

PUBLIC HEALTH DENTISTRY-DS207

INTRODUCTION:

Public Health Dentistry works for the promoting oral health and preventing oral disease. The department strives to take education to the masses to improve their quality of life. We believe the key to ultimate oral health lies in educating and motivating people and bringing positive social change.

Educational activities

Oral health education is provided in the every camp to the residents of the place. Oral health education is provided with the help of lecture, power point presentation, posters, models and demonstration. When the patient comes to the department education is imparted to the patient by taking him through the museum displaying various charts and models pertaining to oral health.

Student's education they taught in an interactive manner for better understanding and also to increase their intellectual skills. Field works like PHC, Old age home, orphanage, handicapped schools visits are undertaken. To enhance students understanding about the social setting, assessment of its problem and program planning to solve the condition. Field surveys are encouraged to provide them the first experience about planning and evaluation, data collection, presentation and analysis.

Research activities: Applied researches are encouraged.

OBJECTIVES:

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

KNOWLEDGE:

- 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.
- 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.
- 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.
- Ability to act as a consultant in community Oral Health, teaching 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.

SKILLS:

The candidate should be able to:

- 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.
- Plan and perform all necessary treatment, prevention and promotion of Oral Health at the individual and .community level.

- Plan appropriate Community Oral Health Program, conduct the program and evaluate, at the community level.
- Ability to make use of knowledge of epidemiology to identify causes and plan appropriate preventive and control measures.
- Develop appropriate person power at various levels and their effective utilization.
- Conduct survey and use appropriate methods to impart Oral Health Education.
- Develop ways of helping the community towards easy payment plan, and followed by evaluation for their oral health care needs.
- Develop the planning, implementation, evaluation and administrative skills to carry out successful community Oral Health Programs.

VALUES:

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

SYLLABUS:

APPLIED BASIC SCIENCES:

I. APPLIED ANATOMY AND HISTOLOGY:

A. Applied Anatomy in relation to:

- o Development of face
- o Branchial arches
- o Muscles of facial expression
- o Muscles of mastication
- o TMJ
- o Salivary gland
- o Tongue
- o Salivary gland
- o Tongue
- o Hard and soft palate
- o Infratemporal fossa
- o Paranasal air sinuses
- o Pharynx and larynx
- o Cranial and spinal nerves- with emphasis on trigeminal, facial, glossopharyngeal and
- o hypoglossal nerve
- o Osteology of maxilla and mandible
- o Blood supply, venous and lymphatic drainage of head and neck

- o Lymph nodes of head and neck
- o Structure and relations of alveolar process and edentulous mouth
- o Genetics-fundamentals

B. Oral Histology

- o Development of dentition, Innervations of dentin and pulp
- o Periodontium-development, histology, blood supply, nerve supply and lymphatic drainage
- o Oral mucous membrane
- o Pulp-periodontal complex

II. APPLIED PHYSIOLOGY AND BIOCHEMISTRY:

- o Cell
- o Mastication and deglutition
- o Food and nutrition
- o Metabolism of carbohydrates, proteins and fats
- o Vitamins and minerals
- o Fluid and electrolyte balance
- o Pain pathway and mechanism-types, properties
- o Blood composition and functions, clotting mechanism and erythropoiesis, Blood groups and transfusions, Pulse and blood pressure,
- o Dynamics of blood flow
- o Cardiovascular homeostasis-heart sounds
- o Respiratory system: Normal physiology and variations in health and diseases, Asphyxia and
- o artificial respiration
- o Endocrinology: thyroid, parathyroid, adrenals, pituitary, sex hormones and pregnancy,
- o Endocrine regulation of blood sugar.

III. A. APPLIED PATHOLOGY:

- o Pathogenic mechanism of molecular level
- o Cellular changes following injury
- o Inflammation and chemical mediators
- o Oedema, thrombosis and embolism
- o Hemorrhage and shock
- o Neoplasia and metastasis
- o Blood disorders
- o Histopathology and pathogenesis of dental caries, periodontal disease, oral mucosal lesions, and malignancies, HIV
- o Propagation of dental infection

III. B. MICROBIOLOGY:

- o Microbial flora of oral cavity
- o Bacteriology of dental caries and periodontal disease
- o Methods of sterilization
- o Virology of HIV, herpes, hepatitis

- o Parasitology
- o Basic immunology – basic concepts of immune system in human body
 - Cellular and humoral immunity
 - Antigen and antibody system
 - Hypersensitivity
 - Autoimmune diseases

III. C. ORAL PATHOLOGY:

- o Detailed description of diseases affecting the oral mucosa, teeth, supporting tissues and jaws.

