

# RAWALPINDI MEDICAL UNIVERSITY



## CURRICULUM

### M.D (Community Medicine)

**2024**

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## **Section - I**

### **INTRODUCTION**

Rawalpindi Medical College was established in Faisalabad on 18th March 1974 and later shifted to Rawalpindi on 5th November 1974 in an incomplete building at Tipu Road (Science block of Gordon College Rawalpindi), that was later handed over to Rawalpindi Medical College.

The founder principal of RMC, Prof. Abdul Latif, worked hard to establish the institution. First Rawalian Principal, Prof. Mohammad Umar after taking over the office in 2013, started working on multi-dimensional approach to further develop the institution.

Since 1974 more than 7900 students have graduated and are serving nationally and internationally. RMC was privileged to claim top positions in university examination several times. Best of the best graduate in UHS is also a Rawalian. Because of the untiring and dedicated efforts of Prof. Muhammad Umer Rawalpindi Medical College was upgraded to Rawalpindi Medical University recently by Government of Punjab, Health Department on 6th may 2017. Higher Education Commission has given NOC to RMU.

The institute has strived to be upgraded to the level of an independent university after which the annual system of MBBS degree has been changed to the internationally preferred modular system. Now after the successful launching Of MD/MS program of other clinical subjects by VC RMU we are ambitious to get the MD Community Medicine, MSPH, and Ph.D. Public Health. program approved by PMDC. In addition to these general standards which apply to all degree courses, specific educational objectives in the form of curriculum contents and curriculum organizer of courses in each specially will be available as separate documents.

I wish success to the Teachers and students of these programs at Rawalpindi Medical University and its attached departments and hospitals.

**Vice Chancellor**  
**Rawalpindi Medical University,**  
**Rawalpindi, Pakistan**

## **Section – 2**

### **1. DURATION OF THE PROGRAM**

The minimum duration of MD course is four (4 ) years. The duration of course can be further increased by the concerned Authority. The course is divided into two phase.

The Phase-I of four (4) years courses is spread over one year. The phase-I and phase-II are separated by Intermediate Evaluation.

### **2. ADMISSION CRITERIA**

1. M.B.B.S/B.D.S
2. One year House job.
3. Entry Test/Part 1
4. Valid PMDC Certificate of Registration

## DURATION AND SCHEME OF MD (Community Medicine) COURSE

### 4 YEARS COURSE

| <b>EXIT</b>                   |   |  |  | Final Evaluation<br><b>PART-III</b><br>Examination |
|-------------------------------|---|--|--|--|
| <b>Phase-II<br/>(3 Years)</b> | <i>Advanced Professional Education in Community Medicines</i> | <b>LOG-BOOK,<br/>ASSIGNMENTS,<br/>ASSESSMENTS</b>        | <b>RESEARCH</b>  |  |
| <b>Phase-I (1 Year)</b>       | <b>Basic Training in Community Medicine<br/>6 months</b>      | <b>Compulsory Rotation Internal Medicine ( 6 months)</b> | <b>M.D.</b> <ul style="list-style-type: none"> <li>Principles of Medicine</li> </ul> |  |

**Intermediate  
Evaluation  
Part-II**

**ENTRY EVALUATION/ Part I  
Vacancy Based  
Competitive  
Transparent**

**PROGRAM DIRECTOR:** Prof. Dr. Arshad Sabir

**I- LIST OF FACULTY: (Full Time)**

|                             |          |
|-----------------------------|----------|
| 1. Prof. Dr. Arshad Sabir   | Chairman |
| 2. Dr.Khola Noreen          | Member   |
| 3. Dr. Sana Bilal           | Member   |
| 4. Dr.Muhammad Imran Younus | Member   |
| 5. Dr. Afifa Kulsoom        | Member   |
| 6. Dr. Rizwana              | Member   |
| 7. Dr. fariha Pervaiz       | Member   |
| 8. Dr. Mehwish Riaz         | Member   |

**II.VISITING FACULTY/ BOARD OF STUDIES**

Under consideration

**2.PROGRAM TEACHING FACULTY**

**RESEARCH**

1. Prof. Dr. Arshad Sabir
2. Muhammad Imran Younus

**I. PUBLIC HEALTH**

1. Prof. Dr. Arshad Sabir
2. Dr.Khola Noreen
3. Dr. Sana Bilal
4. Dr.Muhammad Imran Younus
5. Dr. Afifa Kulsoom
6. Dr. Rizwana
7. Dr. fariha Pervaiz
8. Dr. Mehwish Riaz

## Section – 3 **GENERAL INFORMATION CONCERNING MD**

### **3.1 General Instructional Objectives.**

To improve the quality of Postgraduate Medical Education at the Rawalpindi Medical University, Rawalpindi, the general instructional objectives of MD course has to major objectives.

- i. To assist the supervisors of the MD course to conduct the course and maintain educational quality of their courses.
- ii. To provide a means for objective assessment of the course, the sites of education and the candidates.

### **3.2. Aims and Objectives of MD Community Medicine**

The aims and objectives of the higher medical educational programs must be,

1. That the student accepts **Community Medicine** in its full sense as a lifelong activity and that he/she is prepared to invest time and effort to acquire maintain and further improve his/ her knowledge and skills.
2. A critical appreciation of techniques, procedures carried out in his/her special subject of education; an understanding of scientific methods, reliability and validity of observations and the testing of hypothesis.
3. The ability and willingness to adopt a problem solving approach to manage clinical situations included in the definition of Community Medicine.
4. The ability to plan and interpret a management program with due regard to the community, comfort and economic factors.
5. His/her awareness of the role of specialists of **Community Medicine** in health/ rehabilitation/ welfare teams and his/her willingness to work cooperatively within such teams.
6. The awareness that he/she has to create his/her own professional impact as a capable Specialist/ Teacher/ Scholar of his specialty in the world.
7. To pursue and develop the basic scientific pursuits and guideline for scientific discoveries to strengthen knowledge further about human body requirements.

## Section - 4

### **REGULATIONS REGARDING ADMISSION FOR MD COMMUNITY MEDICINE COURSE**

The Registrar of the Rawalpindi Medical University will admit students in the above-mentioned course.

#### **4.1. Admission Criteria:**

##### **4.1.(a) General Requirements**

1. MBBS from the Rawalpindi Medical University or equivalent.
2. One-year house job after graduation.

##### **4.1.(b) Special Requirements**

- (i) The number of candidates will not exceed the number of training posts available. The Evaluation Certification by the Professor/Head of the Department/Unit that candidate have been evaluated and found fit for the post graduation in same specialty.
- (ii) If the number of candidates will not exceed the number of available slots, the admission will be based upon the above-mentioned general requirements and the recommendations of the Supervisor.
- (iii) When large number of candidates will apply for small number of seats, the merit will be determined as sum of total marks of:
  1. % of Marks obtained in Entry Evaluation (which will be Oral/Written or both as decided by the Board of Studies).
  2. % of Sum Marks obtained in all Professional Examinations minus 4 marks for each extra attempt during professional examinations.
  3. 2 mark for each six months of experience in the specialty of interest; obtained in a recognized teaching hospital, but not more than 8 marks.
  4. Five (5) marks for two (2) years Rural Health Service.
  5. Five (5) marks for carrying out research project and publishing paper in a recognized journal.

After registration/enrolment of the Rawalpindi Medical University, the student will submit his/her joining through his/her supervisor and will be admitted in the office of the Vice Chancellor of the University/Dean of the College/Institute of the Department of the study.

#### **4.2. REGISTRATION (ENROLMENT)FEE.**

The candidate will be registered with the Rawalpindi Medical University and Registrar will maintain a record of Registration. The Rawalpindi Medical University will charge Registration Fee to be paid at the time of application through Bank Chalan



in the account of the University. (The Fee can be changed from time to time by the Concerned Board of university).

**4.3. ADMISSION FEE.**

Admission Fee will be deposited in the office of the Vice Chancellor/Dean of the Institution at the time of Admission. (The fee can be changed from time to time by the University).

**4.5. NUMBER OF ADMISSIONS IN EACH COURSE INN EACH INSTITUTION**

The Vice Chancellor/Registrar/Deans of all colleges/Institutes will provide a list of the Title of Courses and No. of students they can admit in each year in various Departments of their college/Institute to the Dean Faculty of Basic Sciences and Medicine and of Rawalpindi Medical University for record purposes and of the Registrar of the University for admission purposes.

