

COMPETENCIES FOR THE NEW DENTAL GRADUATE

The *Competencies for the New Dental Graduate* was developed by the College of Dentistry's Curriculum Committee with input from the faculty, students, and staff and approved in October 1999. This document was revised in June 2004, April 2007 and March 2010

Preamble

The educational mission and philosophy for the UFCD predoctoral program are presented in Appendix A. The overriding goal of the program is to produce a competent general dentist. The general dentist is the primary oral health care provider, supported by dental specialists, allied dental professionals, and other health care providers. The general dentist will address healthcare issues beyond traditional oral health care and must be able to independently and collaboratively practice evidence-based comprehensive dentistry with the ultimate goal of improving the health of society. The general dentist must have a broad biomedical and clinical education and be able to demonstrate professional and ethical behavior as well as effective communication and interpersonal skills. In addition, he/she must have the ability to evaluate and utilize emerging technologies, continuing professional development opportunities and problem-solving and critical thinking skills to effectively address current and future issues in health care.

As used in this document and described in Appendix B, a competency is a complex behavior or ability essential for the general dentist to begin independent, unsupervised dental practice. Competency includes knowledge, experience, critical thinking and problem-solving skills, professionalism, ethical values, and technical and procedural skills. These components become an integrated whole during the delivery of patient care by the competent general dentist. Competency assumes that all behaviors are performed with a degree of quality consistent with patient well-being and that the general dentist can self-evaluate treatment effectiveness.

In competency-based dental education, what students learn is based upon clearly articulated competencies and further assumes that all behaviors/abilities are supported by foundation knowledge and psychomotor skills in biomedical, behavioral, ethical, clinical dental science and information management that are essential for independent and unsupervised performance as an entry-level general dentist. In creating curricula, dental faculty must consider the competencies to be developed through the educational process, the learning experiences that will lead to the development of these competencies, and ways to assess or measure the attainment of competencies. Competency statements for dental education have evolved to a point where they are divided into domains, are broader and less prescriptive in nature, are fewer in number, and most importantly are linked to requisite foundation knowledge and skills. A glossary of terms used in competency-based education is found in Appendix C.

The purposes of this document are to:

- Define the competencies necessary for entry into the dental profession as a beginning general dentist;

- Enhance patient care quality and safety, illustrate current and emerging trends in the dental practice environment;
- Serve as a guide and central resource to promote change and innovation in predoctoral dental school curricula;
- Through periodic review and update, serve as a guide for benchmarking, best practice, and interprofessional collaboration and additionally, as a mechanism to inform educators in other health care professions about curricular priorities of dental education and entry-level competencies of general dentists.

Competency Statements

Independent Skills

Students will be competent in the following concepts and skills, and expected to be able to perform them independently when they begin unsupervised dental practice. These independent skills are taught in the core curriculum. The competencies relate to the child, adolescent, adult, geriatric and special needs patients.

Domain I: Professionalism – Apply standards of care in an ethical and medicolegal context to assure appropriate informed consent, risk management, quality assurance and record keeping and delivered within the scope of the dentist’s competence in a patient-centered environment that interfaces with diverse patient populations.

1: Ethical Standards: Apply ethical standards to professional practice.

2: Legal Standards: Apply legal standards (state and federal regulations) to professional practice.

Domain II: Health Promotion and Maintenance - Educate patients and the community, based upon critical thinking and outcomes assessments, about the etiology of oral disease, promote preventive interventions and effectively work with patients to achieve and maintain a state of optimal oral health through evidence-based care.

3: Communication and Interpersonal Skills: Communicate effectively using behavioral principles and strategies with patients from diverse populations, applying cultural sensitivity.

4: Critical Thinking: Apply scientific principles and clinical expertise to critically evaluate literature when making decisions in the diagnosis and treatment of patients.

5: Assessment of Treatment Outcomes: Analyze the outcomes of patient care and previous treatment to improve oral health through application of best practices.

6: Practice Management: Apply business principles, human resource skills, and the human and technologic resources necessary for developing, managing, evaluating and protecting a general dental practice.

7: Patient Management: Apply behavioral and communicative management skills during the provision of patient care.

8: Community Involvement: Participate in the protection, promotion and restoration of oral health of the community and to those beyond traditional practice settings.

Domain III: Health Assessment – Recognize systemic diseases, substance and patient abuse and evaluate the patient’s medical and oral condition and plan treatment needs.

