

Commission on Dental Accreditation

Accreditation Standards for Advanced Dental Education Programs in Oral and Maxillofacial Radiology

Accreditation Standards for Advanced Dental Education Programs in Oral and Maxillofacial Radiology

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Commission on Dental Accreditation

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Accreditation Standards for Advanced Dental Education Programs in Oral and Maxillofacial Radiology

Document Revision History

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Introduction

The science of oral and maxillofacial radiology is based on principles of physics, chemistry and biology (both normal and abnormal). An in-depth knowledge of the principles and applications of all diagnostic imaging modalities used in dentistry and other health care professions is fundamental to the discipline.

An in-depth knowledge of normal anatomy, as well as an understanding of the causes of diseases, their processes and effects, together with associated alterations in the head and neck are essential to the practice of oral and maxillofacial radiology. An understanding of the appearance of normal anatomy and disease processes in the rest of the body is important. Of equal importance is an in-depth knowledge of the use of radiation, magnetic fields and other imaging agents in a manner that minimizes risks to the patient, operator and the public.

An oral and maxillofacial radiologist must have the ability, knowledge and skill to:

- 1) conduct a clinical head and neck examination, take and evaluate medical and dental histories to determine appropriate imaging investigations;
- 2) prescribe, make or supervise the making of radiographs and utilize other imaging techniques relevant to dentistry;
- 3) advise on radiation protection and safety;
- 4) interpret radiographs and other diagnostic imaging studies;
- 5) prepare written interpretations and consultative reports; and
- 6) communicate effectively with colleagues and evaluate critically the scientific literature in order to contribute to maintaining competency.

Mission Statement of the Commission on Dental Accreditation

The Commission on Dental Accreditation serves the public and profession by developing and implementing accreditation standards that promote and monitor the continuous quality and improvement of dental education programs.

Commission on Dental Accreditation
Revised: August 5, 2016

Accreditation Status Definitions

Programs That Are Fully Operational:

Approval (*without reporting requirements*): An accreditation classification granted to an educational program indicating that the program achieves or exceeds the basic requirements for accreditation.

Approval (*with reporting requirements*): An accreditation classification granted to an educational program indicating that specific deficiencies or weaknesses exist in one or more areas of the program. Evidence of compliance with the cited standards or policies must be demonstrated within a timeframe not to exceed eighteen (18) months if the program is between one and two years in length or two years if the program is at least two years in length. If the deficiencies are not corrected within the specified time period, accreditation will be withdrawn, unless the Commission extends the period for achieving compliance for good cause. Identification of new deficiencies during the reporting time period will not result in a modification of the specified deadline for compliance with prior deficiencies.

Circumstances under which an extension for good cause would be granted include, but are not limited to:

- sudden changes in institutional commitment;
- natural disaster which affects affiliated agreements between institutions; faculty support; or facilities;
- changes in institutional accreditation;
- interruption of an educational program due to unforeseen circumstances that take faculty, administrators or students away from the program.

Revised: 8/17; 2/16; 5/12; 1/99; Reaffirmed: 8/23; 8/18; 8/13; 8/10, 7/05; Adopted: 1/98

Programs That Are Not Fully Operational

A program which has not enrolled and graduated at least one class of students/residents and does not have students/residents enrolled in each year of the program is defined by the Commission as not fully operational. The accreditation classification granted by the Commission on Dental Accreditation to programs which are not fully operational is “initial accreditation.” When initial accreditation status is granted to a developing education program, it is in effect through the projected enrollment date. However, if enrollment of the first class is delayed for two consecutive years following the projected enrollment date, the program’s accreditation will be discontinued, and the institution must reapply for initial accreditation and update pertinent information on program development. Following this, the Commission will reconsider granting initial accreditation status. The developing education program must not enroll students/residents/fellows with advanced standing beyond its regularly enrolled cohort, while holding the accreditation status of “initial accreditation.”

Initial Accreditation is the accreditation classification granted to any dental, advanced dental or allied dental education program which is not yet fully operational. This accreditation classification provides evidence to educational institutions, licensing bodies, government or other granting agencies that, at the time of initial evaluation(s), the developing education program has the potential for meeting the standards set forth in the requirements for an accredited educational program for the specific occupational area. The classification “initial accreditation” is granted based upon one or more site evaluation visit(s).

