

## COMPETENCIES OF NEW DENTAL GRADUATES, MALAYSIA

A **dental surgeon at graduation** need to be ready to contribute to the general health of the population by being capable of providing basic dental treatment independently and implement and promote appropriate oral health management to his/her patients and communities in a culturally sensitive manner. A dental surgeon is expected to acquire this ability through a formal structured course at a tertiary institution and be a competent dental practitioner by the time he or she received his or her first professional dental degree.

Competency assumes that all decisions, tasks and behaviors' carried out are supported by sound knowledge and skills in biomedical, behavioral and clinical dental science and in an ethical and professional manner as spelled out in the Code of Professional Conduct of the Malaysian Dental Council. Competences should support integration and merging of all disciplines, which should benefit dentists in training and also patients who are receiving treatment

Upon graduation, students should have the following outcomes:-

1. **Possess scientific knowledge to support the practice of dentistry.** (Cognitive)
2. **Demonstrate clinical skills to practice dentistry independently.**( Psychomotor)
3. **Demonstrate teamwork skills in managing oral health care for individuals and community.** (Psychomotor & Affective)
4. **Display ethical values and professionalism in practicing dentistry within the confines of the laws governing the profession.**  
(Psychomotor & Affective)
5. **Communicate effectively with peers in the dental and other health professions, patients and community.** (Psychomotor & Affective)
6. **Appraise and apply current scientific information and techniques in the practice of dentistry.** (Psychomotor)
7. **Display skills for lifelong learning and continuing professional development.** (Psychomotor)
8. **Display entrepreneurial skills in the management of dental practice.** (Psychomotor)

The dental graduate is expected to achieve the following competencies on completion of a basic dental degree programme.

## **Domain 1: Knowledge**

### **PO1: Possess scientific knowledge to support the practice of dentistry. (Cognitive)**

1. **Explain the interactions between general health, oral health, nutrition, drugs and diseases that can have an impact on dental care. (C2)**
2. **Apply the principles of oral health promotion and disease prevention. (C3)**
3. **Relate basic structure and functions of the human body at organ, tissue, cellular and molecular levels to the practice of dentistry. (C2)**
4. **Explain the etiology & pathogenesis of systemic conditions & disease processes such as inflammation, infection, disorders of the immune system, degeneration, neoplasia, metabolic disturbances and genetic disorders affecting the human body including orofacial region. (C2)**
5. **Distinguish the signs and symptoms of orofacial diseases and related systemic conditions. (C4)**
6. **Explain normal and abnormal orofacial development. (C2)**
7. **Explain radiographic techniques and radiation safety in the practice of dentistry. (C2)**
8. **Select relevant investigative procedures to aid the diagnosis and management of common oral diseases. (C4)**
9. **Explain the pharmacotherapeutics of drugs commonly used in dentistry. (C2)**
10. **Apply the principles of occlusion and its significance in the management of various orofacial diseases and conditions. (C3)**
11. **Select local anaesthetic procedures in the management of pain during dental treatment. (C4)**
12. **Explain sedation and general anaesthetic procedures in the control of pain related to dentistry. (C2)**
13. **Explain cranio-facial form and relationships, including evidence of deviation from the norm. (C2)**
14. **Explain the concepts of dento-facial aesthetics and its application. (C2)**
15. **Differentiate the principles of restoration and replacement of primary and permanent dentition. (C4)**
16. **Identify the treatment needs of various target groups including special needs and geriatrics. (C1)**
17. **Apply principles and methods of sterilization, disinfection and antisepsis to prevent cross-infection in clinical practice. (C3)**
18. **Demonstrate the influence of behavioral, social and environmental factors in the delivery of oral health care. (C3)**

19. **Justify the selection of dental materials based on the science and applications as well as their limitations and related environmental issues.(C4)**
20. **Apply basic principles of exodontia and minor oral surgical procedures. (C3)**
21. **Explain the methods of prevention and management of common medical and dental emergencies.(C2)**

