Amrita School of Medicine
Amrita Institute of Medical Sciences (AIMS)
Kochi-682041

PROGRAM
MD COMMUNITY MEDICINE
(Revised with effect from 2016-2017 onwards)
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Preamble

M.D in Community Medicine is a Professional degree confirmed in recognition of a candidate’s command of a comprehensive body of knowledge in the field of public health, medical education and related disciplines. The focus of this degree is the development of knowledge, skills and aptitude in the areas of professional leadership and application of existing State-of-the-art knowledge and approaches to medical education and public health. It shall provide a comprehensive approach to public health issues in general and to Community Medicine in particular with special stress to medical education, research and service in the community settings.

Outcomes

Program Outcomes
PO1: Capability to function as a specialist in Community Medicine and Public Health
PO2: Competency to hold high academic / managerial / or administrative positions in health systems in India and abroad.
PO3: The competency to provide consultancy services to National or International Organization on Public Health issues.
PO4: The ability to scientifically plan, execute and evaluate ongoing Public Health Programmes and Medical Education System.

Program Specific Outcomes
PSO1: Ability to identify important public health problems and approaches to solve them
PSO1: Ability to practice modern techniques in epidemiology and research
PSO3: The ability to apply management techniques in health
PSO4: Ability to effectively communicate at individual, family and community using modern tools and techniques
PSO5: Competency to function as an effective health team leader and trainer
PSO6: Ability to apply the clinical skills to recognize and manage common health problems including their physical, emotional, social and economic aspects at the individual and family levels.
PSO7: Ability to manage / deal with medical emergencies at the community level.
PSO8: Ability to identify and manage the health problems of the community he / she serves.
PSO9: Ability to organize health care in disasters and calamities including rehabilitation services.
PSO10: Ability to organize health care services for special groups like mothers, infants, under fives, school children, adolescent, handicapped children, geriatric and terminally ill.
PSO11: Ability to identify the health needs and demands of the community and prioritise the most important problems and help formulate and implement a plan of action and to manage them under National Health Programme guidelines.
PSO12: The ability to use effectively tools of epidemiology for understanding disease causation and determinants
PSO13: The ability to effectively communicate findings of the study to the experts and public.
PSO14: Knowledge of medical ethics and etiquette.
PSO15: Skills necessary computer skills to carry out the above work.
PSO16: The ability to work as an effective member of the health team and as a team leader
PSO17: The competency to be an effective teacher and trainer of community medicine.

**Specific learning objectives**

At the end of the course, the candidate should be able to function / as Community Physicians / Primary Care Physicians and should be able

1. To identify important public health problems and approaches to solve them
2. To identify and practice modern techniques in epidemiology and research
3. To identify and apply management techniques in health
4. To identify and practice communication skills at individual, family and community using modern tools and techniques
5. To be competent to function as an effective health team leader and trainer

**Skill Development**

1. Able to apply the clinical skills to recognize and manage common health problems including their physical, emotional, social and economic aspects at the individual and family levels.

   1.1 Able to manage / deal with medical emergencies at the community level.
   1.2 Able to identify, plan and manage the health problems of the community he / she serves.
   1.3 Able to organize health care of disasters and calamities including rehabilitation services.
   1.4 Able to organize health care services for special groups like mothers, infants, under fives, school children, adolescent, handicapped children, geriatric and terminally ill.
   1.5 To identify the health needs and demands of the community and prioritise the most important problems and help formulate and implement a plan of action and to manage them under National Health Programme guidelines.

2. Aware of the national priorities and the goals to be achieved to implement primary health care.
2.1 Organise epidemiological research studies and should be able to design a study, collect data, analyze it with appropriate statistical technique and make a report.

2.2. Use effectively tools of epidemiology for understanding disease causation and determinants

2.3. Conduct epidemiological investigation of communicable and no communicable diseases and other health problems and suggest appropriate solutions.