Revised: 8/23; 7/08; Reaffirmed: 8/18; 8/13; 8/10; Adopted: 2/02

Preface

Maintaining and improving the quality of advanced dental education programs is a primary aim of the Commission on Dental Accreditation. The Commission is recognized by the public, the profession, and the United States Department of Education as the specialized accrediting agency in dentistry.

Accreditation of advanced dental education programs is a voluntary effort of all parties involved. The process of accreditation assures students/residents, the dental profession, specialty boards and the public that accredited training programs are in compliance with published standards.

Accreditation is extended to institutions offering acceptable programs in the following disciplines of advanced dental education: dental public health, endodontics, oral and maxillofacial pathology, oral and maxillofacial radiology, oral and maxillofacial surgery, orthodontics and dentofacial orthopedics, pediatric dentistry, periodontics, prosthodontics, advanced education in general dentistry, general practice residency, dental anesthesiology, oral medicine, and orofacial pain. Program accreditation will be withdrawn when the training program no longer conforms to the standards as specified in this document, when all first-year positions remain vacant for a period of two years or when a program fails to respond to requests for program information. Exceptions for non-enrollment may be made by the Commission for programs with “approval without reporting requirements” status upon receipt of a formal request from an institution stating reasons why the status of the program should not be withdrawn.

Advanced dental education may be offered on either a certificate-only or certificate and degree-granting basis.

Accreditation actions by the Commission on Dental Accreditation are based upon information gained through written submissions by program directors and evaluations made on site by assigned site visitors. The Commission has established review committees to review site visit and progress reports and make recommendations to the Commission. Review committees are composed of representatives nominated by dental organizations and nationally accepted certifying boards. The Commission has the ultimate responsibility for determining a program’s accreditation status. The Commission is also responsible for adjudication of appeals of adverse decisions and has established policies and procedures for appeal. A copy of policies and procedures may be obtained from the Director, Commission on Dental Accreditation, 211 East Chicago Avenue, Chicago, Illinois 60611.

This document constitutes the standards by which the Commission on Dental Accreditation and its site visitors will evaluate advanced dental education programs in each discipline for accreditation purposes. The Commission on Dental Accreditation establishes general standards which are common to all disciplines of advanced dental education, institutions and programs.. Each discipline develops discipline-specific standards for education programs in its discipline. The general and discipline-specific standards, subsequent to approval by the Commission on Dental Accreditation, set forth the standards for the educational content, instructional activities, patient care responsibilities, supervision and facilities that should be provided by programs in the particular discipline.

As a learned profession entrusted by the public to provide for its oral health and general well-being, the profession provides care without regard to race, color, religion, gender, national origin, age, disability, sexual orientation, status with respect to public assistance, or marital status.

The profession has a duty to consider patients' preferences, and their social, economic and emotional circumstances when providing care, as well as to attend to patients whose medical, physical and psychological or social situation make it necessary to modify normal dental routines in order to provide dental treatment. These individuals include, but are not limited to, people with developmental disabilities, cognitive impairments, complex medical problems, significant physical limitations, and the vulnerable elderly. The Standards reconfirm and emphasize the importance of educational processes and goals for comprehensive patient care and encourage patient-centered approaches in teaching, research and oral health care delivery.

The profession adheres to ethical principles of honesty, compassion, kindness, respect, integrity, fairness and charity, as exemplified in the ADA Principles of Ethics and Code of Professional Conduct and the ADEA Statement on Professionalism in Dental Education.

General standards are identified by the use of a single numerical listing (e.g., 1). Discipline-specific standards are identified by the use of multiple numerical listings (e.g. 1-1, 1-1.2, 1-2).

Definitions of Terms Used in Oral and Maxillofacial Radiology Accreditation Standards

The terms used in this document (i.e. shall, **must**, should, can and may) were selected carefully and indicate the relative weight that the Commission attaches to each statement. The definitions of these words used in the Standards are as follows:

Must or Shall: Indicates an imperative need and/or duty; an essential or indispensable item; mandatory.

