosis and outcomes of the various treatment options and relating this to the prognosis without treatment (P5)
- vii. formulate treatment plan based on appropriate diagnoses (P5)
- viii. display skills to manage medically compromised patients (P5)
- ix. advise patients on the possible and probable outcomes of the treatment options, as well as the need for future supportive care, prevention, and maintenance (P5)
- x. delineate strategies and plans according to the skills of other clinicians involved in the care of the patient (P5)
- xi. integrate methods and technologies to prevent infection during treatment procedures, between patients and staff and during transport of materials and prostheses between the laboratory and the clinic (P5)
- xii. display skills to manage multidisciplinary cases (P5)
- xiii. display the use of chemical agent in the management periodontal problems (P5)
- xiv. perform periodontal treatment (non-surgical, surgical, mucogingival surgeries and treatment of infrabony defects) of moderate to high complexity cases using a range of techniques (P5)
- xv. display skill and knowledge to treat patients requiring dental implant therapy (P5)
- xvi. assess all treatment outcomes (P5)
- xvii. display proficiency in the application of periodontal materials, instruments, and techniques for managing post-treatment complications (P5)
- xviii. alter treatment plan in the face of unfavourable findings or setbacks, including the decision to abort treatment (P6)
- xix. construct case reports including a standard set of photographs to illustrate the course of treatment (P5).

### **CLUSTER 3.2: INTERPERSONAL SKILLS**

PLO5: Display interpersonal skill in resolving issues in the dental practice.

PLO6: communicate and interact effectively with peers in the field/s as well as general audience.

The trainee must be able to:

- i. display a caring and patient-centred approach to treatment planning (A5)
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5)
- iii. serve all patients with dignity and respect (A5)

- iv. recognise the impact of the patient's oral and general health status and the proposed advice on their quality of life (A3)
- v. recognise the need for supportive care, prevention, and maintenance (A3)
- vi. adhere to the limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A4)

### **CLUSTER 3.4 & 3.5: DIGITAL SKILL AND NUMERACY SKILLS**

PLO7: select suitable digital and analytical tool techniques to resolve problems.

The trainee must be able to:

- vi. consider a variety of information sources to obtain scientific papers and other evidences. such as guidelines (C6, A4);
- vii. display professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking a holistic approach (P5);
- viii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of treatment demonstrating self-direction and autonomy (C6, A5);
- ix. appraise systematically current evidence and appreciate how research activity can inform practice (C6);
- x. perform and sustain a critical argument in writing and through oral presentations (P5).

### **CLUSTER 3.6: LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8: Demonstrate intellectual leadership qualities and management skills.

The trainee must be able to:

- i. build a rapport to work effectively as part of a team and manage members appropriately (A5)
- ii. adapt methods of administration/negotiation in order to achieve an appropriate outcome (P6)
- iii. practice a non-discriminatory approach to patients, carers, colleagues, and other members of the workplace team (A5)
- iv. display appropriate both verbal and non-verbal communication /presentation skills (P5)
- v. display empathy, sensitivity, and awareness in communicating with patients and colleagues (P5, A5).
- vi. organise clinical practice and research based on good governance (C5)
- vii. comprehend the role of the Malaysian Dental Council (MDC) and Dental Specialist Evaluation Committee (DSEC) in the process of professional self-regulation (C2)
- viii. organise and undertake a clinical audit project including implementation of outcomes and re-audit (P4)
- ix. display proficiency in general patient management (P5)
- x. organise and manage the working environment and schedule (P4).

### **CLUSTER 4: PERSONAL SKILLS**

PLO9: Demonstrate commitment to lifelong learning and personal development.

The trainee must be able to:

- i. appraise and evaluate clinical practice and procedures periodically to maintain

- competencies (C6);
- ii. practice the process of revalidation and the assessment of individual clinical performance (A5);
- iii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs e.g. becoming a member of a professional society (A5).

## CLUSTER 5: ETHICS AND PROFESSIONALISM

PLO10: Adhere to ethical, professional, and sustainable practices.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues and the place of their specialty in the overall healthcare spectrum (A5)
- ii. adhere to the standards of practice in dentistry as determined by the Malaysian Dental Council (A4)
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care, in relation to the oral health needs of populations, the needs of patients under treatment (A5)
- iv. practice ethical principles in the preparation of clinical and research reports (A5)
- v. practice medico-legal principles in relation to patients' records (A5).

## 4. MINIMUM CLINICAL EXPERIENCE

The programme must provide sufficient clinical experience for the trainee to be proficient in the comprehensive treatment of a wide range of periodontal cases, refer list in attachment B. The range of clinical experience is recorded by maintaining a cumulative record of the number of treatment procedures undertaken within specified categories.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented.

Scope of Procedures	Minimum Clinical Requirements	Remarks
<b>a. Management of cases</b> <ul style="list-style-type: none"> <li>▪ Periodontitis (various complexity)</li> <li>▪ Non-periodontitis and/or related cases (acute lesions, gingival overgrowth, peri-implantitis)</li> <li>▪ Multidisciplinary cases (Perio – Restorative/Prosthodontic/Endo/ Orthodontic/Oral Surgery and Special Needs/Medically compromised patients)</li> <li>▪ Supportive Periodontal Therapy</li> </ul>	45*	<i>*70% should be new periodontitis cases and of complexity 2 and 3</i>

<b>b. Non-surgical Procedures</b> <ul style="list-style-type: none"> <li>▪ Scaling and root surface debridement (with and without antibiotic)</li> </ul>	50	
<b>c. Basic Periodontal Surgical Procedures</b> <ul style="list-style-type: none"> <li>▪ Open Flap Debridement/Access flap</li> <li>▪ Osseous defect management <ul style="list-style-type: none"> <li>○ Osteoplasty/ostectomy</li> <li>○ Furcation management (tunneling/hemisection/root resection)</li> </ul> </li> </ul>	30*	<i>*Must cover all variety of procedures</i>
<b>d. Advanced Periodontal Surgical Procedures</b> <ul style="list-style-type: none"> <li>▪ Regenerative / Reconstructive Surgery <ul style="list-style-type: none"> <li>○ Bone Substitute (e.g. autogenous)</li> <li>○ Guided Tissue Regeneration (GTR)</li> <li>○ Combine procedures (GTR and bone substitute/ biomolecule/Active Biomolecule e.g. Emdogain, Growth Factors)</li> </ul> </li> </ul>	4*	<i>*Must cover all variety of procedures</i>
<b>e. Mucogingival/Periodontal Plastic Surgery</b> <ul style="list-style-type: none"> <li>▪ Gingivectomy</li> <li>▪ Crown lengthening</li> <li>▪ Root coverage</li> <li>▪ Soft tissue ridge augmentation</li> <li>▪ Frenectomy/Frenotomy</li> </ul>	5 5 1 1 2	
<b>f. Hard Tissue Ridge Preservation/Expansion</b> <ul style="list-style-type: none"> <li>▪ Socket preservation</li> <li>▪ Guided Bone Regeneration (GBR)</li> <li>▪ Lateral sinus graft and/or vertical sinus graft</li> </ul>	2 1 Optional	
<b>g. Other procedures</b> <ul style="list-style-type: none"> <li>▪ Implant placement</li> <li>▪ Endo single canal cases</li> <li>▪ Endo Molar Cases</li> <li>▪ Biopsy</li> <li>▪ Periodontal Therapy with special device (Electrocautery, laser, piezosurgery machine, Photodynamic therapy (PDT), PRF machine)</li> </ul>	2 2 Optional 1 Optional	

## 5. CLINICAL FACILITIES

The HEP must provide facilities and resources to fulfill the needs of the training programme and to develop and sustain it on a continuing basis. These include:

- i. Physical facilities to permit trainee to operate under circumstances prevailing in the practice of Periodontics.
- ii. Clinical facilities specifically identified for the advanced education program in

Periodontics. The facility must be fully equipped with dedicated periodontic armamentarium and materials to allow the standard of contemporary periodontic practice at the advanced level.

- iii. Laboratory facilities specifically identified to support the programme.

## 6. MINIMUM CORE TEACHING STAFF

The minimum core teaching staff shall consist of a programme director (which must be **a full-time, registered/recognised** periodontist by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least TWO (2) registered/recognised periodontists by MDC, and must be full-time/full-time equivalent.

## REFERENCES

- Quality Standards for Graduate Programs In Periodontology, Periodontics And Implant Dentistry European Federation of Periodontology 30 June 1996 (updated 7/9/2017) [https://www.efp.org/education/postgraduate/documents/Quality\\_Standards\\_2017.pdf](https://www.efp.org/education/postgraduate/documents/Quality_Standards_2017.pdf)
- British Society of Periodontology: Referral Policy and Parameters of Care. [https://www.bsperio.org.uk/publications/.../28\\_143801\\_parameters\\_of\\_care.pdf](https://www.bsperio.org.uk/publications/.../28_143801_parameters_of_care.pdf)

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This document was reviewed in 2024 by the DentSEdC in Periodontics, chaired by Professor Dr. Nor Adinar Baharuddin and its members were, Datuk Dr. Ahmad Sharifuddin Mohd Asari, Associate Professor Dr. Haslina Taib, Dr. Marina Mubin, Dr. Lim Ei Leen, Kolonel (Dr) Zaharah bt Mahmud and Dr. Salmah Kamin.

## GLOSSARY OF TERMS

1. **Complexity of case** – adopted from British Society of Periodontology:
  - a. COMPLEXITY 1: Basic Periodontal Examination (BPE) Score 1 – 3 in any sextant
  - b. COMPLEXITY 2: BPE Score of 4 in any sextant.
  - c. COMPLEXITY 3:
    - i. BPE Score of 4 in at least one sextant, and one or more of the following factors:
      1. Concurrent medical factor directly affecting the periodontal tissues (eg diabetes, medications etc)
      2. Complicating root morphologies / anatomical factors
      3. Non-response to previous optimally carried out treatment.
    - ii. Patients with advanced periodontal condition, as assessed based on rapid rate of periodontal disease progression e.g. Stage III/IV and Grade C.
    - iii. Patients requiring surgical procedures involving tissue augmentation or regeneration, including surgical management of mucogingival problems.
    - iv. Patients requiring surgery involving bone removal (e.g. crown lengthening).

# **PROGRAMME STANDARD FOR DOCTOR IN PROSTHODONTICS**

## **PROGRAMME STANDARD FOR DOCTOR IN PROSTHODONTICS**

### **1. SCOPE OF PROSTHODONTICS**

The scope of Prosthodontic training encompasses the comprehensive diagnosis and management to patients who require complex prosthodontic treatment including maxillofacial prosthetics. Trainees are required to conduct research in relevant areas. Training also exposes candidates to a multidisciplinary health team and imparts understanding of the socio-economic consequences of providing a comprehensive prosthodontic service for all types of communities and evaluate alternative procedures and technology appropriate for different socio- economic resources in relation to the national oral health policy.

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

Restorative Dentistry, Periodontology, Orthodontics, Oral Maxillofacial Surgery, Special Need Dentistry and relevant medical disciplines should all receive some time allocation during the training programme.

### **3. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The training programme must be designed to build on the knowledge and skills of the undergraduate programme. This should be oriented towards the accepted standards of prosthodontics practice as set forth in the specific standards contained in this document.

The programme must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research and service. Planning for, evaluation of and improvement of educational quality for the programme must be broad-based, systematic, continuous and designed to promote achievement of programme goals related to education, patient care, research and service.

The domains of competencies are as follows;

#### **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO 1: Demonstrate a critical and in-depth knowledge and understanding in the field of prosthodontics

The trainee must be able to:

- i. integrates relevant knowledge in biology, anatomy, physiology of normal and abnormal intra- and extra-oral structures and tissues in pain management, including prevention and control (C5);
- ii. weigh the primary and supplementary techniques for local anaesthesia of the pulp (C6);
- iii. select dental materials, equipment and technology to achieve each treatment goal (C6);
- iv. choose current best evidence for effectiveness of various treatment modalities (C6);
- v. evaluates prognostic and risk factors for various modalities (C6);

- vi. justify the use of appropriate pharmaceutical agents where necessary (C4);
- vii. evaluate the factors which make a tooth restorable (C6);
- viii. appraise the principles and practice of restoring root treated teeth (C6);
- ix. relate the principles of occlusion and its influence to clinical practice (C6);
- x. consider the multidisciplinary of clinical cases which may require varied treatment modalities(C6);
- xi. relate technical requirements of treatment of pulp and periapical diseases to biology, anatomy, physiology, pathology and microbiology (C6);
- xii. summarize application of tissue regeneration/engineering in clinical practice (C6);
- xiii. evaluate the physical, chemical and biological properties of clinical instruments and materials (C6);
- xiv. appraise conventional and contemporary techniques for imaging (C6);
- xv. appraise the different outcome measures of treatment and their assessment (C6);
- xvi. consider risks and limitations associated with non-surgical and surgical procedures (C6);
- xvii. select the procedures for the emergency management of acute dental pain and sepsis (C6).

#### **CLUSTER 2: COGNITIVE SKILLS**

PLO 2: Synthesise existing and new knowledge in one or more discipline areas to resolve practical problems.

