



# **Faculty of Dentistry**

## **DPCD, MFD, MGDS Syllabus & Guidance Notes**

**RCSI** DEVELOPING HEALTHCARE LEADERS WHO MAKE A DIFFERENCE WORLDWIDE

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# **Diploma of Primary Care Dentistry**

## **The Syllabus**

Candidates are strongly advised to read the regulations and the appendices in full to appreciate the practical applications of the syllabus including the guidance blueprint, learning outcomes and the methods of assessments.

### **1. Clinical Skills**

- 1.1. Restorative Dentistry (Prosthodontics, Periodontics, Endodontics and a basic knowledge of Implant Dentistry)
- 1.2. Preventive Dentistry (integrating the concept of active disease prevention into Primary Care Dentistry including preventive care in relation to caries, periodontal disease, tooth surface loss, diagnosis and planning of appropriate non-operative and operative care and dental health education)
- 1.3. Paediatric Dentistry
- 1.4. Special Care Dentistry
- 1.5. Oral Surgery and Oral Medicine relevant to Primary Dental Care
- 1.6. Orthodontics relevant to Primary Dental Care
- 1.7. Biomaterials
- 1.8. Therapeutics relevant to Dentistry (including Anaesthesia and Sedation)
- 1.9. Diagnostic Skills including Radiology
- 1.10. Clinical applications of relevant biological sciences in relation to the practice of dentistry
- 1.11. Evaluation of Scientific Literature relevant to Primary Dental Care

### **2. Para-clinical Skills**

**(including the five Core CPD areas\* as defined by the Dental Council)**

- 2.1. The concept of integrated patient care
- 2.2. Infection Prevention and Control\*
- 2.3. Radiology and Radiation Protection\*
- 2.4. Clinical Record Keeping
- 2.5. Teamwork in delivering patient care
- 2.6. Risk Management and Communication Skills including the handling of Complaints\*
- 2.7. Ethical and Legal issues in the practice of Dentistry\*
- 2.8. Governance and Clinical Audit (maintaining standards and complying with the relevant clinical governance requirements)
- 2.9. Medical Emergencies\*
- 2.10. Behavioural Science and patient management issues
- 2.11. Dental Public Health relevant to Primary Dental Care

**This Syllabus is provided to indicate the areas of knowledge which are expected of candidates.** It is not intended to be prescriptive or to exclude other topics which are of similar relevance.

## **Diploma of Primary Care Dentistry**

### **Learning Outcomes**

The learning outcomes are provided as a guide to assist candidates and training providers in the design and implementation of training and the delivery of courses. The learning outcomes are cross referenced to the syllabus.

Three key phrases are used to describe the respective learning outcomes which candidates are expected to be able to know / understand / demonstrate after completing their learning in preparation for the examination. They are as follows:

- 1.** “To Know” means to be aware of through observations, inquiries or information, in order to acquire knowledge concerning the subject; to be able to describe and explain the subject area and to outline its applications.
- 2.** “To Understand” means to be able to perceive the appropriate “know how” in relation to the significance and cause concerning the subject; be able to describe, explain and meaningfully relate the subject to the overall area in question.
- 3.** “To Demonstrate” means the competency to be able to do, show and explain clearly and deliberately by reasoning or adducing evidence to establish the validity of the particular area of knowledge through its applications.

## Diploma of Primary Care Dentistry Learning Outcomes Cont.

### 1. Clinical skills

#### **General Restorative Dentistry (Reference to syllabus 1.1, 1.2, 1.4, 1.7)**

On successful completion of this module, the student will be able to:

- Demonstrate an effective contemporary understanding of the aetiologies and management of dental caries
- Demonstrate the way in which dental caries is assessed and managed
- Provide the evidence base for the different management strategies for dental caries taking into account of the patient's diet, use of fluoride and their general relationship with restorative dental treatment
- Explain and apply the theories underpinning dental plaque, its formation, composition and metabolism
- Demonstrate an understanding of the mechanism of tooth surface loss in relation to attrition, abrasion, erosion and abfraction
- Demonstrate the practical applications of functional occlusion in clinical practice
- Demonstrate an understanding of temporo-mandibular-dysfunction, particularly in relation to diagnosis and clinical management
- Demonstrate an understanding of the applications of adhesive dentistry

#### **Prosthodontics (Reference to syllabus 1.1)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding and the effective application of clinical skills required for the management of dental caries
- Demonstrate an understanding and the clinical skills required in respect of the assessment and management of non-carious tooth surface loss
- Demonstrate an understanding of the clinical skills required to manage tooth discolouration and the use of bleaching in clinical dentistry
- Demonstrate a comprehensive understanding of the clinical skills required for effective restorative treatment planning
- Demonstrate an understanding of the clinical skills required to maintain effective functional occlusion in fixed and removable prostheses
- Demonstrate an understanding of the clinical skills required to effectively prescribe, design, prepare, construct, fit and maintain complete and partial dentures
- Demonstrate an understanding of the principles of implant based restorations and be able to discuss their clinical applications and limitations