**Section – 5****CURRICULUM CONTENT AND ORGANIZER FOR MD  
COMMUNITY MEDICINE COURSE****1. PHASE-1 OF THE COURSE**

|            |   |          |
|------------|---|----------|
| Unit.I :   | Basic Concepts and Skills for <b>Community Medicine</b> | 3 months |
| Unit.II :  | Research Methodology and Biostatistics                  | 1 month  |
| Unit.III : | Objectives of the Rotations in Internal Medicine        | 6 months |

**Unit.1****Basic Concepts and Skills in Community Medicine Course      3 months**

The aim is to provide the trainee in the postgraduate course in **Community Medicine** a basic background of the specialty. It is also aimed at developing the skills useful in the practice of Community Health.

**Objectives**

The student shall be able to:

- (1) Describe the origins of **Community Medicine** and its relevance to health issues in the community.
- (2) Discuss the state of community health in developing countries.
- (3) Discuss the Health Policy of Pakistan, with special emphasis on community health related sections.
- (4) Describe in detail the structure of Health Services of Pakistan
- (5) Explain the relationship of physical, social and psychological environment to community health.
- (6) Describe the laws and legal issues relevant to community rights.
- (7) Discuss the importance of social services for community and describe the social services available for community in Pakistan.
- (8) Describe development from birth to adolescence, to conduct developmental tests and interpret the results.
- (9) Explain the concept of Primary Health Care, and describe the Primary Health Care System of Pakistan.
- (10) Describe infectious diseases and the use of surveillance for disease control.
- (11) Discuss the importance of community participation for improvement of community health in the community and be able to mobilize the community for playing an active role in working to improve community health as partners.
- (12) Discuss and practice biomedical ethics as a health care provider.

**Evaluation:** During the training the student is expected to visit PHC clinic under the consultant in-charge. Attend seminars and give at least 10 seminars on the contents out lines above. The presentations and performance should be evaluated by the superior and co-superior, and entered in the logbook.

## Unit 2

### **Research Methodology and Biostatistics.**

The aim of this 4 weeks training is to introduce the postgraduate students to research methodology, and develop research skills applicable to wide range of problems related to community health.

### **Objectives**

The candidate must demonstrate by discussion, examination and practice:

- (1) An understanding of the development of a research protocol(synopsis). The ability to design and execute a research project.
- (2) The ability to analyze critically a scientific article and appropriately alter and review current practice by following the recommendation in appropriate texts and journals.
- (3) The ability to communicate scientifically.
- (4) Develop an outline of the proposal for their intended research for the degree of MD **Community Medicine**

## Unit 3

### **Objectives of Rotation in Internal Medicines**

#### **6 months**

- (1) The core training in Medicine and in the initial period of postgraduate training is required to acquire the knowledge, skills and attitudes underlying the basis of the practice of Internal Medicine in general and preparatory to further training in Community Medicine.
- (2) The examination of Medicine has been designed to evaluate the attainment of the knowledge-based objectives of this core training.
- (3) The core training should provide opportunities for candidates to achieve the objectives outlines in this document. The training should provide opportunities to the candidate with increasing through the concept of appropriate supervision graded responsibility.
- (4) The present document outlines the content and the classification developed to guide the supervisors, teachers and examiners.
- (5) The depth of teaching will depend upon the duration of time available for instructions.

- (6) The candidate must be examined in the areas of the subject, which will be taught during the instructions.

The aim of the attachment in general medicine is to equip the student with basic skills to:

1. Approach the patient taking in consideration the social, environmental and cultural background in order to manage and control diseases.
2. Apply clinical skills in the collection of data and physical examination and request appropriate laboratory and radiological investigations for purpose of diagnosis and management of disease.
3. Identify medical emergencies in the emergency department and be able to outline their active management.
4. Provide medical treatment and perform medical procedures after collaborating the epidemiological and clinical data.
5. Perform clinical duties with proper medical ethics and respect other members of the team.

### **Objectives**

1. The student should be able to acquire skills and acumen to execute lifesaving actions to manage the following common symptoms and diseases. Pain chest, pain abdomen, renal Colic, hyperpyrexia, haemoptysis, hematuria and malena, anaphylactic reaction, hypertensive crises, Hyperglycemia and hypoglycemia, shock, acute poisoning, snakebite and dog bite.
2. He should demonstrate the skills to pass branula and set I/V line, Cardio-pulmonary resuscitation passes N/G tube, does gastric ravages, and interprets ECG and common lab. Investigations in emergency section
3. The student should be able demonstrate skills in assessment, diagnosis and management of common diseases. He should be able to understand the importance of first level contact and utilize the tertiary care when required. He should be demonstrate counseling skills to promote health and prevent following diseases:  
Hypertension, CHD and cardiac failure, CVA, diabetes, liver diseases CNS infections, ascites, gastric peptic disease, malabsorption, arthritis, urogenital infection, common dermatological diseases, anxiety and behavior disorders.

During the training the student is expected to work in the emergency, outpatients and in the ward under the supervision of the consultant of the department of medicine.

During the attachment the student should present 4 cases, enter in the logbook history of 10 patients with provisional diagnosis and suggested management. He should attend the

Emergencies, OPD and ward rounds as per schedule of the ward he/she is attached to. The logbook of the rotation should be evaluated by the consultant.

**Evaluation: At the end of rotation students will be evaluated, should score 50% marks. The same will be entered in Log Book.**

## **PHASE II OF THE COURSE 3 Years**

### **Aim:**

The aim of phase II training in MD Community Medicine is to equip the trainees with skills needed to work as a consultant in Community Medicine. The course will help the trainee to refine, re-enforce the knowledge of Pathology, and Public Health and develop adequate skills. The student will also be encouraged to develop critical approach to practice and policy and to learn the skills required to evaluate and synthesize research evidence.

The overall aim of this training for MD in Community Medicine is to equip doctors with experience in Community with skills needed to be a consultant in especially of Community Medicine

1. To provide the trainee with necessary information on preventive and curative aspects of community health care.
2. To provide the trainee with appropriate technical skills and competence necessary to be able to function adequately in his/her institutional and community settings.
3. To develop realistic awareness and attitude to motivate the trainee to render total and compassionate care in the community.
4. To give the trainee necessary knowledge and skill for problem solving in the interest of children, family and the community.
5. To help the trainee develop skills for the assessment of the needs for child health services, planning, the implementation and evaluation on the basis of primary health care approach.
6. To design and conduct research with improving skills for data analysis and writing scientific work with the critical evaluation of published scientific work.
7. To manage and organize community health services.
8. To understand the relationship between socio-economic conditions and community health.
9. To assess, prevent and manage community with disabilities and chronic disease at hospital and community level.
10. To promote community rights and to assess and manage community who have been abused.
11. Community organization and participation.

## **The Phase II of the MD Community Medicine Program**

### **Unit I**

## **COMMUNITY MEDICINE**

### **Unit I.A.**

#### **Organization of COMMUNITY Health Services**

The aim of this training is to provide an opportunity to the trainee update his/her knowledge of health care systems, structure and components of health delivery systems in Pakistan and relate it with planning and organizing health care services for children.

#### **Objectives**

The trainee should be able to:

1. Chalk out and relate health care system, planning and organization with community health.
2. Describe fundamentals and components of health service organization.
3. Demonstrate characteristics of the health situation in developing countries.
4. Describe the existing national and different international health care delivery systems and discuss the strengths and weaknesses.
5. Suggest the organization of health care delivery system in developing countries.
6. Describe steps, components and importance of planning and apply this knowledge to planning of health services.
7. Devise strategies for health manpower planning in national context.
8. Demonstrate relevance and historical facts about health care and the concept of primary health care. Evaluation of health care system is essential to monitor and to ascertain effectiveness.
9. Describe the importance of different levels of health care and describe the role of filter clinics in health care in the community.

10. Demonstrate components, steps in accounting, budgeting, expenditure plan and auditing as a part of financing health care.
11. Demonstrate relevance of cost benefit analysis, cost effectiveness, planning evaluation and review technique (Pert) and planning, program, budgeting, and survey (PPBS) for PHC.
12. Describe the travel and health global perspective and its impact on international health.
13. Describe the situation of early child health Pakistan and devise health program to improve prenatal and natal care.