## **Domain 2: Practical and Clinical Skills**

### **PO2: Demonstrate clinical skills to practice dentistry independently**

1. **Demonstrate the prevention methods of common orofacial diseases and conditions based on scientific evidence. (P4)**
2. **Demonstrate health promotion skills (P4)**
3. **Perform appropriate methods of infection control in clinical practice.(P5)**
4. **Display the ability to obtain and record relevant medical, dental and social history.(P5)**
5. **Perform clinical examinations, intraoral radiographic and other necessary investigations relevant to the practise of dentistry. (P5)**
6. **Integrate findings of a comprehensive examination to make a diagnosis. (P5)**
7. **Formulate an appropriate treatment plan based on clinical examinations and investigations.(P5)**
8. **Perform simple restorative procedures in primary and permanent dentition including pulp management of single rooted teeth.(P5)**
9. **Perform complex restorative procedures in primary and permanent dentition including onlays, single crowns, short span bridges and root canal therapy of uncomplicated multirooted teeth. (P4)**
10. **Construct simple prostheses for replacement of missing dentition. (P5)**
11. **Perform non-surgical management of periodontal conditions.(P5)**
12. **Perform Basic Life Support in the management of medical emergencies in dental practice. (P4)**
13. **Manipulate commonly used dental materials in dental practice.(P5)**
14. **Perform administration of local and topical anaesthesia and management of their potential complications.(P5)**
15. **Perform simple oral surgical procedures including exodontia. (P5)**
16. **Perform simple orthodontic treatment including removable appliances. (P4)**
17. **Display the ability to prescribe and advise the use of common pharmaceutical agents related to dentistry.(P5)**

### **Domain 3: Social Skills, Teamwork and Responsibility**

**PO3: Demonstrate teamwork skills in managing oral health care for individuals and community (Psychomotor & Affective)**

1. Display skills in implementing preventive measures for individuals and community according to the risk assessment. (P4,A2)
2. Perform patient care by taking into consideration their intellectual and socio-emotional characteristics. (A3)
3. Display ability to engage patient and/or their parents, guardians or care givers in their oral health care. (P3,A2)
4. Display the ability to lead or contribute as team member. (P3,A2)

### **Domain 4: Values, Ethics, Moral and Professionalism**

**PO4: Display ethical values and professionalism in practicing dentistry within the confines of the laws governing the profession. (Cognitive, Psychomotor & Affective)**

1. Comprehend the Code of Professional Conduct from the Malaysian Dental Council. (C2)
2. Comprehend the laws and regulations related to the practice of dentistry in Malaysia. (C2)
3. Explain the role and function of professional organizations and regulatory bodies. (C2)
4. Describe the professional duties of care in dentistry in line with the Patients' Charter. (C1)
5. Follow the requirements for informed consent and confidentiality of patient record. (P3,A2)
6. Demonstrate ethical values and professional behaviour towards patients, members of the dental team and other healthcare personnel. (A3)
7. Recognize the limitations of their clinical skills and refer accordingly. (P4, A3)

## **Domain 5: Communication Skills and Interpersonal Relationships**

**PO5: Communicate effectively with peers in the dental and other health professions, patients and community. (Psychomotor & Affective)**

1. **Display good doctor-patient relationship in the delivery of oral health care.(P4)**
2. **Identify patients' expectations, demands, needs and attitude with regards to oral health care. (P4,A2)**
3. **Display effective communication with the dental team, patients, and other health care personnel to facilitate the delivery of oral health care.(P4)**
4. **Perform an appropriate referral of a patient based on professional judgment. (P5)**

## **Domain 6: Critical Thinking & Scientific Skills**

**PO6:Appraise and apply current scientific information and techniques in the practice of dentistry.(Cognitive & Affective)**

1. **Apply clinical reasoning skills in decision making for oral health care delivery.(C4,A3)**
2. **Apply evidence-based approach in the practice of dentistry.(C3,A2)**

## **Domain 7:Continuing Professional Development and Lifelong Learning**

**PO7: Display skills for lifelong learning and continuing professional development.(Psychomotor)**

1. **Recognize the resources for lifelong learning. (C4)**
2. **Demonstrate ability to acquire knowledge and scientific evidence. (P4)**

