

Oral Implantology Program



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Introduction

Implantology is a branch of dental practice pertaining to the restoration and maintenance of oral function. To provide Implantology service Dentist must be complete an extensive, organised and mentored training program. Without the completion of such program, in GCC countries the health authorities do not consider those Dentists are suitably qualified to provide implant dentistry treatment.

As per the Dubai Health Authority in UAE as an example the guidelines for Implantology practice (Appendix 1) Implantology program requirements shall be either a University residency program in implant dentistry (usually 1Year), OR combinations on both below requirements:

- To finish a series of Multiple Accredited Courses in Implant dentistry with Total of 120 Continuous Medical Education (CME) hours within two years. AND,
- To document 10 self-treated cases with Dental Implants under supervision of privileged dentist in Implant dentistry from DHA approved practice site.

The **Oral Implantology Medical Center** was established in 2002 by **Dr. Souheil R. Hussaini** with aim to provide dentists in UAE and Middle East region an extensive, organised and mentored training program in the field of Implantology. The program is affiliated with International Congress of Oral Implantologists (ICOI), USA. (Appendix 2)

Course Objectives and Goals

The objective of the Implantology program is to develop the necessary skills for the dental practitioner in utilization of dental implants to restore the functional and esthetic requirements of their patients. These skills include evaluation, diagnosis, treatment planning, treatment sequencing, surgical placement and restoration of the implant.

At the completion of the program, the practitioner should be competent to:

1. Examine the patient and determine the implant needs of the patient both functionally and esthetically.
2. Treatment plan and treatment sequence the proposed surgical and restorative phases of implant treatment.
3. Utilize the diagnostic wax up and denture tooth wax try-in for treatment planning and treatment sequences.
4. Establish the need for grafting procedures in the implant rehabilitation procedures.
5. Utilize all available diagnostic procedures including examination, articulated study casts, radio graphs in patient evaluations.
6. Surgically place from one to six implants in both the mandible and maxilla.
7. Utilize particulate and block grafting techniques to augment the implant surgical sites.

8. Stage augmentation and surgical implant placement using one and two stage procedures.
9. Effectively use membranes and barriers in implant-related grafting procedures.
10. Utilize the osteostome (internal sinus lift) procedure to prepare the implant surgical site.
11. Restore the implant-retained and implant-supported over-dentures.
12. Restore the implant-supported single crown.
13. Restore the implant-supported fixed complete denture (hybrid) prosthesis.
14. Restore the 3-unit and multi-unit implant-supported fixed partial denture.
15. Diagnosis and manage the ailing or failing dental implant.
16. Manage prosthetic complications associated with implant-retained and supported restorations.

Course Curriculum

The Implant Dentistry - Study Consortium (ID-SC) contains 4 modules or levels which will be presented within a one-year period. Each module will be for a 3-days period. The modules will be organized in such way to allow the practitioner to proceed to mastery of complex treatment as proficiency improves. The modules are presented at Four month intervals to allow the practitioner to utilize the skills learned in the module before proceeding onward to the next module.

As noted previously the modules are organized by skill level. This arrangement allows the practitioner to master simpler procedures such as implant-supported overdentures before proceeding to more complex restorations where implant placement, functional considerations and esthetic demands are more complex. Site development using grafting procedures will be introduced as the participant develops further surgical skills and the ability to recognize of deficiencies in bone volume and location.

LEVEL- I

Goals:

In this module, basic knowledge and skills will be developed. Preclinical exercises will be utilized to train the student and prepare them for clinical treatment. Clinical treatment will emphasize basic surgical skills in implant placement and will be restricted to maxillary premolars and mandibular overdenture treatment where the restorative, esthetic and functional requirements are simplified.

Clinical Activities:

These will involve preclinical exercises and clinical procedures as part of patient care

- a) Familiarity with dental implant systems.
- b) Preclinical implant placement.
- c) Diagnostic workup of patient (to be treated in Level II).
- d) Fabrication of radiographic and surgical templates.
- e) Surgical placement of implants for implant supported overdenture and single maxillary premolars.

Didactic Activities:

Lectures and seminars on the following topics:

- a) Osseointegration
- b) Implant systems
- c) Diagnosis and Treatment Planning
- d) Surgical Template fabrication
- e) Implant-supported overdentures
- f) Surgical placement of implants

Outcome Measures:

Didactic: The student will be tested in a formal one-half hour interview at the end of the Level- I period. He/she will be expected to provide correct responses to 70% of the questions to successfully complete to module.