2.4. To identify and formulate research questions and design and implement epidemiological and health system research studies.

2.5. To effectively communicate findings of the study to the experts and public.

2.6. Apply ethical principles in research

2.7. To prepare and present scientific papers

2.8. To acquire necessary computer skills to carry out the above work.

3.1 Aware of the health care delivery system and aware of the national priorities and goals to be achieved to implement public health care.

3.2 Manage health information system and respond timely to the information obtained.

3.3 Assess and find out economic need and identification of public health programmes.

3.4 Initiate, implement and supervise national health programmes

3.5 Implementation of public health laws

3.6 Plan human resources development

3.7 Manage logistics and materials effectively

3.8 Monitor and assure quality in programme implementation

4

4.1. Able to plan and implement health education programmes

4.2. Able to promote community participation in implementation of national health programmes.

4.3. Interact, communicate and educate effectively persons from diverse backgrounds to promote healthy behaviour through community participation

5.

5.1. To work as an effective member of the health team and as a team leader
5.2. Able to act as an effective teacher and trainer of community medicine

5.3. Able to assess the learning needs of any given group

5.4. Formulate learning objectives

5.5. To plan curriculum and prepare curriculum material

5.6. To implement appropriate teaching methods and to evaluate learning experience

5.7. To develop pedagogic skills to handle undergraduates and orientation sessions for health functionaries at different levels.

COURSE CONTENT

Paper I

Epidemiology including Biostatistics, Concepts of Communicable Diseases and Non communicable Diseases, Environmental health and Medical sociology

Epidemiology

- History of Epidemiology
- Concepts in Epidemiology
- Introduction to Descriptive and Analytical Epidemiology
- Quantitative Epidemiologic Methods
- Epidemiology of outbreaks / investigations
- Epidemiologic Surveillance
- Epidemiological studies
- Qualities of epidemiological tests
- Outcome measurement in health care
- Sensitivity and specificity
- Introduction to Geographic Information Systems
- Health mapping
- Disease mapping
- Record linkage
- Biomarkers
- Registries

Bio-statistics

- Research methodology
- Survey methodology
- Designing a research study
- Preparation of research protocol
- Determining sample size
- Research methods in social and behavioural sciences
- Sampling method
- Sampling and different types of sampling technique
- Introduction to Biostatistics
● Basic concepts of statistical reasoning, data description, descriptive statistics, probability concepts
● Tests of significance
● Estimation, confidence intervals, hypothesis testing, different tests of significance and the situation of their application – concept of standard error, chi-square, Z test, T test, correlation coefficient, linear regression, analysis of variance procedures, nonparametric methods, multivariate techniques, survival analysis and operational research – health service research.
● Introduction to statistical computing
● Introduction to statistical packages
● Computer skills

  **Communicable and Non-communicable diseases**

● Concepts – epidemiology, prevention & control

  **Environmental Health**

● Principles of Environmental Health and Human Ecology
● Environment health risks and their impact
● Environmental pollution
● Waste disposal
● Housing sanitation and standards
● Environmental Policy Programmes and Legislations
● Medical Entomology including vector and rodent control
● Current and emerging issues in environmental health

  **Occupational Health**

● Health problems and their prevention and control
● Legislation related to health, safety and welfare of workers
● Organisation and administration of occupational health services,
● Industrial hygiene
● Recent advances

  **Medical Sociology & Psychosocial issues**

● Cultural, socio economic and psychological determinants and their impact on health
● Knowledge, attitude and practice related to public health problems
● Clinico social case study in the family and community
● Impact of urbanization on health
● Doctor-patient relationship and hospital sociology
● Changes in lifestyle and health
● Common mental health issues and prevention