## **Domain 8:Managerial & Entrepreneurial Skills**

**PO8:Display entrepreneurial skills in the management of dental practice. (Cognitive& Psychomotor)**

1. **Explain concepts in planning and management of general dental practice in compliance with relevant regulations, policies and protocols.(C2)**
2. **Explain the principles of managing oral health care programme.(C2)**
3. **Organize a community programme to improve the oral health of the public. (P4)**

# Performance Standards

Based on five-point Bondy rating scale

As of 20<sup>th</sup> May 2012

No.	Programme Outcomes (PO)	Competencies		Learning Level(Bloom's Taxonomy)	Performance Level(Five-point Bondy rating scale)
		No.	Description		
PO1	Possess scientific knowledge to support the practice of dentistry. <i>(Cognitive)</i>	1	Explain the interactions between general health, oral health, nutrition, drugs and diseases that can have an impact on dental care.	C2	
		2	Apply the principles of oral health promotion and disease prevention	C3	
		3	Relate basic structure and functions of the human body at organ, tissue, cellular and molecular levels to the practice of dentistry	C2	
		4	Explain the aetiology & pathogenesis of systemic conditions & disease processes such as inflammation, infection, disorders of the immune system, degeneration, neoplasia, metabolic disturbances and genetic disorders affecting the human body including orofacial region	C2	
		5	Distinguish the signs and symptoms of orofacial diseases and related systemic conditions	C4	
		6	Explain normal and abnormal orofacial development	C2	
		7	Explain radiographic techniques and radiation safety in the practice of dentistry	C2	
		8	Select relevant investigative procedures to aid the diagnosis and management of common oral diseases	C4	
		9	Explain the pharmacotherapeutics of drugs commonly used in dentistry	C2	
		10	Apply the principles of occlusion and its significance in the management of various	C3	

			orofacial diseases and conditions.		
		11	Select local anaesthetic procedures in the management of pain during dental treatment	C4	
		12	Explain sedation and general anaesthetic procedures in the control of pain related to dentistry	C2	
		13	Explain cranio-facial form and relationships, including evidence of deviation from the norm.	C2	
		14	Explain the concepts of dento-facial aesthetics and its application.	C2	
		15	Differentiate the principles of restoration and replacement of primary and permanent dentition	C4	
		16	Explain the treatment needs of various target groups including special needs and geriatrics	C2	
		17	Apply principles and methods of sterilisation, disinfection and antisepsis to prevent cross-infection in clinical practice	C3	
		18	Demonstrate the influence of behavioural, social and environmental factors in the delivery of oral health care.	C3	
		19	Justify the selection of dental materials based on the science and applications as well as their limitations and related environmental issues	C4	
		20	Apply basic principles of exodontia and minor oral surgical procedures	C3	
		21	Explain the methods of prevention and management of common medical and dental emergencies	C2	
PO 2	Demonstrate clinical skills to practice dentistry independently( <i>Psychomotor</i> )	1	Demonstrate the prevention methods of common orofacial diseases and conditions based on scientific evidence	P4	B4
		2	Demonstrate health promotion skills	P4	B3
		3	Perform appropriate methods of infection control in clinical practice	P5	B4
		4	Display the ability to obtain and record relevant medical, dental and social history	P5	B4



		5	Perform clinical examinations, intraoral radiographic and other necessary investigations relevant to the practise of dentistry	P5	B4
		6	Integrate findings of a comprehensive examination to make a diagnosis	P5	B4
		7	Formulate an appropriate treatment plan based on clinical examinations and investigations	P5	B4
		8	Perform simple restorative procedures in primary and permanent dentition including pulp management of single rooted teeth	P5	B5
		9	Demonstrate complex restorative procedures in primary and permanent dentition including onlays, single crowns, short span bridges and root canal therapy of uncomplicated multirooted teeth	P4	B3
		10	Perform simple removable prosthetic procedures for replacement of missing dentition	P5	B4
		11	Perform non-surgical management of periodontal conditions	P5	B4
		12	Demonstrate Basic Life Support (BLS) in the management of medical emergencies in dental practice	P4	B4
		13	Manipulate commonly used dental materials in dental practice	P5	B4
		14	Perform administration of local and topical anaesthesia and management of their potential complications	P5	B4
		15	Perform simple oral surgical procedures including exodontia	P5	B5
		16	Demonstrate simple orthodontic treatment including removable appliances	P4	B3
		17	Display the ability to prescribe and advise the use of common pharmaceutical agents related to dentistry	P5	B4
PO 3	Demonstrate teamwork skills in managing oral health care for individuals and community ( <i>Psychomotor &amp; Affective</i> )	1	Display skills in implementing preventive measures for individuals and community according to the risk assessment	P4, A2	
		2	Demonstrate patient care by taking into consideration their intellectual and socio-emotional characteristics	P4,A3	