The trainee must be able to;

- i. considers a variety of information sources to obtain scientific papers and other evidences such as guidelines (C6, A4);
- ii. display professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking an holistic approach (P5);
- iii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of treatment, demonstrating self-direction and autonomy (C6, A5);
- iv. appraise systematically current evidence and appreciate how research activity can inform practice (C6);
- v. performs and sustain a critical argument in writing and through oral presentations (P5).

#### **CLUSTER 2: COGNITIVE SKILLS**

PLO 3: Conduct rigorous and independent research or investigation with minimal supervision.

The trainee must be able to:

- i. composes written reports/articles, including preparing and altering manuscripts, where appropriate (P7);
- ii. perform research activities with minimal supervision (P5);
- iii. display integrity in the design, conduct and criticism of research (P5);
- iv. display presentation skill in communicating research work to professional colleagues or at specialists' meetings (P5).

### **CLUSTER 3.1: PRACTICAL SKILLS**

PLO 4 : Adapt evidence based clinical procedures for proficient patient management in the field of prosthodontics.

The trainee must be able to:

- i. selects the appropriate diagnosis(es) obtained from (P5);
  - a. a thorough history to identify the aetiological factors for the patients' concerns such as tooth wear, parafunction and other;
  - b. a thorough examination of the patient's oral condition, occlusion, existing prostheses and restorative needs of the remaining tooth structure;
  - c. the various appropriate investigations (e.g. radiographic, sensitivity and vitality tests, haematological and microbiological tests and appropriately articulated study casts).
- ii. formulate treatment plan based on (P5);
  - a. a thorough evaluation of any existing prosthesis and related tissues and structures;
  - b. radiographic interpretation;
  - c. the likely prognosis and outcomes of the various treatment options and relating this to the prognosis without treatment;
  - d. the patients' needs and preferences, including future need for further corrective or supportive therapy;
  - e. the patient's participation and compliance in their own oral care;
  - f. discussion and decision while working as part of a multi- disciplinary team such as implant retained or supported fixed or removable prostheses.
- iii. perform occlusal examination and recording of occlusion using facebow and articulators (P5);
- iv. display the ability to manage patients' occlusion in cases of altered vertical dimensions and occlusal schemes (P5);
- v. performs restorative procedures in the provision of fixed and removable prostheses such as tooth wear, maxillofacial defects and endodontically treated teeth (P5);
- vi. perform surgical procedures for placement of dental implants (P5);
- vii. display the ability to use the appropriate techniques, materials and technologies available to manage tooth wear, alteration of tooth colour and proportion;
- viii. construct restorations and prostheses in the laboratory to aid in effective communication with laboratory technicians (P5);
- ix. display skills to manage medically compromised and special needs patients (P5);
- x. advises patients on the possible and probable outcomes of the treatment options, as well as the need for future supportive care, prevention and maintenance (P5);
- xi. integrate methods and technologies to prevent infection during treatment procedures, between patients and staff and during transport of materials and prostheses between the laboratory and the clinic (P5);
- xii. display skills to manage multidisciplinary cases (P5);
- xiii. assess and monitor treatment outcomes (P5);
- xiv. display proficiency in the application of materials, instruments and techniques for managing post-treatment complications (P5);
- xv. alter treatment plan in the face of unfavourable findings or setbacks, including the

- decision to abort treatment (P6);
- xvi. construct case reports including a standard set of photographs to illustrate the course of treatment (P5).

### **CLUSTER 3.2: INTERPERSONAL SKILLS**

PLO 5: Display interpersonal skill in resolving issues in the field of prosthodontics.

The trainee must be able to:

- i. displays a caring and patient-centred approach to treatment planning (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. serve all patients with dignity and respect (A5);
- iv. recognise the impact of the patient's oral and general health status and the proposed advice on their quality of life (A3);
- v. recognises the need for supportive care, prevention and maintenance (A3);
- vi. adhere to the limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A4).

### **CLUSTER 3.3: COMMUNICATION SKILLS**

PLO 6: Communicate and interact effectively and interact with patients, specialists and general audience.

The trainee must be able to:

- i. build a rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. adapt methods of administration/negotiation in order to achieve an appropriate outcome (P6);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. display appropriate verbal and non-verbal communication /presentation skills (P5);
- v. display empathy, sensitivity and awareness in communicating with patients and colleagues (P5, A5).

### **CLUSTER 3.4 & 3.5: DIGITAL AND NUMERACY SKILLS**

PLO 7: Select suitable digital and analytical tool techniques to resolve problems.

The trainee must be able to;

- i. Select and use suitable digital and analytical tool techniques to resolve any related problems in the field of prosthodontics

### **CLUSTER 3.6: LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO 8: Demonstrate intellectual leadership qualities and management skills.

The trainee must be able to;

- i. organise clinical practice and research based on good governance (C5);
- ii. comprehend the role of the MDC and DentSEdC in the process of professional self-regulation (C2);
- iii. organise and undertake a clinical audit project including implementation of outcomes and re-audit (P4);
- iv. display proficiency in general patient management (P5);
- v. organise and manage the working environment and schedule (P4).

#### **CLUSTER 4: PERSONAL SKILLS**

PLO 9: Demonstrate commitment to lifelong learning and personal development.

The trainee must be able to;

- i. appraise and evaluate clinical practice and procedures periodically to maintain competencies (C6);
- ii. practice the process of revalidation and the assessment of individual clinical performance (A5);
- iii. display skills of self-reflection and self-appraisal to identify continuing professional development needs e.g. becoming a member of a professional society (A5).

#### **CLUSTER 5: ETHICS AND PROFESSIONALISM**

PLO 10: Adhere to ethical, professional and sustainable practices.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues and the place of their specialty in the overall healthcare spectrum (A5);
- ii. adhere to the standards of practice in dentistry as determined by the Malaysian Dental Council (A4);
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care, in relation to the oral health needs of populations, the needs of patients under treatment (A5);
- iv. practice ethical principles in the preparation of clinical and research reports (A5);
- v. practice medico-legal principles in relation to patients' records (A5).

#### **4. MINIMUM CLINICAL AND LABORATORY EXPERIENCE**

The programme must provide sufficient clinical experience for the trainee to be proficient in the comprehensive treatment of a wide range of oral rehabilitation/prosthetic cases. The procedures are as listed below. The trainee must manage at least a total of 20 cases, of which must include the followings:

<b>Scope of oral rehabilitation procedures</b>	<b>Minimum Clinical Requirements</b>
Tooth wear	3 cases (of which at least 2 are completed cases – moderate to complex)
Prosthodontics (moderate to severe degree of complexity) – Fixed, removable and combination	8 cases (of which 2 cases involve all laboratory procedures for the prosthesis fabrication)
Implant prosthodontics – Fixed, removable and combination	4 cases (of which 2 cases must include all laboratory procedures for the prosthesis fabrication)
Occlusal equilibration/ Temporomandibular Disorders	2 cases
Maxillofacial Prosthetics	3 cases (of which 1 case must include all laboratory procedures for the prosthesis fabrication)

## **5. CLINICAL FACILITIES**

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include;

- i. Physical facilities to permit trainee to operate under circumstances prevailing in the practice of prosthodontics.
- ii. Clinical facilities specifically identified for the advanced education programme in prosthodontics.
- iii. Laboratory facilities specifically identified to support the fabrication of most prostheses required in the programme.
- iv. Laboratory bench spaces to accommodate the number of students/residents enrolled in the programme.

## **6. MINIMUM CORE TEACHING STAFF**

The minimum core teaching staff shall consist of a programme director (which must be a **full-time, registered/recognised** prosthodontists by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least TWO (2) registered/recognised prosthodontists by MDC, and must be full-time/full-time equivalent.

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The development of the standards for specialty training in Prosthodontics was initiated by the Dental Specialty Education Committee (DentSEdC) subsequent to recent guidance from the Joint Technical Committee for Evaluation of Dental Specialty Programmes (JTCEDSP). This document has been developed by a working party from the DentSEdC in Prosthodontics chaired by Professor Dr. Noor Hayaty Abu Kasim with members comprising Dr. Balkis Ghazali, Dr. Kamarul Hisham Kamarudin, Dr. Mohd Muzafar Hamiruddin, Associate Professor Dr. Rohana Ahmad and Associate Professor Dr. Zaihan Ariffin.

This document was reviewed in 2024 by the DentSEdC in Prosthodontics chaired by Associate Professor Dr. Zaihan Ariffin, and its members were Associate Professor Dr. Norasmatul Akma Ahmad, Dr. Yanti Johari, Dr. Kamarul Hisham Kamarudin, Dr. Saridatun Nur Abd Salam, Lt. Kol (Dr) Marissa Baharom and Dr. Mohd Muzafar Hamirudin.

**SCOPE OF TRAINING**

- i. Evolutionary and embryological development of the oral and cranio-facial structures, the stomatognathic system and the natural dentition.
- ii. Biological (including anatomical and physiological), and functional principles to be followed in designing appropriate prostheses for the replacement of the oral and cranio-facial structures.
- iii. Changes in the form and function of the mouth and jaws brought about by loss of teeth and/or oral and cranio-facial structures and the social and behavioural consequences of this loss.
- iv. Impact of frailty on the oral health and prosthodontic needs of medically compromised and special needs patients, and the elderly people.
- v. Merits of conflicting philosophies with regard to the biological and physical rationale for the clinical and laboratory procedures employed in the construction of different types of prostheses.
- vi. The influence of prostheses on the remaining soft tissues and the underlying supporting structures.
- vii. The scope and limitations of different types of prostheses together with the bio-compatibility and physical properties of all materials used in Prosthodontics.
- viii. The need for prosthodontic intervention and the long-term consequences of any technologies used, and to demonstrate effective use of technology applicable to a given clinical situation.
- ix. The socio-economic consequences of the provision of a comprehensive prosthodontic service for all types of communities.
- x. Alternative procedures available for the provision of a prosthodontic service based on appropriate technology for communities with different socio-economic resources.

## GLOSSARY OF TERMS

### 1. Prosthodontics Specific Terms

- 1.1 Removable Prosthodontics is that branch of prosthodontics concerned with the replacement of teeth and contiguous structures for edentulous or partially edentulous patients by artificial substitutes that are removable from the mouth. Moderate to complex cases involve reorganize occlusal scheme and multidisciplinary in nature.
- 1.2 Fixed Prosthodontics is that branch of prosthodontics concerned with the replacement and/or restoration of teeth by artificial substitutes that are not removable from the mouth. Moderate to complex cases involve reorganize occlusal scheme and multidisciplinary in nature.
- 1.3 Implant Prosthodontics is that branch of prosthodontics concerned with the replacement of teeth and contiguous structures by artificial substitutes partially or completely supported and/or retained by alloplastic implants.
- 1.4 Maxillofacial Prosthetics is that branch of prosthodontics concerned with the restoration and/or replacement of stomatognathic and associated craniofacial structures by artificial substitutes.

### 2. Levels of Skills:

- 2.1 Proficient: The level of skill beyond competency. It is that level of skill acquired through advanced training or the level of skill attained when a particular activity is accomplished with repeated quality and a more efficient utilization of time.
- 2.2 Competent: The level of skill displaying special ability or knowledge derived from training and experience.
- 2.3 Exposed: The level of skill attained by observation of or participation in a particular activity.

### 3. Degree of Case Complexity

- 3.1 Fully Dentate
  - 3.1.1 Low
    - 3.1.1.1 Tooth condition
      - a) No localised adjunctive therapy required.
      - b) Pathology that affects the coronal morphology of 3 or less teeth in a sextant.
    - 3.1.1.2 Occlusal scheme
      - a) No pre-prosthetic therapy required.
      - b) Contiguous, intact dental arches.
  - 3.1.2 Moderate
    - 3.1.2.1 Tooth condition
      - a) Insufficient tooth structure to retain or support intracoronal or extracoronal restorations-- in one sextant.
      - b) Pathology that affects the coronal morphology of 4 or more teeth in a sextant.
      - c) Teeth require localized adjunctive therapy, i.e., periodontal,

endodontic or orthodontic procedure for a single tooth or in a single sextant.

3.1.2.2 Occlusal scheme

- a) Anterior guidance is intact.
- b) Occlusal scheme requires localized adjunctive therapy.

3.1.3 High

3.1.3.1 Tooth condition

- a) Insufficient tooth structure to retain or support intracoronal or extracoronal restorations-- in two sextants.
- b) Pathology that affects the coronal morphology of four or more teeth in a sextant.
- c) Teeth require localized adjunctive therapy, i.e., periodontal, endodontic or orthodontic procedure for teeth in two sextants.

3.1.3.2 Occlusal scheme

Occlusal scheme requires major therapy to maintain the entire occlusal scheme without any change in the occlusal vertical dimension.

3.1.4 Severe

3.1.4.1 Tooth condition

- a) Insufficient tooth structure to retain or support intracoronal or extracoronal restorations-- in three or more sextants.
- b) Pathology that affects the coronal morphology of four or more teeth in all sextant.
- c) Teeth require localized adjunctive therapy, i.e., periodontal, endodontic or orthodontic procedure for a single tooth or in three or more sextants.

3.1.4.2 Occlusal scheme

The occlusal scheme requires major therapy to re-establish the entire occlusal scheme including any changes in the occlusal vertical dimension.

3.2 Partial Edentulism

3.2.1 Low

3.2.1.1 Location and extent of the edentulous area(s); edentulous span confined to a single arch and one of the following:

- a) Any anterior maxillary span that does not exceed 2 missing incisors.
- b) Any anterior mandibular span that does not exceed 4 missing incisors.
- c) Any posterior maxillary or mandibular span that does not exceed 2 premolars or 1 premolar and 1 molar.

