

VANANCHAL DENTAL COLLEGE

&

HOSPITAL

DENTISTRY LEARNING OUTCOME

The undergraduate course involves organization of teaching programs year-wise. However, this course as a whole, demonstrates integration of the basic sciences, clinical dentistry and practical or the laboratory skills. This is designed and integrated in such a way to permit smooth progression from the pre-clinical to clinical phase. Collaboration is encouraged between teachers of basic sciences, dental sciences and clinical subjects.

The undergraduate dental course consists of three main components. The first component consists of subjects common to medicine and dentistry like anatomy, physiology, biochemistry and behavioral sciences, leading to pharmacology, pathology, microbiology and then on to general medicine and general surgery. The second component runs concurrently with the first and deals with special aspects of oral and dental tissues, oral biology and oral pathology. Finally, the third component based on the foundations of the first two, deals with the clinical and technical aspects of dentistry as is required for general dental practice.

The first component of the course is intended to provide initially, an appreciation of normal human structure, development, function and behavior, leading to understanding of the disease, its prevention and treatment. The main objective is to provide the student a broad knowledge of the normal structure and functions of the body, the alterations which take place in disease with particular reference to those conditions in which medical and dental co-operation is essential for proper management. At this stage, the student should also be made aware of the social and psychological aspects of patient care with special reference to the relationship between dentist and the patient. The behavioral sciences including both sociology and psychology should be introduced at the initial stages of the training programme, much before the students actually deal with the patients.

The second component of the dental undergraduate programme consists of instructions in the subjects dealing with dental and oral aspects to ensure a detailed knowledge of the structure and function of the dental and oral tissues. This enables the student to diagnose, prevent and treat the dental and oral diseases and disorders which were not included in the first component. The subject of oral biology is to be introduced at this level to provide the students a comprehensive knowledge and application of oral physiology, microbiology, biochemistry and oral immunology. Students should be exposed to the basic aspects of forensic odontology at this stage of the course along with oral biology / oral pathology.

The third component of the course comprising the clinical and the technical aspects of dentistry actually prepare the student to undertake total oral and dental health care of the patients of all ages. The emphasis at this stage is on the prevention of the various dental diseases and how to preserve natural teeth with their supporting structures. The importance of various preventive

methods is stressed. The significance of diagnosis of various dental and oral problems is emphasized along with treatment planning before actual treatment procedures are undertaken.

In addition to acquiring knowledge, the students gain adequate clinical hands-on-experience in extractions and other minor oral surgical procedures, all aspects of conservative dentistry, endodontics, crown and bridge, provision of partial and complete dentures, various periodontal therapeutic procedures and use of removable orthodontic appliances. Familiarity with various radiological techniques, particularly intra-oral methods and proper interpretation of radiographs is essential part of this component of training and has applications in clinical diagnosis, forensic identification and age estimation.

Towards the final stage of the clinical training, each student is involved in comprehensive oral health care or holistic approach to enable them to plan and treat patient as a whole, instead of piece-meal treatment provided in each specialty. The Dental Council of India strongly recommends that all the dental colleges provide facilities and acquire infrastructure for this purpose.

The aim of undergraduate program is undoubtedly to produce a graduate competent in general dental practice. The commitment towards society as a whole is stressed along with the knowledge and treatment skills gained. Instruction in public health dentistry emphasizes the social aspect of health care, particularly oral health care, including the reason of the variation in oral and dental needs of different section of the society. It is important to know the influence of the social, behavioral, environmental and economic factors on oral and dental health. Students are made aware of the National oral health policy and the importance of being a member of the Health care team delivering medical and oral health care, particularly among the rural population.

Scientific advancement of any profession is based largely on continuous research activities. Our institution is no exception. Proper facilities are provided for research and the faculty members involve themselves in such activities. Inter-disciplinary research is encouraged to bring in integration among various specialties. The teaching and training methodology is such that the students are motivated to think and indulge in self-study, rather than playing a passive role. Provision is made in the daily schedules for adequate time for reading. Proper library facilities with adequate timings and seating capacity are available in the institution. Adequate audio visual aids, like video tapes and, computer assisted learning aids, Medline and internet facilities are provided to encourage self-study. Students are encouraged to participate in simple research project work and the system of electives

The society has the right to expect high standards and quality of treatment. Hence, it is mandatory and a social obligation for each dental surgeon to upgrade his or her knowledge and professional skills from time to time. The Dental Council of India strongly recommends that facilities and proper infrastructure are developed to conduct the continuous professional education programs to enable the practitioners to update their knowledge and skills. In addition,

the students are encouraged to attend conferences at the state and national level, workshops, seminars and any other such activity which is necessary to upgrade the knowledge and skills.

The undergraduate curriculum stresses the significance of infection and cross-infection control in dental practice. Aspects like sources of infection, measures to be adopted- both general and specific – for control particularly the HIV and hepatitis are properly incorporated into the curriculum so that the undergraduates are aware of its significance and follow it in their practice.

Information technology has touched every aspect of an individual's personal and professional life. The undergraduates acquire minimum computer proficiency which will enable them to enhance their professional knowledge and skills.