### **Unit.I.B.**

## **Management of Health Services**

The health managers need to have a good understanding of national health care system and how it differs from that of other countries. They also should be acquainted with elements and process of health care delivery system. Managerial skills are also essential to run the health institutions in both urban and rural settings.

### **Objectives**

Students should be able to:

- Describe and discuss major trends in health care including health as defined by WHO, health in relation to national development, health care as a national responsibility.
- Describe primary health care delivery methods and problems;
- List health related aims of Ministry of Health, Pakistan.

### ***Health care delivery***

### **Objectives**

Students shall be able to:

- Describe and discuss the philosophies and main methods, objectives and problems of the delivery of health care, level of preventive and curative health care; aims and objectives of health care from the patient's view point, local community, and provider on the field health services, department and national planners.
- Describe responsibility and limitations of professionals;
- Discuss responsibility and limitations of people's participation;

- Outline potential and limitations of cooperation with indigenous healers;
- Discuss health care in terms of acceptability, accessibility, availability and appropriateness.

### ***Management theory***

#### **Objectives:**

Students shall be able to:

- Describe, discuss and utilize principles of management to enable them to contact the management of district hospitals and health office (including the purpose and functions of management; scope of management, personnel, fiscal facility, supply logistic);
- Define and use concepts and terms, methods of management, principles of organization, structure, authority, responsibility, and communication.

### ***Personnel supervision***

#### **Objectives:**

Students should be able to:

- Describe basic principles of interpersonal communication;
- Define supervision, types and methods;
- Describe motivation, morale, including incentives positive and negative; salary and allowances, job descriptions and their role in supervision;
- Define employer needs and responsibilities, the evaluation of personnel performance;
- Describe discipline; its purpose, limitations, methods;
- Describe in-service training and supportive supervision;
- Describe, discuss, and utilize the general principles of personnel supervision in their future role as medical officers;

### ***Book-keeping***

#### **Objectives:**

Students should be able to:

- Outline the purpose and functions of book keeping.
- Define the principles, concepts and terms including entry, withdrawal account, credit, debit, balance, assets, liabilities, and capital expenditure, operating expenditure, suspense accounts;
- Describe methods including columnar, single entry, and double entry;
- Describe and discuss various methods of bookkeeping and set up a system such as that to be utilized in district hospital and other facilities.



### ***Records, filing and stocks***

#### **Objectives:**

Students should be able to:

- Define and use concepts and terms including records, filing, retrieval, stock keeping, inventory, supply, and equipment, ordering;
- Describe purposes and functions of various types of records used in Ministry of Health.
- Outline purposes and functions of stock-keeping, major methods of stock keeping, and methods used by EDO;
- Set up record of stocks from data supplied by instructor (as home assignment) and present paper for review in seminar and practical classes;
- Procure, store, retrieve and utilize records and supplies, as they will later be required in the capacity of medical officer.

### ***Health system of Pakistan***

#### **Objectives:**

Students should be able to:

- Describe and discuss the broad outlines of the health care delivery system in Pakistan including philosophy and aims, specific objectives-long and short term plans, budgets, organizational structure integration, and impact of program on health problems;  
Outline his own place and function in the health system and identify his later duties as district medical officer/EDO.

### ***Planning and Budgeting***

#### **Objectives:**

Students should be able to:

- Define planning theory, including needs assessment, assumption resources, resource allocations constraints, obstacles, aims, goal objectives, targets, methods, feedback, and evaluation;
- Define budgeting theory including funding, allocation of capital, operating costs, maintenance costs, depreciation and replacement deficit;
- Describe the planning and budgeting process in the Ministry of Health;

- Make a plan and budget for a health programme for a union council, using data and parameters supplied by instructor; (the plans and budgets will be reviewed in a seminar);

### ***Rules and regulations of Ministry of Health and Department of Health***

#### **Objectives:**

Students should be able to:

- Outline regulations of Health Department, and describe how to find relevant rules and regulations;
- Identify specific rules and regulations related to personnel, fiscal responsibility, money handling, care and upkeep of plan facilities, reports and reporting, professional conduct;
- Make reports, requisitions, and requests in manner and with forms approved by MOH, using forms, and data supplied by the instructor;
- Locate, identify and follow regulations and rules, which will apply, to his duties as a district medical officer.

### ***Ethics and responsibility of management***

#### **Objectives:**

Students should be able to:

- Identify proper and improper use of authority;
- Review of responsibilities to employers, superiors, juniors, consumers, and the nation;
- Explain and discuss the moral ethical and social responsibilities in administration and management in the future role as district health officer EDO.

### ***Problems of health care delivery in Pakistan***

#### **Objectives**

Students shall be able to:

- Explain to senior officers of Department of Health Services who are to be requested to lecture and participate in discussion. They can choose their own topics (suggest these to cover low budget, logistical difficulties, aid constraint etc);
- Describe and discuss on major health and health related problems as they affect the delivery of health service especially in the districts.

### ***Health care systems in other country***

## Objectives

Students shall be able to:

- Explain their findings and discuss relative merits and shortcomings of the different systems;
- Compare the general health care in certain countries with that of Pakistan. Discussion and suggest ideas, which might improve health care delivery in Pakistan.

## Unit.I.C

### Community Health Surveillance

Community health surveillance is a programme that is offered to all children with the aim of preventing ill health and promoting optimum development through immunization and health education. It insures the early detection of abnormalities by facilitating early recognition and referral by parents and through application of screening tests by doctors. Its success depends up specific sensitive screening test, the skills of health providers and efficiency of health care delivery system.

The aim of this training is to enable the student to understand the importance of primary, secondary and tertiary prevention health care services and be able to provide the necessary services.

#### Objectives:

The student should be able to:

1. Describe and discuss primary, secondary and tertiary preventive services at different stages of life
  - a) Neonatal
  - b) Infancy
  - c) Pre-school
  - d) School
    - i) Primary
    - ii) Secondary
  - e) adolescence
  - f) adult
  - g) old age
2. Establish health clinic keeping in mind
  - i) Staff
  - ii) Place
  - iii) Timing
  - iv) Equipment

3. List and plan activity at health clinic
4. Ensure and promote coordinated activity by involving:
  - i) Parent
  - ii) Lady Health worker
  - iii) Teacher/School health nurse
  - iv) Health provider

## **Unit.I.D.**

### **Epidemiology**

The training content is designed to equip the students with comprehensive knowledge of the need, concept, strategy, methods and use of epidemiology.

### **Objectives**

To enable the Postgraduate students to:

1. Achieve scientifically driven improvement in concepts and their work through the application of the basic concepts of Epidemiology and Biostatistics.
2. Plan and execute their own research works
3. Analyze the results from various studies.
4. Interpret the results from various studies.
5. Critically read and interpret published scientific papers.

### ***Epidemiology***

#### **1. Principales of Epidemiology**

Basic concepts:

- Scope of epidemiology
- What is epidemiology (definition)

- Importance of epidemiological investigations
- Development in modern epidemiology
- Uses of epidemiology in Medical Science

#### **2. Epidemiological investigations/Design strategies in Epidemiological Research.**

- Type of investigations
- Stages of an investigation
- Methods/techniques of collection of information
- Design of the studies and use of appropriate study design

### 3. Types of Epidemiological studies:

#### *Descriptive Epidemiology:*

#### **Types of Descriptive studies: in context of:**

Who?

Where?

When?