#### **Periodontics (Reference to syllabus 1.1)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of and the appropriate skills for, periodontal examination and the diagnosis of periodontal disease
- Demonstrate knowledge in relation to the pathogenesis of periodontal disease, the use and limitations of mechanical and chemical means of plaque control, and the use and limitations of other therapeutic agents in the control of periodontal disease
- Demonstrate an understanding of the principles and applications of basic surgical

periodontal treatment, including the general principles of crown lengthening surgery in relation to the preservation and restoration of teeth

- Demonstrate an understanding of the evidence-based clinical principles of regenerative periodontal surgery
- Demonstrate an understanding of the aetiologies and management of periodontal disease in children and young adults, and the periodontal- systemic disease interface.
- Demonstrate an understanding of the anatomical principles underpinning the clinical significance of the periodontal -endodontic interface and be able to demonstrate the clinical acumen to properly manage these lesions, where appropriate.
- Demonstrate an understanding of the general principles of the surgical aspects of dental implant placement and be able to apply these principles in appropriate advice and referral of the patient
- Demonstrate an understanding of the general principles of soft and hard tissue grafting and be able to explain when these clinical techniques will be applicable to patient care

### **Endodontics (Reference to syllabus 1.1)**

On successful completion of this module, the student will be able to:

- Demonstrate a comprehensive understanding of the skills in relation to endodontic diagnosis, indications and contraindications for endodontic treatment including the clinical management of traumatised teeth
- Demonstrate an evidence-based knowledge of pulpal and periapical pathology including their relevant clinical applications, including the knowledge and understanding of root canal anatomy, access to root canal system and the endodontic periodontic interface
- Demonstrate the appropriate understanding of the skills where applicable, in relation to endodontic treatment and re-treatment procedures, endodontic preparation and obturation techniques, surgical approach to endodontics and the implications of the endodontic implant interface

### **Preventive Dentistry (Reference to syllabus 1.2)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of, and be able to apply the skills in relation to proactive disease prevention in primary care dentistry, including preventive care in relation to dental caries and periodontal disease, preventive care in relation to tooth surface loss and the application of epidemiological techniques in respect of dental and oral disease
- Demonstrate the understanding and the skills required to carry out an effective oral health and risk assessment, including the impact of general health on oral health
- Demonstrate an understanding of the skills of preventive dentistry including the use of fluorides and Oral Health Education

### **Paediatric Dentistry (Reference to syllabus 1.3)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of and provide the evidence base for childhood oral healthcare and prevention, including the appropriate use of fluoride therapy.
- Demonstrate an understanding of the behaviour management of children in the dental setting
- Demonstrate an understanding of the effective management of the developing dentition
- Demonstrate an understanding of, and be able to appropriately identify and refer

patients for, sedation and general anaesthesia in accordance with contemporary good practice guidelines

- Demonstrate an understanding of treatment planning including the acumen in relation to diagnosis , pulp therapy in the primary dentition, space maintenance following the premature loss of any number of deciduous teeth including space maintenance
- Demonstrate knowledge and the clinical skills required for the management of dental trauma in children
- Demonstrate knowledge of the underlying principles and contemporary good practice in relation to consent and the paediatric patient, child protection issues and the ethical and legal implications.
- Demonstrate knowledge of the management of dental developmental anomalies in children

#### **Special Care Dentistry (Reference to syllabus 1.4)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of the management of the oral health, where appropriate, of patients with intellectual disability, or who are affected by other medical, physical or psychiatric issues, a history of substance misuse and other vulnerable adults.
- Explain the process for appropriate referral and co-ordination of the care of these patients
- Identify barriers to dental attendance for these patients in a primary care setting and be aware of the challenges in access to dental care for these patients
- Demonstrate an understanding of how to maintain and preserve the dignities of these patients
- Demonstrate an understanding of the issues of consent/assent, for patients with disabilities and be able to demonstrate how this process should work in practice
- Have knowledge of how intellectual, physical, medical and sensory disabilities can affect oral health care delivery and the practical methods these barriers can be alleviated

#### **Oral Surgery and Oral Medicine relevant to Primary Dental Care (Reference to syllabus 1.5)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of, the basic principles of management required for the assessment and diagnosis of the oral hard and soft tissue lesions in a primary dental care environment
- Demonstrate an understanding and the clinical skills required in relation to non-surgical and surgical tooth extractions, the potential complications and the treatment of dento-alveolar trauma, in a primary dental care environment
- Demonstrate an understanding of the appropriate referral of patients for specialist care in accordance with good practice protocols
- Demonstrate an understanding of the diseases of the oral mucosa, including infections, swellings, pigmentation, ulceration, dermatoses, pre-cancerous lesions and neoplasm, including the presentations of squamous and basal cell carcinomas as well as the principles of clinical management
- Demonstrate knowledge of the diseases of the salivary glands , including functional, infective, autoimmune and neoplastic diseases and an outline of the principles of clinical management