Intent: Intent statements are presented to provide clarification to the advanced dental education programs in oral and maxillofacial radiology in the application of and in connection with compliance with the Accreditation Standards for Advanced Dental Education Programs in Oral and Maxillofacial Radiology. The statements of intent set forth some of the reasons and purposes for the particular Standards. As such, these statements are not exclusive or exhaustive. Other purposes may apply.

Examples of evidence to demonstrate compliance include: Desirable condition, practice or documentation indicating the freedom or liberty to follow a suggested alternative.

Should: Indicates a method to achieve the standard; highly desirable, but not mandatory.

May or Could: Indicates freedom or liberty to follow a suggested alternative.

Graduates of discipline-specific advanced dental education programs provide unique services to the public. While there is some commonality with services provided by specialists and general dentists, as well as commonalities among the specialties, the educational standards developed to prepare graduates of discipline-specific advanced dental education programs for independent practice should not be viewed as a continuum from general dentistry. Each discipline defines the educational experience best suited to prepare its graduates to provide that unique service.

Competencies: Statements in the advanced dental education standards describing the knowledge, skills and values expected of graduates of discipline-specific advanced dental education programs.

Competent: Having the knowledge, skills and values required of the graduates to begin independent, unsupervised discipline-specific practice.

In-depth: Characterized by thorough knowledge of concepts and theories for the purpose of critical analysis and synthesis.

Understanding: Knowledge and recognition of the principles and procedures involved in a particular concept or activity.

Patients with Special Needs: Those patients whose medical, physical, psychological, cognitive or social situations make it necessary to consider a wide range of assessment and care options in order

to provide dental treatment as well as modify normal dental routines in order to provide dental treatment for that individual. These individuals include, but are not limited to, people with developmental disabilities, cognitive impairment, complex medical conditions, significant physical limitations, and vulnerable older adults.

Other Terms:

Institution (or organizational unit of an institution): a dental, medical or public health school, patient care facility, or other entity that engages in advanced dental education.

Sponsoring institution: primary responsibility for advanced dental education programs.

Affiliated institution: support responsibility for advanced dental education programs.

Advanced dental education student/resident: a student/resident enrolled in an accredited advanced dental education program.

A degree-granting program is a planned sequence of advanced courses leading to a master's or doctoral degree granted by a recognized and accredited educational institution.

A certificate program is a planned sequence of advanced courses that leads to a certificate of completion in an advanced dental education program.

Student/Resident: The individual enrolled in an accredited advanced dental education program.

International Dental School: A dental school located outside the United States and Canada.

Evidence-based dentistry: Evidence-based dentistry is an 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.

Formative Assessment*: guiding future learning, providing reassurance, promoting reflection, and shaping values; providing benchmarks to orient the learner who is approaching a relatively unstructured body of knowledge; and reinforcing students' intrinsic motivation to learn and inspire them to set higher standards for themselves.

Summative Assessment*: making an overall judgment about competence, fitness to practice, or qualification for advancement to higher levels of responsibility; and providing professional self-regulation and accountability.

*Epstein, R.M. (2007) *Assessment in Medical Education*. The New England Journal of Medicine, 387-96.

STANDARD 1 - INSTITUTIONAL COMMITMENT/PROGRAM EFFECTIVENESS

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

The program **must** document its effectiveness using a formal and ongoing outcomes assessment process to include measures of advanced dental education student/resident achievement.

***Intent:** The Commission on Dental Accreditation expects each program to define its own goals and objectives for preparing individuals for the practice of oral and maxillofacial radiology and that one of the program goals is to comprehensively prepare competent individuals to initially practice oral and maxillofacial radiology. The outcomes process includes steps to: (a) develop clear, measurable goals and objectives consistent with the program's purpose/mission; (b) develop procedures for evaluating the extent to which the goals and objectives are met; (c) collect and maintain data in an ongoing and systematic manner; (d) analyze the data collected and share the results with appropriate audiences; (e) identify and implement corrective actions to strengthen the program; and (f) review the assessment plan, revise as appropriate, and continue the cyclical process.*

The financial resources **must** be sufficient to support the program's stated goals and objectives.