### 4. Cross sectional Study Designs

Illustrative examples using Cross-sectional studies and case-reports

Uses and advantages

Limitation

Bias

Hypothesis formulation from Descriptive studies

### 5. Cohort Studies

Designs of various cohort studies

Uses and advantages

Limitation

Bias

### 6. Measures of Disease frequency

Prevalence, Incidence

Rates

Applications in community diagnosis

Uses of prevalence

Uses of incidence

Trends/period changes

### 7. Analytical epidemiology

Type of analytical studies

Cohort studies as analytic studies

Uses and advantages

Limitation

Bias

### 8. Case-control studies

Uses and advantages of case control studies

Limitations

Bias

### 9. Intervention studies

Types of intervention Trials

Unique problems of Intervention Studies  
 Clinical trials  
 Issues in the conduct of Clinical trials  
 Design  
 Randomization  
 Control  
 Manipulation  
 Issues in the conduct of analysis of clinical trials

### **10. Confounding/Interactions**

Definition  
 Identifying confounding in a study  
 Effects on interpretations of study results  
 Control of confounding  
 Control of interactions in interpreting study results

### **11. Chance**

Definition  
 Identifying chance in a study  
 Effects on interpretations of study results  
 Control of Chance in a study

### **12. Bias**

Definition  
 Identifying bias in a study  
 Types of bias  
 Effects on interpretations of study results  
 Control of Bias in a study

### **13. Measures of Associations**

Causation – Relative Risk/Odds Ratio  
 Cause and effect relationship  
 Principles underlying cause and effect  
 Identify causation/confirmation of causation  
 Calculate associations and related parameters like 95% confidence  
 Limits and tests of significance

### **14. Statistical association and cause-effect relationship**

### **15. Validity and reliability of studies:**

Definitions  
 Validity: Sensitivity, Specificity and Predictive values  
 Their applications to disease control in Epidemiology

Repeatability: its importance and usefulness

## **16. Screening epidemiology in disease control**

Definition

Validity and Reliability of screening tests

Uses of screening

Yield of screening

## **17. Genetics and Epidemiology**

## **18. Critical reading of a medical report/publication etc**

## **19. Occupational Epidemiology**

## **20. Selected indices of health**

**Evaluation: At the end the students should be able to attain 60% marks based on summative evaluation using MCQs and short essay questions.**

The Books used for this course are as follows:

1. Charles H. Hennekens and Julie E Buring. Epidemiology in Medicine. Publishers: Little, Brown and Company, Boston.
2. Brian MacMohan, Thomas F Pugh, Epidemiology, Principles and Methods. Publishers: Little, Brown and Company, Boston.

## **Unit.I.E.**

### **Biostatistics**

This is an introduction to biostatistics. This training content is designed to meet the needs of doctors working in Community Medicine. It attempts to provide a broad perspective of the application of statistical methods in biomedical and health problem and focuses on techniques of collecting reliable information on health problems and health services in the community and statistical presentation and interpretation of the findings or collected data:

#### **1. Fundamentals of Biostatistics**

Definition of Biostatistics

Rationale of Statistics in medicine

#### **2. Interpretation of numerical information**

(Give data set)

What are variables?

Difference type of variables

Classify variables as qualitative, quantitative, discrete and Continuous.

Break down the range of a series of quantitative measurements into intervals and

Specify precisely which measurements belong to which intervals.

### **3. Frequency distribution**

Construct a frequency distribution (tally sheet etc)

Relative frequency distribution

Cumulative frequency distribution

To draw a cumulative frequency distribution and plotting the point in the correct position relative to the intervals.

Identify median

Draw frequency distribution using a histogram (with or without equal intervals)

### **4. Measure of position (given data)**

Calculate the arithmetic mean of a series of observation and quote its algebraic formula.

Calculate the median (for odd and even number of observations)

Estimate mode

Advantages and disadvantages of mean, median and mode

Calculate the weighted mean of 2 samples.

### **5. Measure of variability**

Calculate the range and define its uses and limitation

Calculate the sample estimate of variance using the degrees of freedom in the denominator.

Calculate and interpret the sample estimate of the standard deviation given the variance

Uses of variability

### **6. Measures of Shapes**

Concepts in Normal Distribution

Skewness

Kurtosis

### **7. Probability**

Recognize the algebraic notation used in statistics to differentiate between parameters and statistics.

Define probability

Define the probability distribution for both and binomial distributions.

List the descriptive properties of a normal distribution with mean  $\mu$  and standard deviation  $\delta$

Use tables of the normal distribution function to estimate the area under a normal curve with means  $\mu$  and  $\delta$  for one and between 2 values of the variable.

### **8. Sampling and Sampling techniques**



Probability sampling  
 Non-probability sampling  
 Uses and advantages of sampling

### **9. Sampling distribution**

To distinguish between descriptive statistics and statistical inference  
 Why samples should be random samples  
 Why sampling errors arise in a sample estimate of a parameter  
 Describe the sampling distribution of a mean and a proportion  
 Interpret and explain qualitatively the effect of the standard deviation and sample size on the sampling distribution of a mean.

### **10. Binomial Distribution**

Define binomial distribution  
 Use the normal approximation to the binomial distribution to estimate binomial probabilities.  
 Use a continuity correction to improve the estimates.

### **11. Confidence limits**

Definition  
 Calculate the standard error of a mean and the standard error of a proportion.  
 Interpretation  
 Calculate and interpret confidence intervals for a parameter  
 Explain why it is necessary to calculate confidence interval in a data.

### **12. Test of Hypothesis/Hypothesis testing**

What is Hypothesis/Null ( $H_0$ ) and alternative Hypothesis?  
 Describe the rationale of a significance test  
 Steps involved in Hypothesis testing  
 Various tests of significance; their rationale and use  
 Calculate confidence intervals (CI)  
 Explain the meaning of “p” in statistical terms and in normal language.

### **13. The t distribution**

State Null  $H_0$  and steps in Hypothesis testing  
 Estimate the standard error of a sample mean  
 Why use t-test  
 Determine the degrees of freedom  
 Calculate the value of t for a one-sample t test.  
 Interpret its value in relation to the critical value of it.  
 Calculate a confidence interval for a population mean.

### **14. Differences between sample means and proportions.**

State Null  $H_0$  and steps of Hypothesis testing

Express the variance of the difference between 2 independent random variables in terms of the variance of the individual variables.  
 Apply SND test of the difference between 2 independent sample means given  $\delta_1$  and  $\delta_2$   
 Apply t test by the difference between 2 independent sample means.

### **15. $\chi^2$ test**

To determine the degree of freedom for the use of table of critical values of  $\chi^2$   
 Using  $\chi^2$  test for Hypothesis testing  
 Apply  $\chi^2$  to analyze of a 2x2 table interpret the result and state the relationship between  $\chi^2$  and SND test of 2-samples proportion.  
 Apply continuity correction for the analysis of a 2x2 table.

### **16. Analysis of variance**

Application of ANOVA  
 Type of data required for this analysis  
 Express the variance of the difference between more than 2 independent random variables in terms of the variance of the individual variables.  
 Interpretation of F test from Tables.

### **17. Regression and correlation**

Draw a scatter design to draw association between 2 quantitative variables.  
 Identify the dependent and independent variables  
 Calculate linear regression of y on x and draw line of regression.  
 Interpret the values of the estimated regression coefficients a & b.

### **18. Non-Parametric tests**

Uses of non-parametric tests  
 Advantages and limitations of these tests  
 Sign test  
 Signed Rank and Rank Sum Tests  
 Wilcoxon's Rank Sum Test  
 Mann Whitney U test  
 Kruskal Wallis Test

### **19. Samples Size Estimation**

### **20. Standardization**

### **21. Life Tables/Survivorship Curves**

### **22. Use of computers for data processing and data analysis using SPSS**

**11.0/EPI INFO 2000.**

### **Recommended Book:**

Theodore Colton. Statistics in Medicine. Publisher: Little, Brown and Company, Boston

## Unit.I.F.

### Behavioral Sciences

#### A. Medical Anthropology

Medical Sociology and Anthropology have been included in the curriculum so as to equip the student to broaden their understanding and competence to manage the patients in the context of their sociological settings, attitudes to combat superstitions, realize the gap between the attitude of the old and new generation to the health problems and to understand the conflict between indigenous practice approaches and the new medical system.

The aim is to enable the students to:

- Understand the general role of individual, family and community and sociological variables determining the status of their relationship;
  - Analyze social relationship in the practice of health and medicine and identify the sociological determinants of the problems, management and outcomes;
  - Understand the philosophy and need for the decentralized health services management particularly and the participation and empowerment of the community.
  - Collect, process, analyze, present and use subjective and objective data to identify the community structure, expressed/assessed need of the patient and community.
- ***Understanding the society***

#### **Objectives:**

Students should be able to:

- Describe the historical evolution of the present day human societies and social forms as expression of means of livelihood;
- Describe the significance of an individual in society and the relationship between individual and society;
- Analyze how society moulds the individual's behavior, and factors influencing the socialization process;
- Define: community: and differentiate between the rural and urban way of life;
- Analyze the trends in unplanned urbanization and the effect of slum areas on the way of livelihood;
- Describe how the slum areas are formed and their impact upon the health of community;
- Examine critically the needs of society to an individual, and explain the different social structures and their impact on the health of the inhabitants of certain communities.