IV. PHYSICAL AND SOCIAL ANTHROPOLOGY:

- o Introduction and definition
- o Appreciation of the biological basis of health and disease
- o Evolution of human race, various studies of different races by anthropological methods

V. APPLIED PHARMACOLOGY:

- o Definition, scope and relations to other branches of medicine, mode of action, bioassay, standardization, pharmacodynamics, pharmacokinetics.
- o Chemotherapy of bacterial infections and viral infections – sulphonamides and antibiotics.
- o Local anesthesia
- o Analgesics and anti-inflammatory drugs
- o Hypnotics, tranquilizers and antipyretics
- o Important hormones-ACTH, cortisone, insulin and oral anti-diabetics.
- o Drug addiction and tolerance
- o Important pharmacological agents in connection with autonomic nervous system-
 - o adrenaline, noradrenaline, atropine
 - o Brief mention of antihypertensive drugs
 - o Emergency drugs in dental practice
 - o Vitamins and haemopoietic drugs

VI. RESEARCH METHODOLOGY AND BIOSTATISTICS:

HEALTH INFORMATICS – basic understanding of computers and its components, operating software (Windows), Microsoft office, preparation of teaching materials like slides, project, multimedia knowledge.

RESEARCH METHODOLOGY – definitions, types of research, designing written protocol for research, objectivity in methodology, quantification, records and analysis.

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, multivariate analysis, sampling and sampling techniques – types, errors, bias, trial and calibration

COMPUTERS – Basic operative skills in analysis of data and knowledge of multimedia.

PUBLIC HEALTH:

PUBLIC HEALTH:

- Definition, concepts and philosophy of dental health
- History of public health in India and at international level
- Terminologies used in public health

HEALTH:

- Definition, concepts and philosophy of health
- Health indicators
- Community and its characteristics and relation to health

DISEASE:

- Definition, concepts
- Multifactorial causation, natural history, risk factors
- Disease control and eradication, evaluation and causation, infection of specific diseases
- Vaccines and immunization

GENERAL EPIDEMIOLOGY:

- o Definition and aims, general principles
- o Multifactorial causation, natural history, risk factors
- o Methods in epidemiology, descriptive, analytical, experimental and classic epidemiology of specific diseases, uses of epidemiology
- o Duties of epidemiologist
- o General idea of method of investigating chronic diseases, mostly non-infectious nature, epidemic, endemic, and pandemic.
- o Ethical conversation in any study requirement
- o New knowledge regarding ethical subjects
- o Screening of diseases and standard procedures used

ENVIRONMENTAL HEALTH:

- o Impact of important components of the environment of health
- o Principles and methods of identification, evaluation and control of such health hazards
- o Pollution of air, water, soil, noise, food
- o Water purification, international standards of water
- o Domestic and industrial toxins, ionizing radiation
- o Occupational hazards
- o Water disposal- various methods and sanitation

PUBLIC HEALTH EDUCATION:

- o Definition, aims, principles of health education
- o Health education, methods, models, contents, planning health education programs

PUBLIC HEALTH PRACTICE AND ADMINISTRATION SYSTEM IN INDIA.

ETHICS AND JURISPRUDENCE:

- o Basic principles of law
- o Contract laws- dentist – patient relationships & Legal forms of practice
- o Dental malpractice
- o Person identification through dentistry
- o Legal protection for practicing dentist
- o Consumer protection act

NUTRITION IN PUBLIC HEALTH:

- o Study of science of nutrition and its application to human problem
- o Nutritional surveys and their evaluations
- o Influence of nutrition and diet on general health and oral health, dental caries, periodontal disease and oral cancers
- o Dietary constituents and cariogenicity
- o Guidelines for nutrition

BEHAVIORAL SCIENCES:

- o Definition and introduction
- o Sociology: social class, social group, family types, communities and social relationships, culture, its effect on oral health.
- o Psychology: definition, development of child psychology, anxiety, fear and phobia, intelligence, learning, motivation, personalities, fear, dentist-patient relationship, modeling and experience

HOSPITAL ADMINISTRATION:

- o Departmental maintenance, organizational structures
- o Types of practices
- o Biomedical waste management

HEALTH CARE DELIVERY SYSTEM:

- o International oral health care delivery systems – Review
- o Central and state system in general and oral health care delivery system if any
- o National and health policy
- o National health programme
- o Primary health care – concepts, oral health in PHC and its implications
- o National and international health organizations
- o Dentists Act 1928, Dental council of India, Ethics, Indian Dental Association
- o Role of W.H.O. and Voluntary organizations in Health Care for the Community

ORAL BIOLOGY AND GENETICS:

- o A detailed study of cell structure
- o Introduction to Genetics, Gene structure, DNA, RNA
- o Genetic counseling, gene typing
- o Genetic approaches in the study of oral disorders
- o Genetic Engineering - Answer to current health problems

DENTAL PUBLIC HEALTH:

- o History
- o Definition and concepts of dental public health
- o Differences between clinical and community dentistry
- o Critical review of current practice
- o Dental problems of specific population groups such as chronically ill, handicapped and institutionalized group

EPIDEMIOLOGY OF ORAL DISEASES AND CONDITIONS:

- o Dental caries, gingival, periodontal disease malocclusion, dental Fluorosis, oral cancer, TMJ disorders and other oral health related problems.

ORAL SURVEY PROCEDURES:

- o Planning
- o Implementation
- o WHO basic oral health methods 1997 and 2013
- o Indices for dental diseases and conditions
- o Evaluation

DELIVERY OF DENTAL CARE:

- o Dental person power – dental auxiliaries
- o Dentist – population ratios,
- o Public dental care programs
- o School dental health programs- Incremental and comprehensive care
- o Private practice and group practice
- o Oral health policy – National and international policy

PAYMENT FOR DENTAL CARE:

- o Prepayment
- o Post-payment
- o Reimbursement plans
- o Voluntary agencies
- o Health insurance

EVALUATION OF QUALITY OF DENTAL CARE:

- o Problems in public and private oral health care system program
- o Evaluation of quality of services, governmental control

PREVENTIVE DENTISTRY:

- o Levels of prevention
- o Preventive oral health programs screening, health education and motivation
- o Prevention of all dental diseases-dental caries, periodontal diseases, oral cancer, malocclusion and Dentofacial anomalies
- o Role of dentist in prevention of oral diseases at individual and community level.
- o Fluoride
 - History
 - Mechanism of action
 - Metabolism
 - Fluoride toxicity

- Fluorosis
- Systemic and topical preparations
- Advantages and disadvantages of each
- Update regarding Fluorosis
- Epidemiological studies
- Methods of fluoride supplements
- Defluoridation techniques

Plaque control measures-

- Health Education
- Personal oral hygiene
- Tooth brushing technique
- Dentifrices, mouth rinses
 - Pit and fissure sealant, ART
 - Preventive oral health care for medically compromised individual
 - Update on recent preventive modalities
 - Caries vaccines
 - Dietary counseling

PRACTICE MANAGEMENT:

- Definition
- Principles of management of dental practice and types
- Organization and administration of dental practice
- Ethical and legal issues in dental practice
- Current trends

TEACHING AND LEARNING ACTIVITIES

FIRST YEAR

Seminars

7 Seminars in basic sciences subject

To conduct 10 journal clubs

Library assignment on assigned topic-1

Submission of synopsis for dissertation

Periodic review of dissertation at two monthly intervals

Clinical training

1. Clinical assessment of patient
2. Learning different criteria and instruments used in various oral indices – 5 each
 - Oral Hygiene Index – Greene and Vermillion
 - Oral Hygiene Index – Simplified
 - DMF – DMF (T), DMF (S)
 - Def t/s
 - Fluorosis Indices – Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index
 - Community Periodontal Index (CPI), Periodontal Index
 - Plaque Index-Silness and Loe, Gingival and bleeding indices

- o WHO Oral Health Assessment Form – 1997/2013
- o Carrying out treatment (under comprehensive oral health care) of 10 patients – maintaining complete records

Field programme

1. Carrying out school dental health education.
2. School based preventive programs-
 - a. Topical Fluoride application – Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations and Fluoride varnishes.
 - b. Pit and Fissure Sealant
 - c. Minimal Invasive Techniques – Preventive Resin Restorations (PRR), Atraumatic Restorative Treatment (ART)
3. Organizing and carrying out dental camps in both urban and rural areas.
4. Visit to slum, water treatment plant, and sewage treatment plant and milk diary. PHC and submitting reports.
5. Assist and guide the undergraduate students in their clinical and field programs.