- Demonstrate an understanding of the diseases of the bone and the jaws, including odontogenic cysts, tumours, fibro-osseous lesions, endocrine and metabolic disorders
- Demonstrate knowledge of the orofacial manifestations of systemic diseases including the metabolic consequences of trauma and surgery
- Explain trauma in relation to dento-alveolar trauma, mid-face trauma, mandibular fracture and zygomatic fracture, and be able to demonstrate an understanding of the appropriate referral protocols
- Demonstrate knowledge of the surgical aspects of implant dentistry including the diagnosis, treatment planning, augmentation of bone and how to make an appropriate referral

#### **Orthodontics relevant to Primary Dental Care (Reference to syllabus 1.6)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of the management of the developing dentition, including the aetiology of malocclusion, diagnosis and treatment planning
- Demonstrate an understanding of the application of common removable, fixed and functional orthodontic appliances, their indications and the underpinning techniques used in the management of malocclusion, including the clinical indications of Interceptive Orthodontics
- Demonstrate knowledge of the orthodontic/restorative/surgical interface
- Demonstrate an understanding of the duty of care that primary care dentists have in the management of malocclusion including the making the appropriate referrals

#### **Biomaterials (Reference to syllabus 1.7)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of and be able to explain, identify and appropriately apply the knowledge in relation to dental materials: their physical properties and biocompatibility, the applications and limitations of dental materials in relation to clinical dentistry
- Demonstrate how materials science can be applied clinically in respect of direct restorative materials, including resin composites, amalgams, glass-ionomer cements
- Demonstrate an understanding of the clinical applications of materials involved in the fabrication of indirect restorations, including dental stone, impression materials, common luting agents, metals and alloys and ceramics.
- Demonstrate an understanding of the principles of adhesive dentistry

#### **Therapeutics Relevant to Dentistry (Reference to syllabus 1.8)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of the clinical use of antimicrobial, antifungal and antiviral agents,
- Demonstrate knowledge of the mediators of pain and inflammation, peripherally and centrally acting analgesics and anti-inflammatory agents.
- Demonstrate an understanding of the principles and the clinical use of local anaesthetic agents, including the methods of delivery
- Demonstrate an understanding of the use of intravenous and inhalation sedation, including patient assessment and demonstrate knowledge of how to refer, when required

- Understand the principles and the appropriate management in relation to the use of coagulants and anti-coagulants
- Demonstrate an understanding of the basic principles of drug dosage, administration, distribution, metabolism and excretion of drugs as well as the side effects of drugs and drug interactions in dentistry
- Demonstrate knowledge of prescribing in dentistry and its legal implications
- Demonstrate an understanding of the treatment of systemic pathology relevant of the practice of dentistry
- Demonstrate knowledge of the dental implications of the misuse of drugs, abuse and addiction
- Demonstrate an understanding of the dental management of medically compromised patients (including those with basic neurological and psychological conditions, organ transplant, impact of radiotherapy/chemotherapy on the dental health of head and neck cancer and the general oncology patient)

### **Radiology and Radiation Protection (Reference to syllabus 1.9, 2.3)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of the radiological anatomy of the head and neck with a particular emphasis on the maxilla, mandible and the teeth and the basic principles of alternative imaging systems, including CT and cone-beam CT
- Demonstrate knowledge of the regulatory compliance with current legislations and guidelines, the use of conventional and digital radiographic systems and the interpretation of images
- Demonstrate an understanding of compliance with radiation safety and protection, including the principles of protection, justification, optimisation and limitations of exposure
- Demonstrate the effective use of clinical audit in relation to radiation in dentistry

### **Clinical Application of Relevant Biological Sciences in Relation to the Practice of Dentistry (Reference to syllabus 1.8, 1.10)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of physiology as applied to the practice of clinical dentistry
- Demonstrate an understanding of, and skills to record and interpret, a patient's medical and dental history to formulate the appropriate care plan in order to optimise the outcome of patient care
- Demonstrate an understanding of the physiological principles underlying: cardiovascular physiology, fainting; blood: haemopoiesis, constituents, clotting and bleeding; the general principles of respiratory physiology and cyanosis; metabolism of glucose and diabetes; the interpretation of blood test results and their relevance to the practice of dentistry
- Demonstrate an understanding of the basic scientific principles in relation to the salivary glands in function, including the composition of saliva and gingival crevicular fluid.
- Demonstrate an understanding of the mechanisms of neurotransmission and the physiological action of anaesthetic agents, neurotransmitters and psychotropic medication; the autonomic nervous system, nerve damage and repair, mechanisms of pain perception and pain control, oral sensory perception; the control of jaw posture and

movement

- Demonstrate an understanding of mastication and swallowing, vomiting and coughing in relation to the practice of clinical dentistry
- Demonstrate an understanding of tooth morphology in relation to clinical practice, the characteristics of a functional occlusion in the natural dentition; and the description of the border movements of the mandible.
- Understand the temporo-mandibular-joint, its structure, function, common disorders and an outline of its management