- ***Concept of culture***

**Objectives**

Students should be able to:

- Define culture and state its significance;
- Enlist different ethnic groups and describe different cultural characteristics in Pakistan;
- Explain the role of norms, customs, folkways and religion in forming behavior;
- Identify the cultural variation ;among different ethnic groups of Pakistan in terms of child rearing practice;
- Identify different diseases in ;their relationship to the culture of different groups,

- ***Social Stratification***

**Objectives:**

Students should be able to:

- List the forms of social stratification in the community;
- Explain the community on the basis of occupation, communication and language;
- Identify the roles of different people on the basis of their position and status in community;
- Explain the impediments caused by caste and class hierarchy and its impact upon the way of life of the people.

- ***Family, marriage and kinship***

**Objectives:**

Students should be able to:

- Describe the nature and structure of family as a biological and cultural unit of society;
- Describe types of family;
- Explain the role of family as a socializing agency;
- Identify the malpractices in the community related to the spreading of infectious diseases;
- Explain the relationship between health, life style and socio-economic status of the family;
- Describe the relationship between a sick person and the family/relatives in terms of psychosocial and economic burden due to the illness and care.

- ***Concept of health and attitude towards illness***

**Objectives:**

Students should be able to:

- Describe concepts of health, attitude towards sickness and concepts of birth and death in Pakistan;
  - Analyze the factors which constitute the basis of traditional superstitions and popular belief about the role of fate in sickness and belief in supernatural forces.
  - Describe the way communities use “Taweez”, evil spirit, blood and other sacrifices to cure diseases.
  - Describe community attitude towards taking drug and using available health services;
  - State the role of traditional practitioners.
- ***Conducting community survey and family case status***

### **Objectives**

Students should be able to:

- Describe sampling techniques and use them to identify a problem;
- Assess the problem as a non-participant observer;
- Use sampling techniques appropriately; conduct case study; take meaningful interview of families and make a report;
- Collect, analyze, interpret and evaluate the subjective and objective data to identify community needs, present the findings and develop appropriate health care which is sociologically compatible.

- ***Doctor patient relationship***

### **Objectives:**

Students should be able to:

- Explain the importance of doctor-patient relationship;
- Identify the factors that hinder the interpersonal relationship between doctor and patient.
- Identify and overcome barriers to effective communication.

- ***Social problems and social change***

Students should be able to:

- ***Analyze the different social problems which impede the healthy living of the community in terms of:***
  - Poverty
  - Crime and juvenile delinquency
  - Broken homes
  - Drug addiction/alcoholism
  - Suicide
  - Man-made or natural disaster
  - Child abuse
- ***Describe the role of the following factors to bring social changes:***
  - Demography
  - Technological innovations

- Cultural factors
  - Identify the causes why the traditional societies do not accept changes brought about technological innovations and causes of resistance for change:
  - Analyze the effects of social changes on the structure of community:
  - Explain the sociological aspects of human rights, national and international law, conventions and their practices
- **Community participation**

**Objectives:**

The students should be able to:

- Describe the principles and types of community participation (community compliance, community co-operation or contribution, community sharing or partnership and community empowerment).
- Analyze the way to achieve community participation in their community diagnosis exercise and in implementing their care programme.

**B. Demography**

The population characteristics and population dynamics play a role in determining the development and health service's needs. The student of Preventive Pediatrics needs to understand the socio-economic, cultural, physical and eco-biological determinants of demographic status and trends and its effects on family and society and vice-versa.

The aim is to make the student understand the:

- Different modes of living, ways of life of people of different ethnic groups of diversity, setting in relation to health and diseases and are able to:
- Collect, process, analyze and use demographic data;
- Conduct scientific studies on population.

**Objectives:**

Students should be able to:

- Describe the basic demographic concepts;
- Explain critically Malthusian doctrine and its place in the study of population;
- Describe the trend of world population growth and its determinants;
- State sources of demographic data:
  - Periodic census
  - Vital registration
  - Sample survey; and
  - Systematically collect population data;
- Analyze the composition of population and the factors that influence the size and composition of the population.
  - Fertility
  - Population replacement rate
  - Contraceptive prevalence rate (CBR)
  - Mortality; and
  - Migration

- Describe demographic characteristic and dynamics of demographic change in relation to:
  - Demographic stages
  - Demographic transition
  - Young population
  - Aging population
  - Growing population
  - Decaying population
  - Dependency ratio
  - Baby boom syndrome
- Describe the recent research and methods of population control and population policy in Pakistan.

### **Unit.I.G.**

#### **Community Diagnosis**

The purpose of any investigation in the health field is collection of information that will provide a basis for action whether immediately or in the long run. Before planning an investigation the problem must be identified. The awareness of problem is mother of research.

#### **Objectives:**

The students should be able to:

- Design and plan for community diagnosis (exercise including use of various field techniques, data processing, analysis, interpretation and references).
- Generate objectives and methodology for field study;
- Standardize epidemiological tests and methods including pre-testing;
- Plan the process of identification of health problems including expressed and assessed health needs;
- Design verification, plan and implement procedures;
- Monitor and supervise the study;
- Implement the data processing and analysis;
- Present the findings to the community;
- Write-up for the presentation to the institution including presentation at a seminar at the department.

**Note:** The student is expected to prepare and pre-test the questionnaire.

To assess the community health needs before his/her attachment to the PHC Centre. He/ She will use the questionnaire during the field assignment and write a report and share it with the community.

### **Unit I.H**

#### **Health Communication**

The health care delivery is becoming increasingly complex due to rapid technological advances, and therefore, requires a broad understanding of communication from the health professionals and demands high levels of sophistication in how to communicate with each other about health issue.

As a Public Health consultant needs to communicate with the mothers, fathers, families and communities, they should be equipped with the concept and components of health education applied to health and medical care settings and the community.

The aim is enable the student to comprehend the role of patient health education in medical care settings both in the clinic and community and carry out counseling and educational activities.

## **Introduction**

### **Objectives:**

Students should be able to.

- Explain the concept of patient health education by analyzing various definitions of health education;
- Describe the place of health education in health and medical services;
- Describe scope of health education in:
  - a. Schools
  - b. Work sites
  - c. family
  - d. Community in general
  - e. Health and medical care settings, such as hospitals, health centres and private clinics.

### ***Health Education in medical care settings***

#### **Objectives:**

Students should be able to:

- Explain the concept of facilitation of health education in health and medical care settings;
- Describe the roles and functions of health care provider for facilitation of patient health education as a counselor, or a facilitator and as a monitor;
- List and explain the following functions of health and medical care providers;
  - a. Health education counseling function; promote, understanding and identification of needs/problems;
  - b. Health education facilitating functions;
  - c. Health education monitoring functions.

### ***Patient health education counseling planning and facilitating***

#### **Objectives:**

Students should be able to:



- Explain the concept of patient counseling;
- List and describe the opportunities for patient counseling/education;
- Enlist and explain the essential traits required among health care professionals to carry outpatient counseling activities;
- Describe the planning procedures of patient communication;
- Demonstrate the process of implementing patient communication/counseling by using appropriate methods and media;
- Describe the implementation procedures of health education/counseling in health care setting;
- Describe the need of assessing effectiveness of health education/counseling activities in the health care settings.

### ***Method and media of health communication/counseling in medical care setting***

#### **Objectives:**

Students should be able to:

- List the patient communication/counseling methods appropriate for use in health care facilities;
- Describe the nature, process and limitations of interview, counseling and group discussion methods;
- Explain the selection criteria for interview, counseling demonstration and group discussion methods of health education;
- Demonstrate the process of patient counseling methods;
- List the health communication materials and equipment appropriate for health education in health care facility.

### ***Communication in patient education process***

#### **Objectives:**

Students should be able to:

- Explain effective interpersonal and group communication with patient and patient parties;
- Define communication and its elements; Describe interpersonal and group communication barriers and the ways to overcome the barriers in terms of:
  - a. Inadequate and perception of patient's own problems,
  - b. Offensive behavior,
  - c. Hidden agenda
  - d. Communication noise,
  - e. Cultural difference between providers and patient/patient parties
  - f. Message distortion etc,
  - g. Compliance tendency,
  - h. Plan, prepare and conduct health communication activities in a PHC setting especially for mothers and children.