- 9: Examination of the Patient:** Perform a comprehensive patient evaluation that collects patient history including medications, chief complaint(s), biological, behavioral, cultural and socioeconomic information needed to assess the patient’s medical, oral and extraoral conditions accordingly.
- 10: Diagnosis:** Perform a differential, provisional, or definitive diagnosis by interpreting and correlating findings from the patient history and interview, the clinical and radiographic examinations, and other diagnostic tests to accurately assess.
- 11: Treatment Planning:** Develop properly sequenced alternative treatment plans as appropriate to achieve patient satisfaction and that considers the patient’s medical history and all the diagnostic data; to discuss the diagnosis and treatment options to obtain informed consent; and to modify the accepted plan based upon regular evaluation, unexpected situations, or special patient needs.
- 12: Emergency Treatment:** Prevent, recognize and manage dental and medical emergencies in the office.

Domain IV: Health Rehabilitation – Using universal infection control guidelines perform procedures that manage oral diseases and restore the patient to optimal oral health or refer appropriately.

- 13:** Prescribe and/or apply clinical and/or home therapies for the management of dental caries and monitor their effect on the patient’s oral health.
- 14:** Perform restorative and esthetic procedures that preserve tooth structure, prevent hard tissue disease, promote soft tissue health and replace missing teeth with prostheses.
- 15:** Prevent, diagnose and manage periodontal diseases.
- 16:** Manage conditions requiring surgical procedures of the hard and soft tissues, and to employ appropriate pharmacological agents to support the treatment and to manage the patient’s anxiety and pain.
- 17:** Diagnosis and manage temporomandibular disorders.
- 18:** Diagnosis and manage limited developmental or acquired occlusal abnormalities.
- 19:** Prevent, diagnose, and manage pulpal and periradicular diseases.
- 20:** Manage oral mucosal and osseous diseases or disorders, including oral cancer.

Non-independent Skills

Students will be exposed to the following concepts and skills, but are not expected to be able to perform these skills independently. Most of these non-independent skills are taught in the elective curriculum.

- 1. Perform periodontal surgical procedures
- 2. Observe placement of endosseous implants
- 3. Order and interpret advanced laboratory and radiological evaluations
- 4. Administer conscious sedation
- 5. Provide limited orthodontic treatment
- 6. Treatment for complex orofacial trauma and advanced intraoral infections
- 7. Complex restorative and pulpal therapies for primary teeth

Appendix A - Educational Mission, Philosophy and Curriculum for the Predoctoral Program at the University of Florida College of Dentistry

Mission

The educational mission of the College of Dentistry is to graduate a scientifically knowledgeable, biologically oriented, technically competent, socially sensitive practitioner of dental medicine who adheres to the highest standards of professional conduct and ethics and who can function effectively as a member of the nations health care delivery system. Our graduates must be competent in the prevention, diagnosis and care of patients with oral-facial conditions that affect overall health and patient well-being. A competent practitioner is one who is able to begin independent, unsupervised dental practice.

Philosophy

The College of Dentistry's highest commitment is to academic excellence. The development of the competent graduate ¹ in the art, science and practice of dentistry is the foundation of our educational philosophy.² It is paramount that the educational environment be humanistic³ and reflects the values of integrity, honesty, respect, fairness, and cooperation. It is equally important that faculty and staff develop, integrate, and facilitate effective⁴ and active learning.⁵ These efforts must result in graduates who possess and demonstrate knowledge and skills in the cognitive, psychomotor, and affective⁶ domains.

Predoctoral Education Program

<http://www.dental.ufl.edu/offices/Education/DMD/>

¹ competent graduate: an individual who possesses clinical judgment, understanding, empathy, technical skills and independence to begin professional practice.

² educational philosophy: the system of values and beliefs by which students, faculty, staff and administration will accomplish student learning.

³ humanism: a philosophy that stresses an individual's dignity, worth, self-realization and reasoning.

⁴ effective: producing a desired measurable outcome

⁵ active learning: learning which focuses on the student's involvement in the process of reasoning and understanding, as well as their responsibility to engage in continued learning, self-assessment and the pursuit of higher knowledge.

⁶ affective: this domain relates to behaviors indicating attitudes of awareness, interest, attention, concern, involvement and responsibility.

Appendix B – Description of Competency-based Education

Competencies are learning experiences stated in terms of what a student must be able to do to be considered competent by the profession after completion of the dental curriculum, and imply performance at a clinically acceptable level in each of the identified domains of dental practice. These competencies must be supported by a working knowledge of the basic biomedical and clinical sciences, by cognitive and psychomotor skills, and by professional and ethical values.