Clinical: Each student will participate in two implant surgeries. The supervising instructor will evaluate the student's surgical skills with regard to judgment and technical competency.

LEVEL- II

Goal:

In this module, the student will be expected to refine surgical skills and develop precision in implant placement. The location of implants for implant-supported crowns requires further precision so as to develop adequate anatomic form for the restoration. Diagnostic and treatment planning skills will be expanded. Students will be required to present a "worked up" case with a treatment plan supported by clinical findings, articulated study casts with a diagnostic waxup and radio graphics including CT scans if appropriate. In addition the student will participate in preclinical exercises in impressing, provisionalization and particulate grafts.

Clinical Activities:

The focus of this module will be clinical with further emphasis of diagnostic skills and clinical decision making. The student will be introduced to particulate grafting techniques and membrane placement.

- a) Selection, reading and evaluation of diagnostic radiographics
- b) Articulated casts and diagnostic waxups
- c) Impressing and provisionalization as preclinical exercises
- d) Use of particulate grafting techniques and membranes as preclinical exercises
- e) Surgical placement of posterior single unite implants in the mandible using a two stage technique in case of grafting.
- f) Restoration of the previously placed implants in the anterior mandible and maxillary premolars.

Didactic Activities:

Lectures and seminars on the following topics:

- a) Radiographic evaluation
- b) Implant-supported single tooth restorations
- c) Particulate grafting procedures utilizing restorable membranes
- d) Inferior alveolar nerve and related implementation principles

Outcome Measures:

Didactic: The student will be tested in a formal one-half hour interview at the end of the Level- II period. He/she will be expected to provide correct responses to 70% of the questions to successfully complete to module.

Clinical: Each student will participate in two implant surgeries. The supervising instructor will evaluate the student's surgical skills with regard to judgment and technical competency.

LEVEL- III

GOAL:

In this module, the student will broaden their surgical skills with multi-unit implant placement. There will be a greater emphasis on prosthodontic restoration including indexing at the time of surgery. The concepts of golden proportion, bone splitting, spreading, immediate placement and load will be presented. The student will also develop skills at particulate grafting and membrane placement in the anterior maxilla. Finally, the student will be exposed to harvesting placement of block grafts at the preclinical level.

Clinical Activities:

The focus of this module will also be clinical. The preclinical exercise will prepare the student for module IV where block grafts will be done clinically in conjunction with internal sinus lifts in the posterior maxillary area.

- a) Two-three multi-unit and implant placements and restoration in the anterior and premolar regions in both the maxilla and mandible.
- b) Single-stage and immediate load implant placement and restoration in the anterior and premolar region
- c) Indexing at the time of implant placement

Didactic Activities:

Lectures and seminars on the following topics

- a) Fixed prosthodontic restorations
- b) Abutment selection and use of custom abutments
- c) Surface enhancement of implants including PRP
- d) Single stage and immediate loading techniques
- e) Golden Proportion and esthetic principles

Outcome Measures:

Didactic: The student will be tested in a formal one-half hour interview at the end of the Level- III period. He/she will be expected to provide correct responses to 70% of the questions to successfully complete to module.

Clinical: Each student will participate in two implant surgeries. The supervising instructor will evaluate the student's surgical skills with regard to judgment and technical competency.

LEVEL- IV

Goal:

This module emphasizes the optimization of implant placement. The student is expected to demonstrate sophisticated skills as treatment planning, basic implant placement and restoration of single and multi-unit implant restoration (1-4 units). Optimization of implant placement involves particulate grafts, block grafts, membrane placement and the internal sinus lift. Restoratively the student will learn to utilize the hybrid-fixed complete denture for the edentulous maxilla or mandible.

Clinical Activities:

- a) Implant placement in the posterior maxilla
- b) Utilization of the internal sinus lift for implant placement in the posterior maxilla
- c) Utilization of block grafting techniques harvesting from the symphysis and ramus
- d) Restoration of the edentulous arch with the implant-supported hybrid-fixed complete denture

Didactic Activities:

Lectures and seminars on the following topics

- a) Internal Sinus lift technique
- b) Bone grafting techniques
- c) Advanced treatment planning
- d) Occlusion
- e) Management of the ailing implant
- f) Prosthetic and biomechanical problems of implant-supported restorations

Outcome Measures:

Didactic: The student will be tested in a formal one-half hour interview at the end of the Level- IV period. He/she will be expected to provide correct responses to 70% of the questions to successfully complete to module.