  **Paper II**

  **Reproduction and Child Health Issues including Public Health Nutrition**
● Reproduction and child health issues – relevance
● Policy and Programmes in Reproductive Child Health
● Reproductive Child Health package and interventions
● Women empowerment and gender related issues
● Newer initiatives in Reproductive Child Health
● Management of reproduction including sterility and birth regulation
● MTP, prenatal determination of sex
● School health
● Adolescent health
● Health problems, services and programmes for the priority groups – Geriatrics, Tribal
● Diet and life style issues

Public Health Nutrition

● Nutritional problems of the country; Role of nutrition in Health and Disease.
● Common sources of various nutrients and special nutritional requirement according to age, sex, activity, physiological conditions.
● Nutritional assessment of individual, families and the community by selecting and using appropriate methods such as: anthropometry, clinical, dietary, laboratory techniques
● Compare recommended allowances of individual and families with actual intake.
● Plan and recommend a suitable diet for the individuals and families bearing in mind local availability of foods, economic status and therapeutic diets.
● Common nutritional disorders: protein energy malnutrition
● National Nutritional Policy
● National programmes in nutrition and their evaluation
● Food hygiene, food adulteration, legislation to control adulteration

Paper III

Primary Health Care and Health System Management

● Rural sanitation
● Health legislations
● Health care system in India
● Health care delivery system in developed countries
● Socialized medicine
● Health insurance
● Urban Health Services in India
● Primary Health Care Initiative
● Health Promotion Initiatives
● Programme evaluation
● Cost benefit and cost effectiveness
● Quality of health care
● Health care versus medical care
● Role of NGOs in health care of the community
● Spiraling cost of medical care
● Public Health Program Planning and Evaluation
● Public Health Leadership
● Medical Anthropology
● Health and Public Health Law
● Health Economics
● Finance for Health Management
● Health Information Systems
● Technology assessment and economic evaluation of health programmes
● Health Care Management System
● Principles of inspection and supervision
● Modern concepts in health care management
● Total quality management
● Healthcare marketing
● Leadership in public health
● Community Based public health programmes
● Public health funding
● Management information systems
● Cost analysis and Cost effectiveness
● National Health Policy
● Health Planning in India
● National Rural Health Mission and National Urban Health Mission
● National Health Program
● Rural development
● Five year plans

Health Education (Information, Education, Communication)

● Effective communication with individuals, family and community using tools and techniques of information, education, communication.
● Principles of communication and barriers to effective communication
● Principles, methods and evaluation of health education
● Methods of health education with their advantages and disadvantages
● Use of appropriate media (simple audiovisual aids) for effective health education

Paper IV
Global Health Initiative and Health Technology

● Emerging health issues of national and international concern
● Disaster management
● Social and behavioral aspects of global health
● Ethical issues in public health
● Health policy and politics
● Behavioral and social aspects of public health
● Epidemiology of bioterrorism / catastrophic events
● Health promotion in Multicultural populations
● Public health laws – national and international
● International health organizations
● World health organization
● Public health issues facing developing countries
● Concept of global health and global community
● Remote sensing, GIS and other new technologies
Class and field training

1. Self directed – At least twice a week in which the trainee will present articles, abstracts from journals, seminars, group work, epidemiological and statistical exercises, case studies and family study presentation.
2. Facilitating learning of undergraduates (Interactive session)
3. Participation in scientific programmes

1\textsuperscript{st} year – Interactive sessions, Seminars, Journal Clubs, Practical sessions in entomology, Parasitology, Biostatistics and Epidemiology.
- Selection of thesis topic
- Thesis Registration and thesis work
- Undergraduate teaching
- Other services – Camps, Clinics, investigation of epidemics, Natural disaster management, Health Programme Evaluation, Training in computer application

2\textsuperscript{nd} year – Posting to different departments

A. Field and Laboratory Posting

1. PHC / CHC 2 months – 8 weeks
2. District Health Administration – 1 week
3. Urban – 2 weeks
4. District TB Control – 1 week
5. Local bodies in health, NGO’s and private agencies – 1 week