***Intent:** The institution should have the financial resources required to develop and sustain the program on a continuing basis. The program should have the ability to employ an adequate number of full-time faculty, purchase and maintain equipment, procure supplies, reference material and teaching aids as reflected in annual budget appropriations. Financial allocations should ensure that the program will be in a competitive position to recruit and retain qualified faculty. Annual appropriations should provide for innovations and changes necessary to reflect current concepts of education in the advanced dental education discipline. The Commission will assess the adequacy of financial support on the basis of current appropriations and the stability of sources of funding for the program.*

The sponsoring institution **must** ensure that support from entities outside of the institution does not compromise the teaching, clinical and research components of the program.

Examples of evidence to demonstrate compliance may include:

- *Written agreement(s)*
- *Contract(s)/Agreement(s) between the institution/program and sponsor(s) related to facilities, funding, and faculty financial support.*

Advanced dental education programs **must** be sponsored by institutions, which are properly chartered, and licensed to operate and offer instruction leading to degrees, diplomas or certificates with recognized education validity. Hospitals that sponsor advanced dental education programs **must** be accredited by an accreditation organization recognized by the Centers for Medicare and

Medicaid Services (CMS). Educational institutions that sponsor advanced dental education programs **must** be accredited by an agency recognized by the United States Department of Education. The bylaws, rules and regulations of hospitals that sponsor or provide a substantial portion of advanced dental education programs **must** ensure that dentists are eligible for medical staff membership and privileges including the right to vote, hold office, serve on medical staff committees and admit, manage and discharge patients.

United States military programs not sponsored or co-sponsored by military medical treatment facilities, United States-based educational institutions, hospitals or health care organizations accredited by an agency recognized by the United States Department of Education or accredited by an accreditation organization recognized by the Centers for Medicare and Medicaid Services (CMS) **must** demonstrate successful achievement of Service-specific organizational inspection criteria.

The authority and final responsibility for curriculum development and approval, student/resident selection, faculty selection and administrative matters **must** rest within the sponsoring institution.

The institution/program **must** have a formal system of quality assurance for programs that provide patient care.

The position of the program in the administrative structure **must** be consistent with that of other parallel programs within the institution and the program director **must** have the authority responsibility, and privileges necessary to manage the program.

- 1-1 Those portions of advanced oral and maxillofacial radiology education programs in medical radiology **must** be in programs approved and accredited by the Accreditation Council for Graduate Medical Education.
- 1-2 The program director and faculty **must** actively assess the outcomes of the oral and maxillofacial radiology program in terms of whether it is achieving its educational objectives.

USE OF SITES WHERE EDUCATIONAL ACTIVITY OCCURS

The primary sponsor of the educational program **must** accept full responsibility for the quality of education provided in all sites where educational activity occurs.

- 1-3 All arrangements with sites where educational activity occurs, not owned by the sponsoring institution, **must** be formalized by means of current written agreements that clearly define the roles and responsibilities of the parties involved

***Intent:** The items that are covered in inter-institutional agreements do not have to be contained in a single document. They may be included in multiple agreements, both formal and informal (e.g., addenda and letters of mutual understanding).*

- 1-4 For each site where educational activity occurs, there **must** be an on-site clinical supervisor who is qualified by education and/or clinical experience in the curriculum areas for which he/she is responsible.

If the program utilizes educational activity sites for clinical experiences or didactic instruction, please review the Commission's Policy on Reporting and Approval of Sites Where Educational Activity Occurs in the Evaluation and Operational Policies and Procedures manual (EOPP).

STANDARD 2 - PROGRAM DIRECTOR AND TEACHING STAFF

The program **must** be administered by one director who is board certified in the respective advanced dental education discipline of the program. (All program directors appointed after January 1, 1997, who have not previously served as program directors, must be board certified.)

***Intent:** The director of an advanced dental education program is to be certified by a nationally accepted certifying board in the advanced dental education discipline. Board certification is to be active. The board certification requirement of Standard 2 is also applicable to an interim/acting program director. A program with a director who is not board certified but who has previous experience as an interim/acting program director in a Commission-accredited program prior to 1997 is not considered in compliance with Standard 2.*

Examples of evidence to demonstrate compliance may include:

For board certified directors: Copy of board certification certificate; letter from board attesting to current/active board certification.