		3	Display ability to engage patient and/or their parents, guardians or care givers in their oral health care	P4,A2	
		4	Display the ability to lead or contribute as team member	P4,A2	
PO 4	Display ethical values and professionalism in practicing dentistry within the confines of the laws governing the profession. <i>(Cognitive, Psychomotor &amp; Affective)</i>	1	Comprehend the Code of Professional Conduct from the Malaysian Dental Council	C2	
		2	Comprehend the laws and regulations related to the practice of dentistry in Malaysia	C2	
		3	Explain the role and function of professional organizations and regulatory bodies	C2	
		4	Comprehend the professional duties of care in dentistry in line with the Patients' Charter	C2	
		5	Follow the requirements for informed consent and confidentiality of patient record	P3,A2	
		6	Demonstrate ethical values and professional behaviour towards patients, members of the dental team and other health care personnel	A3	
		7	Recognize the limitations of their clinical skills to refer accordingly	A3	
PO 5	Communicate effectively with peers in the dental and other health professions, patients and community. <i>(Psychomotor &amp; Affective)</i>	1	Display good doctor-patient relationship in the delivery of oral health care	P4, A2	
		2	Demonstrate the ability to respond to patients' expectations, demands, needs and attitude with regards to oral health care	P4,A2	
		3	Demonstrate effective communication with the dental team, patients, and other health care personnel to facilitate the delivery of oral health care	P4, A3	
		4	Perform an appropriate referral of a patient based on professional judgment	P5	
PO 6	Appraise and apply current scientific information and techniques in the practice of dentistry. <i>(Cognitive &amp; Affective)</i>	1	Apply clinical reasoning skills in decision making for oral health care delivery	C3,A3	
		2	Apply evidence-based approach in the practice of dentistry	C3,A3	

PO 7	Display skills for lifelong learning and continuing professional development. <i>(Cognitive &amp; Psychomotor)</i>	1	Recognize the resources for lifelong learning	C1	
		2	Demonstrate ability to acquire knowledge and scientific evidence	P4	
PO 8	Display entrepreneurial skills in the management of dental practice. <i>(Cognitive &amp; Psychomotor)</i>	1	Explain concepts in planning and management of general dental practice in compliance with relevant regulations, policies and protocols.	C2	
		2	Explain the principles of managing oral health care programme.	C2	
		3	Organize a community programme to improve the oral health of the public.	P4	

**Table 2: The five-point Bondy rating scale<sup>3</sup>**

Scale label	Score	Standard of procedure	Quality of performance	Level of assistance required
<b>Independent</b>	<b>5</b>	Safe Accurate Achieved intended outcome Behavior is appropriate to context	Proficient Confident Expedient	No supporting cues required
<b>Supervised</b>	<b>4</b>	Safe Accurate Achieved intended outcome Behavior is appropriate to context	Proficient Confident Reasonably expedient	Requires occasional supportive cues
<b>Assisted</b>	<b>3</b>	Safe Accurate Achieved most objectives for intended outcome Behavior generally appropriate to context	Proficient throughout most of performance when assisted	Required frequent verbal and occasional physical directives in addition to supportive cues
<b>Marginal</b>	<b>2</b>	Safe only with guidance Not completely accurate Incomplete achievement of intended outcome	Unskilled Inefficient	Required continuous verbal and frequent physical directive cues
<b>Dependent</b>	<b>1</b>	Unsafe Unable to demonstrate behavior Lack of insight into behavior appropriate to context	Unskilled Unable to demonstrate behavior/ procedure	Required continuous verbal and continuous physical directive cues
<b>X</b>	<b>0</b>	Not observed		