B. Medical specialties

1. Obstetrics and Gynaecology – 2 weeks
2. Child health – 4 weeks
3. General Medicine – 2 weeks
4. Psychiatry – 2 weeks
5. Ophthalmology – 2 weeks
6. Dermatology – 2 weeks
7. Infectious diseases – 2 weeks
8. Physical Medicine and Rehabilitation – 1 week
9. Community Dentistry – 1 week
10. Community Oncology – 1 week
11. Occupational Health – 1 week
12. Microbiology practicals – 2 weeks
14. Respiratory Medicine – 1 week
15. Geriatrics – 2 weeks
16. Pain and Palliative – 1 week
17. Family planning – 2 weeks
18. Surgery – 2 weeks
19. Anesthesia - 2 weeks
20. Casualty – 2 weeks

3rd year –
Posting to PHC / CHC – 4 weeks
   UHC – 2 weeks
   Interactive sessions, Seminars, Journal Clubs,
   Other services – Camps, Clinics, investigation of epidemics, Natural disaster management, Health Programme Evaluation

Thesis Completion and submission 6 months before University Examination
 Log Book

Each trainee shall maintain a log book in which the daily work is documented. This will be signed by the faculty guide concerned and submitted to the HOD every Saturday for concurrent evaluation which shall include, but not limited to, punctuality, regularity, sincerity, aptitude, dedication, innovation, commitment and participation in MBBS training programmes, interaction / discussion skills, initiatives and willingness to take up responsibilities etc. HOD shall discuss with the guide concerned and document it in the concurrent assessment form. Necessary feedback shall be given to the trainees.

Examination pattern

Written exam will consist of 4 theory papers each of 3 hours duration, carrying 100 marks each.

Paper I – Epidemiology including Biostatistics, Concepts of Communicable diseases and noncommunicable diseases, Environmental health and Medical sociology

Paper II – Reproduction and child health issues including Public Health Nutrition

Paper III – Health System Management and Health Education

Paper IV – Global Health Issues and Health Technology

Practical and Viva

Day : 1

Practical I
Clinico social study and discussion – 2 Hrs - 30 marks
Identification of health problems in the community – 2 short cases – 1 Hr – 2 x 10 = 20 marks

Practical 2
Microbiology practical
Identification of spotters, vectors and parasites – 30 minutes = 15 marks

Practical 3
Exercise in Nutrition / Water sample analysis / Interpretation of data reports and discussion – 1 Hr – 15 marks
Practical 4
Epidemiology exercise
Statistics exercise - 1 Hr - 2 x 10 = 20 marks

Day 2
Pedagogy - 1 Hr for each candidate – 50 marks
Thesis discussion- 1 Hr / candidate – 50 marks
Viva Voce - 1 Hr / candidate – 100 marks

* Thesis to be accepted for eligibility for the exam
Total marks for practical & viva voce – 300
Practical – 100
Pedagogy – 50
Thesis Defence – 50
Viva voce – 100

MDCM1 Paper - I Epidemiology Including Biostatistics, Concepts of Communicable Diseases and Non Communicable Diseases, Environmental Health and Medical Sociology
CO1: Ability to identify and investigate an Outbreak.
CO2: Ability to describe the natural history, aetiology and risk factors of a disease.
CO3: Competency to conduct an epidemiological study, including population studies.
CO4: Knowledge about prevention and control of communicable and Non-communicable diseases.
CO5: The ability to identify cultural, socio-economic and psychological determinants of diseases.
CO6: The ability to apply the principles of biostatistics in collecting, compiling and analyzing epidemiological data.

