PREVENTIVE AND COMMUNITY DENTISTRY

Goals

The goals of Postgraduate training in various specialties is to train B.D.S. graduate who will, after successful completion of the course:

1. Practice respective specialty efficiently and effectively, backed by scientific knowledge and skill.
2. Exercise empathy and a caring attitude and maintain high ethical standards.
3. Continue to evince keen interest in continuing professional education in the specialty and allied specialties irrespective of whether in teaching or practice.
4. Willing to share the knowledge and skills with any learner, junior or a colleague.
5. Develop the faculty for critical analysis and evaluation of various concepts and views, to adopt the most rational approach.

Objectives

At the end of 3 years of training the candidate should be able to:

a) Knowledge

1. Apply basic sciences knowledge regarding etiology, diagnosis and management of the prevention, promotion and treatment of all the oral conditions at the individual and community level.
2. Identify social, economic, environmental and emotional determinants in a given individual patient or a community for the purpose of planning and execution of Community Oral Health Program.
3. Ability to conduct Oral Health Surveys in order to identify all the oral health problems affecting the community and find solutions using multi - disciplinary approach.
4. Ability to act as a consultant in community Oral Health, teach, guide and take part in research (both basic and clinical), present and publish the outcome at various scientific conferences and journals, both national and international level.

b) Skills

The candidate should be able to

1. Take history, conduct clinical examination including all diagnostic procedures to arrive at diagnosis at the individual level and conduct survey of the community at state and national level of all conditions related to oral health to arrive at community diagnosis.
2. Plan and perform all necessary treatment, prevention and promotion of Oral Health at the individual and community level.
3. Plan appropriate Community Oral Health Program, conduct the program and evaluate, at the community level.
4. Ability to make use of knowledge of epidemiology to identify causes and plan appropriate preventive and control measures.
5. Develop appropriate person power at various levels and their effective utilization.
6. Conduct survey and use appropriate methods to impart Oral Health Education.
7. Develop ways of helping the community towards easy payment plan, and followed by evaluation for their oral health care needs.
8. Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.

c.) Values

1. Adopt ethical principles in all aspects of Community Oral Health Activities.
2. To apply ethical and moral standards while carrying out epidemiological researches.
3. Develop communication skills, in particular to explain the causes and prevention of oral diseases to the patient. for help from colleagues when needed and promote teamwork approach.
4. Respect patient's rights and privileges including patients right to information and right to seek a second opinion.

COURSE CONTENT
FIRST YEAR

I) Applied Anatomy

1. Development of face.
2. Brachial arches.
3. Muscles of facial expression.
4. Muscles of mastication.
5. Temporo Mandibular Joint.
6. Salivary glands.
7. Tongue.
8. Hard and soft palate.
9. Paranasal air sinuses.
10. Cranial nerves - with emphasis on trigeminal, facial, glossopharyngeal and hypoglossal nerve.
11. Blood supply of head and neck.
12. Lymphatic system of head and neck.
13. Structure and relations of alveolar process and edentulous mouth.
14. Genetics-fundamentals.
15. Oral Histology:
    a. Development of dentition, Innervation of dentin and pulp.
    b. Periodontium-development, histology, blood supply, nerve supply and lymphatic drainage.
    c. Oral mucous membrane.
    d. Pulp-periodontal complex.

II) Applied Physiology and Biochemistry

1. Mastication and deglutition.
2. Food and nutrition.
3. Metabolism of carbohydrates, proteins and fats.
4. Vitamins and minerals.
5. Pain pathway and its mechanism.
6. Blood composition, function, clotting mechanism, erythropoiesis, Blood groups and transfusions.
7. Pulse and blood pressure.
8. Cardiovascular system – homeostasis, heart sounds.
9. Respiratory system- normal physiology and variations in health and diseases, asphyxia and artificial respiration.
10. Endocrinology: thyroid, parathyroid, adrenals, pituitary, pancreas and sex hormones.

III) Applied Pathology

1. Inflammation.
2. Oedema, thrombosis and embolism.
3. Hemorrhage and shock.
4. Neoplasia and metastasis.
5. Blood disorders.

IV) Microbiology

1. Microbial flora of oral cavity.
2. Bacteriology of dental caries and periodontal disease.
3. Methods of sterilization.
4. Virology of HIV, herpes and hepatitis.
5. Basic immunology - basic concepts of immune system in human body.
6. Autoimmune diseases.

V) Applied Pharmacology

1. Chemotherapy of bacterial and viral infections.
2. Local anesthesia.
3. Analgesics and anti-inflammatory drugs.
4. Emergency drugs in dental practice.