### **The Relevant Biological Sciences (Reference to syllabus 1.10)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of applied anatomy as it relates to the practice of clinical dentistry; techniques and anatomical basis of local and regional anaesthesia
- Describe the blood supply, venous and lymphatic drainage of the head and neck; the facial and masticatory muscles; muscles of the tongue, floor of the mouth and soft palate; the cranial nerves, particularly III, IV, V, VI, VII, IX, X, XI and XII; the larynx, trachea and thorax particularly in relation to resuscitation and life support.
- Describe the relevance of the following structures and their application to oral disease and patient management: the salivary glands; the paranasal air sinuses; the principal tissue spaces and spread of infections from the teeth, tonsils and skin in the head and neck region; the developing teeth and supporting structures
- Demonstrate an understanding of dental and oral histology including tooth movement and age changes; the developmental disorder of teeth and dental tissues; the oral manifestations of autoimmune diseases with an emphasis on the management of the immune-compromised patients; inflammation and the development of oedema; and the principles of identification of oral micro-organisms and their role in oral health and disease
- Describe the aetiologies and clinical features of benign and malignant tumours with an emphasis on the clinical applications in the practice of dentistry
- Explain and be able to apply to the practice of clinical dentistry, the relevance of an understanding of anaphylactic shock and acute allergic reactions; acute respiratory disease, asthma and laryngeal obstruction; other respiratory disease and respiratory failure
- Demonstrate an understanding of diseases of the blood including diseases of red and white blood cells; and anaemia
- Demonstrate an understanding of the physiology of thrombosis, ischaemia and infarction; haemorrhage and shock; cerebrovascular haemorrhage and stroke; angina, myocardial infarction and cardiac arrest; infective endocarditis and bacteraemia; heart failure; hepatitis, cirrhosis and liver failure, but only as so far as they are relevant to the practice of dentistry
- Demonstrate knowledge of neurological conditions including neuralgia, palsies, epilepsy, migraine, Multiple Sclerosis, Parkinson's disease and dementia
- Demonstrate knowledge of HIV and related infections, particularly their oral manifestations and the effective management of these patients in the practice of dentistry
- Demonstrate an understanding of the aetiology and management of the diabetic patient including acute hypoglycaemia, diabetic coma and the control of blood sugar

**Systemic Conditions Relevant to The Practice of Dentistry (Reference to syllabus 1.8, 1.10)**

Notwithstanding the section above, on successful completion of this module, the student will be able to:

- Demonstrate understanding of the management of the following categories of patients when they undertake dental treatment so that their medical risks are minimised: the cardiac patient; the diabetic patient; patients on Bisphosphonate therapy and the osteoporotic patient; the respiratory compromised patient including those with asthma; the immune-compromised patient and patients on anticoagulant therapy

**Evaluation of Scientific Literature (Reference to syllabus 1.11)**

On successful completion of this module, the student will be able to:

- Demonstrate knowledge of and the application of basic statistical methods used in the scientific literature related to the practice of dentistry
- Demonstrate the ability to interpret the scientific literature relevant to dental practice and evaluate the appropriateness of the investigations undertaken
- Demonstrate knowledge of the clinical relevance of evidence-based scientific literature

**2. Para Clinical Skills****Integrated Total Patient Care and Teamwork (Reference to syllabus 2.1, 2.5)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding of a multi-disciplinary and integrated approach to patient care; organising and integrating all aspect of care in order of priority and sequence in accordance with the best interests of the patient
- Understand and be able to explain the provision of continuing care for patients appropriate to their needs and expectations; be able to demonstrate how to take into account all the clinical and non-clinical factors when arriving at the optimal care plan for the patient
- Describe, explain and demonstrate the concept of the entire dental team , including dentists, dental nurses, therapists, hygienists, receptionists, dental technicians, administrators, funding bodies; working together in an integrated approach to deliver integrated total patient care
- Explain the practical application of knowledge in relation to the concept of team care and team training in delivering total patient care including the concept of team communication
- Demonstrate the making of appropriate referrals and writing prescriptions when required

**Infection Prevention and Control (Reference to syllabus 2.2)**

On successful completion of this module, the student will be able to:

- Demonstrate how to discharge the dentist's duty of care in relation to maintaining the required standard of cross infection control
- Demonstrate the effective use of hand-washing techniques; personnel protection equipment; aspirations and ventilation of healthcare premises; training of staff; needle stick injuries prevention and management including post-exposure management protocols

