



Professional competence standards of graduates of baccalaureate dental initial training and education programs in the United Arab Emirates

Introduction

The professional competence standards of graduates of baccalaureate dental initial training and education programs in the United Arab Emirates is developed to be a conceptual tool for use in UAE's undergraduate dental curricula. CAA believes that professional competence is context dependent, therefore the framework identifies five areas of competence to best ensure that UAE dental graduates are competent for patient care deliver and to practice safely in the community. Also, the CAA believes that the professional competency standards do not stand in isolation of other standards, regulations and guidelines governing award-bearing higher education and training programs in the UAE. They are set within the context of the UAE's National Qualifications Framework (*QFEmirates*) and the CAA Standards for Institutional Licensure and Program Accreditation (CAA Standards). Dental programs are required to comply with the CAA Standards, and to be aligned to the *QFEmirates*. They must also comply with additional expectations placed by Ministerial Decrees, including the MoE Ministerial Decree No. 670 for 2020 concerning admission standards for dental programs and CAA Directives such as the CAA Directive of 11 March 2021 concerning dental program admission standards, award titles, curriculum structure and student assessment.

Aim and rationale.

The aim of this document is to set out the professional competencies that must be demonstrated and confirmed to have been attained at threshold level by undergraduate dental students in UAE higher education institutions to qualify for the award of a Bachelor of Dental Surgery (BDS) which

not only leads to eligibility to undertake post-graduation internship training but also leads to licensure as general dental practitioners in the UAE.

The professional competency standards define basic levels of knowledge, skills, and attitudes required of graduates from initial education and training programs. This basic level is sufficient to assure the graduate's preparedness to undertake the duties expected of new graduates in respect of the promotion, assessment, and implementation of oral health and, as applicable, the general health and wellbeing of individuals and communities within the scope of practice defined by the UAE's laws and regulations concerning general dental practice. Each of the competencies must be attained at a level of 'does' according to Miller's pyramids (Miller, 1990) and will typically be assessed through direct observation of workplace-based practice to confirm functional adequacy through action.

Methodology

The professional competence standards of graduates of baccalaureate dental initial training and education programs have been developed as a result of a collaboration between the Ministry of Education (MoE) Commission for Academic Accreditation (CAA), the Deans of UAE Colleges of Dentistry, the Ministry of Health and Prevention (MOHAP) and the MoE National Qualifications Authority (NQA) that included wide consultation with dental education stakeholders including regulators, employers, dental college faculty, students, alumni and advisory boards, and dental practitioners.

The CAA formed a Dental Program Reform Working Group with membership from all UAE Colleges of Dentistry, MOHAP, NQA and the CAA in October 2020 which was tasked to undertake curriculum reform in dental education including the development of the UAE competency framework. Through a face-to-face meeting, all the members of the Working Group developed a clear roadmap (**Annex1**) to outline the main milestones of the professional competence standards development process.

An initial iteration of the professional competency standards for undergraduate programs was developed by this group guided by different international frameworks such as the professional competency's standards of the United Kingdom (GDC, 2017- <https://www.gdc-uk.org/education-cpd/quality-assurance>), Canada (ACFD, 2016- <http://acfd.ca>), the United States (ADEA, 2017- <https://www.adea.org>), Australia (ADC-2016- <https://www.adc.org.au>) and the Association for the Dental Education in Europe (ADEE, <https://www.adee.org/>). The initial iteration was sent to other stakeholders for consultation in early Feb 2021. Delphi technique (Travis, 1976) was adopted to reach to final consensus among different members of the working group.

The process of development has passed through different rounds of revision that is followed by a meeting of the members of taskforce group to finalize the document in April 2021.

The Working Group will undertake future periodic review of the competency standards and its ongoing work includes development of competency standards for graduate dental specialization programs. The CAA is extremely grateful to all members of the Working Groups, their parent organizations, and the consulted stakeholders for their full engagement in the process of developing the professional competency standards.

Outline of the competency framework

The professional competency standards consist of five domains each of which is defined by a collection of competency statements that articulate threshold expectations of BDS graduates upon which the students will be assessed and will have to demonstrate achievement of performance.