(For non-board certified directors who served prior to January 1, 1997: Current CV identifying previous directorship in a Commission on Dental Accreditation- or Commission on Dental Accreditation of Canada-accredited advanced dental education program in the respective discipline; letter from the previous employing institution verifying service.)

The program director **must** be appointed to the sponsoring institution and have sufficient authority and time to achieve the educational goals of the program and assess the program's effectiveness in meeting its goals.

Documentation of all program activities **must** be ensured by the program director and available for review.

- 2-1 The oral and maxillofacial radiology program **must** be directed by one individual who has a full-time appointment to the sponsoring institution.
- 2-2 The program director and faculty of an advanced oral and maxillofacial radiology program **must** demonstrate a commitment to teaching and supervision.
- 2-3 The program director and full-time faculty **must** have adequate time to develop and foster their own professional development.
- 2-4 The program **must** show evidence of an ongoing faculty development process.

***Intent:** Ongoing faculty development is a requirement to improve teaching and learning, to foster curricular change, to enhance retention and job satisfaction of faculty, and to maintain the vitality of academic dentistry as the wellspring of a learned profession.*

Examples of evidence to demonstrate compliance may include:

Participation in development activities related to teaching, learning, and assessment

Attendance at regional and national meetings that address contemporary issues in education and patient care

Mentored experiences for new faculty

Scholarly productivity

Presentations at regional and national meetings

Examples of curriculum innovation

Maintenance of existing and development of new and/or emerging clinical skills

Documented understanding of relevant aspects of teaching methodology

Curriculum design and development

Curriculum evaluation

Student/Resident assessment

Cultural Competency

Ability to work with students/residents of varying ages and backgrounds

Use of technology in didactic and clinical components of the curriculum

Evidence of participation in continuing education activities

- 2-5 All faculty, including those at major and minor educational activity sites, **must** be calibrated to ensure consistency in training and evaluation of students/residents that supports the goals and objectives of the program.

STANDARD 3 - FACILITIES AND RESOURCES

Institutional facilities and resources **must** be adequate to provide the educational experiences and opportunities required to fulfill the needs of the educational program as specified in these Standards. Equipment and supplies for use in managing medical emergencies **must** be readily accessible and functional.

***Intent:** The facilities and resources (e.g.; support/secretarial staff, allied personnel and/or technical staff) should permit the attainment of program goals and objectives. To ensure health and safety for patients, students/residents, faculty and staff, the physical facilities and equipment should effectively accommodate the clinic and/or laboratory schedule.*

The program **must** document its compliance with the institution's policy and applicable regulations of local, state and federal agencies, including but not limited to radiation hygiene and protection, ionizing radiation, hazardous materials, and bloodborne and infectious diseases. Policies **must** be provided to all students/residents, faculty and appropriate support staff and continuously monitored for compliance. Additionally, policies on bloodborne and infectious diseases **must** be made available to applicants for admission and patients.

***Intent:** The program may document compliance by including the applicable program policies. The program demonstrates how the policies are provided to the students/residents, faculty and appropriate support staff and who is responsible for monitoring compliance. Applicable policy states how it is made available to applicants for admission and patients should a request to review the policy be made.*

Students/Residents, faculty and appropriate support staff **must** be encouraged to be immunized against and/or tested for infectious diseases, such as mumps, measles, rubella and hepatitis B, prior to contact with patients and/or infectious objects or materials, in an effort to minimize the risk to patients and dental personnel.

***Intent:** The program should have written policy that encourages (e.g., delineates the advantages of) immunization of students/residents, faculty and appropriate support staff.*

All students/residents, faculty and support staff involved in the direct provision of patient care **must** be continuously recognized/certified in basic life support procedures, including cardiopulmonary resuscitation.

***Intent:** Continuously recognized/certified in basic life support procedures means the appropriate individuals are currently recognized/certified.*

The use of private office facilities as a means of providing clinical experiences in advanced dental education is only approved when the discipline has included language that defines the use of such facilities in its discipline-specific standards.