VI) Oral Pathology

1. Histopathology and pathogenesis of dental caries, periodontal disease and oral mucosal lesions.
2. Facial space infection.

VII) Research Methodology

1. Research methodology- definitions, types of research, designing protocol for research, objectivity in methodology, quantification, records and analysis.
2. Biostatistics: -Introduction, applications, uses and limitations of bio - statistics in Public Health dentistry, collection of data, presentation of data, measures of central tendency, measures of dispersion, methods of summarizing, parametric and non parametric tests of significance, correlation and regression, sampling and sampling techniques - types, errors, bias, trial and calibration.

VIII) Computers

Basic operative skills in analysis of data and knowledge of multimedia Health informatics: basic understanding of computers and its components, operating software (Windows), Microsoft office, preparation of teaching materials like slides, project, multimedia knowledge.

IX) Public Health

1. Introduction to Public Health
   a. Definition, concepts and philosophy of dental health.
   b. History of public health in India and at international level.
   c. Terminologies used in public health.

2. Health
   a. Definition, concepts and philosophy of health.
   b. Health indicators.
   c. Community and its characteristics and relation to health.

3. Disease
    a. Definition, concepts.
    b. Multifactorial causation, natural history, risk factors.
    c. Disease control, eradication, evaluation and causation, infection of specific diseases.
    d. Vaccines and immunization.

4. General Epidemiology
    a. Definition, aims and general principles.
    b. Methods in epidemiology, descriptive, analytical, experimental and classic epidemiology of specific diseases.
    c. Uses of epidemiology.
    d. Duties of epidemiologist.
    e. General idea of method of investigating chronic diseases mostly non-infectious in nature, epidemic, endemic, and pandemic.
    f. Ethical conversation in any study requirement.
    g. New knowledge regarding ethical subjects.
    h. Screening of diseases and standard procedures.

5. Public Health Education:
    a. Definition, aims, principles of health education.
    b. Health education, methods, models, contents, planning health education programs.

This is basic minimum requirement, however a student needs to know all the related aspects of the above mentioned topics.

TRAINING SCHEDULE

I. Academic Training

1. Basic Seminars.
2. Journal clubs.
3. Commencement of library assignment.
4. Submission of synopsis for dissertation-within 6 months.
5. Periodic review of dissertation at two monthly intervals.
6. Pedagogy for P.G. orientation.
7. Commencement of short term research.

II. Clinical Training

1. Clinical assessment of patient.
2. Learning different criteria and instruments used in various oral indices.
   a. Oral Hygiene Index-Greene and Vermillion.
   b. Oral Hygiene Index – Simplified.
   c. DMF-DMF(T), DMF (S). Def.
   d. Fluorosis Indices - Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index.
   e. Community Periodontal Index of Treatment Needs (CPITN).
   f. Plaque Index-Silness and Loe.
3. WHO Oral Health Assessment Form -1997.
4. Carrying out treatment (under comprehensive oral health care).

III. Field Programme

1. Carrying out preventive programs and health education for school children of the adopted school.
2. Organizing and carrying out dental camps in both urban and rural areas.
3. Visit to slum, water treatment plant, sewage treatment plant, and Milk dairy, Public Health Institute, Anti-Tobacco Cell, Primary Health Center and submitting reports.
4. In additions the postgraduate shall assist and guide the under graduate students in their clinical and field programs.
5. Posting in satellite clinic.
6. In addition the post graduate shall assist and guide the under graduate students in their clinical and field programs.

IV. Maintaining Records

1. Daily work done.
2. Log book.

SECOND YEAR

I) Biostatistics

1. Advanced statistical analysis.

II) Environment and Health

1. Impact of important components of the environment on health.
2. Principles and methods of identification, evaluation and control of such health hazards.
3. Pollution of air, water, soil, noise and food.
4. Water purification and international standards of water.
5. Domestic industrial toxins and ionizing radiation.
6. Occupational hazards.
7. Waste disposal- various methods and sanitation.

III) Public Health Practice and Administration System in India

IV) Ethics And Jurisprudence:

1. Basic principles of law.
2. Contract laws- dentist - patient relationships and Legal forms of practice.
3. Dental malpractice.
4. Person identification through dentistry.
5. Legal protection for practicing dentist.
6. Consumer Protection Act.