- Demonstrate knowledge of immunisation requirements
- Demonstrate knowledge and its application in standard universal precautions for all including the use of protection equipment and cross infection control protocols
- Demonstrate knowledge of risk assessments, clinical audit, team training and management of cross infection control
- Demonstrate knowledge of the practical application of the management of healthcare wastes (segregating, packaging, storage and disposal) in accordance with legislations
- Demonstrate knowledge of the correct handling and disposal of needles and sharps in accordance with contemporary protocols
- Demonstrate knowledge of the management of blood spillages in accordance with contemporary protocols
- Demonstrate the maintenance of an aseptic working environment and the use of disinfectants in surface cleaning
- Demonstrate the effective decontamination of impressions and prosthetic appliances in accordance with contemporary protocols
- Demonstrate knowledge of how to reduce the risks of water supply contamination and maintenance of dental units waterline
- Demonstrate effective cleaning, decontamination, sterilisation and storage of equipment and instruments in accordance with evidence-based good practice
- Demonstrate knowledge of practical transmission based precautions, particularly for the at risk patients
- Demonstrate knowledge of airborne precautions, droplets precautions, contact precautions and sterilisation precautions together with the concept of essential cross infection control measures and the best practice measures
- Demonstrate an understanding of the legal and ethical responsibilities for the healthcare professionals in relation to infection prevention and control, including the medical device directive and infection prevention
- Demonstrate knowledge of guidance on infection prevention and control from the appropriate regulatory bodies and the Dental Council in Ireland.

#### **Clinical Record Keeping (Reference to syllabus 2.4)**

On successful completion of this module, the student will be able to:

- Demonstrate an understanding and application of the contemporary protocols in respect of compiling medical and dental records (both electronic and conventional), their contents and the details required; and the disclosure and retention of these records
- Demonstrate the integration of clinical record keeping with risk management and communication skills

#### **Risk Management, Communication Skills and Handling of Complaints (Reference to syllabus 2.6)**

On successful completion of this module, the student will be able to:

- Demonstrate the principles of good practice in relation to risk management in the practice of clinical dentistry and as a means to raise the standard of practice and patient care; the methods for introducing and maintaining sound clinical risk management protocols
- Demonstrate an understanding of and the protocol for handling and managing patient

<p>complaints, and to appreciate the close relationships between good communication skills and effective risk management</p> <ul style="list-style-type: none"> <li>• Demonstrate the skills in identifying the elements of and how to compile and maintain a practice safety statement together with a risk register where applicable</li> <li>• Demonstrate the appropriate skills in relation to effective communications with patients, their relatives and fellow health care colleagues, in particular the management of complaints in line with the Dental Council guidelines</li> </ul>
<p><b>Ethical and Legal Issues (Reference to syllabus 2.7)</b></p> <p>On successful completion of this module, the student will be able to:</p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding of and the conformance with the legal requirements for the practice of dentistry, with particular emphasis on the law in relation to consent for dental treatment; clinical negligence and professional indemnity for the dental profession; the dentist as an employer; the use and limitations of medico-legal reports; data protection obligations for the healthcare professionals</li> <li>• Explain and apply the knowledge in relation to the management of a dental practice</li> <li>• Demonstrate understanding of the ethical guidance issued by the Dental Council in Ireland</li> </ul>
<p><b>Governance and Audit (Reference to syllabus 2.8)</b></p> <p>On successful completion of this module, the student will be able to:</p> <ul style="list-style-type: none"> <li>• Demonstrate an understanding of the components of clinical governance in relation to maintaining standards and compliance with the relevant clinical governance requirements</li> <li>• Illustrate the practical application of clinical audit, its values, functions, applications, and the components of a clinical audit cycle</li> <li>• Understand and be able to appreciate the role clinical audit plays in maintaining and enhancing standards as well as in achieving quality improvement</li> <li>• Demonstrate a commitment to continuing professional development and lifelong learning.</li> </ul>
<p><b>Medical Emergencies (Reference to syllabus 2.9)</b></p> <p>On successful completion of this module, the student will be able to:</p> <ul style="list-style-type: none"> <li>• Demonstrate knowledge and competency in the prevention, identification and management of medical emergencies in the practice of clinical dentistry, in particular, basic life support; cardiac arrest and myocardial infarction; syncope and postural hypotension; hyperventilation; the diabetic patient; the asthmatic patient, the epileptic patient; management of anaphylactic shock and other allergic reactions ; haemorrhage and shock</li> <li>• Demonstrate competency with the appropriate use of emergency drugs, the handling other medical emergencies the dentist may face in the practice of clinical dentistry; Demonstrate leadership of the dental team in managing medical emergencies</li> <li>• Illustrate and demonstrate the undertaking of the cycle of training required to maintain medical emergencies skills for the dental team, including the development of a practice emergency protocol</li> </ul>
<p><b>Behavioural Science and Patient Management (Reference to syllabus 2.10)</b></p> <p>On successful completion of this module, the student will be able to:</p>

- Demonstrate an understanding of behavioural management and patient management skills and be able to explain the role that patient management has in the development of the dental practice
- Demonstrate competencies in communicating, monitoring, supporting and reassuring patients through effective communication and relevant behavioural techniques
- Demonstrate how to communicate effectively and sensitively with patients, their relatives or carers and fellow dental professionals
- Demonstrate how to communicate appropriately with colleagues from the dental and other healthcare professions in relation to the direct care of individual patients
- Demonstrate the use of a range of communication methods and technologies and their appropriate applications to support the clinical practice of dentistry

#### **Dental and Public Health (Reference to syllabus 2.11)**

On successful completion of this module, the student will be able to:

- Describe, explain and identify the issues involved in health planning, allocation of resources and the respective dilemmas faced in the provision of dental healthcare in primary care, community care and secondary care
- Demonstrate an understanding of the principles of oral health promotion, communication and disease prevention
- Explain the role of healthcare workers and the place of dentistry in the provision of healthcare
- Demonstrate an understanding of and the role that oral health plays in, maintaining general health
- Demonstrate an understanding of the impact of general health on oral health as an indicator of systemic disease
- Demonstrate an appreciation of the role of the dental health professional as an advocate for oral health

# **Membership of the Faculty of Dentistry**

## **Syllabus**

### **Introduction**

The Diploma of Membership of the Faculty of Dentistry is awarded by the Royal College of Surgeons in Ireland following success in the above examination. This examination is designed to be an assessment of the basic knowledge, understanding and experience of dentistry, which is expected of individuals completing a period of General Professional Training. When associated with a suitable broad clinical training, the MFD will be a marker that can identify those dentists with a knowledge, understanding and experience of the clinical practice and science of dentistry sufficient to enter formal training in one of the dental specialties.

Candidates will be expected to have a sound basic knowledge and understanding of applied anatomy, physiology, and biochemistry sufficient to interpret the effects of common dental diseases and injuries on the systems of the body especially, but not exclusively, in the head and neck. They are expected to have a good understanding of cell biology and applied histology which enables them to understand the normal and disordered function of dentally important tissues and organs. A detailed knowledge of embryology is not required but the pathogenesis of common developmental abnormalities important in dentistry will be examined. A working knowledge of the therapeutic actions and toxic effects of drugs commonly used, in particular in the treatment of dental conditions, will also be required. Candidates must have an understanding of applied general pathology including the principles of immunology and microbiology that are relevant to dental practice.

No syllabus can be comprehensive. The list which follows is not intended to be proscriptive but to give candidates a guide to the topics which may be included in the examination. It is important to remember that the MFD is not a specialist examination and that the level of knowledge expected in any area of the syllabus will be that which could be reasonably expected from a dentist in training who has recently completed an appropriate period of general professional training.



# Membership of the Faculty of Dentistry

## Syllabus

### Section 1 The Scientific Basis of Clinical Dentistry

#### 1.1 Biological Basis of Clinical Practice

##### 1.1.1 Craniofacial Biology

- The notochord, neural tube and neural crest.
- Branchial (pharyngeal) arches and grooves, pharyngeal pouches, and their derivatives.
- Development and growth of the skull, mandible, palate, tongue and thyroid gland.
- Craniofacial malformations including developmental cysts, clefts and relevant syndromes.
- The histology of epithelium, general connective tissue, cartilage and bone.
- The histology of skin.
- Wound healing in bone and soft tissues.

##### 1.1.2. Applied Physiology

- General principles of cardiovascular physiology.
- Fainting.
- CPR.
- Constituents of blood.
- Haemopoiesis.
- Clotting and bleeding.
- General principles of respiratory physiology.
- Oxygen carriage.
- Cyanosis and its significance.
- Calcium and phosphorus metabolism; fluoride; mineralization.
- Hormones in control of growth, metabolism and the major body systems; metabolism of glucose.
- Structure and function of the salivary glands.
- Composition of saliva and gingival crevicular fluid, and their role in oral health and disease.
- Mechanism of nerve conduction, neuromuscular transmission and the action of anaesthetic agents.
- Neurotransmitters and psychotropic medication.
- The autonomic nervous system.
- Nerve damage and repair.
- Mechanisms of pain perception and pain control.
- Oral sensory perception: the nature and distribution of sensory receptors in the mouth.
- The control of jaw posture and movement.
- Mastication and swallowing. Vomiting and coughing.

##### 1.1.3. Applied Anatomy

- Blood supply, venous and lymphatic drainage of the head and neck.
- The facial and masticatory muscles and those of the tongue, the floor of mouth and the soft palate.

- The cranial nerves, especially **III, IV, V, VI, VII, IX, X, XI and XII**.
- Local and regional anaesthesia: techniques and their anatomical basis
- The anatomy of the larynx and trachea, and of the thorax in relation to resuscitation.
- The paranasal air sinuses.
- The salivary glands.
- Principal tissue spaces and the spread of infection from the teeth, tonsils and skin in the head and neck.
- Radiological anatomy of the head and neck, and especially of the jaws and teeth.

#### **1.1.4. Dental Anatomy**

- The development of the teeth and supporting tissues.
- Dental and oral histology and their clinical applications, including tooth movement and age changes.
- Developmental disorders of the teeth and the dental hard tissues.
- Tooth morphology.
- Chronology of dental development and tooth eruption.
- The mechanism of non-carious tooth surface loss: attrition, abrasion and erosion.
- Forensic aspects including age estimation and identification from dental records.
- Functional occlusion in the natural dentition.
- The border movements of the mandible.
- The temporomandibular joint: its structure, function and common disorders.