***Intent:** Required oral and maxillofacial radiology clinical experiences do not occur in private office facilities. Practice management and elective experiences may be undertaken in private office facilities.*

- 3-1 An advanced oral and maxillofacial radiology education program **must** provide access for the student/resident to an active and well-organized diagnostic imaging facility.
- 3-2 The student/resident **must** have access to a clinical facility with adequate supervision for the comprehensive examination and diagnostic imaging management of patients.
- 3-3 The combination of radiographic cases, through a clinic or referral service and through indexed files and reports of diagnosed cases, **must** be sufficient in number and variety to afford adequate diagnostic experience in oral and maxillofacial radiology.
- 3-4 The oral and maxillofacial radiology service **must** provide sufficient space and equipment for the student/resident.
- 3-5 There **must** be sufficient technical and support personnel to ensure that the radiology clinic functions efficiently.
- 3-6 An advanced oral and maxillofacial radiology education program **must** provide access to an active and well-organized research facility.

STANDARD 4 – CURRICULUM AND PROGRAM DURATION

The advanced dental education program **must** be designed to provide special knowledge and skills beyond the D.D.S. or D.M.D. training and be oriented to the accepted standards of the discipline’s practice as set forth in specific standards contained in this document.

***Intent:** The intent is to ensure that the didactic rigor and extent of clinical experience exceeds pre-doctoral, entry level dental training or continuing education requirements and the material and experience satisfies standards for the discipline.*

Advanced dental education programs **must** include instruction or learning experiences in evidence-based practice. Evidence-based dentistry is an 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.

Examples of Evidence to demonstrate compliance may include:

- Formal instruction (a module/lecture materials or course syllabi) in evidence-based practice
- Didactic Program course syllabi, course content outlines, or lecture materials that integrate aspects of evidence-based practice
- Literature review seminar(s)
- Multidisciplinary Grand Rounds to illustrate evidence-based practice
- Projects/portfolios that include critical reviews of the literature using evidence-based practice principles (or “searching publication databases and appraisal of the evidence”)
 - Assignments that include publication database searches and literature appraisal for best evidence to answer patient-focused clinical questions.

The level of discipline-specific instruction in certificate and degree-granting programs **must** be comparable.

***Intent:** The intent is to ensure that the students/residents of these programs receive the same educational requirements as set forth in these Standards.*

Documentation of all program activities **must** be ensured by the program director and available for review.

If an institution and/or program enrolls part-time students/residents, the institution/program **must** have guidelines regarding enrollment of part-time students/residents. Part-time students/residents **must** start and complete the program within a single institution, except when the program is discontinued. The director of an accredited program who enrolls students/residents on a part-time basis **must** ensure that: (1) the educational experiences, including the clinical experiences and responsibilities, are the same as required by full-time students/residents; and (2) there are an equivalent number of months spent in the program.

PROGRAM DURATION

- 4-1 The duration of an advanced oral and maxillofacial radiology program **must** be a minimum of 24 months full-time or its equivalent.
- 4-2 Students/residents **must** be enrolled on, at least, a half-time basis.

ETHICS AND PROFESSIONALISM

- 4-3 Graduates **must** be able to apply the principles of ethical reasoning, ethical decision making and professional responsibility as they pertain to the academic environment, research, patient care, and practice management.

***Intent:** Graduates should know how to draw on a range of resources such as professional codes, regulatory law, and ethical theories to guide judgment and action for issues that are complex, novel, ethically arguable, divisive, or of public concern.*

CLINICAL ORAL AND MAXILLOFACIAL RADIOLOGY

- 4-4 Students/Residents **must** assume major responsibility for interpretations and consultative reports on an adequate number of imaging studies of sufficient variety to be competent, as graduates, in clinical oral and maxillofacial radiology.
- 4-5 Clinical oral and maxillofacial radiology case conferences **must** be held an average of, at least, once every two weeks.

***Intent:** The intent is to ensure that graduates understand and can explain the underlying principles of interpretation of disease processes.*

- 4-6 Students/residents **must** participate in regularly scheduled literature reviews.