Epidemiology

• History of Epidemiology
• Concepts in Epidemiology
• Introduction to Descriptive and Analytical Epidemiology
• Quantitative Epidemiologic Methods
• Epidemiology of outbreaks / investigations
• Epidemiologic Surveillance
• Epidemiological studies
• Qualities of epidemiological tests
• Outcome measurement in health care
• Sensitivity and specificity
• Introduction to Geographic Information Systems
• Health mapping
• Disease mapping
• Record linkage
• Biomarkers
• Registries

Bio-statistics

• Research methodology
• Survey methodology
• Designing a research study
• Preparation of research protocol
• Determining sample size
• Research methods in social and behavioural sciences
● Sampling method
● Sampling and different types of sampling technique
● Introduction to Biostatistics
● Basic concepts of statistical reasoning, data description, descriptive statistics, probability concepts
● Tests of significance
● Estimation, confidence intervals, hypothesis testing, different tests of significance and the situation of their application – concept of standard error, chi-square, Z test, T test, correlation coefficient, linear regression, analysis of variance procedures, nonparametric methods, multivariate techniques, survival analysis and operational research – health service research.
● Introduction to statistical computing
● Introduction to statistical packages
● Computer skills

  Communicable and Non-communicable diseases

● Concepts – epidemiology, prevention & control

Environmental Health

● Principles of Environmental Health and Human Ecology
● Environment health risks and their impact
● Environmental pollution
● Waste disposal
● Housing sanitation and standards
● Environmental Policy Programmes and Legislations
● Medical Entomology including vector and rodent control
● Current and emerging issues in environmental health

Occupational Health

● Health problems and their prevention and control
● Legislation related to health, safety and welfare of workers
● Organisation and administration of occupational health services,
● Industrial hygiene
● Recent advances

Medical Sociology & Psychosocial issues

● Cultural, socio economic and psychological determinants and their impact on health
● Knowledge, attitude and practice related to public health problems
● Clinico social case study in the family and community
● Impact of urbanization on health
● Doctor-patient relationship and hospital sociology
● Changes in lifestyle and health
● Common mental health issues and prevention
MDCM2  Paper - II Reproduction and Child Health Including Public Health Nutrition
CO1: Ability to identify and manage reproductive and child health issues.
CO2: Knowledge of demography and the ability to apply the same in population studies.
CO3: Awareness of gender related issues and women empowerment in the community and its applications.
CO4: Competency to effective implement school health programmes.
CO5: Ability to manage the nutritional problems in the community.

Reproduction and Child Health Issues including Public Health Nutrition

- Reproduction and child health issues – relevance
- Policy and Programmes in Reproductive Child Health
- Reproductive Child Health package and interventions
- Women empowerment and gender related issues
- Newer initiatives in Reproductive Child Health
- Steps to reduce anemia in adolescent girls
- Management of reproduction including sterility and birth regulation
- MTP, prenatal determination of sex
- School health
- Adolescent health
- Health education classes
- Health problems, services and programmes for the priority groups – Geriatrics, Tribal
- Minority support groups
- Diet and life style issues

Public Health Nutrition

- Nutritional problems of the country; Role of nutrition in Health and Disease.
- Common sources of various nutrients and special nutritional requirement according to age, sex, activity, physiological conditions.
- Nutritional assessment of individual, families and the community by selecting and using appropriate methods such as : anthropometry, clinical, dietary, laboratory techniques
- Compare recommended allowances of individual and families with actual intake.
- Plan and recommend a suitable diet for the individuals and families bearing in mind local availability of foods, economic status and therapeutic diets.
- Common nutritional disorders: protein energy malnutrition
- National Nutritional Policy
- National programmes in nutrition and their evaluation
- Food hygiene, food adulteration, legislation to control adulteration

MDCM3  Paper - III Primary Health Care and Health System Management
CO1: The competency to plan and implement primary health care delivery for the community.
CO2: The ability to implement health promotion strategies.
CO3: The ability to provide comprehensive - promotive, preventive, curative and rehabilitative health services.
CO4: The ability to monitor and evaluate health programmes in the community.
CO5: The ability to apply the principles of management in health care delivery systems.
Primary Health Care and Health System Management