#### **Unit.I.I**

## Primary Health Care (PHC)

The health status of millions of people in the world is unacceptable. More than half of the people of the world do not have the benefit of proper health care. The Alma-Ata Conference 1978 affirmed that Primary Health Care (PHC) approach is essential to achieve the acceptable level of health throughout the world as an integral part of social development in the spirit of social justice.

The fundamental of PHC is the participation of community at all stages. The aim of this training is to equip the postgraduate trainee in Preventive Pediatrics to be able to organize primary health care services in the community for the benefit of the children.

### Objectives:

The student is expected to be able to:

1. Discuss health as the right and responsibility of all individuals irrespective of difference in gender, cast, religion, ethnicity or geographical habitation;
2. Explain the principles of PHC and HFA (Health for All) according to Alma-Ata declaration and strategy, components of PHC, and their application;
3. Describe the need for prioritizing for the poor, deprived, unprivileged and undeserved;
4. Apply the principle of PHC in integrated health-care system, and integrated rural, suburban and urban community development in the local context;
5. Apply the principle of PHC in the health care development in difficult circumstances like disaster, war, refugee camps, prison etc;
6. Identify and discuss the role of the community and its involvement in PHC;
7. Describe the various functions of the health centre;
8. List all the health personnel in the health centre and outline their activities, supervisors and their job description;
9. Discuss the problems of the referral system;
10. Describe and discuss the PHC programme in Pakistan, its objectives, components, implementation, management and administration;
11. Coordinate the work as part of a team for achieving a better understanding and management of the community health problems;
12. Identify and describe the organizational structure of health services in Pakistan;
13. Discuss in details the common endemic diseases in the community e.g. malaria;
14. Discuss the statistical and epidemiological concepts and methods which have their impact on the health care delivery and on planning, implementation and evaluation of PHC;
15. Discuss the difference legislations of health.

### PHC Attachment:

The students will work in a BHU for a period of 6 weeks, in the health centre the student is expected to do the following:

1. Provide primary medical care
2. Deliver and participate in the delivery of MCH, family planning services.
3. Participate in the immunization programme.

4. Observe environmental and basic sanitation and suggest plans for improvement and give health communication concerning water supply, personal hygiene, sewage disposal etc.
5. Identify communicable and endemic diseases present in the children in the community and advice in their prevention and control.
6. Observe, advice, and encourage participation and teamwork for the effective implementation of PHC.
7. Write critical report about his work in the health centre including self-evaluation.

**Evaluation: The student will enter in the Log Book a report of the work. The supervisor of the BHU will evaluate his/her performance and send report to the supervisor.**

## **Unit 1.J**

### **Maternal and Child Health**

Maternal and child health are closely related. Child health cannot be improved without improvement of maternal health. To assure good health of the child it is essential to see that the foundation is laid from the period the child is in the womb till it completes adolescence. Maternal health component of the MCH attempts to help the parents in their task in the interest of the children.

#### **Objectives:**

Students will be able to:

1. Describe patterns of maternal, infant and child morbidity and mortality in Pakistan.
2. List and describe components of MCH Services:
  - Antenatal care
  - Natal services
  - Postnatal care
  - Immunization of mothers/child
  - Nutritional support programme
  - Well baby care, growth monitoring and breastfeeding
  - Management of common childhood diseases(diarrhea and ARI)
3. Discuss Government of Pakistan policies, strategies and programmes related to MCH Services.
4. Explain principles of safe motherhood, child survival and essential obstetrics services;
5. Describe the role TBAs in the improvement of maternal and child health.

6. Discuss development of family planning programme in Pakistan, its needs and relevance;
7. Explain types and recent trends in contraception, their mode of actions, methods of use, efficacy, indications and contra-indications, contraceptive prevalence rate (CPR).
8. Explain post-partum contraception – selection, method and follow up;
9. Describe the importance of counseling IE & C and follow up services in MCH.

## **Unit I.KB**

### **Nutrition**

The aim is to enable the student to comprehend the role of good nutrition in development and maintenance of a healthy body. This will help in the identification of common nutritional disorders at individual levels and also in advising mothers in matters related to nutrition.

### **Objectives**

The students should be able to:

1. Identify and prioritize nutritional disorders in the community.
2. Identify the common nutritional deficiency states at hospital and community levels,
3. Identify populations at risk of developing malnutrition.
4. Explain the basic components of food and nutrition like proteins, fats, carbohydrates and trace elements;
5. List the caloric requirements of various age groups during health and disease;
6. Explain the importance of food and prescribe a balanced diet in health and illness.
7. Explain ;the role of vitamins and minerals in the human body and effects of their deficiencies or excess;
8. Describe the importance of different macro and micro-nutrients in child and maternal health;
9. Explain the interactions between nutrition and infections;
10. Identify various constituents of food consumed by the children(complimentary foods) or by the mother;
11. Measure and grade the nutritional status of ;individuals and describe its relevance to the community;
12. List the nutritional and nutrition-related problems in children and women;

13. Plan the actions related to the nutritional problems in the hospital for severe malnourished cases and in the community for mild and moderate malnutrition;
14. Use different classifications for identifying the nutritional status of the children in a community;
15. Use Growth chart as an assessment tool for malnutrition;
16. Community health assessment and diagnosis;
17. Set-up a nutrition or lactation management centre;
18. Develop communication skills in nutrition education;
19. Counsel ;mothers about nutritional rehabilitation of malnourished children taking into account the socio-cultural factors in the etiology of malnutrition;
20. Counsel mothers on appropriate and optimal feeding of their infants, children and themselves during pregnancy and lactation;
21. Assess sanitation of water and food in the community and its need in the hospital situation in relation to disease and nutrition;
22. Develop liaison with other sectors who are responsible for maintaining nutrition in the population ( agricultural, Food and Health etc);
23. To establish a referral system

## Unit I.L

### Physical Growth and Development

Growth represents the summation of all processes, which convert fetus through childhood to adult. The study of growth is therefore at the heart of preventive pediatrics. Development is concerned with milestones i.e. gross motor, fine motor skills, cognitive and social development as they are used in child health practice.

A community pediatrician should be capable of diagnosing and providing adequate timely care to children with growth failure and development delay.

#### Objectives:

The students should be able to:

1. Describe the general patterns of growth in weight, height, head circumference and different parts and tissues of the body.
2. List and discuss the factor influencing physical growth,
3. Measure weight, height and head circumference.
4. Describe how growth curves are constructed.

5. Describe the prenatal growth and effect of uterine environment on birth weight and height
6. Describe the standards for low birth weight
7. Describe and assess the maturity of newborns infants.
8. Describe and assess the growth from birth to 2 years.
9. Describe and assess the growth adolescents.
10. Discuss the development of the reproductive system and normal variations in pubertal development.
11. Describe the endo-crinological aspects of puberty and adolescence.
12. Identify and describe signs and symptoms disorders of puberty.
13. Discuss the principles of development.
14. Describe normal development i.e. motor skills, cognitive and adaptive development, language and communication, and personal social.
15. List and discuss factors which affect development
16. Development, evaluate and interpret developmental data.
17. Detect asses and manage a child with handicap.

## **Unit            1.M**

### **Adolescent Health**

Adolescence is the period of transition between childhood and adulthood, Anatomical and physiological together with emotional and cognitive components. These changes produce new feeling desires and drives. A feeling of CRISIS may emerge from the need to find Ones Own identity. The aim of this training is to equip the trainee to take care of the problems that may arise during adolescence.

#### **Objectives:**

The student is expected to be able to:

- Describe and assess the growth and development during puberty;
- Identify and manage the health, behavioral and sexual problems of adolescence.
- List available services for the special needs of the vulnerable adolescent groups.

## **Unit.I.N.**

### **Family Health**

Child health is interrelated with the health of other family members. The community pediatrician should be trained to diagnose and manage common problems in community.

**Objectives:**

The trainee should be able to describe and demonstrate sign and symptoms of common problems in the adult family members.

Provide ambulatory care and refer to tertiary care if required.

**Unit.I.O****School Health**

School Health Services deal with medical inspections of school children and their health protection primary in the environment of the school. It is a continuation of the health service of the pre-school child.

The doctor should be able to demonstrate relationship between the school and child health for optimal learning.

**Objectives:**

The trainee doctor should explore and describe elements of school health and link it to national school health programmes. He should list and describe role of pediatrician, teachers and community in child health i.e.:

- a. Importance of school health
- b. Elements of school health
- c. National school health programmes.
- d. Role of school health team.