### **1.2      Features and Management of Local and Systemic Diseases of Dental Relevance**

#### **1.2.1. Principles of Pathology**

- Anaphylactic shock and acute allergic reactions.
- Immune system and autoimmunity.
- Inflammation, protein synthesis and the development of oedema.
- Aetiology and clinical features of benign and malignant tumours.
- Oral micro-organisms: principles of identification and their role in oral health and disease.

#### **1.2.2. Clinical Pharmacology**

- Antimicrobial agents: mode of action, toxicity, resistance.
- Mediators of pain and inflammation, peripherally and centrally acting analgesics, anti-inflammatory agents.
- Local anaesthetic agents and vasoconstrictors.
- Intravenous and inhalation sedation.
- Coagulants and anticoagulants.
- Basic principles of drug dosage and the administration, distribution, metabolism and excretion of drugs.
- Side effects of drugs, drug interactions especially in dentistry.
- Prescribing and legal implications; misuse of drugs: abuse and addiction.
- Drug addiction: acute withdrawal symptoms.
- Therapeutic use of hormones.
- The dental management of medically compromised patients, including those with basic neurological and psychological conditions and organ transplant patients.
- The impact of radiotherapy +/- chemotherapy on the dental health of “head & neck” cancer and general oncology patients.
- Medical emergencies in dental practice and their management.

### **1.2.3. Pathology of the Orofacial Region**

- Diseases of the oral mucosa: infections (bacterial, viral and fungal), swellings, pigmentation, ulceration, dermatoses, precancerous lesions, neoplasms.
- Diseases of salivary glands: functional, infective, autoimmune and neoplastic.
- Squamous and basal cell carcinomas.
- Diseases of bone, especially of the jaws, including infections, cysts, neoplasms, fibro-osseous lesions, endocrine and metabolic disorders.
- Diseases of paranasal air sinuses.
- Orofacial manifestations of systemic diseases.

### **1.2.4. Systemic Pathology**

- Acute respiratory distress, asthma and laryngeal obstruction.
- Respiratory disease: chronic, obstructive and infective.
- Respiratory failure.
- Diseases of red and white blood cells.
- Anaemia
- Thrombosis, ischaemia and infarction.
- Haemorrhage and shock including causes and management.
- Cerebrovascular haemorrhage and stroke.
- Angina, myocardial infarction, cardiac arrest.
- Infective endocarditis and bacteraemia, including prophylaxis.
- Heart failure.
- Viral hepatitis, cirrhosis and liver failure.
- Neurological conditions including neuralgia, palsies, epilepsy, migraine, Parkinson's disease, dementia.
- HIV and related infections.
- The diabetic patient, acute hypoglycaemia and diabetic coma; the control of blood sugar.

## **1.3 The Scientific Basis of Dental Practice**

### **1.3.1. Behavioural Science**

- Psychological principles of behaviour management.
- Pharmacological and non-pharmacological management of behavioural problems.
- Basic concepts of personality, psychological and psychiatric disorders, especially as they present as dental problems *e.g.* facial pain, disturbances of sensation and altered self-image.

### **1.3.2. The Dental Practice**

- Dental materials: their physical properties, biocompatibility and applications.
- Disinfection and sterilisation; control of cross infection.
- Conventional radiographic systems, indications for use and the interpretation of images.
- Basic principles of alternative imaging systems (CT, MRI and ultrasound).
- Radiation protection: principles of protection, monitoring and basic radiation science.

### **1.3.3. Audit, Epidemiology and Preventive Dentistry**

- Basic statistics.
- Principles of audit and the importance of evidence-based dentistry

- Clinical trial design and analysis.
- Epidemiology of dental and oral diseases.
- Basic principles of prevention of oral diseases including diet, oral hygiene and fluoridation.

## **Section 2 Clinical Dentistry**

### **2.1. Endodontics**

- Endodontic diagnosis
- Pulpal and periapical pathology
- Root canal anatomy
- Indications for Endodontic treatment
- Access to the root canal system
- Endodontic treatment procedures
- Endodontic preparation techniques
- Endodontic obturation techniques
- Endodontic re-treatment
- Management of traumatised teeth
- Endodontic Periodontal interface
- Endodontic Implant interface
- Surgical Endodontics

### **2.2. Periodontology**

- Dental plaque: its formation, composition and metabolism.
- Mechanical and chemical plaque control.
- Periodontal examination and diagnosis.
- The pathogenesis of periodontal disease.
- Therapeutic agents in the control of periodontal disease.
- Basic periodontal surgery.
- Crown lengthening surgery
- Regenerative periodontal surgery
- Periodontal disease in children and young adults
- Periodontal endodontic interface
- Periodontal Systemic disease interface
- Systemic disease and the periodontium
- Dental Implant placement (surgical aspects)
- Soft and hard tissue grafting

### **2.3. Prosthodontics (including operative Dentistry)**

- Dental caries: causes, diagnosis and the influence of diet, fluoride and restorative care.
- Therapeutic agents in the control of caries.
- The management of non-carious tooth surface loss: attrition, abrasion and erosion.
- Tooth discoloration and bleaching.
- Principles of restorative treatment planning.
- Principles of intra- and extra-coronal restoration of teeth.
- Functional occlusion in fixed and in removable prostheses.
- Complete and partial dentures: their design, construction and maintenance.
- Implant based restorations.