3.2.1.2 Conditioned of the abutment teeth

No pre-prosthetic therapy is indicated.

3.2.1.3 Occlusal scheme

No pre-prosthetic therapy is required.

3.2.1.4 Residual ridge

- a) Residual ridge morphology that resists horizontal and vertical movement of the denture base.
- b) Location of muscle attachments that are conducive to denture base stability and retention.

3.2.2 Moderate

3.2.2.1 Location and extent of the edentulous area(s); the edentulous span is in both arches and one of the following;

- a) Any anterior maxillary span that does not exceed 2 missing incisors.
- b) Any anterior mandibular span that does not exceed 4 missing incisors.
- c) Any posterior maxillary or mandibular span that does not exceed 2 premolars or 1 premolar and 1 molar.
- d) The maxillary or mandibular canine is missing.

3.2.2.2 Conditioned of the abutment teeth

- a) Insufficient tooth structure to retain or support intracoronal or extracoronal restorations-- in one or two sextants.
- b) Abutments require localised adjunctive therapy, i.e., periodontal, endodontic or orthodontic procedures in one or two sextants.

3.2.2.3 Occlusal scheme

The occlusal scheme requires localised adjunctive therapy (e.g. enameloplasty on premature occlusal contacts).

3.2.2.4 Residual ridge

- a) Residual ridge morphology that resists horizontal and vertical movement of the denture base.
- b) Location of muscle attachments that are conducive to denture base stability and retention.

3.2.3 High

3.2.3.1 Location and extent of the edentulous area(s):

- a) Any posterior maxillary or mandibular span that is greater than 3 missing teeth or 2 molars.
- b) Any edentulous span including anterior and posterior areas of 3 or more missing teeth.

3.2.3.2 Conditioned of the abutment teeth

- a) Insufficient tooth structure to retain or support intracoronal or extracoronal restorations - in four or more sextants.
- b) Abutments require localised adjunctive therapy, i.e., periodontal, endodontic or orthodontic procedures in four or more sextants.
- c) Abutments have a fair prognosis.

3.2.3.3 Occlusal scheme

The entire occlusal scheme requires reestablishment but without any change in the occlusal vertical dimension of occlusion (including loss of posterior support).

3.2.3.4 Residual ridge

- a) Residual ridge morphology that resists horizontal and vertical movement of the denture base.
- b) Location of muscle attachments that are conducive to denture base stability and retention.

### 3.2.4 Severe

#### 3.2.4.1 Location and extent of the edentulous area(s):

- a) Any posterior maxillary or mandibular span that is greater than 3 missing teeth or 2 molars.
- b) Any edentulous span including anterior and posterior areas of 3 or more missing teeth.

#### 3.2.4.2 Conditioned of the abutment teeth

The abutments have a guarded prognosis.

#### 3.2.4.3 Occlusal scheme

The entire occlusal scheme requires reestablishment but without any change in the occlusal vertical dimension of occlusion (including loss of posterior support).

#### 3.2.4.4 Residual ridge

The residual ridge morphology compromised.

## 3.3 Complete Edentulism

### 3.3.1 Low

#### 3.3.1.1 Residual mandibular bone height

- a) Well formed.
- b) Residual bone height of 21mm or greater measured at the least vertical height of the mandible.

#### 3.3.1.2 Maxillomandibular relationship

- a) Class I maxillomandibular relationship.
- b) Allows tooth position that has normal articulation with the teeth supported by the residual ridge.

#### 3.3.1.3 Residual maxillary ridge morphology

- a) Well formed.
- b) Anterior labial and posterior buccal vestibular depth that resists vertical and horizontal movement of the denture base.
- c) Palatal morphology that resists vertical and horizontal movement of the denture base.
- d) Sufficient tuberosity definition that resists vertical and horizontal movement of the denture base.
- e) Hamular notch is well defined to establish the posterior extension of the denture base.
- f) Absence of tori or exostoses.

#### 3.3.1.4 Muscles attachment

Adequate attached mucosal base without undue muscular impingement during normal function in all regions.

### 3.3.2 Moderate

- 3.3.2.1 Residual mandibular bone height
  - a) Moderately resorbed.
  - b) Residual bone height of 16 – 20 mm measured at the least vertical height of the mandible.
- 3.3.2.2 Maxillomandibular relationship
  - a) Class II maxillomandibular relationship.
  - b) Maxillomandibular relationship requires tooth position outside the normal ridge relation in order to attain phonetics and articulation; i.e., anterior or posterior tooth position not supported by the residual ridge/anterior vertical overlap that exceeds the principles of articulation.
- 3.3.2.3 Residual maxillary ridge morphology
  - a) Moderately resorbed.
  - b) Loss of posterior buccal vestibule.
  - c) Tuberosity and hamular notch are poorly defined compromising delineation of the posterior extension of the denture base.
  - d) Maxillary palatal and/or lateral tori are rounded and do not affect the posterior extension of the denture base.
  - e) Palatal vault morphology that resists vertical and horizontal movement of the denture base.
- 3.3.2.4 Muscles attachment
  - a) Adequate attached mucosal base in all regions except anterior buccal vestibule - cuspid to cuspid.
  - b) High mentalis muscle attachment.
- 3.3.3 High
- 3.3.3.1 Residual mandibular bone height
  - a) Resorbed.
  - b) Residual bone height of 11 – 15 mm measured at the least vertical height of the mandible.
- 3.3.3.2 Maxillomandibular relationship
  - a) Class III maxillomandibular relationship.
  - b) Maxillomandibular relationship requires tooth position outside the normal ridge relation in order to attain phonetics and articulation; i.e., crossbite - anterior or posterior, tooth position not supported by the residual ridge.
- 3.3.3.3 Residual maxillary ridge morphology
  - a) Resorbed.
  - b) Loss of anterior labial vestibule.
  - c) Prominent midline suture.
  - d) Maxillary palatal and/or lateral tori with bony undercuts that do not affect the posterior extension of the denture base.
  - e) Hyperplastic, mobile anterior ridge that offers minimum support and stability of the denture base.
  - f) Palatal vault morphology that offers minimal resistance to vertical and horizontal movement of the denture base.
  - g) Reduction of the post malar space by the coronoid process during

mandibular opening and/or excursive movements.

3.3.3.4 Muscles attachment

- a) Adequate attached mucosal base in all regions except anterior buccal vestibule - cuspid to cuspid.
- b) High genioglossus and mentalis muscle attachment.

3.3.4 Severe

3.3.4.1 Residual mandibular bone height

- a) Resorbed.
- b) Residual bone height of 10 or less measured at the least vertical height of the mandible.

3.3.4.2 Maxillomandibular relationship

All classifications of maxillomandibular relationship.

3.3.4.3 Residual maxillary ridge morphology

- a) Severely resorbed.
- b) Loss of anterior labial and posterior buccal vestibules.
- c) Maxillary palatal and/or lateral tori-rounded or undercut- that interferes with the posterior border of the denture.
- d) Hyperplastic, redundant anterior ridge.
- e) Palatal vault morphology that does not resist vertical or horizontal movement of the denture base.
- f) Prominent anterior nasal spine.

3.3.4.4 Muscles attachment

- a) Adequate attached mucosal base only in the posterior lingual region.
- b) All other regions are detached.
- c) No attached mucosa in any region.
- d) Cheek and lip movement = tongue movement.

3.3.4.5 Conditions requiring pre-prosthetics surgery

- a) Implant placement (complex)—augmentation required.
- b) Surgical correction of dentofacial deformities.
- c) Hard tissue augmentation.
- d) Major soft tissue revision, i.e., vestibular extensions with or without soft tissue grafting.
- e) History of paresthesia or dysesthesia.
- f) Insufficient interarch space with surgical correction required.
- g) Acquired or congenital maxillofacial defects.

In those instances when a patient's diagnostic criteria are mixed between two or more classes, any single criterion of a more complex class places the patient into the more complex class.

- a) Aesthetic concerns or challenges raise the classification in complexity by one or more levels in Class I and II patients.
- b) In the presence of TMD symptoms, the classification is increased in complexity by one or more levels in Class I and II patients.

The following modifying factors places the patients into the most complex class;

- a) Severe manifestations of local or systemic disease, including the sequelae from

oncologic treatment.

- b) Orofacial dyskinesia, oromandibular dystonia and/or ataxia.
- c) A refractory patient—a patient who presents with chronic complaints following appropriate treatment. These patients continue to have difficulty in achieving their treatment expectations despite the thoroughness or frequency of the treatment provided.

**PROGRAMME STANDARD FOR  
DOCTOR IN  
RESTORATIVE DENTISTRY**

## **PROGRAMME STANDARD FOR DOCTOR IN RESTORATIVE DENTISTRY**

### **1. SCOPE OF RESTORATIVE DENTISTRY**

The scope of Restorative Dentistry training encompasses the comprehensive diagnosis and management of patients with moderate to high complexity treatment of operative, endodontic, prosthodontics, periodontology and implantology. Training also exposes candidates to a multidisciplinary health team and imparts an understanding of the socio-economic consequences of providing a comprehensive dental service for all types of communities, and evaluates alternative procedures and technology appropriate for different socio-economic resources in relation to the national oral health policy.

### **2. INTERRELATIONSHIP WITH OTHER DISCIPLINES IN DENTISTRY**

Clinical aspects of orthodontics, oral surgery and special care dentistry should all receive some time allocation during the training programme. Close cooperation with the relevant field of specialty such as pain clinics, oral pathology and oral medicine should be encouraged.

### **3. CONTENTS OF LEARNING AND DOMAINS OF COMPETENCIES**

The doctorate training programme must be designed to build on the knowledge and skills of the undergraduate programme. This should be oriented and geared to the accepted standards of restorative dentistry practice as set forth in the specific standards contained in this document.

The program must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research and service. Planning for, evaluation of and improvement of educational quality for the programme must be broad-based, systematic and continuous.

The domains of competencies are as follows;

#### **CLUSTER 1: KNOWLEDGE AND UNDERSTANDING**

PLO1: Demonstrate a critical and in-depth knowledge and understanding in restorative dentistry.

The trainee must be able to:

- i. integrate relevant knowledge in biology, anatomy, physiology of normal and abnormal intra- and extra-oral structures and tissues in management of pain and periodontal disease, including prevention and control (C5);
- ii. weigh the primary and supplementary techniques for local anaesthesia of the pulp and periodontal tissues (C6);
- iii. select dental materials, equipment and technology to achieve each treatment goal (C6);
- ii. choose current best evidence for effectiveness of various treatment modalities (C6);
- iii. evaluate prognostic and risk factors for various modalities (C6);
- iv. justify the use of appropriate pharmaceutical agents where necessary (C4);
- v. evaluate the factors which make a tooth unrestorable (C6);

- vi. appraise the principles and practice of periodontally compromised teeth and restoring root-treated teeth (C6);
- vii. relate the principles of occlusion and its influence on clinical practice (C6);
- viii. consider the multidisciplinary of clinical cases which may require varied treatment modalities (C6);
- ix. relate technical requirements treatment of pulp and periapical diseases and periodontal diseases to biology, anatomy, physiology, pathology and microbiology (C6);
- x. summarize the application of tissue regeneration/engineering in clinical practice (C6);
- xi. evaluate the physical, chemical and biological properties of clinical instruments and materials (C6);
- xii. appraise conventional and contemporary imaging techniques (C6);
- xiii. appraise the different outcome measures of treatment and their assessment (C6);
- xiv. consider risks and limitations associated with non-surgical and surgical procedures (C6);
- xv. select the procedures for the emergency management of acute dental pain and sepsis (C6).

## **CLUSTER 2: COGNITIVE SKILLS**

PLO2: Synthesise existing and new knowledge in one or more discipline areas to resolve practical problems.

The trainee must be able to:

- i. appraise a variety of information sources to obtain scientific papers and other evidence such as guidelines (C5);
- ii. justify the professional judgement in implementing clinical solutions by developing evidence-based treatment plans and adopting a holistic approach. (C5)
- iii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of treatment demonstrating self-direction and autonomy (C5);
- iv. defend a critical argument in writing and through oral presentations (C5)

## **CLUSTER 2: COGNITIVE SKILLS**

PLO3: Conduct rigorous and independent research or investigation with minimal supervision

The trainee must be able to:

- v. compose written reports/articles, including preparing and altering manuscripts, where appropriate (C6);
- vi. perform research activities (P5);
- vii. display integrity in the design, conduct and criticism of research (C5);
- viii. display presentation skills in communicating research work to professional colleagues or at specialists' meetings (C6);
- ix. appraise systematically current evidence and appreciate how research activity can inform practice (C5).

### **CLUSTER 3.1: PRACTICAL SKILLS**

PLO4: Adapt evidence-based clinical procedures for proficient patient management in restorative dentistry.