Paramount throughout the standards is the expectation that students must demonstrate ethical and safe practice that is patient-centered within the legal and regulatory requirements for general dental practice in the UAE. The standards include reference to and demand competence in specific procedures and practices that are within the scope of general dental practice in the UAE and emphasize the role of general dental practitioners that extends beyond the assessment,

diagnosis, and treatment of dental conditions. Emphasis is also placed on the behavioral, communication and social skills expected of dental practitioners and on the foundation, knowledge required of general dental practitioners to ensure informed practice and the application of science in practice.

Although our definition of competency is aligned with what is stated by Frank J. *et al.* (2010) as It is “An observable ability of a health professional, integrating multiple components such as knowledge, skills, values, and attitudes.”, still the Working Group has recommended adding scientific and clinical knowledge domain of competence in order to highlight essential “must know” knowledge that are required by the student at the time of graduation.

Competency domains and associated competencies

Professionalism Domain:

The graduate must be able to:

- Apply ethical standards and comply with national legal and regulatory requirements in the provision of dental care.
- Ensure that patient safety is paramount in all decisions and actions.
- Recognize professional and individual scopes and limitations of practice or refer patients to professional colleagues when indicated.
- Demonstrate empathy and caring behaviour towards patients, their families, and members of the community.
- Ensure that all actions focus on the patients' best interests and respect patients' dignity, rights and choices.
- Protect patients' privacy and confidentiality.
- Maintain effective relationships with peers and respect professional boundaries.
- Recognize the importance of continuing education and professional development for self and all members of the dental team.

Patient-Centered Care Domain:

The graduate must be able to:

Clinical Information Gathering

- Identify and record the chief complaint, history of the present condition, medical, oral and social history of the patient.

- Perform an extra-oral and intra-oral examination for health, disease and abnormalities of the dentition, mouth, and associated structures, including assessment of vital signs.
- Select, take, and interpret diagnostic images and other diagnostic procedures relevant to the patient's condition.
- Maintain accurate, consistent, legible, and contemporaneous records of the patient.

Diagnosis and Management Planning

- Diagnose disease or abnormalities of the oral cavity and associated structures and identify conditions which require management and referral.
- Recognize the manifestations of systemic conditions and how these and their management may affect the management of dental care.
- Formulate and record a comprehensive, patient-centred, evidence-based oral health treatment plan.
- Apply the principles of preventive care as part of comprehensive treatment plan.
- Ensure and record patient informed consent for treatment and their financial obligation.

Clinical Treatment and Evaluation

- Identify patient's anxiety and pain related to the oral cavity and associated structures and respond appropriately.
- Evaluate and manage the periodontium with surgical and non-surgical treatment plans.
- Perform surgical and non-surgical endodontic treatment of the pulp and periapical conditions.
- Perform preventive therapeutic procedures to preserve the vitality of the pulp.
- Utilise patient removable and/or fixed prostheses to rehabilitate, restore appearance and function, prevent injury, and stabilize the occlusion.
- Apply principles of management of developmental or acquired occlusal abnormalities.
- Manage uncomplicated tooth extractions and perform minor oral surgical procedures.
- Administer and/or prescribe pharmaceutical agents relevant to routine dental practice.
- Evaluate and monitor the progress of the dental treatment and aftercare.
- Prevent, recognize, and manage medical and dental emergencies.
- Apply universal infection control guidelines for all clinical procedures.
- Manage restorative procedures that preserve tooth structure, replace defective tooth structure, maintain function, aesthetics, and promote soft and hard tissue health using direct or indirect methods.
- Recognize and manage acute dento-alveolar and mucosal infection.
- Manage patients from different age groups, medically compromised patients, and people of determination according to their needs.
- Administer local anaesthesia in the oral cavity as needed and manage potential complications.
- Undertake an orthodontic assessment, including an indication of treatment need and interceptive orthodontics treatment.

Health Promotion Domain:

The graduate must be able to:

- Evaluate the social, cultural, and environmental factors which contribute to health or illness.
- Apply the principles of health promotion strategies and disease prevention to promote oral and general health, quality of life and wellbeing.
- Collaborate with dental team members and other health care professionals in the management of oral health care and health promotion for all patients.
- Assess the risk factors and behaviors such as nutrition, smoking, drugs and diseases that can have an impact on oral healthcare.
- Design, implement and evaluate evidence-based health promotion programs.
- Apply caries risk assessment (CRA) on different age groups and design a customized preventive program.
- Demonstrate creativity in promoting oral health within the community using a variety of platforms.