- Rural sanitation
- Health legislations
- Health care system in India
- Health care delivery system in developed countries
- Socialized medicine
- Health insurance
- Urban Health Services in India
- Primary Health Care Initiative
- Health Promotion Initiatives
- Programme evaluation
- Cost benefit and cost effectiveness
- Quality of health care
- Health care versus medical care
- Role of NGOs in health care of the community
- Spiraling cost of medical care
- Public Health Program Planning and Evaluation
- Public Health Leadership
- Medical Anthropology
- Health and Public Health Law
- Health Economics
- Finance for Health Management
- Health Information Systems
- Management of an outbreak
- Technology assessment and economic evaluation of health programmes
- Health Care Management System
- Principles of inspection and supervision
- Promotion of vaccination according to the national schedule in pediatric age group
- Modern concepts in health care management
- Total quality management
- Health care marketing
- Leadership in public health
- Community Based public health programmes
- Public health funding
- Management information systems
- Cost analysis and Cost effectiveness
- National Health Policy
- Health Planning in India
- Waste management
- National Rural Health Mission and National Urban Health Mission
- National Health Program
- Rural development
- Five year plans

Health Education (Information, Education, Communication)

- Effective communication with individuals, family and community using tools and techniques of information, education, communication.
- Principles of communication and barriers to effective communication
- Principles, methods and evaluation of health education
● Methods of health education with their advantages and disadvantages
● Use of appropriate media (simple audiovisual aids) for effective health education

MDCM4  Paper - IV Global Health Initiative and Health Technology
CO1: The competency to prepare and implement health care in disasters.
CO2: The ability to give inputs in formulation and implementation of public health laws.
CO3: The ability to apply the principles of epidemiology in health policy development.
CO4: The ability to apply the principles of to effectively deal with cross border health challenges.
CO5: The competency to use technology in providing healthcare to populations including hard to reach communities.

Global Health Initiative and Health Technology

● Emerging health issues of national and international concern
● Disaster management
● Social and behavioral aspects of global health
● Ethical issues in public health
● Health policy and politics
● Behavioral and social aspects of public health
● Epidemiology of bioterrorism / catastrophic events
● Health promotion in Multicultural populations
● Public health laws – national and international
● International health organizations
● World health organization
● Public health issues facing developing countries
● Concept of global health and global community
● Remote sensing, GIS and other new technologies

MDCM5  Soft Skills (Elective Course)
CO1: Ability to use Computers for Teaching and Research purposes.
CO2: Ability to work as a member of a team.
CO3: Competency to communicate with a large group of people in a community setting.
CO4: Teaching skills.
CO5: Ability to work as the leader of a healthcare team.
MD – (Community Medicine)
Degree Examination

Paper I: Epidemiology including Biostatistics, Concepts of Communicable Diseases and Non communicable Diseases, Environmental health and Medical sociology

Instruction : Answer all questions

Time : 3 hrs  Max marks – 100

1. Discuss the strategies for Polio eradication in the country. Critically evaluate the implementation of the programme (20 marks)

2. Comment on: (4 x 10 = 40 marks)
   a. Disease Registries
   b. Community Diagnosis
   c. Nested case control study
   d. Total sanitation campaign

3. Write briefly on: (4 x 10 = 40 marks)
   a. Social marketing
   b. Latent infection
   c. Non parametric methods in statistics
   d. TB control – a shared responsibility
1. Discuss the components of the Reproductive and Child Health Package in RCH – II.
   Give and brief account of IMNCI strategy under RCH II (20 marks)

2. Comment on:
   (4 x 10 = 40 marks)
   a. Need for diet modification in life style diseases
   b. Relevance of Geriatric Care in health service system
   c. Rationale of supplementary Nutrition Programmes
   d. Prenatal Sex Determination

3. Write briefly on:
   (4 x 10 = 40 marks)
   a. Community Need Assessment Approach
   b. Newer contraceptives
   c. Salient features of Urban Health Mission
   d. Public Health importance of Iodine Deficiency Disorder
1. Discuss the origin and concept of Social Security. Critically evaluate the implementation of Social Security Legislations in India (20 marks)