The trainee must be able to:

- i. take a thorough history to identify the aetiological factors for the patients' concerns such as tooth wear, parafunction (P5);
- ii. execute a thorough examination of the patient's oral condition, occlusion, existing prostheses and restorative needs of the remaining tooth structure (P5);
- iii. perform appropriate investigations (e.g. radiographic, pulp sensibility test and appropriately articulated study casts) (P5);
- iv. evaluate existing prosthesis and related tissues and structures and radiographic interpretation (P5);
- v. construct the appropriate diagnosis(es) based on the examination and investigation (P5);
- vi. derive the likely prognosis and outcomes of the various treatment options and relating this to the prognosis without treatment (P5);
- vii. formulate treatment plan based on appropriate diagnoses (P5);
- viii. display skills to manage medically compromised patients (P5);
- ix. advise patients on the possible and probable outcomes of the treatment options, as well as the need for future supportive care, prevention and maintenance (P5);
- x. delineate strategies and plans according to the skills of other clinicians involved in the care of the patient (P5);
- xi. integrate methods and technologies to prevent infection during treatment procedures, between patients and staff and during transport of materials and prostheses between the laboratory and the clinic (P5);
- xii. display skills to manage multidisciplinary cases (P5);
- xiii. perform occlusal examination and recording of occlusion using facebow and articulators (P5)
- xiv. display the ability to manage patients' occlusion in cases of altered vertical dimensions and occlusal schemes (P5)
- xv. perform restorative procedures in the provision of fixed and removable prostheses such as tooth wear, maxillofacial defects and endodontically treated teeth (P5)
- xvi. perform surgical procedures for placement of dental implants (P5)
- xvii. display the ability to use the appropriate techniques, materials and technologies available to manage tooth wear and alteration of tooth colour and proportion.
- xviii. construct restorations and prostheses in the laboratory to aid in effective communication with laboratory technicians (P5)
- xix. display skills to manage medically compromised and special needs patients (P5);
- xx. assess and monitor treatment outcomes (P5);
- xxi. display proficiency in the application of materials, instruments and techniques for managing post-treatment complications (P5);
- xxii. alter treatment plan in the face of unfavourable findings or setbacks, including the decision to abort treatment (P6);
- xxiii. assess all treatment outcomes (P5);

xxiv. construct case reports including a standard set of photographs to illustrate the course of treatment (P7).

### **CLUSTER 3.2: INTERPERSONAL SKILLS**

PLO5: Display interpersonal skills in resolving issues in the dental practice

The trainee must be able to:

- i. display a caring and patient-centred approach to treatment planning (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. serve all patients with dignity and respect (A5);
- iv. recognise the impact of the patient's oral and general health status and the proposed advice on their quality of life (A3);
- v. recognise the need for supportive care, prevention and maintenance (A3);
- vi. adhere to the limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A4).

### **CLUSTER 3.3: COMMUNICATION SKILLS**

PLO6: Communicate and interact effectively and interact with patients, specialists and general audience.

The trainee must be able to:

- i. display professional communication with patients and other professionals in general educational and professional settings (A5);
- ii. perform appropriate verbal and non-verbal communication (A5);

### **CLUSTER 3.4 & 3.5: DIGITAL AND NUMERACY SKILLS**

PLO7: Select suitable digital and analytical tool techniques to resolve problems

The trainee must be able to:

- i. Justify a proposal for clinical audit based on the principles of clinical effectiveness (C5)
- ii. Integrate appropriate tools/methodologies to support and enhance clinical/research activities (P5).
- iii. Display ability in selecting relevant tools/methodologies to support and enhance clinical/research activities (A5).
- iv. Compose critical evaluation of numerical and graphical data (C6).

### **CLUSTER 3.6: LEADERSHIP, AUTONOMY AND RESPONSIBILITY**

PLO8: Demonstrate intellectual leadership qualities and management skills

The trainee must be able to:

- i. display rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. practice methods of administration/negotiation in order to achieve an appropriate outcome (A5);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. display empathy, sensitivity and awareness in communicating with patients and colleagues (A5).
- v. perform clinical practice and research based on good governance (A5);
- vi. explain the role of the Malaysian Dental Council (MDC) and Dental Specialty Board (DSB) in the process of professional self-regulation (A4)
- vii. display proficiency in general patient management (A5);

### **CLUSTER 4: PERSONAL SKILLS**

PLO9: Demonstrate commitment to lifelong learning and personal development.

The trainee must be able to:

- i. perform appraisal and evaluation of clinical practice and procedures periodically to maintain competencies (A5);
- ii. practice the process of revalidation and the assessment of individual clinical performance (A5);
- iii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs e.g. becoming a member of a professional society (A5)
- iv. organise and manage the working environment and schedule (A4).

### **CLUSTER 5: ETHICS AND PROFESSIONALISM**

PLO10: Adhere to ethical, professional and sustainable practices.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues and the place of their specialty in the overall healthcare spectrum (A5);
- ii. adhere to the standards of practice in dentistry as determined by the Malaysian Dental Council (A4);
- iii. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care, in relation to the oral health needs of populations, the needs of patients under treatment (A5);
- iv. practice ethical principles in the preparation of clinical and research reports (A5);
- v. practice medico-legal principles in relation to patients' records (A5)

## **4. MINIMUM CLINICAL AND LABORATORY EXPERIENCE**

The programme must provide sufficient clinical experience for the trainee to be proficient in the comprehensive treatment of a wide range of moderate to high complexity restorative cases. The procedures are as listed below. The trainee must treat **at least** a total of 20 patients, of which must include the followings:

<b>Scope of restorative dentistry</b>	<b>Minimum Clinical Requirements</b>
Temporomandibular Disorders/ Splints	2 procedures occlusal splint
Prosthodontics – Fixed, removable and/or combination	14 patients fixed, removable and/or combination (1 case must include all laboratory procedures for the prosthesis fabrication); of which:  - 2 patients for full mouth rehabilitation with the diagnostic wax-up performed by the trainee  - 2 patients for aesthetics management
Implant prosthodontics – Fixed, removable and combination	3 patients including treatment planning, insertion and restoration (1 case must include all laboratory procedures for the prosthesis fabrication)
Endodontics	4 procedures molar RCT  2 procedures retreatment / procedural error / complications in endodontics  1 procedure surgical endodontics For surgical endodontics procedure - clinical exposure as operator or assistant is accepted.
Periodontics	10 procedures non-surgical root debridement  4 procedures surgical crown lengthening / open flap debridement

A procedure can be standalone case / as part of the integrated clinical management of patients.

The range of clinical experience is recorded by maintaining a cumulative record of the number of treatment procedures undertaken within specified categories. The above listings are not considered to be totally prescriptive; if further detail to an entry is considered appropriate, this can be added.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented.

## 5. CLINICAL FACILITIES

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include;

- i. Physical facilities to permit trainee to operate under circumstances prevailing in the practice of restorative dentistry;
- ii. Clinical facilities specifically identified for the advanced education program in restorative dentistry; The facility must be fully equipped with dedicated armamentarium and materials to allow the standard of practice at the advanced level;
- iii. Laboratory facilities specifically identified to support the fabrication of most prostheses with contemporary techniques required in the programme;
- iv. Laboratory bench spaces to accommodate the number of students/residents enrolled in the programme;

## 6. MINIMUM CORE TEACHING STAFF

The minimum core teaching staff shall consist of a programme director (which must be a **full-time, registered/recognised** specialists in Restorative Dentistry by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least two (2) **registered/recognised** specialists (in the field or related field) by MDC and must be full-time/full-time equivalent.

## REFERENCES

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## **ACKNOWLEDGEMENT**

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This document was reviewed in 2024 by the DentSEdC in Restorative Dentistry chaired by Dr. Roshima bt Mohd Sharif, Associate Professor Dr Noor Azlin Yahya, Dr Jasmina Qamaruz Zaman, Dr Faizah bt Abdul Fatah, Dr. Ithnaniah bt Abdul Wahab, Brigadier Jeneral (Dr) Mohamad Asri bin Din and Dr. Army Empol.

<b>DEGREE OF PERIODONTIC CASE COMPLEXITY</b>		
<b>LOW</b>	<b>MODERATE</b>	<b>HIGH</b>
<p>1. BPE Score 1 – 3 in any sextant</p>	<p>1. BPE Score of 4 in any sextant</p>	<p>1. Patients with BPE scores of 4 in at least one sextant, and one or more of the following factors:</p> <ul style="list-style-type: none"> <li>a) Concurrent medical factors directly affecting the periodontal tissues, (eg diabetes, medication, etc);</li> <li>b) Complicating root morphologies / anatomical factors;</li> <li>c) Non-response to previous optimally carried out treatment</li> </ul> <p>2. Diagnosis of aggressive periodontitis as assessed either by severity of disease for age or based on rapid rate of periodontal breakdown;</p> <p>3. Patients requiring surgical procedures involving tissue augmentation or regeneration, including surgical management of mucogingival problems;</p> <p>4. Patients requiring surgery involving bone removal (eg crown lengthening);</p>

		5. Patients requiring surgery associated with osseointegrated implants.
<p><b>MODIFYING FACTORS</b></p> <p>These modifying factors increase the degree of complexity of 1</p> <ul style="list-style-type: none"> <li>• Co-ordinated medical or dental multi-disciplinary care;</li> <li>• Medical history that significantly affects clinical management (see below);</li> <li>• Regular tobacco smoking;</li> <li>• Special needs for the acceptance or provision of dental treatment;</li> <li>• Concurrent mucogingival disease (e.g. erosive lichen planus).</li> </ul>		<p>Medical History that Significantly Affects Clinical Management</p> <ul style="list-style-type: none"> <li>• Patients who are significantly immunocompromised or immunosuppressed;</li> <li>• Patients with a significant bleeding dyscrasia/disorder;</li> <li>• Patients with a potential drug interaction.</li> <li>• Patients with a history of head/neck radiotherapy or intravenous bisphosphonate therapy.</li> </ul>

DEGREE OF ENDODONTIC CASE COMPLEXITY		
LOW	MODERATE	HIGH
<p>1. Single/multiple root canals with curvature</p> <p>2. No root canal obstruction/damaged access</p> <p>3. I &amp; D required</p> <p>4. Tooth with complete root development</p>	<p>1. Single/multiple root canals with curvature &gt;15° but &lt;40° to root axis</p> <p>2. Teeth with incomplete root development - apical opening 1-1.5mm in diameter</p>	<p>1. Single/multiple root canals with curvature &gt;40° from radiographic or clinical evidence through their entire length - Curvature &gt; 40°, S-shaped, dilacerated root, apical hook</p> <p>2. Single/multiple root canals that are not considered negotiable a) Indistinct/calcified pulp chamber b) Canal(s) not visible, indistinct canal path from radiographic assessment c) Restrictive/narrow or calcified canal d) Large pulp stone</p> <p>3. Periradicular surgery a) Persistent symptomatic cases b) Tooth with post</p> <p>4. Teeth with iatrogenic damage or pathological resorption a) Pathological resorption -Extensive apical resorption -Internal resorption -External resorption -Cervical resorption b) Teeth with iatrogenic damage</p>

DEGREE OF ENDODONTIC CASE COMPLEXITY		
LOW	MODERATE	HIGH
		<ul style="list-style-type: none"> <li>-Perforation</li> <li>-Blocked canal</li> <li>-Ledge</li> <li>-Transportation</li> <li>-Separated instrument</li> </ul> <p>5. Teeth with difficult root morphology</p> <ul style="list-style-type: none"> <li>a) Canal divides in the middle or apical third (1-2 rc configuration)</li> <li>b) Fusion/gemination</li> <li>c) Dense in dente/ dens invaginatus</li> <li>d) C-shaped canal</li> <li>e) Mandibular premolar or anterior with 2 roots</li> <li>f) Maxillary premolar with 3 roots</li> <li>g) Very long tooth (&gt;25mm)</li> <li>h) Tooth with extra root canal</li> <li>i) Horizontal root fracture</li> <li>j) Apical opening &gt; 1.5mm in diameter</li> <li>k) Tooth with post</li> </ul> <p>6. Others</p> <ul style="list-style-type: none"> <li>a) Confusing and complex signs and symptoms: difficult &amp; uncertain diagnosis - e.g non-localised irreversible pulpitis with referred pain</li> <li>b) Problems encountered during RCT - Persistent symptoms (e.g pain, swelling,</li> </ul>

DEGREE OF ENDODONTIC CASE COMPLEXITY		
LOW	MODERATE	HIGH
		abscess, deep pocketing) -Weeping canal - Non-stop bleeding from canal c) Crown or bridge abutments which require RCT
<b>MODIFYING FACTORS</b> These modifying factors increase the degree of complexity of 1 <ul style="list-style-type: none"> <li>• Medical history that significantly affects clinical management such as:               <ul style="list-style-type: none"> <li>-Patient with a history of head/neck radiotherapy</li> <li>-Patients who are immunocompromised or immunosuppressed</li> </ul> </li> <li>• Special needs patients with restorative treatment</li> </ul> <ul style="list-style-type: none"> <li>• Mandibular dysfunction</li> <li>• Atypical facial pain</li> <li>• Limited conventional or surgical operating access</li> <li>• Endodontic retreatment</li> </ul>		