Competencies must be relevant and important to the patient care responsibilities of the general dentist, directly linked to the oral health care needs of the public, realistic, and understandable by other health care professionals. Specific learning objectives are listed for each course as part of a course syllabus. Thus, this competency document provides a framework for the predoctoral curriculum, where as, a course syllabus outlines the specific learning objectives and experiences of a particular course which ultimately contributes to the achievement of competency.

Professional Development is a continuous process of improvement transitioning from
novice to
beginner to
competent to
proficient and ultimately to
expert.

Competence is an intermediate stage of professional development and learning that starts with the beginner or novice dental student.

The basic and behavioral science foundation knowledge, skills, and values provide the general dentist a requisite knowledge base upon which sound clinical judgments are made. Specifically, the new dental graduate must be able to demonstrate an integrated knowledge of the biology, etiology and epidemiology of diseases and conditions affecting the oral cavity.

Basic and behavioral science knowledge and professionalism are the foundation upon which sound clinical judgments are made. Patient care is a dynamic and interactive process that begins with an assessment of the patient and leads to the restoration of a state of oral health and function, and ultimately to the promotion and maintenance of oral health. We recognize, however, that the patient care process can deviate from this "model." For example, based on an appropriate assessment, the dentist may decide that no restorative care is needed and the patient will receive preventive and health maintenance care. Our competency-based curriculum provides learning opportunities that support foundation knowledge, reinforce professional and ethical practice behaviors, and guide the development of sound clinical judgment and treatment skills. Competencies are interdisciplinary, yet each department or division within a department is responsible for coursework with specific behavioral objectives or clinical activities. Clinical departments or divisions assess most competencies, although some competencies are assessed within interdepartmental activities.

Appendix C - Glossary of Terms in Competency-Based Education and Evaluation 7

Active learning: Learning which focuses on student's individual responsibility to engage in continued learning, self-assessment in achieving and maintaining competency, and the pursuit of higher skill levels.

Competencies: Statements describing the abilities needed to engage in the independent practice of dentistry. Competencies combine foundation knowledge, skills, understanding, and professional values and are performed independently in realistic settings.

Competency-based education: A planned sequence of student experiences designed to move students through the stages in the competency continuum. Different methods of instruction and evaluation are used as appropriate to each level of professional growth, and the entire sequence is coordinate to produce a competent beginning practitioner.

Competency-based evaluation: Use of evaluation techniques and decisions that match the stages along the competency continuum. Novices are assessed with tests, beginners with simulation, and competent students with evaluation of direct patient care. Management of students is guided by assessing the correct educational qualification path for each student to decide which experiences are required to satisfy each competency. Educational diagnosis of learning difficulties and remedial interventions are also part of the evaluation system.

Behavioral objectives: Specific statements of expected student behavior as a result of short-term educational experiences, such as a lecture. A course typically has many behavioral objectives, most of which are cognitive in nature, although they might alternatively be in the psychomotor or affective domains. Competencies may cross disciplines and always combine skill, understanding, and supporting values.

Best practices: Evidence-based practice that integrates the best research evidence with clinical expertise and patient values.

Curriculum guidelines: Suggestions from special interest groups, usually disciplines or subdisciplines, about desired course topical coverage. There are no requirements for dental schools to conform to such guidelines, and the result of implementing all of them represents an unreasonably large task.

Evidence-based dentistry: The approach to oral health care that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences.

Foundation knowledge and skills: The necessary core body of cognitive basic and behavioral science and psychomotor skills for novices and beginners. These are what students must know and be able to do to benefit from the curriculum experiences designed to achieve competency.

Manage: Recognize and treat accordingly or refer and follow-up situations beyond the competency of the dentist.

Management: Direction of care so that care is provided in a judicious manner that encourages patient compliance.

Perform: To carry to completion a prescribed course of action.

Special needs: any individual that exhibits a physical, psychological, social, medical or developmental challenge that requires modification of the standard methods of dental delivery.

Treatment: The management and care of a patient for the purpose of combating a disease or disorder.

⁷ This glossary of terms is adapted from definitions provided by the American Dental Association and the Journal of Evidenced-based Dental Practice (March 2007) as well as from the 1997 Chambers and Glassman article. Some additional terms were defined by the UFCED Curriculum Committee. For a more complete glossary of terms, please see: Chambers DW, Glassman P. A primer on competency-based evaluation. J Dent Educ 61(8): 651-66, 1997.