

Predoctoral Curriculum Guidelines in Implant Dentistry

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On July 1 and 2, 1990, sixty-two faculty members representing forty-nine U.S.A. dental schools, gathered in Chicago, Illinois, to review, revise, and approve curriculum guidelines for predoctoral implant dentistry. Several officers and directors of the A.C.O.I. and I.C.O.I. were also participants in this conference which was organized and co-sponsored by the A.C.O.I., the University of Pittsburgh, School of Dental Medicine, and the American Association for Dental Schools.

At the closing of the conference, the guidelines were unanimously approved by all participants. The final draft of the guidelines was then transmitted to the A.A.D.S. for final approval and publication. After a period of public comments, which will end in December, 1990, the guidelines will be published by the A.A.D.S. in the *Journal of Dental Education*.

The conference was financially co-sponsored by the American College of Oral Implantology, Nobelpharma, U.S.A., and Steri-Oss, Denar affiliate. Following is the final draft of the predoctoral curriculum guidelines. All written comments on the proposed guidelines should be sent to:

Executive Director
Division of Educational Affairs
American Association of Dental Schools
1625 Massachusetts Avenue, NW
Washington, D.C. 20036

CURRICULUM GUIDELINES FOR PREDOCTORAL IMPLANT DENTISTRY

I. PREAMBLE:

The results of a recent survey (Bavitz, 1990), indicated the wide-spread acceptance of implant dentistry in U.S. dental schools. In 1974, only 20 percent of dental schools presented lectures both to predoctoral and graduate students (Chappell, 1974), while in 1989, 89 percent of dental schools required implantology experience at the graduate level, and 73 percent at the predoctoral level. In addition, 91 percent of deans of dental schools indicated that implant dentistry should be incorporated in the predoctoral curriculum (Bavitz, 1990).

In the absence of guidelines for predoctoral curriculum in implant dentistry, the American College of Oral Implantology and the University of Pittsburgh, School of Dental Medicine agreed to initiate a national conference for dental educators to develop and revise such guidelines. The development process started in January, 1990, by the appointment of John Y. H. Ismail, D.M.D., M.S., Ph.D. (University of Pittsburgh) to chair a committee to develop the guidelines. A committee was formed and immediately began addressing the task of developing the curriculum guidelines for predoctoral implant dentistry. The committee was composed of: Dr. John Y. H. Ismail (University of Pittsburgh), Dr. Carl E. Misch (University of Pittsburgh), Dr. David E. Steflik (Medical College of Georgia), Dr. Paul A. Schnitman (Harvard University) and Dr. Kenneth W. Judy (Harlem Hospital Center, New York). The national conference was held in July, 1990, in Chicago, Illinois, to revise and approve the curriculum guidelines for predoctoral implant dentistry.

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The revised guidelines were transmitted to the American Association of Dental Schools for approval and publication in the *Journal of Dental Education*. After a period of public comment, the guidelines were reviewed and approved for publication by the A.A.D.S. Council of Sections Administrative Board and Executive Committee. Any questions concerning these guidelines may be directed to the Executive Director.

II. STATEMENT OF AUTHORSHIP:

These guidelines were developed by the American Association of Dental Schools in cooperation with the American College of Oral Implantology, the University of Pittsburgh, and oral implantology educators. The guidelines are intended for use by individual educational institutions as curriculum development aids. They are not official policy statements of the Association and should not be construed as recommendations for restrictive requirements.

III. INTRODUCTION:

The predoctoral curriculum in implant dentistry is a multidisciplinary and readily identifiable, didactic and clinically illustrated program. Implant dentistry is that branch of dentistry pertaining to the reconstruction and maintenance of function, appearance and health of the patient, through replacement of teeth, and contiguous structures with natural and alloplastic substitutes.

IV. INTERRELATIONSHIP:

The multidisciplinary nature of the curriculum in implant dentistry suggests that all departments and/or disciplines may be directly involved in the instructional aspects of this curriculum.

V. OVERVIEW:

This curriculum in implant dentistry is structured to provide basic learning experience for dental students. The learning modules present an approach to (1) the biological and scientific basis for implantology, (2) patient evaluation, diagnosis, treatment planning, and implant selection, (3) implant surgery and post-surgical care, (4) implant prosthodontic procedures, and (5) maintenance protocols.

VI. PRIMARY EDUCATIONAL GOALS:

- (1) Develop an understanding of the history and past status of implant dentistry.
- (2) Develop an understanding of the scientific basis of implant-host relations and interactions.