DEGREE OF PROSTHODONTIC COMPLEXITY – FULLY DENTATE			
LOW	MODERATE	HIGH	SEVERE
<p><u>Tooth condition</u></p> <ul style="list-style-type: none"> <li>No localised adjunctive therapy required</li> <li>Pathology that affects the coronal morphology of 3 or less teeth in a sextant</li> </ul> <p><u>Occlusal scheme</u></p> <ul style="list-style-type: none"> <li>No pre-prosthetic therapy required</li> <li>Contiguous, intact dental arches</li> </ul>	<p><u>Tooth condition</u></p> <ul style="list-style-type: none"> <li>Insufficient tooth structure to retain or support intracoronal or extracoronal restorations-in one sextant</li> <li>Pathology that affects the coronal morphology of 4 or more teeth in a sextant</li> <li>Teeth require localized adjunctive therapy, i.e., periodontal, endodontic or orthodontic procedure for a single tooth or in a single sextant</li> </ul> <p><u>Occlusal scheme</u></p> <ul style="list-style-type: none"> <li>Anterior guidance is intact</li> <li>Occlusal scheme requires localized adjunctive therapy</li> </ul>	<p><u>Tooth condition</u></p> <ul style="list-style-type: none"> <li>Insufficient tooth structure to retain or support intracoronal or extracoronal restorations-in two sextants</li> <li>Pathology that affects the coronal morphology of four or more teeth in a sextant</li> <li>Teeth require localized adjunctive therapy, i.e., periodontal, endodontic or orthodontic procedure for teeth in two sextants</li> </ul> <p><u>Occlusal scheme</u></p> <ul style="list-style-type: none"> <li>Occlusal scheme requires major therapy to maintain the entire occlusal scheme without any change in the occlusal vertical dimension</li> </ul>	<p><u>Tooth condition</u></p> <ul style="list-style-type: none"> <li>Insufficient tooth structure to retain or support intracoronal or extracoronal restorations-in three or more sextants</li> <li>Pathology that affects the coronal morphology of four or more teeth in all sextant</li> <li>Teeth require localized adjunctive therapy, i.e., periodontal, endodontic or orthodontic procedure for a single tooth or in three or more sextants</li> </ul> <p><u>Occlusal scheme</u></p> <ul style="list-style-type: none"> <li>Occlusal scheme requires major therapy to re-establish the entire occlusal scheme including any changes in the occlusal vertical dimension</li> </ul>

<p>In those instances when a patient's diagnostic criteria are mixed between two or more classes, any single criterion of a more complex class places the patient into the more complex class.</p> <ul style="list-style-type: none"> <li>• Aesthetic concerns or challenges raise the complexity by one of more levels in Class I and II patients</li> <li>• In the presence of TMD symptoms, the classification is increased in complexity by one or more levels in Class I and II patients</li> </ul>	<p><b>MODIFYING FACTORS</b></p> <p>The following modifying factors places the patients into the most complex class;</p> <ul style="list-style-type: none"> <li>• Severe manifestations of local or systemic disease, including the sequelae from oncologic treatment.</li> <li>• Orofacial dyskinesia , Oromandibular dystonia and/or ataxia.</li> <li>• A refractory patient—a patient who presents with chronic complaints following appropriate treatment. These patients continue to have difficulty in achieving their treatment expectations despite the thoroughness or frequency of the treatment provided.</li> </ul>
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DEGREE OF PROSTHODONTIC COMPLEXITY – PARTIAL EDENTULISM			
LOW	MODERATE	HIGH	SEVERE
<p><u>Location and extent of the edentulous area(s)</u></p> <p>The edentulous span is confined to a single arch and one of the following:</p> <ul style="list-style-type: none"> <li>• Any anterior maxillary span that does not exceed 2 missing incisors</li> <li>• Any anterior mandibular span that does not exceed 4 missing incisors</li> <li>• Any posterior maxillary or mandibular span that does not exceed 2 premolars or 1 premolar and 1 molar</li> </ul>	<p><u>Location and extent of the edentulous area(s)</u></p> <p>The edentulous span is in both arches and one of the following:</p> <ul style="list-style-type: none"> <li>• Any anterior maxillary span that does not exceed 2 missing incisors.</li> <li>• Any anterior mandibular span that does not exceed 4 missing incisors.</li> <li>• Any posterior maxillary or mandibular span that does not exceed 2 premolars or 1 premolar and 1 molar.</li> <li>• The maxillary or mandibular canine is missing.</li> </ul>	<p><u>Location and extent of the edentulous area(s)</u></p> <ul style="list-style-type: none"> <li>• Any posterior maxillary or mandibular span that is greater than 3 missing teeth or 2 molars.</li> <li>• Any edentulous span including anterior and posterior areas of 3 or more missing teeth.</li> </ul>	<p><u>Location and extent of the edentulous area(s)</u></p> <ul style="list-style-type: none"> <li>• Any posterior maxillary or mandibular span that is greater than 3 missing teeth or 2 molars.</li> <li>• Any edentulous span including anterior and posterior areas of 3 or more missing teeth.</li> </ul>
<p><u>Condition of the abutment teeth</u></p> <ul style="list-style-type: none"> <li>• No pre-prosthetic therapy is indicated</li> </ul>	<p><u>Condition of the abutment teeth</u></p> <ul style="list-style-type: none"> <li>• Insufficient tooth structure to retain or support intracoronal or extracoronal restorations-in one or two sextants.</li> <li>• Abutments require localised adjunctive therapy, i.e., periodontal, endodontic or</li> </ul>	<p><u>Condition of the abutment teeth</u></p> <ul style="list-style-type: none"> <li>• Insufficient tooth structure to retain or support intracoronal or extracoronal restorations-in four or more sextants.</li> <li>• Abutments require localised adjunctive therapy, i.e., periodontal, endodontic or</li> </ul>	<p><u>Condition of the abutment teeth</u></p> <ul style="list-style-type: none"> <li>• Abutments have a guarded prognosis.</li> </ul>

**DEGREE OF PROSTHODONTIC COMPLEXITY – PARTIAL EDENTULISM**

LOW	MODERATE	HIGH	SEVERE
<p><u>Occlusal scheme</u></p> <ul style="list-style-type: none"> <li>No pre-prosthetic therapy is required</li> </ul> <p><u>Residual ridge</u></p> <ul style="list-style-type: none"> <li>Residual ridge morphology that resists horizontal and vertical movement of the denture base</li> <li>Location of muscle attachments that are conducive to denture base stability and retention.</li> </ul>	<p>orthodontic procedures in one or two sextants.</p> <p><u>Occlusal scheme</u></p> <ul style="list-style-type: none"> <li>Occlusal scheme requires localised adjunctive therapy (e.g. enameloplasty on premature occlusal contacts).</li> </ul> <p><u>Residual ridge</u></p> <ul style="list-style-type: none"> <li>Residual ridge morphology that resists horizontal and vertical movement of the denture base.</li> <li>Location of muscle attachments that are conducive to denture base stability and retention.</li> </ul>	<p>orthodontic procedures in four or more sextants.</p> <ul style="list-style-type: none"> <li>Abutments have a fair prognosis.</li> </ul> <p><u>Occlusal scheme</u></p> <ul style="list-style-type: none"> <li>Entire occlusal scheme requires reestablishment but without any change in the occlusal vertical dimension of occlusion (including loss of posterior support).</li> </ul> <p><u>Residual ridge</u></p> <ul style="list-style-type: none"> <li>Residual ridge morphology that resists horizontal and vertical movement of the denture base.</li> <li>Location of muscle attachments that are conducive to denture base stability and</li> </ul>	<p><u>Occlusal scheme</u></p> <ul style="list-style-type: none"> <li>Entire occlusal scheme requires reestablishment with changes in the occlusal vertical dimension of the occlusion (including loss of posterior support).</li> </ul> <p><u>Residual ridge</u></p> <ul style="list-style-type: none"> <li>Residual ridge morphology compromised.</li> </ul>
<p>In those instances when a patient's diagnostic criteria are mixed between two or more classes, any single criterion of a more complex class places the patient into the more complex class.</p> <ul style="list-style-type: none"> <li>Aesthetic concerns or challenges raise the classification in complexity by one or more levels in Class I and II patients.</li> </ul>		<p><b>MODIFYING FACTORS</b></p> <p>The following modifying factors places the patients into the most complex class;</p> <ul style="list-style-type: none"> <li>Advanced wear.</li> </ul>	

**DEGREE OF PROSTHODONTIC COMPLEXITY – PARTIAL EDENTULISM**

LOW	MODERATE	HIGH	SEVERE
<ul style="list-style-type: none"> <li>In the presence of TMD symptoms, the classification is increased in complexity by one or more levels in Class I and II patients</li> </ul>			<ul style="list-style-type: none"> <li>Severe manifestations of local or systemic disease, including the sequelae from oncologic treatment.</li> <li>Orofacial dyskinesia, oromandibular dystonia and/or ataxia.</li> <li>A refractory patient—a patient who presents with chronic complaints following appropriate treatment. These patients continue to have difficulty in achieving their treatment expectations despite the thoroughness or frequency of the treatment provided</li> </ul>

DEGREE OF PROSTHODONTIC COMPLEXITY – COMPLETE EDENTULISM

LOW	MODERATE	HIGH	SEVERE
<p><u>Residual mandibular bone height</u></p> <ul style="list-style-type: none"> <li>Well formed.</li> <li>Residual bone height of 21mm or greater measured at the least vertical height of the mandible.</li> </ul> <p><u>Maxillomandibular relationship</u></p> <ul style="list-style-type: none"> <li>Class I maxillomandibular relationship.</li> <li>Allows tooth position that has normal articulation with the teeth supported by the residual ridge.</li> </ul>	<p><u>Residual mandibular bone height</u></p> <ul style="list-style-type: none"> <li>Moderately resorbed.</li> <li>Residual bone height of 16 – 20 mm measured at the least vertical height of the mandible.</li> </ul> <p><u>Maxillomandibular relationship</u></p> <ul style="list-style-type: none"> <li>Class II maxillomandibular relationship.</li> <li>Maxillomandibular relationship requires tooth position outside the normal ridge relation in order to attain phonetics and articulation; i.e., anterior or posterior tooth position not supported by the residual ridge/anterior vertical overlap that exceeds the principles of articulation.</li> </ul>	<p><u>Residual mandibular bone height</u></p> <ul style="list-style-type: none"> <li>Resorbed.</li> <li>Residual bone height of 10 mm or less mm measured at the least vertical height of the mandible.</li> </ul> <p><u>Maxillomandibular relationship</u></p> <ul style="list-style-type: none"> <li>Class III maxillomandibular relationship.</li> <li>Maxillomandibular relationship requires tooth position outside the normal ridge relation in order to attain phonetics and articulation; i.e., crossbite - anterior or posterior, tooth position not supported by the residual ridge.</li> </ul>	<p><u>Residual mandibular bone height</u></p> <ul style="list-style-type: none"> <li>Resorbed.</li> <li>Residual bone height of 10mm or less measured at the least vertical height of the mandible.</li> </ul> <p><u>Maxillomandibular relationship</u></p> <ul style="list-style-type: none"> <li>All types of classification maxillomandibular relationship.</li> </ul>
<p><u>Residual maxillary ridge morphology</u></p> <ul style="list-style-type: none"> <li>Well formed.</li> </ul>	<p><u>Residual maxillary ridge morphology</u></p> <ul style="list-style-type: none"> <li>Moderately resorbed.</li> </ul>	<p><u>Residual maxillary ridge morphology</u></p> <ul style="list-style-type: none"> <li>Resorbed.</li> </ul>	<p><u>Residual maxillary ridge morphology</u></p> <ul style="list-style-type: none"> <li>Severely resorbed.</li> </ul>

<ul style="list-style-type: none"> <li>• Anterior labial and posterior buccal vestibular depth that resists vertical and horizontal movement of the denture base.</li> <li>• Palatal morphology that resists vertical and horizontal movement of the denture base.</li> <li>• Sufficient tuberosity definition that resists vertical and horizontal movement of the denture base.</li> <li>• Hamular notch is well defined to establish the posterior extension of the denture base.</li> <li>• Absence of tori or exostoses.</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of posterior buccal vestibule.</li> <li>• Tuberosity and hamular notch are poorly defined compromising delineation of the posterior extension of the denture base.</li> <li>• Maxillary palatal and/or lateral tori are rounded and do not affect the posterior extension of the denture base.</li> <li>• Palatal vault morphology that resists vertical and horizontal movement of the denture base.</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of anterior labial vestibule.</li> <li>• Prominent midline suture.</li> <li>• Maxillary palatal and/or lateral tori with bony undercuts that do not affect the posterior extension of the denture base.</li> <li>• Hyperplastic, mobile anterior ridge that offers minimum support and stability of the denture base.</li> <li>• Palatal vault morphology that offers minimal resistance to vertical and horizontal movement of the denture base.</li> <li>• Reduction of the post malar space by the coronoid process during mandibular opening and/or excursive movements.</li> </ul>	<ul style="list-style-type: none"> <li>• Loss of anterior labial and posterior buccal vestibules.</li> <li>• Maxillary palatal and/or lateral tori-rounded or undercut- that interferes with the posterior border of the denture.</li> <li>• Hyperplastic, redundant anterior ridge.</li> <li>• Palatal vault morphology that does not resist vertical or horizontal movement of the denture base.</li> <li>• Prominent anterior nasal spine.</li> </ul>
<p><u>Muscle attachments</u></p> <ul style="list-style-type: none"> <li>• Adequate attached mucosal base without undue muscular impingement during normal function in all regions.</li> </ul>	<p><u>Muscle attachments</u></p> <ul style="list-style-type: none"> <li>• Adequate attached mucosal base in all regions except anterior buccal vestibule - cuspid to cuspid.</li> <li>• High mentalis muscle attachment.</li> </ul>	<p><u>Muscle attachments</u></p> <ul style="list-style-type: none"> <li>• Adequate attached mucosal base in all regions except anterior buccal and lingual vestibules—cuspid to cuspid.</li> <li>• High genioglossus and mentalis muscle attachments.</li> </ul>	<p><u>Muscle attachments</u></p> <ul style="list-style-type: none"> <li>• Adequate attached mucosal base only in the posterior lingual region.</li> <li>• All other regions are detached.</li> <li>• No attached mucosa in any region.</li> </ul>