1. Basic medical and Dental subjects

The basic medical and dental sciences comprise anatomy gross and microscopic, physiology, biochemistry, pharmacology, oral biology and science of dental material. Subjects like behavioral sciences, which is useful in development of communication skills, is introduced in the first year itself and spread over undergraduate course. An introduction to Public Health Dentistry and Preventive Dentistry is also useful to develop the concept of commitment to community. The laboratory skills to be developed by the students like pre-clinical Prosthodontics, Crown Bridge, Aesthetics dentistry and oral implantology exercises and studying dental morphology also is a part of initial training. The instruction in the above medical and dental sciences is of two years duration. At the end of this period the student is in a position to understand and comprehend in general the development, structure and function of the human body in both health and diseases.

The instructions in basic dental sciences include theoretical and practical aspects of oral anatomy and physiology provide detailed knowledge of form and structure of teeth, associated tissues and occlusal relationships. The study aims at development of a concept regarding physiological and biochemical processes relevant to oral cavity for better understanding of the changes which occur with the onset of disease in the oral cavity. The student is made aware of the importance of various dental tissues in forensic investigation.

2. Clinical, Medical and Dental subjects

The period of instruction in the clinical subjects is not less than three years full time. During this period, the student attends a dental hospital, general hospitals, community camps and satellite clinics, in order to obtain instruction and experience in the practice of dentistry. The main objective of training in clinical dental subjects is to produce a graduate able and competent to recognize or diagnose various dental and oral diseases, to undertake general dental treatment, advice on the provision of general dental treatment, advice on the provision of special dental treatment available and finally advise the patient on prevention. The student also understands the relationship between oral and systemic diseases.

3. Training in general medicine and surgery

Is to provide knowledge on human disease to enable the student to understand its manifestation as relevant to the practice of dentistry. This requires clinical teaching on patients and shall be carried out in in-patient and out-patient medical departments and specialist clinics. This clinical instruction enables the student to understand and perhaps diagnose common systemic diseases which have relevance to dental practice, by adopting a systematic approach of history taking and clinical examination. The student also realizes the significance of various general and special investigations in the diagnosis of diseases. The ability to recognize physical and mental illness, dealing with emergencies, effective communication with patients, interaction with various professional colleagues also becomes an important aspect of this training.

4. The students receive instruction in first-aid and principles of cardio-pulmonary resuscitation. It is also desirable that the student spends time in an accident and emergency department of a general hospital.

5. The purpose of the clinical training is to provide sufficient practical skill in all aspects of clinical dentistry. The instructions include patient management skills, treatment of patients of all ages with special reference to children (pediatric), very elderly (geriatric), medically compromised and disabled patients.

6. **In Oral & Maxillofacial Surgery and Oral Implantology**, instruction includes the knowledge of various maxillofacial problems like injuries, infections and deformities of the jaws and associated structures. The clinical experience includes those procedures commonly undertaken in general practice like extraction of teeth, minor oral surgical procedure, etc.

7. **In Conservative, Endodontic & Aesthetic dentistry, Prosthodontics, Crown Bridge, Aesthetic Dentistry and Oral Implantology and Periodontology and oral implantology**, students become competent to carry out routine treatment like restorations of various kinds, endodontic procedures, removable and fixed prosthodontics, concepts of osseointegration and finally various kinds of periodontal therapy. In addition, students are also made aware of their limitations on graduation, need to refer patients for consultant opinion and/or treatment and also the need for postgraduate and continual education programmes.

8. **In Orthodontics & Dentofacial Orthopedics**, students carry out simple appliance therapy for patients. Students are able to appreciate the role of dento facial growth in the development and treatment of malocclusion.

9. **In Pediatric dentistry**, the students concentrate on clinical management, efficacy of preventive measures, treatment needs particularly for children with disabilities. **In oral medicine and oral pathology**, the students receive instructions in various lesions, occurring in the oral cavity with particular reference to oral cancer.

10. The successful control and management of pain is an integral part of dental practice. Upon graduation the students is competent to administer all forms of local anesthesia. The value of behavioral method of anxiety management is emphasized. The students also have the practical experience in the administration of intra-muscular and intra-venous injections. Knowledge of pain mechanisms and strategies to control post-operative pain is essential for practice of dentistry. All students receive instructions and gain practical experience in taking, processing and interpretation of various types of intra and extra oral radiographs. They are made aware of the hazards of radiation and proper protective measures from radiation for the patient, operator and other staff. Instructions are given in dental jurisprudence, legal and ethical obligations of dental practitioners and the constitution and functions of Dental Council of India.

11. In recent times, the subject of aesthetic dentistry, oral implantology, behavioral sciences and forensic odontology have assumed great significance. Hence, these four specialties are incorporated into the undergraduate curriculum. The instruction and clinical training in aesthetic dentistry is carried out by the departments of Conservative, Endodontics & Aesthetic Dentistry and Prosthodontics, Crown Bridge, Aesthetic Dentistry and Oral Implantology. Similarly, the instruction and clinical training in oral implantology is done by the departments of Oral & Maxillofacial Surgery, Prosthodontics, Crown Bridge, Aesthetic Dentistry and Oral Implantology and Periodontology. The instruction in behavioral sciences commences before the students come in contact with the patients and is carried out by the departments of Public Health Dentistry & Preventive Dentistry and Paedodontics. Forensic Odontology is a part of Oral Pathology & Oral Microbiology and Oral Medicine & Radiology.