- (3) Develop an understanding of diagnosis, treatment planning, treatment, treatment-associated complications, and maintenance procedures in implant dentistry.

VII. PRE-REQUISITES:

Dental students entering this curriculum should have had experience in the following disciplines and/or areas:

- (1) Biological and related sciences
- (2) Pre-clinical courses in fixed and removable prosthodontics and other related disciplines.

In addition, dental students should be progressing in the clinical and related sciences including, but not limited to, diagnostic services, oral pathology, anesthesia, periodontics, oral surgery, and prosthodontics.

VIII. CORE CONTENT OUTLINE:

Following are suggested instructional modules that cover the essential materials forming the scientific and clinical base of knowledge in implant dentistry.

- (A) Introduction
 - (1) Impact of edentulism
 - (2) Historical overview
 - (3) Current status of dental implants
- (B) Classification and Definitions of Dental Implants
 - (1) Terminology and definitions
 - (2) Classification and types of dental implants
 - (3) Indications for different modalities
- (C) Scientific basis for dental implant therapy
 - (1) Anatomy of hard and soft tissues
 - (2) Implant - tissue interface
 - (3) Biomechanics
 - (4) Biomaterials
 - (5) Surface Preparation
- (D) Diagnosis and Treatment Planning
 - (1) Diagnostic procedures
 - (2) Treatment planning, site selection, and implant selection
 - (3) Patient education, preparation, and referral
 - (4) Risk management
- (E) Surgical Procedures
 - (1) Armamentaria
 - (2) Surgical preparation
 - (3) Anesthesia
 - (4) Surgical procedure
 - (5) Post-surgical care

(F) Prosthodontic Procedures

- (1) Interim
- (2) Single tooth
- (3) Fixed
- (4) Fixed Detachable
- (5) Removable

(G) Maintenance and Evaluation Procedures

- (1) Professional care
- (2) Patient education and care
- (3) Corrective procedures
- (4) Follow-up care and education

(H) Advanced Implant Procedures

IX. SPECIFIC BEHAVIORAL OBJECTIVES:

Upon completion of this curriculum, the dental student should be able to:

- (1) Recognize the need to include the use of implants as a treatment modality for that segment of the population requiring restoration and maintenance of oral function, appearance, and health.
- (2) Recognize the historical contributions in implant dentistry.
- (3) Discuss the current status of and trends in implants in dentistry.
- (4) Identify different types of implant modalities.
- (5) Describe the maxillary and mandibular anatomical considerations and limitations in relation to implant placement.
- (6) Recognize the need for imaging and other diagnostic procedures for implant therapy.
- (7) Recognize the biofunctional, biomechanical, and biotechnological aspects relevant to implants in dentistry.
- (8) Identify local, systemic, and behavioral conditions that may influence the surgical and/or prosthodontic phase of treatment.
- (9) Discuss the indications for appropriate medical and dental referrals.
- (10) Describe sequential treatment planning for implant therapy and alternative therapies.
- (11) Describe a protocol for patient education and preparation for dental implant therapy to include but not limited to informed consent, financial considerations, and duration of care.
- (12) Describe criteria for implant selection.
- (13) Describe the presurgical, surgical, and post-surgical procedures for implant(s) placement.

(14) Describe the various laboratory and clinical prosthodontic procedures for implant supported and/or retained prostheses, including provisional prostheses when indicated.

(15) Demonstrate maintenance procedures following completion of implant treatment.

(16) Describe remedial procedures following completion of implant treatment.

(17) Recognize the applications of implants in advanced and reconstructive oral and maxillofacial procedures.

(18) Recognize the need for continuing education in implant dentistry.

X. FACULTY:

Faculty should be composed of educationally qualified specialists, and those who have advanced education and/or appropriate experience in implant dentistry. Institutions should develop an appropriate administrative entity to coordinate the curriculum in implant dentistry.

XI. FACILITIES:

Adequate facilities currently exist to teach this proposed curriculum in dental schools.

XII. REFERENCES:

- Bavitz, B. "Dental Implantology in U.S. Dental Schools," *J. Dent. Ed.* 1990;54(4)205-206.
- Chappell, R. (1974): Dental School Implant Survey, *J. Oral Implantol.* 1974;5:24-32.
- NIH Conference Proceedings - Dental Implants; Consensus Development Conference on Dental Implants, National Institutes of Health, Bethesda, Maryland, *J. Den. Ed.* 1988;52(12) Special Issue.