V) Nutrition in Public Health

1. Study of science of nutrition and its application.
2. Nutritional surveys and their evaluation.
3. Influence of nutrition and diet on general and oral health (dental caries, periodontal disease and oral cancer).
4. Dietary constituents and cariogenecity.
5. Guidelines for nutrition.

VI) Behavioral Sciences

1. Definition and introduction.
2. Sociology: social class, social group, family types, communities, social relationships and culture.

VII) Physical and Social Anthropology

1. Introduction and definition.
2. Evolution of human race, various studies of different races by anthropological methods.

VIII) Health Care Delivery System

1. International oral health care delivery systems – Review.
2. Central and state system in general and oral health care delivery system.
3. National oral health policy.
4. National health programme.
5. Primary health care - concepts, oral health in Primary Health Center and its implications.

6. National and international health organizations.
7. Dentists Act 1928, Dental council of India, Ethics, Indian Dental Association.
8. Role of W.H.O. and Voluntary organizations in Health Care for the Community.

IX) Epidemiology of Oral Diseases and Conditions

1. Dental caries, gingival and periodontal diseases, malocclusion, dental fluorosis, oral cancer, TMJ disorders and other oral health related problems.

X) Oral Survey Procedures

1. Planning.
2. Implementation.
3. WHO basic oral health methods 1997.
4. Indices for dental diseases and conditions.
5. Evaluation.

XI) Delivery of Dental Care

1. Dental person power - dental auxiliaries.
2. Dentist- population ratio.
3. Public dental care programs.
4. School dental health programs- Incremental and comprehensive dental care.
5. Private and group practice.
6. Oral health policy- National and international policy.

XII) Payment for Dental Care

1. Prepayment.
2. Post-payment.
3. Reimbursement plans.
4. Voluntary agencies.
5. Health insurance.

XIII) Evaluation of Quality of Dental care

1. Problems in public and private oral health care system program.
2. Evaluation of quality of services and governmental control.

XIV) Preventive Dentistry

1. Levels of prevention.
2. Preventive oral health programs screening, health education and motivation.
3. Prevention of dental diseases-dental caries, periodontal diseases, oral cancer, malocclusion and Dentofacial anomalies.
4. Role of dentist in prevention of oral diseases at individual and community level.
5. Fluoride.
    a. History.
    b. Mechanism of action.
    c. Metabolism.
    d. Fluoride toxicity.
    e. Fluorosis.
    f. Systemic and topical Fluorides.

g. Update regarding Fluorides.
h. Epidemiological studies.
i. Defluoridation techniques.

6. Plaque control measures
   a. Health Education.
   b. Personal oral hygiene.
   c. Mechanical plaque control.
   d. Chemical plaque control.
   e. Dentifrices, mouth rinses.

7. Pit and fissure sealant, Atraumatic Restorative Treatment (ART).
8. Preventive oral health care for medically compromised individual.
9. Update on recent preventive modalities.
10. Caries vaccines.
11. Diet counseling.
12. Minimal Invasive dentistry (MID).

This is basic minimum requirement, however a student needs to know all the related aspects of the above mentioned topics.

TRAINING SCHEDULE

I. Academic Training

1. Seminars in Public Health and Dental Public Health topics.
2. Conducting journal clubs.
3. Completion of second short-term research project.
4. Periodic review of dissertation at monthly reviews.
5. Pedagogy for P.G. orientation.

II. Clinical Training

1. Clinical assessment of patient.
2. Learning different criteria and instruments used in various oral indices.
   a. Oral Hygiene Index-Greene and Vermillion.
   b. Oral Hygiene Index – Simplified.
   c. DMF-DMF (T), DMF (S). Def t/s.
   d. Fluorosis Indices - Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index.
   e. Community Periodontal Index of Treatment Needs (CPITN).
   f. Plaque Index-Silness and Loe.
   g. WHO Oral Health Assessment Form-1997.
3. Carrying out treatment (under comprehensive oral health care)
4. Application of the following preventive measures in clinic.
   a. Topical Fluoride application - Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations and Fluoride varnishes.
   b. Pit and Fissure Sealants

III. Field Program

1. Organizing and carrying out dental camps in both urban and rural areas.
2. Assessing oral health status of various target groups like School children, expectant mothers, Handicapped, Underprivileged, and geriatric populations. Planning dental manpower and financing dental health care for the above group.
3. Planning total health care for school children in an adopted school:
   a. Periodic surveying of school children.
   b. Incremental dental care.
   c. Comprehensive dental care.
4. Organizing and conducting community oral health surveys for all oral conditions.
5. In addition the postgraduate shall assist and guide the under graduate students in their clinical and field programmes.
6. Posting in satellite clinic.
7. In addition the post graduate shall assist and guide the under graduate students in their clinical and field programs.