			<ul style="list-style-type: none"> <li>• Cheek and lip movement = tongue movement.</li> </ul> <p><u>Conditions requiring pre-prosthetics surgery</u></p> <ul style="list-style-type: none"> <li>• Implant placement (complex) -augmentation required</li> <li>• Surgical correction of dentofacial deformities.</li> <li>• Hard tissue augmentation.</li> <li>• Major soft tissue revision, i.e., vestibular extensions with or without soft tissue grafting.</li> <li>• History of paresthesia or dysesthesia.</li> <li>• Insufficient interarch space with surgical correction required.</li> <li>• Acquired or congenital maxillofacial defects.</li> </ul>
<p>In those instances when a patient's diagnostic criteria are mixed between two or more classes, any single criterion of a more complex class places the patient into the more complex class. The following modifying factors places the patients into the most complex class;</p> <ul style="list-style-type: none"> <li>• Severe oral manifestation of systemic disease or conditions including sequelae from oncologic treatment.</li> <li>• Maxillomandibular ataxia.</li> </ul>			<ul style="list-style-type: none"> <li>• Hyperactivity of tongue that can be associated with a retracted tongue position and/or its associated morphology.</li> <li>• Hyperactive gag reflex managed with medication. Psychosocial conditions warranting professional intervention</li> </ul>



**MINIMUM COURSE CONTENT**

1. Fixed Prosthodontics
  - i. Tooth Preparation: Principles and Theory - revisit
  - ii. Bridge Design
  - iii. Impression Techniques and Soft Tissue Management
  - iv. Cementation: Theory, Materials, and Techniques
  - v. Adhesive Retained Bridges
  
2. Removable Partial Denture
  - i. Principle of Partial Denture Design
  - ii. Distal Extension Base RPD
  - iii. The Interface Between Fixed and Removable Prosthesis
  - iv. Periodontally Compromised Abutment Tooth
  - v. Acrylic Partial Denture
  - vi. Surveying and Denture Design - revisit
  
3. Complete Denture
  - i. Residual Ridge Resorption
  - ii. Impression techniques
  - iii. Jaw relationship and Occlusal concept in Complete denture
  - iv. Support, Stability, and Retention in Complete Denture
  - v. Tooth / Implant Supported/ Assisted Overdenture.
  - vi. Pre-Prosthetics Management of Removable Prosthesis
  - vii. Denture Aesthetic
  
4. Endodontology
  - i. Biomechanical Considerations of Endodontically Treated Teeth.
  - ii. Diagnosis And Management of Cracks in Teeth.
  - iii. Diagnosis Of Pulp and Peri-Radicular Pathoses
  - iv. Management of Pulp and Peri-Radicular Pathoses
  - v. Combined Endodontic-Periodontic Pathosis
  - vi. Oro-Facial Pain.
  - vii. Use Of the Dental Operating Microscope
  - viii. Traumatic Injuries to The Teeth and Mouth
  - ix. Aetiology, Recognition, And Treatment of Resorptive Defects
  - x. Management Of Root Perforations and Other Iatrogenic Complications during Endodontic Treatment.
  
5. Periodontology
  - i. Supportive Periodontal Therapy
  - ii. Periodontal Surgical Therapy
  - iii. Healing of Periodontal Tissues
  - iv. Pocket Reduction Surgery
  - v. Regenerative Periodontal Therapy

- vi. Gingival Recession and mucogingival surgeries
  - vii. Treatment of Furcation Involved Teeth
  - viii. Treatment of Mobile Teeth
  - ix. Management of Periodontal Osseous Lesions
  - x. Systemic Disease and Periodontal Health
  - xi. Advances in Periodontal Therapies
6. Implantology
- i. Classification of peri-implant diseases and conditions
  - ii. Osseointegration: cellular and surgical aspects
  - iii. Medical contra-indications for implant placement
  - iv. Interdisciplinary approach to implant dentistry
  - v. Treatment planning modifiers
  - vi. Pre-implant prosthodontics
  - vii. Principle of implant prosthesis retention
  - viii. Comparing Different Implant Systems
  - ix. Soft & Hard Tissue management around dental implants
  - x. Fixed implant prosthetic options
  - xi. Joining implant to teeth
  - xii. Removable implant prosthetic options
  - xiii. Immediate placement
  - xiv. Immediate loading
  - xv. Supportive maintenance care for patients with dental implants
  - xvi. Managing implant failures and complications
7. Multidisciplinary Management in Restorative Dentistry Digital dentistry
- i. Temporomandibular disorder (TMD)
  - ii. Occlusal Splint Therapy
  - iii. Management of Space Loss and Conformative Vs Reorganising the Occlusion.
  - iv. Microleakage
  - v. Prognosis evaluation of Dentition.
  - vi. The Periodontics-Endodontic Interface.
  - vii. The Perio-Prosthodontic Interrelationship
  - viii. The Ortho-Prosthodontics Interrelationship
  - ix. Geriatric and Medically Compromised
  - x. Maxillofacial Prosthesis
  - xi. Digital dentistry

**PROGRAMME STANDARD FOR  
DOCTOR IN  
SPECIAL CARE DENTISTRY**

## PROGRAMME STANDARD FOR DOCTOR IN SPECIAL CARE DENTISTRY

### 1. SCOPE OF SPECIAL CARE DENTISTRY

#### Definition of Special Care Dentistry (SCD)

Special Care Dentistry is defined as the field of dentistry which is concerned with the oral health management of individuals with compromised physical, intellectual, medical, psychiatric conditions, or a combination of these factors where delivery of oral health care necessitates a holistic approach that is specialist led in meeting their complex requirements. It includes the delivery of oral health care, focusing on individuals with special needs aged **16 years and above**.

The Dental Specialists Evaluation Committee (DSEC) recognises that the terms Special Care Dentistry (SCD) and Special Needs Dentistry (SND) are interchangeable, therefore the use of the term SCD is equivalent to SND and vice-versa.

The scope of Special Care Dentistry encompasses a comprehensive, holistic approach to the care of patients who are categorized as having compromised physical, intellectual, medical, psychiatric conditions, or a combination of these factors that directly or indirectly affect their oral health. It includes the delivery of oral health care, focusing on individuals with special needs aged **16 years and above**. These include:

- a) The management of oral health care (assessment, diagnosis, treatment or management options and their consequences) in:
  - i. individuals with intellectual/ developmental impairments
  - ii. individuals with physical disabilities/ impairments
  - iii. medically compromised individuals
  - iv. geriatric patients (60 years old and above) with co-morbidity conditions
  - v. oncology patients with co-morbidity conditions
  - vi. individuals with psychiatric/ psychological issues
  
- b) Provision of dental procedures which include:
  - i. Treatment and maintenance of the key dentition to facilitate long-term care and improve the quality of life
  - ii. Modification of routine restorative dentistry to prevent tooth loss
  - iii. Routine periodontal treatment
  - iv. Preventive periodontal therapy
  - v. Routine endodontic care as necessary
  - vi. Removable prosthodontics
  - vii. Routine dental extractions
  - viii. Minor oral surgery (e.g surgical extraction of impacted teeth)
  - ix. Treatment of simple dento-alveolar trauma
  - x. Management of oral manifestations of systemic disease and medical therapy
  - xi. Management of oral adverse side effects of polypharmacy
  - xii. Management of oral pathology conditions and soft tissues anomalies

- c) Behavioural Guidance and Strategies:
  - i. Conscious sedation
  - ii. General Anaesthesia
  - iii. Communication strategies
  - iv. Clinical holdings

## **2. INTER-PROFESSIONAL RELATIONSHIP WITH OTHER MEMBERS OF HEALTH CARE TEAM**

The programme should include multidisciplinary involvement of other dental, medical specialties and other healthcare professionals/providers. Close cooperation with other stakeholders such as government agencies and non- governmental organisations should be encouraged.

## **3. CONTENT OF LEARNING AND DOMAINS OF COMPETENCIES**

The training programme must be designed to build on the knowledge and skills of the undergraduate programme. This should be oriented to the accepted standards of SCD practice as set forth in the specific standards contained in this document.

The programme must have clearly stated goals and objectives appropriate to advanced specialty education, addressing education, patient care, research and service. Planning for, evaluation of and improvement of educational quality for the programme must be broad-based, systematic and continuous.

The domains of competences are as follows;

### **DOMAIN 1: KNOWLEDGE**

PLO1: Synthesise knowledge in the field of SCD. The trainee must be able to:

- i. integrate relevant knowledge in biology, anatomy, physiology of normal and abnormal intra- and extra-oral structures, including prevention and control of pain (C5);
- ii. differentiate normal development and potential abnormalities in general and craniofacial growth, growth of the dento-alveolar complex and tooth eruption (C4);
- iii. relate the association between general health and oral health when managing individuals requiring special care (C4);
- iv. determine the relationship between common impairments (intellectual/development, physical, sensory and emotional), disabilities and health conditions (medically compromising conditions, psychiatric conditions including phobia) and its impacts to oral health and functions (C5);
- v. relate the impact of disability and/or complex medical problems on an individual oral health care planning by taking into account the individual's social, physical and cognitive circumstances (C6);
- vi. to decide appropriate dental treatment based on oral and dental manifestations of specific conditions such as malocclusion in cerebral palsy, periodontal disease in Down's Syndrome, and oral care for individuals on palliative care (C6);
- vii. evaluate the structure, function and principles of managing dental occlusion, function and dysfunction (C6);
- viii. evaluate the effects of fluorides used systematically and topically as it relates to

- ix. evaluate the needs of using various techniques and applications of pharmacological and non-pharmacological pain control (C5);
- x. consider the use of behavioural management strategies, local analgesia, conscious sedation and general anaesthesia for people with special needs receiving dental care (C6);
- xi. decide the appropriate staging and management as well as the materials used in operative intervention (C6);
- xii. evaluate the role of saliva in maintaining good oral health and mechanism involves in salivary secretion (C6);
- xiii. consider the protective effects of saliva in the management of xerostomia (C6);
- xiv. integrate the knowledge on anatomical and physiological features of the masticatory system including mechanism and pathology of swallowing, speech, taste and olfaction (C6);
- xv. relate the psychiatric and somatic complaints to the oral manifestations of psychiatric diseases (C6);
- xvi. integrate the knowledge of aetiology of stress, anxiety and phobia and the measurement of anxiety with the management of dental anxiety and phobia (C5);
- xvii. choose current best evidence for effectiveness of various treatment modalities (C6);
- xviii. evaluate prognostic and risk factors for various modalities (C6);
- xix. justify the use of appropriate pharmaceutical agents where necessary (C5);
- xx. justify the significance of patient's previous dental experience, past and current medical and dental history towards attitudes to dentistry and oral health (C5);
- xxi. relate the social model of disability to the delivery of care in SCD (C6);
- xxii. formulate treatment plan based on current evidence of best practice (C6);
- xxiii. determine the multidisciplinary nature of clinical cases which may require varied treatment modalities (C6);
- xxiv. appraise conventional and contemporary imaging techniques (C6);
- xxv. appraise the different outcome measures of treatment and their assessment (C6);
- xxvi. consider risks and limitations associated with non-surgical and surgical procedures (C6);

## **DOMAIN 2: PSYCHOMOTOR SKILLS**

PLO2: Adapt evidence based clinical procedures for proficient patient management in SCD.