***Intent:** Graduates will have an in-depth knowledge of the current literature in oral and maxillofacial radiology.*

ORAL AND MAXILLOFACIAL DIAGNOSTIC IMAGING TECHNIQUES

- 4-7 Training in oral and maxillofacial diagnostic imaging techniques **must** be provided to the students/residents with adequate instruction and supervision.
- 4-8 Graduates **must** be competent in the procedures performed in oral and maxillofacial radiology including, but not limited to: (a) intraoral, (b) panoramic, (c) cephalometric and other skull projections, and (d) cone-beam computed tomography/volumetric imaging.
- 4-9 Graduates **must** have an in-depth knowledge of other imaging techniques applicable to oral and maxillofacial radiology, including, but not limited to: (a) multi-slice/detector computed tomography, (b) magnetic resonance imaging, (c) diagnostic ultrasonography, and (d) nuclear medicine imaging techniques.

***Intent:** Programs will provide students/residents with an in-depth knowledge of the technical procedures to acquire these studies but not necessarily experience in independent acquisition of these studies.*

- 4-10 Graduates **must** understand administrative procedures associated with the directorship of an oral and maxillofacial radiology facility.

***Intent:** Graduates of oral and maxillofacial radiology programs will be prepared to assume the administrative responsibilities to direct a radiology facility.*

ASSOCIATED MEDICAL SCIENCES

- 4-11 The program **must** provide advanced education in head and neck anatomy, and oral and maxillofacial pathology.

EVALUATION AND RADIOLOGIC MANAGEMENT OF PATIENTS

- 4-12 The program **must** provide students/residents with an understanding of and experience in the clinical manifestations of head and neck diseases and head and neck manifestations of systemic diseases as an important facet of the training and practice of oral and maxillofacial radiology.
- 4-13 Students/Residents **must** attend head and neck tumor board or a similar institutional interdisciplinary conference which includes radiology on a regular basis, but at least monthly.
- 4-14 Graduates **must** be competent in designing appropriate radiologic studies.

***Intent:** Graduates of oral and maxillofacial radiology programs will be prepared to serve as a resource to the referring clinician with respect to selecting the optimum examination.*

- 4-15 The clinical training of oral and maxillofacial radiology students/residents in the routine activities of a screening/emergency or treatment planning clinics **must** be minimized.
- 4-16 Graduates **must** understand intended applications and limitations of artificial and augmented intelligence-based approaches in dentomaxillofacial imaging.

***Intent:** Graduates of oral and maxillofacial radiology programs will be prepared to serve as a resource to the referring clinician with respect to guiding and discussing optimal application of artificial and augmented intelligence-based approaches in radiology practice.*

MEDICAL RADIOLOGY

- 4-17 The program **must** provide for a meaningful period of education in medical radiology in an active, hospital-based radiology department or other similar facility of, at least, three months duration, or its part-time equivalent.

***Intent:** The practice of oral and maxillofacial radiology calls for the association,*

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cooperation and frequent consultation with medical radiologists (general, head and neck, and/or neuroradiology). An understanding of the broad scope of radiology is important.

RADIATION AND IMAGING PHYSICS

- 4-18 Graduates **must** understand radiation physics including the basic imaging physics of: (a) analog and digital oral and maxillofacial radiography; (b) cone-beam computed tomography/volumetric imaging; (c) multi-slice computed tomography; (d) magnetic resonance imaging; (e) diagnostic ultrasonography; (f) nuclear medicine; and (g) image enhancement analysis concepts associated with diagnostic imaging.

RADIATION BIOLOGY

- 4-19 Graduates **must** have an in-depth knowledge of the biological effects of ionizing radiations.

***Intent:** Graduates will be able to describe both the biological changes and the clinical consequences of exposure to ionizing radiations*

RADIATION PROTECTION

- 4-20 Graduates **must** have an in-depth knowledge of radiation protection and/or hygiene.

***Intent:** Graduates will be prepared to eliminate unnecessary exposure of patients, operators and the general public*

TEACHING EXPERIENCE

- 4-21 A program in oral and maxillofacial radiology **must** include an organized teaching experience for students/residents with formal evaluation.
- 4-22 The amount of time devoted by the student/resident to teaching experience **must** be carefully evaluated and not exceed ten percent (10%) of the overall program.

