

**MEDICAL COUNCIL OF  
INDIA  
REGULATIONS  
ON  
GRADUATE MEDICAL EDUCATION, 1997**



**MEDICAL COUNCIL OF INDIA  
Pocket 14, Sector 8, Dwarka  
New Delhi - 110077**

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Medical Council of India

The 4th March 1997

**NOTIFICATION**

In exercise of the powers conferred by Section 33 of the Indian Medical Council Act, 1956 (102 of 1956) the Medical Council of India with the previous sanction of the Central Government hereby makes the following regulations, namely :-

(1) Short title and commencement : (1) These regulations may be called the "Regulations on Graduate Medical Education, 1997".

(2) They shall come into force on the date of their publication in the Official Gazette.

## CHAPTER 1

### 2. GENERAL CONSIDERATIONS AND TEACHING APPROACH

(1) Graduate medical curriculum is oriented towards training students to undertake the responsibilities of a physician of first contact who is capable of looking after the preventive, promotive, curative & rehabilitative aspect of medicine.

(2) With wide range of career opportunities available today, a graduate has a wide choice of career opportunities. The training, though broad based and flexible should aim to provide an educational experience of the essentials required for health care in our country.

(3) To undertake the responsibilities of service situations which is a changing condition and of various types, it is essential to provide adequate placement training tailored to the needs of such services as to enable the graduates to become effective instruments of implementation of those requirements. To avail of opportunities and be able to conduct professional requirements, the graduate shall endeavour to have acquired basic training in different aspects of medical care.

(4) The importance of the community aspects of health care and of rural health care services is to be recognized. This aspect of education & training of graduates should be adequately recognized in the prescribed curriculum. Its importance has been systematically upgraded over the past years and adequate exposure to such experiences should be available throughout all the three phases of education & training. This has to be further emphasized and intensified by providing exposure to field practice areas and training during the internship period. The aim of the period of rural training during internship is to enable the fresh graduates to function efficiently under such settings.

(5) The educational experience should emphasize health and community orientation instead of only disease and hospital orientation or being-concentrated - on-curative -aspects. As such all the basic concepts of modern scientific medical education are to be adequately dealt with.

(6) There must be enough experiences to be provided for self learning. The methods and techniques that would ensure this must become a part of teaching-learning process.

(7) The medical graduate of modern scientific medicine shall endeavour to become capable of functioning independently in both urban or rural environment. He/she shall endeavour to give emphasis on fundamental aspects

of the subjects taught and on common problems of health and disease avoiding unnecessary details of specialization.

(8) The importance of social factors in relation to the problem of health and diseases should receive proper emphasis throughout the course and to achieve this purpose, the educational process should also be community based than only hospital based. The importance of population control and family welfare planning should be emphasized throughout the period of training with the importance of health and development duly emphasized.

(9) Adequate emphasis is to be placed on cultivating logical and scientific habits of thought, clarity of expression and independence of judgment, ability to collect and analyse information and to correlate them.

(10) The educational process should be placed in a historic background as an evolving process and not merely as an acquisition of a large number of disjointed facts without a proper perspective. The history of Medicine with reference to the evolution of medical knowledge both in this country and the rest of the world should form a part of this process.

(11) Lectures alone are generally not adequate as a method of training and are a poor means of transferring/acquiring information and even less effective at skill development and in generating the appropriate attitudes. Every effort should be made to encourage the use of active methods related to demonstration and on first hand experience. Students will be encouraged to learn in small groups, through peer interactions so as to gain maximal experience through contacts with patients and the communities in which they live. While the curriculum objectives often refer to areas of knowledge or science, they are best taught in a setting of clinical relevance and hands on experience for students who assimilate and make this knowledge a part of their own working skills.

(12) The graduate medical education in clinical subjects should be based primarily on out-patient teaching, emergency departments and within the community including peripheral health care institutions. The out-patient departments should be suitably planned to provide training to graduates in small groups.

(13) Clinics should be organised in small groups of preferably not more than 10 students so that a teacher can give personal attention to each student with a view to improve his skill and competence in handling of the patients.

(14) Proper records of the work should be maintained which will form the basis for the students' internal assessment and should be available to the inspectors at the time of inspection of the college by the Medical Council of India.