**Unit.I.P.****Immunization**

Infectious diseases are a major cause of illness in children. Immunization has had a dramatic effect on diseases like smallpox, diphtheria, poliomyelitis; smallpox has been eradicated, indigenous polio is not seen in many countries and diphtheria is rare Immunization is a major part of preventive pediatrics services.

**Objectives:**

The participants will be able to:

1. Discuss the immunological basis of immunization.
2. Discuss the principles and practical applications of the vaccines included in the national programme.
3. Vaccinate a child with the vaccines included in the national programme.
4. Counsel parents regarding immunization.

5. Describe the cold chain for common vaccine.
6. Plan, organize and supervise vaccination in the community and PHC facilities.
7. Discuss the new developments in immunization.

## **Unit.I.Q.**

### **Children with Special Needs**

#### ***Handicaps***

Children with severe physical handicaps need continuous support not only from their parents, family and friends but also a lifelong involvement with professional services. The aim of management during childhood and adolescence is to produce an adult who can be as physically independent as possible, within the limitations of their disability and also has emotional independence to enjoy adulthood.

#### **Objectives:**

The student should be able to:

1. Recognize the significance of childhood disabilities.
2. Identify/diagnose physical handicap children
3. Discuss with the child/adolescent and the family to make them fully knowledgeable regarding the disability.
4. Identify and mobilize the resource persons/organizations for the multi-disciplinary assessment the handicapped children's need.
5. Identify the social services, educational and medical and psychiatric facilities needed for handicapped children and adolescents.
6. Provide support the child and the family to plan the management of the child/adolescent.

#### ***Vision***

Visual disorders are common. They can be result of malformation, injury or malfunction of any part of the visual pathway from eye to the visual cortex. Many aspects of development are dependent upon normal vision e.g. learning and language.

#### **Objectives:**

The student should be able to:

1. Discuss the significance of visual disorders in relation to child development and learning.
2. Identify visual disorders in infants and children by visual screening.
3. Identify sources for ophthalmic assessment.
4. Support and guide families to use the ophthalmic, social and educational facilities for optimal development of child.



## ***Hearing***

Deafness is categorized as mild, moderate and severe. Early detection, management and appropriate education are important for producing the best result in language development, educational performance and prevention of behavioral problems.

### **Objectives:**

The student should be able to:

1. Describe the epidemiology of deafness and discuss the significance of deafness for the development of the child.
2. List the causes of deafness.
3. Discuss the screening tests for deafness.
4. Identify the resource person/institutions for audio logical assessment.
5. Support and guide parents to use the social/educational and medical facilities for management of deaf children.

## ***Speech***

Speech is the most highly developed of all human skills. It is required to convey ideas. Children with disorders of spoken language also have difficulty in acquiring the writing capability.

### **Objectives:**

The student should be able to:

1. Describe the causes of speech defects.
2. Describe the skills required for spoken language.
3. Discuss the development of speech.
4. Identify disorders of articulation.
5. Identify resource persons/institutions for assessment and management of speech disorders.
6. Support and guide parents to use the medical, educational and social services for management of children with speech and language disorders including reading spelling and writing.

## ***Learning Disability***

Intellectual impairment and learning disability seems to be a better terminology than mental handicap, and use the term handicap for describing the ways in which the children are unable to fulfill their normal roles Autism.

### **Objectives:**

1. Describe and diagnose learning disabilities at various ages.
2. Demonstrate the skills to identify learning disabilities.
3. Support and guide parents to use medical, educational and social services for the management of children with learning disabilities.

### **Unit.I.R.**

## **Child Rights, Child Abuse/Child Protection**

The community pediatrician should have comprehensive knowledge of child abuse in Pakistan. He should be able to establish physical diagnose and recommended measures.

### **Objectives**

The trainee doctors should be able to identify and investigate and relate factors leading to child abuse in our culture.

Determine various forms of child abuse and its impact on child health.

- Describe child rights and CRC
- Discuss adoption and foster care.
- Define of child abuse, physical/emotional (parental sibling and Teacher), sexual abuse.
- Describe laws related to children
- Management abused children
- List institutional/NGO taking care of children in difficult circumstances.

### **Unit.I.S.**

## **Genetic Counseling**

The aim is to enable the students to identify congenital anomalies/disorders and guide parents about prognosis.

### **Objectives**

The student should be able to:

- Diagnose and demonstrate various forms of inheritance.
- Investigate and interpret lab. Investigation pertaining to inherited disorders.
- Impart relevant counseling to parent.

### **Unit.I.T.**

## **Accidents**

An accident is an unpremeditated event resulting in recognizable danger. Infants and children of all ages and level of development are prone to accidents in home, school and outdoor environment.

A doctor should be able to identify and narrate recognizable to infants and children at home and in outdoor environment.

### **Objectives**

The trainee doctor should be able to:

- Describe and counsel parents about likely accidents at different ages according to our environment.
- Suggest feasible ways and means to prevent such happening in our environments.
- Describe age and development and nature of accidents in our community.
- Manage common accidents, fall – Head injury, poisoning drowning – home and outdoor, roadside accidents, Protection and prevention of accidents at different ages.

## **Unit.I.U.**

### **Health Management Information System**

Effective primary health care programs require constant overseeing the activities of personnel, adequate provision of drugs and other supplies and effectiveness of the intervention strategies for specific problem. The management of information system provides the necessary tools for establishing the infra structure for management and supervision.

To demonstrate importance of flow of information from first level health facility to MOH and its role in planning and management of health services.

### **Objectives**

The student should be able to describe and discuss the contents, person's responsibility and channel of communications. He should practically demonstrate filling of different reports and proforma. He should construct a diagram showing linkages between health information and planning process.

## **Unit.I.V**

### **Environment and Community Health**

Water supply, sanitation, waste disposal, urbanization and deterioration of air quality all contribute strongly to overall health, thus forming an important component of Community Medicine.

The aim is to create awareness about role of environment in child health.

### **Objectives:**

The student should be able to:

- i) Comprehend and describe the knowledge of:
  - a) Water and land use
  - b) Water supply
  - c) Environmental Hygiene
  - d) Water and hygiene – Related diseases
  - e) Sanitation
  - f) Waste disposal
  - g) Sources and use of toxic chemicals
  - h) Susceptibility to chemicals hazards
  - i) Urbanization and deterioration of air quality
  - j) Urban epidemics
  
- ii) Advise the parents about:
  - a) Water purification, household measures
  - b) Proper waste disposal measures
  - c) Hygiene measures in living and eating habits
  - d) Preventive measures in chemical exposures
  
- iii) Describe and discuss the important of inter-sectoral collaboration with the related departments like:
  - a) WASA (water And Sanitation Agency)
  - b) EPD (Environmental Protection Department)

## Unit.I.W

### Leadership in Health

Pakistan, being a developing country is facing shortage of leaders and trained health managers. The deficiency, as depicted by WHO leads to gap between policies and implementation of health plans. The principal aim is to create awareness about importance of leadership in establishment of child health services.

#### Objectives

The students should describe and discuss:

- a) Role of leader in child health
- b) The attributes of leader and the relationship between leader and manager.
- c) The stages and levels of leadership.
- d) The basic principles of leadership for community development.
- e) The WHO leadership development initiative and health for all (HFA).

**Evaluation: During the whole period of training in Community Medicine(Community Medicine) the student will be expected to present 20**

Seminars and participate actively in 20 seminar presented by other students and faculty.

They will be attached to various sections in the department under a supervisor. Their performance will be evaluated every month and entered into their logbook.

## Phase II

### **SPECIAL PATHOLOGY RELATED TO COMMUNITY MEDICINE**

To provide child health care, the health provider should have essential knowledge of pathogenesis and symptoms of diseases. Based on this knowledge he should be able to order relevant investigation, prescribe treatment and prevent occurrence of disease.

#### ***Bacteriology***

The student should be able to describe epidemiology, pathology, pathogenesis and clinical manifestations of common bacterial pathogens causing disease in children.

**Objectives**

The student should be able to narrate individual characteristics of gm-positive, gm-negative and atypical bacteria. He should be able to order lab investigations to diagnose disease caused by these organisms. He should manage and advise preventive measure.

***Virology***

The postgraduate doctor should be able to state common illnesses caused by viruses in childhood.