Communication and Social Skills Domain

The graduate must be able to:

- Apply appropriate interprofessional and communication skills that allow building a teamwork approach to the delivery of oral healthcare.
- Demonstrate appropriate interpersonal skills in mentoring and participating in activities within a health care team.
- Document and share written and electronic information about the dental encounter to optimize clinical decision-making and patient safety, ensuring confidentiality and privacy.
- Present clear information to patients in a timely manner, that ensures that they are advised of and understand the different treatment options including risks and benefits.
- Communicate responsibly and professionally, including when using social media.
- Communicate and engage patients, their families and communities in relation to oral health.
- Communicate effectively within the organizational hierarchy.
- Recognize cultural diversity and apply cultural competency in caring for patients and communities.

Scientific and Clinical Knowledge Domain:

The graduate must be able to:

- Evaluate published clinical and basic science research and integrate this information to improve the oral health of the patient.
- Apply the biomedical, physical, and behavioural sciences in relation to oral health and disease.
- Design and implement research in a critical and scientific manner relevant to dentistry.

- Apply the scientific basis, application, and risks of using ionizing radiation, dental materials and risk management and quality improvement.
- Demonstrate foundation knowledge as relevant to clinical skills in operative/conservative dentistry.
- Demonstrate foundation knowledge as relevant to clinical skills related to pediatric and preventive dentistry.
- Demonstrate foundation knowledge as relevant to clinical skills related to oral surgery.
- Demonstrate foundation knowledge as relevant to clinical skills related to orthodontics.
- Demonstrate foundation knowledge as relevant to clinical skills related to endodontics.
- Demonstrate foundation knowledge as relevant to clinical skills related to periodontics.
- Demonstrate foundation knowledge as relevant to clinical skills related to prosthodontics.
- Demonstrate foundation knowledge of dental public health.

Implementation arrangements

Following approval of the professional standards by the ministry of Education, all the Colleges of Dentistry inside the UAE will be responsible for the implementation of these standards within their initial dental training and education programs. The CAA will monitor the implementation by the Colleges of Dentistry through its processes for program accreditation. The timeline for implementation is that Colleges of Dentistry will be expected to have developed the curricula and assessment practices of their undergraduate programs sufficiently to allow full implementation by September 2022.

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Annexes.

Annex-I

Dental Program Reform Working Group Professional competence standards of graduates of baccalaureate dental initial training and education programs in the United Arab Emirates

Table 1. Proposed Roadmap for developing the Emirates Competency Framework for Dental Education

Stage	Actions	Responsibility	Product	Timeline	Status
1	Gather and collate competencies/curriculum outcomes from dental schools across UAE	Prof. Hesham Marei and Working Group	List of competencies of the current Dental Colleges - UAE (<i>CF version zero</i>)	Dec 2020	Closed
2	Revise List of competencies of the current Dental Colleges -UAE against the QF Emirates, PQRs and international literature	Prof. Hesham Marei and Working Group	Updated List of competencies of the current Dental Colleges - UAE (<i>CF version zero</i>).	Dec 2020	Closed
3	Face to face meeting “First UAE Dental Summit” to revise Updated List of competencies of the current Dental Colleges – UAE	Working Group (Deans, MOH, NQF)	Competency domains (<i>CF version 1</i>)	5 January 2021 Present to the Working Group meeting in Ajman-GMU	Closed
4	Delphi technique round 1: revising and expanding the competencies through consultation/questionnaire/survey (dental academics, dental professionals, health care authorities, etc.)	Prof. Hesham Marei, Working Group assisted by staff with research skills	Revised/expanded competencies. (<i>CF version 2</i>)	07 Feb 2021	closed

5	Delphi technique round 2: validation and prioritization of competencies (Likert scale survey among a sample of academics and professionals)	Working Group assisted by faculty and staff with research skills	Revised and prioritized competencies (<i>CF version 3</i>)	22 Feb 2021	closed
6	Final discussion and endorsement of the competency framework	Workshop/grand meeting organized by the Working Group (2 nd Dental Summit)	A refined competency framework (<i>CF version 4</i>)	7 th April 2021	Closed
6	Approval of the competency framework	CAA	Emirates Competency Framework for Dental Education	May 2021	In progress