The trainee must be able to:

- i. obtain a thorough history to identify the aetiological factors for the patients' or carer's concerns (P5);
- ii. display the ability to identify the person who requires special oral health care through a comprehensive understanding of disability issues and/or the complexities of medical problems (P5);
- iii. execute a thorough examination of the patient's orofacial condition, prostheses and restorative needs of the remaining tooth structure (P5);
- iv. perform appropriate investigations (e.g. radiographic, pulp sensibility tests, haematological and microbiological tests) (P5);
- v. display the ability in recognizing and maintaining key teeth to facilitate long-term care (P5);
- vi. perform appropriate restorative techniques for the management of broken down,

- fractured and missing teeth (P5);
- vii. diagnose, prevent and provide appropriate restorative treatment for non-carious tooth surface loss such as abrasion, erosion and attrition (P5);
- viii. diagnose and manage non-surgical treatment of temporomandibular dysfunction (P5);
- ix. diagnose and manage periodontal diseases in individuals with impairments and disability (P5);
- x. construct appropriate and effective preventive individualized periodontal programmes (P5);
- xi. adapt techniques for prevention appropriate for individuals requiring special care such as communication with individuals with autism spectrum disorder, intellectual impairment and cognitive impairment (P5);
- xii. perform routine endodontic treatment when and if necessary (P5);
- xiii. diagnose, formulate treatment plan and provide removable prosthodontic appliances including techniques appropriate for individuals with special needs such as copy dentures techniques (P5);
- xiv. display the skills in providing evidence of how removable and fixed prosthodontic treatment can affect the quality of life (P5);
- xv. perform dental treatment for individuals with common oral medical conditions, undergoing chemotherapy, radiotherapy, immunotherapy and organ transplant (P5);
- xvi. diagnose oral manifestations of systemic diseases (P5);
- xvii. diagnose and perform treatment of oral side effects of prescribed medications (P5);
- xviii. interpret haematological test such as full blood count and haematinics, clotting studies, urea and electrolytes, liver function tests and thyroid function tests (P5);
- xix. perform routine exodontias and simple surgical extractions for retained roots/fractured teeth and impacted wisdom teeth (P5);
- xx. perform incisional and excisional biopsy of gingival and mucosal lesion (P5);
- xxi. diagnose dental emergencies (P5);
- xxii. initiate treatment of medical emergencies which may occur during the provision of dental treatment in the dental surgery and in the domiciliary setting (P7);
- xxiii. arrange communication with other healthcare professionals in the emergency management of patients under SCD care (P7);
- xxiv. display ability to use emergency drugs correctly in appropriate circumstances (P5);
- xxv. derive the likely prognosis and outcomes of the various treatment options and relating this to the prognosis without treatment (P5);
- xxvi. formulate a rational treatment plan appropriately (P5);
- xxvii. advise patients on the possible and probable outcomes of the treatment options, as well as the need for future supportive care, prevention and maintenance (P5);
- xxviii. delineate strategies and plans according to the skills of other clinicians involved in the care of the patient (P5);
- xxix. integrate methods and technologies to prevent infection during treatment procedures, between patients and staff (P5);
- xxx. display skills to manage multidisciplinary cases (P5);
- xxxi. perform treatment of moderate to high complexity of patient management using a range of techniques (P5);
- xxxii. display skills to communicate using the concept of behavioural sciences with patients having varying degree of learning disabilities or cognitive impairment in order to understand their oral health problems and needs (P5);
- xxxiii. assess all treatment outcomes (P5);

- xxxiv. display proficiency in the different techniques of pharmacological (conscious sedation) and non-pharmacological behaviour guidance (P5);
- xxxv. Organizing and performing the appropriate treatment services in the relevant care setting for the individual (e.g domiciliary service) (P5);
- xxxvi. alter treatment plan in the face of unfavourable findings or setbacks, including the decision to abort treatment (P6);
- xxxvii. display efficiency and confidence in providing dental treatment under general anaesthesia when necessary (P5);
- xxxviii. demonstrate positive attitude towards people with disabilities (P4);
- xxxix. construct case reports with photographs, if possible, to illustrate the course of treatment (P5);
- xl. demonstrate the ability to obtain informed consent (P4);
- xli. adapt to the concepts of safe clinical holding and transfer of patient (P6).

## **DOMAIN 2: PSYCHOMOTOR SKILLS**

PLO4: Conduct research independently.

The trainee must be able to:

- i. compose written reports/articles, including preparing and altering manuscripts, where appropriate (P7);
- ii. perform research activities (P5);
- iii. display integrity in the design, conduct and criticism of research (P5);
- iv. display presentation skill in communicating research work to professional colleagues or at specialists' meetings (P5).

## **DOMAIN 3: SOCIAL RESPONSIBILITY**

PLO3: Provide expert advice to society in the field of SCD.

The trainee must be able to:

- i. display a caring and patient-centred approach to treatment planning (A5);
- ii. display confidence, insight and empathy in formulating and presenting strategies and plans to patients and colleagues (A5);
- iii. serve all patients with dignity and respect (A5);
- iv. recognize the impact of the patient's oral and general health status and the proposed advice on their quality of life (A3);
- v. recognize the need for supportive care, prevention and maintenance (A3);
- vi. verify the needs of developing networking with wider circle of social and health care professionals in relation to the individual's care needs (cross-sector and inter-agency working, care and advocacy) (A5);
- vii. adhere to the limitations of knowledge and practical experience in the assessment and management of interdisciplinary cases (A4).

## **DOMAIN 4: ETHICAL & PROFESSIONALISM**

PLO5: Adhere to legal, ethical and professional codes of practice.

The trainee must be able to:

- i. display appropriate attitude and understanding of ethical and societal issues and the place of their specialty in the overall healthcare spectrum (A5);

- ii. display appropriate understanding of legislation relevant to the practice of SCD (A5);
- iii. adhere to the standards of practice in dentistry as determined by the Malaysian Dental Council (A4);
- iv. adhere to the legislation and ethics relevant to dental practise and SCD (e.g Akta Orang Kurang Upaya 2008, Mental Health Act 615, Akta Orang Papa 183, Akta Pusat Jagaan, Dasar Warga Tua Negara, Pelan Tindakan Warga Tua Negara) (A5);
- v. display the attitudes necessary for the achievement and delivery of the highest standards of specialist care, in relation to the oral health needs of populations and the needs of patients under treatment (A5);
- vi. display respect for patient autonomy (A5);
- vii. practise ethical principles in the preparation of clinical and research reports (A5);
- viii. practise medico-legal principles in relation to patients' records (A5).

### **DOMAIN 5: LEADERSHIP, COMMUNICATION & TEAMWORK**

PLO6: Display leadership qualities through communicating and working effectively with peers and stakeholders.

The trainee must be able to:

- i. build a rapport to work effectively as part of a team and manage members appropriately (A5);
- ii. adapt methods of administration/negotiation in order to achieve an appropriate outcome (P6);
- iii. practice a non-discriminatory approach to patients, carers, colleagues and other members of the workplace team (A5);
- iv. display appropriate both verbal and non-verbal communication /presentation skills (P5);
- v. display empathy, sensitivity and awareness in communicating with patients and colleagues (P5, A5).

### **DOMAIN 6: PROBLEM SOLVING & CRITICAL THINKING**

PLO7: Generate solutions to problems using scientific and critical thinking skills

The trainee must be able to:

- i. consider a variety of information sources to obtain scientific papers and other evidences such as guidelines (C6, A4);
- ii. display professional judgement to implement clinical solutions in response to problems by developing an evidence-based treatment plan and taking a holistic approach (P5);
- iii. evaluate critically the scope and limitations of the various techniques, balancing the risks and cost benefits of treatment demonstrating self-direction and autonomy (C6, A5);
- iv. appraise systematically current evidence and appreciate how research activity can inform practice (C6);
- v. perform and sustain a critical argument in writing and through oral presentations (P5).

### **DOMAIN 7: LIFELONG LEARNERS**

PLO8: Exhibit attributes of independent lifelong learners

The trainee must be able to:

- i. appraise and evaluate clinical practice and procedures periodically to maintain

- competencies (C6);
- ii. practice the process of revalidation and the assessment of individual clinical performance (A5);
- iii. display skills of self-reflection and self-appraisal used to identify continuing professional development needs e.g. becoming a member of a professional society (A5).

#### **DOMAIN 8: MANAGEMENT SKILL**

PLO9: Display skills in clinical governance

The trainee must be able to:

- i. organise clinical practice and research based on good governance (C5);
- ii. comprehend the role of the Malaysian Dental Council (MDC) and Dental Specialist Evaluation Committee (DSEC) in the process of professional self-regulation (C2);
- iii. organise and undertake a clinical audit project including implementation of outcomes and re-audit (P4);
- iv. display proficiency in general patient management (P5);
- v. organize and manage the working environment and schedule (P4).

#### **4. MINIMUM CLINICAL EXPERIENCE**

The students must have had experience managing at least three cases in each of these categories with a total of 30 patients:

- i. patients with intellectual/ developmental impairments.
- ii. patients with physical disabilities with co-morbidity conditions.
- iii. medically compromised patients with co-morbidity conditions.
- iv. geriatric patients (60 years old and above) with co-morbidity conditions.
- v. oncology patients with co-morbidity conditions.
- vi. patients with psychiatric/ psychological issues.
- vii. cases requiring multidisciplinary approach of three or more disciplines (medical or dental).

The range of clinical experience is recorded by maintaining a cumulative record of the number of treatment procedures undertaken within specified categories. The above listings are not considered to be totally prescriptive, if further detail to an entry is considered appropriate this can be added.

The trainee must be monitored periodically to record how the trainee progresses throughout the training period. Proof of readiness to practice independently as a specialist must be documented.

#### **5. CLINICAL FACILITIES**

The HEP must provide facilities and resources to fulfil the needs of the training programme and to develop and sustain it on a continuing basis. These include;

- i. Physical facilities to permit trainee to operate under circumstances prevailing in the practice of SCD;

- ii. Clinical facilities specifically identified for the programme in SCD. The facility must be fully equipped with dedicated equipment and materials to allow the high standard of dental practice;
- iii. General facilities which accommodate access for individuals with disabilities.

## 6. MINIMUM CORE TEACHING STAFF

The minimum core teaching staff shall consist of a programme director (which must be a **full-time, registered/recognised** specialist in Special Care Dentistry by MDC, with minimum clinical experience of 5 years after acquiring specialist qualification), and at least two (2) **registered/recognised** specialists (in the field or related field) by MDC, and must be full-time/full-time equivalent.

## 5. ADDITIONAL REQUIREMENTS

### MODELS OF LEARNING IN SPECIAL CARE DENTISTRY

It is essential that evidence-based dentistry is practised in educating the future specialists who are competent in SCD. It requires a range of skills including knowledge, attitudes and behaviours which will need to be developed systematically through a variety of learning experiences and environment. It is mandatory for the trainees to demonstrate a sound understanding on the educational theories and fundamental principles in SCD to enhance their critical thinking and ensuring effective teaching and life-long learning. Clinical experience may be provided through clinical teaching supervision, clinical demonstrations, practical exercises and workshops as well as field visit activities such as the provision of domiciliary dental care. Although the trainees have to be supervised by an experienced teacher at the initial stage of the learning process, the increasing independence is expected as the training progresses. In ensuring a complete training, it is expected that the training is linked with relevant hospital departments and other community settings as well.

The training and learning methodology can be carried out through but not limited to the followings:

- Guided theoretical learning during formal and scheduled periods. This should be geared towards developing an understanding of the subject by critical appraisal and synthesis of the classical and contemporary literature through individual and group activities, involving lecture, discussion and debate and independent study;
- Clinical skills development through attendance to multidisciplinary clinics and medical clinical posting under supervision of trainers with specific expertise in the relevant fields. Pre-management case discussions may be used to facilitate development of independent decision-making in diagnosis, treatment planning, planning of treatment and treatment execution. Post-treatment case conferences may be used to facilitate group reflection and integration with theoretical knowledge. Maintenance of log-book, active participations in case-based discussion should be emphasised to improve their skills, knowledge and behaviours.
- Practical exercises through systematic simulation exercises, with development of a presentation portfolio, reflection and discussion of outcomes through peer presentation

- and trainer feed-back;
- Research exposure through participation in a research project (clinical, experimental or literature research) which is reported formally in a thesis, or as a manuscript prepared for submission or as published paper(s).

## **REFERENCES**

Specialty Training Curriculum For Specialist Care Dentistry. November 2012. Specialist Advisory Committee for Special Care Dentistry The Faculty of Dental Surgery The Royal College of Surgeons of England.

Special Care Dentistry Postgraduate Curriculum Guidance. November 2014. International Association of Disability and Oral Health.

## **ACKNOWLEDGEMENT**

The development of the standards for the foundation specialty training in Special Care Dentistry was initiated and developed by a working party from the DentSEdC in Special Needs/Care Dentistry, chaired by Dr Siti Zaleha Hamzah, with members comprising Dr Norjehan Yahaya, Dr Dasera Raj Vedha Raj, Dr Maryani Mohamed Rohani, Associate Professor Dr Mas Suryalis Ahmad and Assistant Professor Dr Farah Natashah Mohd.

This document was reviewed in 2024 by the DentSEdC in Special Care Dentistry, chaired by Associate Professor Dr. Mas Suryalis Ahmad, and its members were Associate Professor Dr. Farah Natasha Mohd, Dr.Maryani binti Mohamed Rohani, Dr.Norjehan Yahaya, Dr. Dasera Raj Vedha Raj, Dr.Wan Syasliza Mohamed Thani and Dr. Eileen Yap Ai Ling.