IV. Maintaining Records

1. Daily work done.
2. Log book.

THIRD YEAR

I) Practice Management

1. Definition.
2. Principles of management of dental practice and types.
3. Organization and administration of dental practice.
4. Ethical and legal issues in dental practice.
5. Critical review of current practice.
6. Recent advances in practice management.

II) Hospital Administration

1. Departmental maintenance and organizational structures.
2. Types of practices.
3. Biomedical waste management.

III) Oral Biology and Genetics

1. Introduction to genetics, DNA, RNA.
2. Genetic counseling, gene typing.
3. Genetics in oral disorders.
4. Genetic Engineering - Answer to current health problems.

IV) Recent Advances

1. Recent advances in Public Health Dentistry.
2. Evidence based dentistry.
3. Tele dentistry.
4. Oral health related quality of life.

V) Application of behavioral and social sciences to dental public health

1. Culture and oral health.
2. Sociology and oral health.
3. Psychology and oral health.

VI) Programme Planning and Problem Solving

1. Planning a programme for prevention of oral diseases for various groups including special groups such as chronically ill, handicapped and institutionalized people.

This is basic minimum requirement, however a student needs to know all the related aspects of the above mentioned topics.

TRAINING SCHEDULE

I. Academic Training

1. Seminars on recent advances in Preventive Dentistry and Dental Public Health
2. Critical evaluation of scientific articles
3. Completion and submission of dissertation
4. To take lecture classes for Undergraduate students in order to learn teaching methods (pedagogy) on assigned topic
5. Exercise on solving community health problems.

II. Clinical Training

1. Clinical assessment of patient.
2. Learning different criteria and instruments used in various oral indices.
   a. Oral Hygiene Index - Greene and Vermillion.
   b. Oral Hygiene Index - Simplified.
   c. DMF(T), DMF (S).
   d. Def t/s.
   e. Fluorosis Indices - Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index.
   f. Community Periodontal Index of Treatment Needs (CPITN).
   g. Plaque Index-Silness and Loe.
3. WHO Oral Health Assessment Form –1997.
4. Carrying out treatment (under comprehensive oral health care) in clinic.
5. Application of the following preventive measures in clinic.
   a. Topical Fluoride application - Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations and Fluoride varnishes.
   b. Pit and Fissure Sealants.

III. Field Program

1. Organizing and carrying out dental camps in both urban and rural areas.
2. Planning total health care for school children in an adopted school:
   a. Periodic surveying of school children.
   b. Incremental dental care.
   c. Comprehensive dental care.
3. Posting in satellite clinic.

IV. Maintaining Records

1. Daily work done.
2. Log book.

Before completing the third year M.D.S., a student must have attended two national conferences and one state level conference. Attempts should be made to present two scientific papers, Poster presentation, publication of a scientific article in a journal.

IV. Monitoring Learning Process:

It is essential to monitor the learning progress of each candidate through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring be done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment be done using checklists that assess various aspects.

TRAINING SCHEDULE

Academic Training

S. No	Type of Work	First Year	Second Year	Third Year	Total
1.	Submission of synopsis for dissertation	Within six months	--	--	
2.	Basic Seminars	5	--	--	5
3.	Subject Seminars	--	5	5	10
4.	journal clubs	10	10	--	20
5.	Periodic review of dissertation at two monthly intervals				
6.	Library dissertation	To be complete at the end of 18 months	--	--	1
7.	Short term research project	1	1	--	2
8.	Critical evaluation	--	--	10	10
9.	Completion and submission of dissertation	--	--	Six months before the university examination	
10.	Pedagogy for P. G. Orientation	5	5	--	10
11.	To take lecture classes (2) for Undergraduate students in order to learn teaching methods (pedagogy) on assigned topic.	--	--	2	2

Clinical Training

S. No	Type of Work	First Year	Second Year	Third Year	Total
1.	Clinical assessment of patient	15	15	15	45
2.	Learning different criteria and instruments used in various oral indices:				
	a) Oral Hygiene Index-Greene and Vermillion	10	10	10	30
	b) Oral Hygiene Index - Simplified	10	10	10	30
	c) DMF(T), DMF (S) Def	10 Each	10 Each	10 Each	30 Each
	d) Fluorosis Indices – Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index	10 Each	10 Each	10 Each	30 Each
	e) Community Periodontal Index of treatments needs(CPITN)	10	10	10	30
	f) Plaque Index-Silness and Loe	10	10	10	30
3.	WHO Oral Health Assessment Form - 1997	30	30	40	100
4.	Carrying out treatment (under comprehensive oral health care) in the clinic	20	10	10	40