2. Comment on: (4 x 10 = 40 marks)
   a. Current Infant Immunization Schedule
   b. Financing in health system
   c. Mass Drug Administration Strategy
   d. Role of intersectoral co-ordination in Health

3. Write briefly on: (4 x 10 = 40 marks)
   a. Evaluation of quality of health care
   b. Health Survey and Development Committee report
   c. Education Vs Legislation in Public Health
   d. Socialized Medicine
1. Give an account of the emerging health issues. Discuss their impact on the health system and outline the strategies for the control of these issues. (20 marks)

2. Comment on: (4 x 10 = 40 marks)
   a. Ethical issues in Public Health
   b. Epidemiological transition
   c. Bio-terrorism
   d. Tobacco free initiative

3. Write briefly on: (4 x 10 = 40 marks)
   a. BCC strategies
   b. Remote sensing technology
   c. Health tourism and its impact on public health
   d. AIDS vaccine

Journals

1. Lancet
2. Indian Journal of Community Medicine
3. Indian Journal of Public Health
5. British Medical Journal
6. WHO Bulletin
7. WHO TRS
8. Indian Journal of Medical Research
9. Journal of Clinical Epidemiology
10. Journal of Communicable Diseases
11. Journal of Clinical Nutrition
12. Indian Journal of Paediatrics
13. World Health Forum

## Text Books

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<tr>
<th>Sl No:</th>
<th>Author / Editor</th>
<th>Title of the books</th>
<th>Edition</th>
<th>Publishers</th>
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<tr>
<td>1</td>
<td>Mancy &amp; Rosenau</td>
<td>Public Health &amp; Preventive Medicine</td>
<td>12&lt;sup&gt;th&lt;/sup&gt;</td>
<td>Appletion- Century Crafts or Oxford University Press</td>
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<td>3</td>
<td>Hanlon &amp; Pickett</td>
<td>Public Health Administration &amp; Practice</td>
<td>1983 Edn</td>
<td>B.T. Publication Pvt. Ltd</td>
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<td>4</td>
<td>Garrow &amp; James</td>
<td>Human Nutrition &amp; Dietetics</td>
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<td>5</td>
<td>Hobson</td>
<td>The theory &amp; practice of public health</td>
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<td>6</td>
<td>DJP Barker, G. Rose</td>
<td>Epidemiology in Medical Practice</td>
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<td>7</td>
<td>Wilcocks &amp; Mansion Bahn</td>
<td>Manson’s Tropical Disease</td>
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<td>8</td>
<td>Bradford Hill</td>
<td>Text book of Biostatistics</td>
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<td>9</td>
<td>Topley Wilson</td>
<td>Microbiology of microbial infections</td>
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<td>10</td>
<td>Panicker</td>
<td>Text book of Micorbiology</td>
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<td>11</td>
<td>Leavell H.R &amp; Clark. E. G</td>
<td>Preventive Medicine</td>
<td>1965</td>
<td>Ms.graw Hill, New york</td>
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<tr>
<td>14</td>
<td>Mausner.J.S &amp; Kramer.S</td>
<td>Mausner and Bahn: Epidemiology – An introductory text</td>
<td>1985</td>
<td>Saunders</td>
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<tr>
<td>16</td>
<td>Anderson &amp; Langton</td>
<td>Health Principles and Practice</td>
<td>1961</td>
<td>C.V. Mosley</td>
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<td>17</td>
<td>Hunter</td>
<td>Hunter’s Disease of Occupational health</td>
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<tr>
<td>18</td>
<td>Park</td>
<td>Tex book of Preventive and Social Medicine</td>
<td>18th edition</td>
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<td>19</td>
<td>Chatterjee. K. D</td>
<td>Human parasites and parasitic disease</td>
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