**MINIMUM DETAILS OF COURSE CONTENT**

**(Adopted from Special Care Dentistry Postgraduate Curriculum Guidance by International Association of Disability and Oral Health)**

Module 1: Professional, Legal and and Ethical Context of Special Care Dentistry

- a. Cultural and social context of people with disability with chronic health conditions and those in marginalized groups
- b. Legal and political issues for the major disability groups and those in marginalized groups
- c. Local professional and ethical framework in which they work
- d. Assessment of individual's capacity to consent and understand the roles of the family members and caregivers in assisted decision making
- e. How to respect for patient autonomy and apply appropriate rationale for the use of physical and pharmacological intervention

Module 2: Impairment, Disability and Oral Health

- a. Epidemiology, terminology concepts and classifications of human function, disability and health
- b. Common impairments, disabilities and health conditions in relation to their impact on oral health
- c. Common impairments, disabilities and health conditions in relation to their impact on oral function
- d. The characteristic oral manifestations of specific patient groups
- e. The relationship between oral health and general health for requiring Special Care Dentistry
- f. Determinants of oral health related quality of life for people requiring Special Care Dentistry

Module 3: Medical Sciences Related to Special Care Dentistry

- a. Medical principles behind acute and chronic health conditions, congenital and acquired conditions, syndromes and genetic disorders relevant to Special Care Dentistry
- b. Pharmacology, principal, interactions and adverse systemic and oral side effects of commonly used medications and therapeutic regimen for people requiring Special Care Dentistry
- c. Management of medical emergencies in the clinical setting according to local protocols and guidelines

Module 4: Psychology Related to Special Care Dentistry

- a. The models of health behaviour and belief and psychology as it relates to the person and health
- b. The emotional experience involved in living with disability, chronic condition and

- coping with situations such as transition of age or loss
- c. Effective communication strategies in the healthcare setting to develop meaningful interaction with people according to their specific needs
- d. Verbal and non-verbal communication relating to pain, anxiety and phobia in patients requiring Special Care Dentistry
- e. Pharmacological and non-pharmacological methods that can be used to manage pain, anxiety and phobia in patients requiring Special Care Dentistry

#### Module 5: Dental Public Health and Oral health Promotion

- a. The social determinants of health in relation to health inequalities in people requiring Special Care Dentistry
- b. Social, environmental and attitudinal barriers and facilitators to oral healthcare services for people requiring Special Care Dentistry
- c. Mechanism for financing health care and their likely impact on access to oral healthcare for people requiring Special Care Dentistry
- d. Oral health promotion initiatives in relation to people requiring Special Care Dentistry
- e. Institutional and community targeted oral health promotion for people requiring Special Care Dentistry
- f. The role of professional advocacy in promoting policies, services and systems that respect diversity, equality and human rights

#### Module 6: Oral Healthcare Planning and Teamwork

- a. Designing and organizing comprehensive treatment plans in the appropriate setting according to individuals characteristics, risks, guidelines and protocols
- b. Application of the evidence base to develop oral health care plans to stabilize and maintain oral health in people requiring Special Care Dentistry
- c. Utilization of communication strategies to encourage patient autonomy and participation in partnership with families and caregivers where appropriate
- d. Coordination of an inter-disciplinary team, including allied oral healthcare, professionals in the delivery of optimal clinical care for people requiring Special Care Dentistry
- e. Working with caregivers and residential care homes to prevent oral diseases
- f. Skills of inter-professional communication with medical teams to gather information and integrate oral risk assessment into key stages of medical care pathways
- g. Conferment and collaboration with different specialties in a professional manner and referrals to other specialties regarding treatment options outside of individual scope of practice

#### Module 7: Clinical Special Care Dentistry

- a. Skills to assess, diagnose and provide clinical care for individual patients requiring Special Care Dentistry in a variety of settings

- b. The use of appropriate language and methods of communication as required by people with cognitive, sensory and/or other communication impairments in obtaining consent
- c. Management of disorders of oral function in individual patients requiring Special Care Dentistry
- d. Pain management and behavioural facilitation techniques for individual patients requiring Special Care Dentistry
- e. Risk assessment, treatment planning and provision of dental care for patients under sedation and general anaesthesia
- f. Safe transfer techniques and appropriate positioning using aids where necessary for individual patients with physical disabilities
- g. Safe clinical holding techniques to individual risk, local guidelines and protocols

#### Module 8: Research and Governance

- a. Reviewing relevant literature in order to practice evidence-based dentistry
- b. Undertake research design related to Special Care Dentistry including ethical approval
- c. Analyze and report research findings appropriately and write a report suitable for publication
- d. Presenting research

## **DENTAL SPECIALTY EDUCATION COMMITTEE MEMBERS**

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(Chairperson) Universiti Malaya
2. Professor Dr. Norkhazifah Saddki  
Universiti Sains Malaysia
3. Associate Professor Dr. Tanti Irawati Rosli  
Universiti Kebangsaan Malaysia
4. Datin Paduka Dato' Dr. Nooral Zeila Junid  
Universiti SEGi
5. Dr. Salleh Zakaria  
Ministry of Health
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Ministry of Health
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Malaysian Armed Forces

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(Chairperson) Universiti Kebangsaan Malaysia
2. Associate Professor Dr. Mariam Abdullah  
University of Malaya
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Ministry of Health
5. Dr Nor Sitah bt Markom  
Ministry of Health
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Malaysian Armed Forces
7. Dr. Lam Jac Meng  
Jac Lam Endodontic Practice

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2. Prof Madya Dr. Mohd Fadhli Khamis  
University Sains Malaysia

3. Dr. Nor Atika Md Ashar  
Universiti Kebangsaan Malaysia
4. Professor Dr. Mohd Yusmiadil Putera bin Mohd Yusof  
Universiti Teknologi MARA
5. Dr Hairuladha bin Abdul Razak  
Ministry of Health
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Malaysian Armed Forces

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(Chairperson) Universiti Malaya
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Universiti Kebangsaan Malaysia
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Universiti Teknologi MARA
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Ministry of Health
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Ministry of Health
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KPJ Tawakkal Health Centre

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Universiti Malaya
4. Professor Dr Rosnah Mohd Zain  
MAHSA University
5. Dr Ajura Abdul Jalil  
Institute of Medical Research

6. Dr Sumairi Ismail  
Ministry of Health
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Malaysian Armed Forces

#### **F. ORTHODONTICS**

1. Professor Dr. Rohaya Megat Abdul Wahab  
(Chairperson) Universiti Kebangsaan Malaysia
2. Professor Dr. Siti Adibah Othman  
Universiti of Malaya
3. Associate Professor Dr. Maryati Md Dasor  
Universiti Teknologi MARA
4. Dr. Mohd Zambri Mohamed Makhbul  
Ministry of Health Malaysia
5. Dr. Yatimah Othman  
Ministry of Health Malaysia
6. Colonel (Dr) Mizalazrin Madzlan,  
Malaysian Armed Forces
7. Dr. Evelyn Lee Gaik Lyn  
Specialist Private Practice

#### **G. ORAL AND MAXILLOFACIAL RADIOLOGY**

1. Prof Dr Norliza binti Ibrahim  
Universiti of Malaya
2. Dr. Nor Hidayah binti Reduwan  
Universiti Teknologi MARA
3. Prof. Madya Dr Azizah Ahmad binti Fauzi  
Universiti Kebangsaan Malaysia
4. Dr. Sharifah Munirah Al Idrus bt Syed Jaafar  
Ministry of Health Malaysia
5. Dr. Aida Shafiza binti Che Azmi  
Ministry of Health Malaysia
6. Dr. Wan Noorina binti Wan Ahmad  
Specialist Private Practice

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1. Associate Professor Dr. S Nagarajan M. P. Sockalingam  
Universiti Kebangsaan Malaysia

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Universiti Teknologi MARA
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International Islamic University Malaysia
4. Dr Sarimah binti Mohd Mokhtar  
Ministry of Health Malaysia
5. Dr Juanna bt Bahadun  
Ministry of Health Malaysia
6. Prof. Dr. Noraini @ Nun Nahar binti Yunus  
MSU Medical Centre
7. Dr Zahani Yusoff  
Malaysian Armed Forces

#### **I. PERIODONTICS**

1. Professor Dr. Nor Adinar Baharuddin  
(Chairperson) Universiti of Malaya
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MAHSA University
3. Associate Professor Dr. Haslina Taib  
Universiti Sains Malaysia
4. Dr. Marina Mubin  
Ministry of Health
5. Dr. Lim Ei Leen  
Ministry of Health
6. Kolonel (Dr) Zaharah bt Mahmud  
Malaysian Armed Forces
7. Dr. Salmah Kamin  
Dental Clinic KPJ Selangor Specialist Hospital

#### **J. PROSTHODONTICS**

1. Associate Professor Dr. Zaihan Ariffin  
(Chairperson) Universiti Sains Malaysia
2. Associate Professor Dr Norasmatul binti Ahmad  
Universiti Malaya
3. Dr Yanti Johari  
Universiti Sains Malaysia
4. Dr. Saridatun Nur Abd Salam  
Ministry of Health

5. Dr. Kamarul Hisham Kamarudin  
Ministry of Health Malaysia
6. Leftenan Kolonel (Dr) Marissa bt Baharom  
Malaysian Armed Forces
7. Dr. Mohd Muzafar Hamiruddin  
KPJ KL Dental Specialist Centre

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Universiti Malaya
3. Dr Jasmina Qamaruz Zaman  
Universiti Kebangsaan Malaysia
4. Dr Faizah bt Abdul Fatah  
Universiti Sains Islam Malaysia
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Ministry of Health
6. Brigadier Jeneral (Dr) Mohamad Asri bin Din  
Malaysian Armed Forces
7. Dr. Army Empol  
Kok's Dental Surgery

#### **L. SPECIAL CARE DENTISTRY**

1. Associate Professor Dr. Mas Suryalis Ahmad  
(Chairperson) Universiti Teknologi MARA
2. Associate Professor Dr. Farah Natasha Mohd  
International Islamic University Malaysia
3. Dr.Maryani binti Mohamed Rohani  
Universiti Malaya
4. Dr.Norjehan Yahaya  
Ministry of Health
5. Dr. Dasera Raj Vedha Raj  
Ministry of Health
6. Dr.Wan Syasliza Mohamed Thani  
Ministry of Health
7. Dr. Eileen Yap Ai Ling  
Ministry of Health

## ENDORSEMENT OF SPECIFIC PROGRAMME STANDARD DOCUMENT

NO	STANDARD	ENDORSED AT:
1.	PROGRAMME STANDARD FOR DOCTOR IN ENDODONTOLOGY	MQA 2019
2.	PROGRAMME STANDARD FOR DOCTOR IN FORENSIC ODONTOLOGY	MQA 2019
3.	PROGRAMME STANDARD FOR DOCTOR IN ORTHODONTICS	MQA 2019
4.	PROGRAMME STANDARD FOR DOCTOR IN PERIODONTOLOGY	MQA 2019
5.	PROGRAMME STANDARD FOR DOCTOR IN PROSTHODONTICS	MQA 2019
6.	PROGRAMME STANDARD FOR DOCTOR IN RESTORATIVE DENTISTRY	MQA 2019
7.	PROGRAMME STANDARD FOR DOCTOR IN SPECIAL CARE DENTISTRY	MQA 2019
8.	PROGRAMME STANDARD FOR DOCTOR IN ORAL MEDICINE	8th MDC Meeting on 3 April 2023. Approval letter from MDC: KKM.600-23/1/5 (42) dated 3 April 2023
9.	PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN FORENSIC ODONTOLOGY	
10.	PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN ORAL MAXILLOFACIAL PATHOLOGY AND ORAL MEDICINE COURSE	
11.	PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN PAEDIATRIC DENTISTRY	
12.	PROGRAMME STANDARD FOR FOUNDATION SPECIALTY TRAINING IN RESTORATIVE DENTISTRY	
13.	PROGRAMME STANDARD FOR DOCTOR IN DENTAL PUBLIC HEALTH	9th MDC Meeting on 24 July 2023 . Approval letter from MDC : KKM.600-23/1/5 (51) dated 28 July 2023
14.	PROGRAMME STANDARD FOR DOCTOR IN ORAL AND MAXILLOFACIAL SURGERY	
15.	PROGRAMME STANDARD FOR DOCTOR IN ORAL MAXILLOFACIAL PATHOLOGY AND ORAL MEDICINE	
16.	PROGRAMME STANDARD FOR DOCTOR IN PAEDIATRIC DENTISTRY	
17.	PROGRAMME STANDARD FOR FOUNDATION IN SPECIALTY TRAINING IN ENDODONTICS	
18.	PROGRAMME STANDARD FOR FOUNDATION IN SPECIALTY TRAINING IN ORTHODONTICS	
19.	PROGRAMME STANDARD FOR FOUNDATION IN SPECIALTY TRAINING IN ORAL AND MAXILLOFACIAL SURGERY	
20.	PROGRAMME STANDARD FOR FOUNDATION	

	IN SPECIALTY TRAINING IN DENTAL PUBLIC HEALTH	
21.	PROGRAMME STANDARD FOR FOUNDATION IN SPECIALTY TRAINING IN PERIODONTOLOGY	
22.	PROGRAMME STANDARD FOR FOUNDATION IN SPECIALTY TRAINING IN SPECIAL CARE DENTISTRY	
23.	PROGRAMME STANDARD FOR FOUNDATION IN SPECIALTY TRAINING IN PROSTHODONTICS	

## **GLOSSARY OF TERMS**

The terms used in this document (i.e. must, should, may and could) were selected to indicate the relative weight that the DentSEdC / JTCEdSP attaches to each statement. The definitions of these words used in this document are as follows:

**Must:** Indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

**Should:** Indicates a method to achieve the standards.

**May or Could:** Indicates freedom or liberty to follow a suggested alternative.

### **Levels of Knowledge:**

- In-depth: A thorough knowledge of concepts and theories for the purpose of critical analysis and the synthesis of more complete understanding.
- Understanding: Adequate knowledge with the ability to apply.
- Familiarity: A simplified knowledge for the purpose of orientation and recognition of general principles.

### **Levels of Skills:**

- Proficient: The level of skill beyond competency. It is that level of skill acquired through advanced training or the level of skill attained when a particular activity is accomplished with repeated quality and a more efficient utilization of time.
- Competent: The level of skill displaying special ability or knowledge derived from training and experience.
- Exposed: The level of skill attained by observation of or participation in a particular activity.