Clinical: Each student will participate in two implant surgeries. The supervising instructor will evaluate the student's surgical skills with regard to judgment and technical competency.

Continuous Professional Development (CPD)

The scientific committee of the program obtained the Medical Education Department approval on the four levels. (see Appendix 3 for the details of the CPD application and other related documents).

Trainer Qualification and Experience

The program has four Clinical Instructors who provided the clinical hands on training along with the Didactic activities. The program has two more lecturers also who provide the educational program.

Clinical Instructor team includes:

1. **Dr. Souheil Hussaini**, BDS, MS. He has completed his post-graduation in Prosthodontics, TMD, and Implant Dentistry concurrently with a Master of Science degree in Oral Biology

from the University of Medicine & Dentistry-New Jersey Dental School-USA. Under-Graduate degree from Annamalai University RM Dental College & Hospital, India. He is currently adjunct professor at UMD-New Jersey Dental School-USA and completing his PhD in the field of CBCT. His Master's research was in the field of different dental implants involving transmitted stresses in the peri-implant area. His private dental office is based in the United Arab Emirates, Dubai, where he performs most of his implant surgeries and prosthetic treatments. He is the Consultant for the American Hospital in Dubai. He is the Founder of Implant Dentistry – Study Consortium ID-SC, the first ADA approved Dental Implant continuing education course in the Gulf and Middle East. He also founded The Study Club of Oral Implantology (SCOI) for the Emirates Medical Association in 2004. He has 18 years of experience with most of the implant systems like the NobelBioCare, Astra, Ostem, Megagen, lifecore, Bicon, Direct, 3i, ITI, Zimmer and the BioHorizon system. Presented lectures in USA (Harvard Univ.), Penselvania- Penn Univ., China (Hunan Univ.), UAE (Ajman Univ.), Qatar. Organized socioeconomic activities and dental camps in Sharjah Cental jail, India, Erbil, Yemen, Sudan, and Bangladesh. And published articles in the int. JPD, Implant Dentistry, J prosthodontics.

2. **Dr. Sally Issa**, BDS, MSc. She is awarded the Postgraduate Certificate from Warwick University-UK 2013. Her MSc thesis was on the "Influence of implant design on the strain magnitude imparted to the bone-implant interface". Dr. Issa is Fellow and Diplomate of the ICOI. She is member of scientific committee of Warwick Dental School. She is Co-Instructor for the ID-SC program since 9 years.
3. **Dr. Harikrishnan Gopalakishnan**, BDS, MDS. (periodontics), he was Lecturer in periodontics, India (college of dental surgery Kasthurba medical college, Mangalore) 1992-94. He holds Certificate AAID Associate fellow, USA, Deplomate Tranee in laser dentistry, university of Genova, Italy, he is Fellow and Diplomate of the ICOI, Dr. HariKrishnen is licensed by UAE Ministry of Health (MOH) and Dubai Health Authority (DHA) as Periodontist. Currently he acts as Co-Instructor of the ID-SC program and he was the Examiner in the qualifying committee IDSC.
4. **Dr. Daniel Rothamel**, MD DMD PhD Assistant Professor at the Department of Oral and Maxillofacial Plastic Surgery, University of Cologne, Cologne, Germany. Dr. Daniel is a graduated from Heinrich-Heine University, Duesseldorf. Dr. Rothamel is Dental and Medical doctor. In 2007 he finished Specialization in Oral Surgery. His professional experiences include Research Associate, Department of Oral Surgery Heinrich-Heine University, Düsseldorf, and Research Associate, Department of Oral and Maxillofacial Plastic Surgery, University of Cologne, Cologne, Germany. His Ph.D thesis was "Reconstruction of defects of the alveolar ridge using artificial and autogenous bone blocks and growth factors"

The program **lecturers'** team includes (non-clinical):

1. **Dr. Saul Weiner** is a Professor in the New Jersey Dental School for over 25 years. He has taught Prosthodontics and Implantology at the predoctoral, post-doctoral and continuing education levels. He currently directs the predoctoral didactic implant courses and presents continuing education courses in implantology for general practioners. He has a private practice in which he both surgically places as well as restores implants. He has made a

number of research and clinical presentations on dental implantology at the national as well as local levels.