**Objectives**

The community physician should be able to describe characteristics of viruses and pathognomonic signs symptoms caused by different viruses. He should be able to create and advise preventive measures to parents of children.

***Parasitology***

The trainee should be able to describe parasite causing disease in children.

**Objectives**

The student should be able to demonstrate sign and symptoms caused by both endo and ecto-parasites in children. He should be able to exercise skills to treat and prevent diseases caused by parasite in children.

***Entomology***

The doctors should be able to describe common arthropods transmitting disease.

**Objectives**

He should be able to diagnose, manage and advise preventive measure to avoid diseases caused by arthropods.

## **Section - 6**

### **RESEARCH THESIS**

During course on Research Methodology and Biostatistics held during Phase-I of the Course, the candidate is expected to develop synopsis of Research.

### **GUIDELINES FOR PREPARATION OF SYNOPSIS**

The applicants should organize thesis synopsis to address the following points:

- a) Title : Reflect the study
- b) Introduction : Should clearly manifest why the present work is Undertaken
- c) Literature review : Place the project in academic context by referring

To the major work by others on the topic

- d) Objectives : Define clearly the aims of the research proposal.
- e) Significance : Explain the significance of the proposal for the field and the country
- f) Plan : Give your wise tentative plan of the work.
- g) Methodology : Explain the approach and methods he will follow.
- h) Bibliography : Up to date references.

### **GUIDELINES FOR THESIS FORMAT**

Thesis must be bound in accordance with the following specifications:

- a) Quarts approximately 10 inches, except for drawings and maps on which no restriction is placed. A margin of 1.5 inches to be left on left hand side. Cloth bound is standard size. Lettered boldly up back in gold (1 inch letter).
- b) The front should bear the title, name of the candidate and the insignia of the University

### **Section – 7**

## **EXAMINATIONS & Results**

### **1. ENTRY EVALUATION/PART I**

Entry test covers basic sciences and internal medicine, MCQ test followed by video projected clinical examination and interview.

The Fee for Entry Evaluation will be determined by the University.

### **2. INTERMEDIATE EVALUATION: (Part-II Examination)**

- (a) All candidates admitted in MD Community Medicine course will appear in Part-II Examination at the end of their year- 1 of Training.



- (b) The examination will consist of one Paper covering the principals of internal medicine.

**M.D. Community Medicine**  
**Course Principles of Internal**  
**Medicine**

For Part-I Examination the Paper I and Paper 2 will be set by two panels of four (4) examiners

50% are the passing percentage

***Eligibility to appear in Part-I Examination***

1. Application by the candidate recommended by the Supervisor.
2. Certificate by the Supervisor that candidate has regularly attended at least 75% of the Lectures, Seminars, Practical, demonstrations of the Phase-I education.
3. Bank Challan Form of payment of examination fee. University can change the fee from time to time).

**3. LONGITUDINAL EVALUATION (Log Book Assignments, Assessments).**

Through out the length of the course, the performance of the candidate will be recorded on the Log-Book. The Log Book will reflect the performance of the candidate on following parameters:

- i. Year wise record of competence of technical skills
- ii. Year wise record of the assignments.
- iii. Year wise record of the evaluation regarding affective and interpersonal behavior
- iv. Year wise record of Journal Clubs, Conferences, Lectures attended.

The performance of the candidate will be evaluated on yearly basis.

|   |   |     |
|---|---|-----|
| Marks for each year                       | = | 50  |
| Total Marks for whole of Training Program | = | 200 |

The evaluation will be made by the Superior (in consultation with the Co-Supervisor if appointed).

**LOG BOOK**

Total marks for whole training program: 200

Marks for each year: 50

Log Book will consist of following parts:

Curriculum of MD Community Medicine Course, Rawalpindi Medical University, Rawalpindi- 2024

- |  |          |
|--|----------|
| 1. Teaching assignments:<br>Lectures/Demonstrations/Tutorial | 10 Marks |
| 2. Written assignments:<br>Review articles/papers            | 10 Marks |
| 3. Attendance and Paper Presentation in<br>Conferences:      | 10 Marks |
| 1. Technical Skills  | 10 Marks |
| 2. Affective and Interpersonal skills                        | 10 Marks |

Log Book will signed by the Supervisor/Co-Supervisor regularly. Evaluation of Log Book will be performed by the Supervisor at the end of each year.

#### **4. RESEARCH THESIS**

##### **4.(a) Characteristics of the Research Topic.**

The Research Topic in clinical subjects should address 20% to the related Applied Basic Sciences and in Basic Sciences should address 20% to the Related Applied Clinical Sciences. The research Topic must consist of a reasonable sample size and sufficient No. of variables to give training to the candidate to conduct research to acquire data, analyze data and reach results, discuss results and draw conclusions and thus test the hypothesis.

##### **4.(b) Preparation of Synopsis.**

The applicants should organize thesis synopsis to address the guidelines mentioned in the Anex-II of the Revised Regulations for PhD Programs No.1300/GS, Dated 21- 06- 2001.

##### **4.(c) Submission/Evaluation of Synopsis.**

Synopsis of research project will be submitted during the year-1 of the course. The Synopsis will be submitted through the supervisor to the Vice Chancellor. The synopsis will be evaluated by the following committees.

1. Board of studies
2. Project evaluation committee
3. Institutional Review Board
4. Advance Studies & Review Board

##### **4.(d) Submission of Thesis**

- 1) The Thesis must be bound in accordance with the specification mentioned in RMU act.

- 2) Four (4) copies of the Thesis must be submitted at least 6-months before the commencement of the written and oral Examination.
- 3) The minimum duration between approval of synopsis of research and submission of thesis should be 2 years; the maximum duration will be 10 years.
- 4) The Thesis will be submitted along with the Fee paid in the account of the Rawalpindi Medical University.
- 5) Application for Thesis Evaluation recommended by the Supervisor.

4.(e) **The Evaluation of the Thesis**

The thesis will be examined by three examiners appointed as examiner for the Final Examination of MD course (Part-2 Examination). Each of the examiners will be provided a copy of the Thesis at least Three (3) months before the commencement of examination

The Candidates will defend their Thesis in presence of their supervisor or Co-Supervisor during the Part-III Examination. Total Marks for Thesis Evaluation will be 200. The Marks with two examiners will be 66 each and 68 with the head Examiner.

**Part-III; Final Examination**

(a) Eligibility;

1. Certificate of Completion of Training and issued jointly by the supervisor/mentor, the Associate Program Director and the Chairman/ Program Director.
2. The Result Sheet of all internal Assessments showing that the candidate has passed all annual assessments
3. Certificate of completion of the Log Book by the Associate Program Director/Program Director.
4. Certificate of submission of the Thesis issued by the Controller of Examination.

(b) Written Examination.

1. A panel of three (3) examiners, one internal and two external will prepare and mark the question papers.
2. Paper -1 will comprise of 100 “One best answer” type MCQs of 100 marks to be solved in 100 minutes.
3. Paper -2 will comprise of 20 “short Essay Questions” of 100 marks (5 marks each question), to be solved in 3 hours.
4. Both paper 1 and 2 will cover the whole syllabus of the specialty of training.
5. 20% questions (both MCQ and SEQ) should test the knowledge of the candidate in applied basic sciences including pathology regarding the specialty.

(c) Oral and Practical Examination.

1. Candidates who will pass the written examination with 50% pass marks will be eligible to appear in the oral and practical examination.
3. The Internal Examiners will not examine the candidates for whom they have acted as supervisor/mentor and will be substituted by other internal examiner.

4. The panel of four examiners will comprise of one internal and three external examiners. All examiners will have equal marks. Internal examiner will act as the coordinator.
  5. Each Candidate will be examined for OSCE and Table Viva.
  6. Total Marks of Oral and Practical Examination will be 200 (50 each for OSCE//Table Viva)
  7. The candidates will pass Oral and Practical Examination with 50% and above marks.
  8. The candidates who fail in oral and practical examination will appear in only oral and practical examination.
  9. The candidates(s) with 50% marks separately in i- written and ii- Oral and Practical, and 60% aggregate will be declared pass
- (d) Declaration of Result.  
Candidate(s) who have;
1. Approved their Thesis
  2. Passed the written and oral & Practical examination, will be declared pass.  
(60% Marks for ordinary Pass and 80% Marks for Pass with distinction).