STANDARD 5 - ADVANCED DENTAL EDUCATION STUDENTS/RESIDENTS

ELIGIBILITY AND SELECTION

Eligible applicants to advanced dental education programs accredited by the Commission on Dental Accreditation **must** be graduates from:

- a. Predoctoral dental programs in the U.S. accredited by the Commission on Dental Accreditation; or
- b. Predoctoral dental programs in Canada accredited by the Commission on Dental Accreditation of Canada; or
- c. International dental schools that provide equivalent educational background and standing as determined by the program.

Specific written criteria, policies and procedures **must** be followed when admitting students/residents.

Intent: *Written non-discriminatory policies are to be followed in selecting students/residents. These policies should make clear the methods and criteria used in recruiting and selecting students/residents and how applicants are informed of their status throughout the selection process.*

Admission of students/residents with advanced standing **must** be based on the same standards of achievement required by students/residents regularly enrolled in the program. Students/Residents with advanced standing **must** receive an appropriate curriculum that results in the same standards of competence required by students/residents regularly enrolled in the program.

Examples of evidence to demonstrate compliance may include:

- Policies and procedures on advanced standing.
- Results of appropriate qualifying examinations.
- Course equivalency or other measures to demonstrate equal scope and level of knowledge.

Intent: *Advanced standing refers to applicants that may be considered for admission to a training program whose curriculum has been modified after taking into account the applicant's past experience. Examples include transfer from a similar program at another institution, completion of training at a non-CODA accredited program, or documented practice experience in the given discipline. Acceptance of advanced standing students/residents will not result in an increase of the program's approved number of enrollees. Applicants for advanced standing are expected to fulfill all of the admission requirements mandated for students/residents in the conventional program and be held to the same academic standards. Advanced standing students/residents, to be certified for completion, are expected to demonstrate the same standards of competence as those in the conventional program.*

EVALUATION

A system of ongoing evaluation and advancement **must** ensure that, through the director and faculty, each program:

- a. Periodically, but at least semiannually, assesses the progress toward (formative assessment) and achievement of (summative assessment) the competencies for the discipline using formal evaluation methods;
- b. Provide to students/residents an assessment of their performance, at least semiannually;
- c. Advances students/residents to positions of higher responsibility only on the basis of an evaluation of their readiness for advancement; and
- d. Maintains a personal record of evaluation for each student/resident which is accessible to the student/resident and available for review during site visits.

***Intent:** (a) The evaluation of competence is an ongoing process that requires a variety of assessments that can measure the acquisition of knowledge, skills and values necessary for discipline-specific level practice. It is expected that programs develop and periodically review evaluation methods that include both formative and summative assessments. (b) Student/Resident evaluations should be recorded and available in written form. (c) Deficiencies should be identified in order to institute corrective measures. (d) Student/Resident evaluation is documented in writing and is shared with the student/resident.*

DUE PROCESS

There **must** be specific written due process policies and procedures for adjudication of academic and disciplinary complaints, which parallel those established by the sponsoring institution.

RIGHTS AND RESPONSIBILITIES

At the time of enrollment, the advanced dental education students/residents **must** be apprised in writing of the educational experience to be provided, including the nature of assignments to other departments or institutions and teaching commitments. Additionally, all advanced dental education students/residents **must** be provided with written information which affirms their obligations and responsibilities to the institution, the program and program faculty.

***Intent:** Adjudication procedures should include institutional policy which provides due process for all individuals who may potentially be involved when actions are contemplated or initiated which could result in disciplinary actions, including dismissal of a student/resident (for academic or disciplinary reasons). In addition to information on the program, students/residents should also be provided with written information which affirms their obligations and responsibilities to the institution, the program, and the faculty. The program information provided to the students/residents should include, but not necessarily be limited to, information about tuition, stipend or other compensation; vacation and sick leave; practice privileges and other activity outside the educational program; professional liability coverage; and due process policy and current accreditation status of the program.*

STANDARD 6 - RESEARCH

Advanced dental education students/residents **must** engage in scholarly activity.

6-1 Graduates **must** understand research methodology.

6-2 Students/Residents **must** engage in scholarly and/or research-related activities.