#### **2.4. Orthodontics**

- Management of the developing dentition
- Aetiology of malocclusion.
- Diagnosis and treatment planning
- Common appliances / techniques used in the management of malocclusion.
- The role of the general dental practitioner in the management of malocclusion.
- The Orthodontic/Restorative/Surgical interface.

#### **2.5. Oral Surgery**

- Dento-alveolar trauma, mandibular and zygomatic fractures
- Principles of management of salivary gland disease
- Surgical tooth extractions and important complications.
- Metabolic consequences of trauma and surgery.
- Minor soft tissue surgery
- Principles of management of salivary gland disease.
- Biopsy techniques
- Odontogenic cysts and their management.
- Differential diagnosis of oro-facial pain including pain of non-dental origin.
- Implant surgery

#### **2.6 Paediatric Dentistry**

- Infant oral healthcare prevention.
- Paediatric periodontal problems.
- Optimum fluoride therapy.
- Behaviour management of children in the dental setting.
- Guidelines for the use of sedation and general anaesthesia in children.
- Diagnosis and treatment planning for the paediatric dental patient.
- Paediatric restorative dentistry.
- Pulp therapy in the primary dentition
- Management of the developing dentition in paediatric patients.
- Space maintenance.

#### **2.7. The Principles of Professional and Ethical Practice**

- The law in relation to the practice of dentistry
- The law in relation to consent for dental treatment.
- Medical and dental records: their content, the legal aspects of disclosure, data protection and freedom of information.
- Medico-legal reports.
- Clinical negligence and professional indemnity for the dental profession.
- Managing patient's complaints.
- The dentist as employer.
- Dental practice management.
- Communication with patients, relatives and health care colleagues.
- Clinical Governance.

<p><b>The syllabus is provided to indicate the areas of knowledge which are expected of candidates.</b> It is not intended to be exhaustive or to exclude other topics which are of similar relevance.</p>
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## Membership in General Dental Surgery

### Scope of Examination

The scope of the examination is broad and covers all aspects of general dental practice. No syllabus can be comprehensive and the list that follows is not intended to be prescriptive but to give candidates a guide to the scope of the examination. Both theoretical and practical knowledge in respect of the following non-exhaustive headings will be expected.

1. **Clinical Application of basic dental and medical sciences:** demonstrating and applying a sound knowledge of the basic sciences relevant to the examination, diagnosis, treatment planning and treatment of patients in general dental practice, including the impact of underlying medical conditions, psycho-social factors and past dental history on their dental care
2. **Preventive Dentistry:** integrating the concept of active disease prevention into general dental practice including preventive care in relation to caries, periodontal disease, tooth surface loss and dental health education.
3. **Clinical dentistry:** a level of expertise consistent with at least 3 years post –qualification in the practice of all aspects of clinical dentistry.
4. **Biomaterials:** clinical performance of dental materials available for use in the oral environment, including rationale for particular choices, alternatives and their limitations.
5. **Emergencies in dental practice:** Medical emergencies in dental practice including cardio-pulmonary resuscitation. The management of acute dental emergencies and the overall management of the emergency patient.
6. **Management of Special Care Patients:** including the individuals with special needs, medically compromised and elderly patients.
7. **Medical ethics and medico-legal responsibilities:** knowledge of professional ethics, jurisprudence and regulations pertaining to the practice of general dentistry.
8. **Therapeutics:** Principles of applied pharmacology in dentistry, prescribing in dental practice including a thorough understanding of the contra-indications and side effects of relevant medications and how they may affect the provision of dental care.
9. **Radiology:** knowledge of radiology, radiation hazards, principles of safe and effective imaging, the effects of ionising radiation in clinical practice including radiation protection, monitoring and dose reduction.
10. **Practice management and personnel issues:** understanding of the socio-economics of providing dental care, communication skills, information management, clinical record keeping, clinical audit including the audit cycle , quality assurance, strategic planning in the practice environment, the mechanics of practice management, cost efficiency, selection and management of staff, delegation, motivation and supervision of dental auxiliaries, and maintenance of standards of laboratory work.

11. **Health and safety:** The knowledge, and where applicable, implementation of best practice regarding all health and safety issues relating to the practice of general dentistry including implications of COVID-19 with its physical & psychological effects on clinicians, staff, patients and specifically for the safe management of general dental practice. Constant monitoring review and update of workplace guidance related to the practice of dentistry including heating, air-conditioning and ventilation relevant to SARS-CoV-2.
12. **Dental literature:** knowledge of relevant current literature from which contemporary best practice is based and an ability to evaluate relevant scientific reports.
13. **Epidemiology & Research:** knowledge of how frequently oral or dentally related diseases occur in different groups of population and why, including plans and strategies to prevent such occurrences.