2. **Dr. Jon Suzuki** DDS, PhD, MBA is the associate dean for graduate education, research, and international relations, school of dentistry. He is a professor of periodontology and oral implantology. Dr. Jon is the Director of graduate periodontology specialty program and professor of oral biology, director of oral biology graduate program and temple university graduate school. He is also a professor of microbiology/ immunology, temple university school of medicine. He is currently the chairman of United States food and drug administration (FDA) dental products panel.
3. **Dr. Mark Lin** B.Sc., D.D.S., M.Sc. graduated from the University Of Toronto in the Biochemistry Specialists honors program. He received his dental degree from University of Detroit Mercy in which he was on the Dean's list for 4 consecutive years and finished within the top 5% of the class. As a senior dental student, he was selected to participate in the world renowned Oral Maxillofacial Surgical Externship program at the Parkland Hospital in Dallas, Texas. He then completed a 1-year General Practice Residency program at the Miami Valley Hospital in Dayton, Ohio, where he received training in hospital dentistry Intravenous sedation and advanced surgical procedures. He practiced general dentistry for 13 years then completed his post graduate training in the specialty of Prosthodontics at the University of Toronto. He currently holds a part-time position as an Associate in Dentistry at the University of Toronto. He serves as a surgical demonstrator in the post graduate Periodontics department and staff at the Implant Prosthetics Unit (IPU) at the University of Toronto. In addition, he maintains a full-time practice as a prosthodontist with a focus on full mouth reconstructions and implant dentistry.

See appendix 4 for detailed CV of all instructors

Educational Library

For each of the Implantology level, the students will have an access to different educational materials and reference books which will aid in completing their theoretical knowledge. The E-Book library at the Oral Implantology Research Institute consists of the following:

1. Applied Basic Dentistry
2. Introduction to Implant Design, System and Equipments
3. Pre-Surgical Prosthodontics and Treatment Planning
4. Basic Implant Surgery
5. Implant Prosthodontics
6. Occlusal Consideration and Loading Protocol
7. Maintenance of Implant and Failures in Implant Dentistry.
8. Clinical Periodontology and Implant Dentistry
9. Contemporary Implant Dentistry
10. Dental Implant Atlas
11. Dental Implants Norton
12. Hand Book of Implant Dentistry II edition

13. Hand Book of Implant Dentistry
14. Implant Prosthodontics
15. Implant Survival Rates in a Condensed Surgical
16. One visit impression technique
17. Osseointegration

Affiliations

The program has an affiliate society with the International Congress of Oral Implantology (ICOI) where site inspection by one of the Board of Directors for the program occurs every two years. (Appendix 5)

Trainee Selection Criteria

As Implantology is a branch of dental practice pertaining to the restoration and maintenance of oral function, the scientific committee - Continuing Dental Education Implant Dentistry select candidate based on the following criteria:

1. Graduate of dental school recognized by his or her country of origin.
2. Licensed by one of the health authorities in UAE
3. Good conduct and practice.
4. Ability to learn new techniques.

Physical Facility Location and Layout

The program was running under the College of Dentistry, University of Sharjah. Currently the training program will be located in Knowledge village Dubai under the training license **Oral Implantology Research Institute** in Knowledge village. Part of the training will be in the **Oral Implantology Medical Center**, the clinic is located in the Deira – Dubai. The clinic consist of **Five dental rooms** dedicated for hands on training and furnished with the latest equipments and technologies to ensure proper training and education for trainee. (see Appendix 6 for more details about the Centre)

The Theoretical part of the Implantology training program will be conducted in a dedicated lectures room which is available in Knowledge Village, Dubai. (Appendix 7)

Assessment

The scientific committee follows 360 degree assessment methodology, each speaker/clinical trainer is evaluated by the Implantology students at the end of his/her session. In the mean time, the student also give the opportunity to evaluate the whole program and if it meet their expectation and learning requirements.

On the other hand the scientific committee implements the following assessment structure to evaluate Implantology students

1. Complete the attendance of the program for all the levels.
2. Presentation of the cases performed.
3. Case study report.
4. Placement and restoration of the required number of implants.
5. Passing of the written and oral examination.

For details about assessment methodology see Appendix 8.

Appendix:

As per the Dubai Health Authority in UAE as an example the guidelines for Implantology practice (Appendix 1) Implantology program requirements shall be either a University residency program in implant dentistry (usually 1Year), OR combinations on both below requirements .

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