SECOND YEAR

Seminars

7 Seminars in subject

To conduct 10 journal clubs

Periodic review of dissertation at two monthly intervals

Short term research -2

Clinical training

1. Clinical assessment of patient
 2. Learning different criteria and instruments used in various oral indices – 5 each
 - Oral Hygiene Index – Greene and Vermillion
 - Oral Hygiene Index – Simplified
 - DMF – DMF (T), DMF (S)
 - Def - t/s
 - Fluorosis Indices – Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index
 - Community Periodontal Index (CPI), Periodontal Index
- Plaque Index-Silness and Loe, Gingival and bleeding indices
- WHO Oral Health Assessment Form – 1997/2013 • Carrying out treatment (under comprehensive oral health care) of 10 patients – maintaining complete records

Field programme

1. Carrying out school dental health education.
2. School based preventive programs-
 - Topical Fluoride application – Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations and Fluoride varnishes.
 - Pit and Fissure Sealant

- Minimal Invasive Techniques – Preventive Resin Restorations (PRR), Atraumatic Restorative Treatment (ART)
 - Organizing and carrying out dental camps in both urban and rural areas.
3. Assessing oral health status of various target groups like school children, handicapped, underprivileged/ geriatric populations.
 4. Application of the following preventive measures in clinic – 10 cases each.
 - Topical Fluoride application – Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations
 - Pit and Fissure sealants
 5. Planning total health care for school children in an adopted school
 - Periodic surveying of school children
 - Incremental dental care
 - Comprehensive dental care
 6. Organizing and conducting community and oral health service for all oral conditions-3 surveys.
 7. In addition the post graduate shall assist and guide the under graduate students in their clinical and field programs. Before completing the third year MDS students must have attended three conferences/ conventions along with three presentations by each student. Each student must also have one scientific publication.
 8. To take lecture classes (2) for Undergraduate students in order to learn teaching methods (pedagogy) on assigned topic.
 9. Posting at dental satellite centers/ nodal centers

THIRD YEAR

Seminars

7 Seminars in subject

To conduct 10 journal clubs

Completion and submission of dissertation

Clinical training

1. Clinical assessment of patient
2. Learning different criteria and instruments used in various oral indices – 5 each • Oral Hygiene Index – Greene and Vermillion
 - Oral Hygiene Index – Simplified
 - DMF – DMF (T), DMF (S)
 - Def t/s
 - Fluorosis Indices – Dean's Fluorosis Index, Tooth Surface Index for Fluorosis, Thylstrup and Fejerskov Index
 - Community Periodontal Index (CPI), Periodontal Index
 - o Plaque Index-Silness and Loe, Gingival and bleeding indices
 - WHO Oral Health Assessment Form 2013
 - Carrying out treatment (under comprehensive oral health care) of 10 patients – maintaining complete records

Field programme

1. Carrying out school dental health education.
2. School based preventive programs-
 - Topical Fluoride application – Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations and Fluoride varnishes.
 - Pit and Fissure Sealant
 - Minimal Invasive Techniques – Preventive Resin Restorations (PRR), Traumatic Restorative Treatment (ART)
3. Organizing and carrying out dental camps in both urban and rural areas.
4. Assessing oral health status of various target groups like school children, handicapped, underprivileged/ geriatric populations.
5. Application of the following preventive measures in clinic – 10 cases each.
 - Topical Fluoride application – Sodium Fluoride, Stannous Fluoride, Acidulated Phosphate Fluoride preparations
 - Pit and Fissure sealants
6. To take lecture classes (2) for Undergraduate students in order to learn teaching methods (pedagogy) on assigned topic.
7. Exercise on solving community health problems – 10 problems
8. Dental – health education training of school teachers, social workers, health workers.
9. In addition the post graduate shall assist and guide the under graduate students in their clinical and field programs Before completing the third year M.D.S., a student must have attended 3 conferences/ convention along with 3 presentation by each student. Each student must also have one scientific publication. Each student must have postings in allied medical or dental subjects (Oncology/ Radiotherapy) – 1 month.

RECOMMENDED BOOKS FOR READING

Sr. No.	Title	Author
1	Mosby's comprehensive review of dental hygiene (with CD)(5 th ed.)	Darby, Michele
2	Park's textbook of preventive and community dentistry (23 rd ed.)	Park, K
3	Dentistry, Dental practice and the community (6 th ed.)	Burt, Brian A.
4	Dental clinical advisor (1 st ed.)	Hupp, James R
5	Oxford hand book of clinical dentistry (4 th ed.)	Mitchell, David A.
6	Embalming; principles and legal aspect (1 st ed.)	Ajmani, M.L
7	Diagnosis and risk prediction of dental caries (1 st ed.)	Axelsson per.