Field Programme

Sl. No	Type of Work	First Year	Second Year	Third Year	Total
1.	Organizing and carrying out dental camps in both urban and rural areas.	10	10	10	30
2.	Visit to slum, water treatment plant, sewage treatment plant and Milk dairy, Public Health Institute, Anti-Tobacco Cell, Primary Health Center and submitting reports.	Any two visits	Any two visits	--	4 visits
3.	Posting in satellite clinic	On rotation basis	On rotation basis	On rotation basis	
4.	a) Assessing oral health status of various target groups like School children, Expectant mothers, Handicapped, Underprivileged, and geriatric populations. b) Planning dental manpower and financing dental health care for the above group.	--	Anyone group	Anyone group	2
5.	Planning total health care for school children in an adopted school:				
	a) Periodic surveying of school children b) Incremental dental care	For 1 School	Continuation	Continuation	For 1 school
	c) Preventive dental care • Pit and fissure sealants • ART • Fluoride applications	10 each	10 each	10 each	30 each
	d) Comprehensive dental care	10	10	10	30
6.	In addition the postgraduate shall assist and guide the under graduate students in their clinical and field programmes	For one batch of Under graduate students	For one batch of Under graduate students	--	

Dissertations

1. Synopsis
   a. Identifying and Selection of topic.
   b. Synopsis writing.
   c. Presentation of synopsis to the department, institute review board and ethical committee.
   d. Submission to university (End of first six months) .
2. Library Dissertation: Completion and submission by 18 Months of commencement of post graduate programme.
3. Main Dissertation submission 6 Months before university examination.

Assessment and monitoring

1. Daily work done record and log books.
2. Scheme of Exams (Institutional level).
   a. First Internal assessments on basic sciences at the end of first year (Theory).
   b. Second Internal assessments at the end of Second year (Theory and Practical / Clinical).
   c. Preliminary examination in the last 6 months (Theory and practical / Clinical and viva voce).

SCHEME OF UNIVERSITY EXAMINATION

A. THEORY : 300 MARKS

a) Paper I	075 Marks
b) Paper II	075 Marks
c) Paper III	075 Marks
d) Paper IV	075 Marks
Total	**300 Mark**

Written examination shall consist of four question papers each of three hours duration. Total marks for each paper will be 100. Paper I, II and III shall consist of two long questions carrying 20 marks each and 6 short essay questions each carrying 10 marks. Paper IV will be on Essay. Questions on recent advances may be asked in any or all the papers. Distribution of topics for each paper will be as follows:

Paper I : Applied Basic Sciences - Applied Anatomy and Histology, Applied Physiology and Biochemistry, Applied Pathology, Microbiology, Oral Pathology, and Research Methodology and Biostatistics.

Paper II: Public Health.

Paper III: Dental Public Health.

Paper IV: Essay - Topics of current interest in community oral health.

The topics assigned to the different papers are generally evaluated under those sections. However a strict division of the subject may not be possible and some overlapping of topics is inevitable. Students should be prepared to answer overlapping topics

B. PRACTICAL / CLINICAL : 200 MARKS

1. Clinical examination of at least 2 patients representing the community – includes history, main complaints, examination and recording of the findings, using indices for the assessment of oral health and presentation of the observation including diagnosis, comprehensive treatment planning. **(75 Marks -21/2 Hrs)**
2. Performing One of the procedures specified in the curriculum (Pit and fissure sealant, fluoride application or atraumatic restorative treatment). **(25 Marks - 1/2 Hrs)**
3. Critical evaluation of a given research article published in an international journal. **(50 Marks – 11/2 Hour)**
4. Problem solving - a hypothetical oral health situation existing in a community is given with sufficient data. The student as a specialist in community dentistry is expected to suggest practical solutions to the existing oral health situation of the given community. **(50 Marks - 1 1/2 Hours)**

C. VIVA VOCE EXAMINATION : 100 Marks

a. Viva voce. : 80 Marks
   All examiners will conduct viva-voce conjointly on candidate's comprehension, analytical approach, expression, interpretation of data and communication skills. It includes all components of course contents.

b. Pedagogy : 20 Marks
   A topic be given to each candidate in the beginning of clinical examination. He/she is asked to make a presentation on the topic for 20-30 minutes.

Total (A+B+C) = 600 Marks