Annex-II

Glossary and Abbreviations

ACFD	Association of Canadian Faculties of Dentistry-Canada.
ADEA	American Dental Education Association -USA.
ADC	Australian Dental Council- Australia- Australia.
ADEE	Association for Dental Education in Europe.
BDS	Bachelor of Dental Surgery.
CAA	Commission for Academic Accreditation -UAE.
GDC	General Dental Council-UK.
MoE	Ministry of Education.
MOHAP	Ministry of Health and Prevention.
NQA	National Qualifications Authority-UAE.
QFEmirates	The Qualification Framework Emirates (2012).

Clinical The range of skills required to deliver direct care, where registrants interact with patients, and also the essential technical skills, carried out in the absence of patients which support their care, for example, by dental technicians (GDC,2017-UK)

Communication The skills involved in effectively interacting with patients, their representatives, the public and colleagues and recording appropriate information to inform patient care (GDC,2017-UK)

Competence The array of abilities across multiple domains or aspects of physician performance in a certain context. Competence is multi-dimensional and dynamic. It changes with time, experience, and setting (Frank *et al.*, 2010).

Competency An observable ability of a health professional, integrating multiple components such as knowledge, skills, values, and attitudes (Frank *et al.*, 2010).

Competent Possessing the required abilities in all domains in a certain context at a defined stage of medical education or practice (Frank *et al.*, 2010).

Evidence-based dentistry An approach to oral health care that requires judicious integration of systematic assessments of clinically relevant scientific evidence relating to the patient's oral and medical condition, history, oral health literacy, and integrated with the practitioner's clinical expertise and the patient's treatment needs and preferences (ADC-2016).

Health promotion	The process of enabling people to increase control over the determinants of health and thereby improve their health. Health promotion not only embraces actions directed at strengthening the skills and capabilities of individuals but also actions directed towards changing social, environmental, political and economic conditions to alleviate their impact on populations and individual health (ADC-2016).
Management and Leadership	The skills and knowledge required to work effectively as a dental team, manage their own time and resources and contribute to professional practices (GDC-2017)
Patient-centred care	Displays cultural and social sensitivity, respect for patients' differences and autonomy, to diagnose, relieve pain and suffering in an empathic and kind manner, to coordinate continuous care, advocate disease prevention and promote a healthy lifestyle by a holistic approach to the individual patient as well as the community (ADC-2016).
Professionalism	The knowledge, skills and attitudes/behaviours required to practice in an ethical and appropriate way, putting patients' needs first and promoting confidence in the dental team (GDC-2017)

Annex IV.

Names of Working groups & reviewers (in Alphabetical order)

- **Prof. Ali El Razooky:** Dean College of Dentistry, City University College of Ajman.
- **Prof. Amjad Qandil:** Commissioner, CAA, UAE
- **Prof. Donald J. Ferguson:** Dean College of Dentistry, European University College.
- **Prof. Dhayaneethie Perumal:** Commissioner, CAA, UAE
- **Dr. Elsheikh Elsidig Badr:** Policy Expert; National Qualifications Authority (NQA), Ministry of Education, UAE.
- **Prof. Eyas Abdhijleh:** Acting Dean College of Dentistry, University of Science and Technology of Fujairah.
- **Prof. Hesham Marei:** Dean College of Dentistry, Gulf Medical University.
- **Dr. Manal AlHalabi:** Dean College of Dental Medicine, Mohammed Bin Rashid University of Medicine and Health Sciences.
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- **Prof. Mohamed Y. Baniyas:** Director of the CAA and Advisor to H.E The Minister of Education, UAE
- **Prof. Muhammed Mustahsen:** Dean of College of Dental Sciences, Ras Al Khaimah Medical and Health Sciences University.
- **Prof. Salem Abu Fanas:** Dean College of Dentistry, Ajman University.
- **Prof. Stephen Arkle:** Commissioner, CAA, UAE
- **Dr. Walid Shaaban Moustafa Elsayed:** Vice Dean Academic, College of Dentistry, Gulf Medical University.
- **Prof. Zaid Baqain:** Provost of Mohammed Bin Rashid University of Medicine and Health Sciences.