8	Oral health surveys basics methods (4 th ed.)	WHO, Geneva
9	Dental hygiene theory and practice (3 rd ed.)	Darby Micheleleonardi,walsh Margaret M
10	Maxcy-rosenau-last public health and preventive medicine (15 th ed.)	Wallace Robert b
11	Public health practice and the school-age population (1 st e.)	Debell diane
12	Modern epidemiology (1 st ed.)	Rothman Kenneth J
13	Primer of epidemiology (5 th ed.)	Friedman gary D
14	Primer of biostatistics (7 th ed.)	Glantz Stanton A
15	Park's textbook of preventive and social Medicine	Park.K
16	ABC of research methodology and applied biostatistics (1 st ed.)	Parikh MN
17	Treatment planning in general dental practice	Bain
18	Medical legal practitioners serie dentistry	Rowson
19	practice and community	Burt
20	Diagnostic risk prediction of dental caries	Axelsson
21	Prevention in clinical oral health care	Cappell
22	Epidemiology	Leon Gordis
23	Biostatistics for oral health care	Kim
24	Culturally sensitive oral health care	Crispian Scully
25	Minimally invasive dentistry	Wilson
26	Concepts in dental public health	Jill mason
27	Treatment planning in primary dental care	Shearer
28	Dental caries: the disease and its clinical management	Fejerskov
29	Behavioural science dentistry	Humphries
30	Fluoride in caries prevention	JJ murray
31	Social psychology	Pennington
32	Epidemiology biostatistics and preventive medicine	Jekel
33	Textbook of clinical cariology	Anders thylstrup
34	Preventive dentistry	Forrest
35	A textbook of preventive dentistry	Caldwell
36	Jung's community dental health	Gluck
37	Diet nutrition and the prevention of chronic diseases	WHO

38	Guidelines for drinking water quality VOL 2	WHO
39	National oral health survey and fluoride mapping	WHO
40	Essentials Of Dental Public Health	Blanaid Daly & Watt
41	Fluorides In Dentistry	Ole Fejerskov, Jan Ekstrand, Brain A Burt
42	Essentials Of Dental Caries, Disease & Management	Edwin Kidd
43	Introduction Risk Prediction And Preventive Dentistry	Axellsson Per
44	Primary Preventive Dentistry	Norman O Harris, Ranklin Farcia-Godoy, Christine Nielsen Nathe
45	Principles Of Dental Public Health	James Morse And Dunning
46	Prevention Of Oral Diseases	J.J. Murray, Jane H Nunn, James G Steele
47	Dental Public Health ;an introduction to community dentistry	SLACK GL
48	Preventive materials, methods and programs.	Axellsson Per
49	Fluoride And Dental Caries	Amrit Tiwari
50	Handbook Of Critical Evaluation And Journal Club	L. Nagesh.
51	Fluorides In Oral Health	WHO
52	Dental Public Health	Antony Jong
53	Management Of Dental Caries Through The Atraumatic Restorative Treatment (ART) Approach	M. Rahamatullah & Others
54	Research Methodology	WHO, Kothari
55	Textbook Of Preventive Medicine	Stallard
56	Anthropology: Theoretical Practice In Culture And Society	Michael Herzfeld
57	Nutrition In Clinical Dentistry	Nizel Papas
58	Principles and Practice of Public Health Dentistry	Krishna, Dasar
59	Prevention Of Hospital Acquired Infections	G.Ducel, J.Febry
60	Clinical Practice Of Dental Hygienist	Esther M Wilkins

RECOMMENDED JOURNALS

Sr. No.	Title
1	Journal of Public Health Dentistry (P/O)
2	Community Dentistry & Oral Epidemiology
3	Oral Health & Preventive Dentistry
4	International Journal of Dental Hygiene
5	Compendium of Continuing Education in Dentistry
6	Canadian Journal of Dental Hygiene
7	Journal of Dental Hygiene
8	International Journal of Dentistry
9	Internet Journal of Dental Science
10	Journal of American Dental Association (p)
11	Quintessence International
12	Evidence-Based Dentistry
13	Quintessence of Dental Technology(QDT)
14	Journal of the Canadian Dental Association
15	Journal of the Irish Dental Association
16	New York State Dental Journal
17	New Zealand Dental Journal
18	Open Dentistry Journal
19	Journal of the California Dental Hygienists' Association
20	Contemporary Oral Hygiene
21	Journal of Dental Biomechanics