(15) Maximal efforts have to be made to encourage integrated teaching between traditional subject areas using a problem based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both understanding and resolution of the problem. Every attempt be made to de-emphasize compartmentalisation of disciplines so as to achieve both horizontal and vertical integration in different phases.

(16) Every attempt is to be made to encourage students to participate in group discussions and seminars to enable them to develop personality, character, expression and other faculties which are necessary for a medical graduate to function either in solo practice or as a team leader when he begins his independent career. A discussion group should not have more than 20 students.

(17) Faculty member should avail of modern educational technology while teaching the students and to attain this objective, Medical Education Units/ Departments be established in all medical colleges for faculty development and providing learning resource material to teachers.

(18) To derive maximum advantage out of this revised curriculum, the vacation period to students in one calendar year should not exceed one month, during the 4 ½ years Bachelor of Medicine and Bachelor of Surgery (MBBS) Course.

(19) In order to implement the revised curriculum in toto, State Govts. and Institution Bodies must ensure that adequate financial and technical inputs are provided.

### **3. OBJECTIVE OF MEDICAL GRADUATE TRAINING PROGRAMME:**

(1) **NATIONAL GOALS** : At the end of undergraduate program, the medical student should be able to :

(a) recognize 'health for all' as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.

(b) learn every aspect of National policies on health and devote himself/herself to its practical implementation.

(c) achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.

(d) develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.

(e) become exemplary citizen by observation of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

(2) **INSTITUTIONAL GOALS** : (I) In consonance with the national goals each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The undergraduate students coming out of a medical institute should:

(a) be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.

(b) be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.

(c) appreciate rationale for different therapeutic modalities, be familiar with the administration of the "essential drugs" and their common side effects.

(d) be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

(e) possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine.

(f) be familiar with the basic factors which are essential for the implementation of the National Health Programmes including practical aspects of the following:

(i) Family Welfare and Material and Child Health(MCH)

(ii) Sanitation and water supply

(iii) Prevention and control of communicable and non-communicable diseases

(iv) Immunization

(v) Health Education

(g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery.

(h) be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.

(i) be able to work as a leading partner in health care teams and acquire proficiency in communication skills.

(j) be competent to work in a variety of health care settings.

(j) have personal characteristics and attitudes required for professional life such as personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

(II) All efforts must be made to equip the medical graduate to acquire the skills as detailed in APPENDIX B.

## CHAPTER II

### ADMISSION, SELECTION, MIGRATION & TRAINING:-

**4. Admission to the Medical Course - Eligibility Criteria :** No Candidate shall be allowed to be admitted to the Medical Curriculum proper of first Bachelor of Medicine and Bachelor of Surgery (MBBS) Course until:

(1) He/she shall complete the age of 17 years on or before 31<sup>st</sup> December of the year of admission to the MBBS Course.

(2) He/she has passed qualifying examination as under:

(a) The higher secondary examination or the Indian School Certificate Examination which is equivalent to 10+2 Higher Secondary Examination after a period of 12 years study, the last two years of study comprising of physics, Chemistry, Biology and Mathematics or any other elective subjects with English at a level not less than the core course for English as prescribed by the National Council for Educational Research and Training after the introduction of the 10+2+3 years educational structure as recommended by the National Committee on education.

Note: Where the course content is not as prescribed for 10+2 education structure of the National Committee, the candidates will have to undergo a period of one year pre-professional training before admission to the Medical colleges.

or

(b) The Intermediate examination in science of an Indian University/Board or other recognized examining body with Physics, Chemistry and Biology which shall include a practical test in these subjects and also English as a compulsory subject.

or

(c) The pre-professional/pre-medical examination with Physics, Chemistry and Biology, after passing either the higher secondary school examination, or the pre-university or an equivalent examination. The pre-professional/pre-medical examination shall include a practical test in Physics, Chemistry & Biology and also English as a compulsory subject.

or

(d) The first year of the three years degree course of a recognized university, with Physics, Chemistry and Biology including a practical test in these subjects provided the examination is a "University Examination" and candidate has passed 10+2 with English at a level not less than a core course.

or

(e) B.Sc examination of an Indian University, provided that he/she has passed the B.Sc examination with not less than two of the following subjects Physics, Chemistry, Biology (Botany, Zoology) and further that he/she has passed the earlier qualifying examination with the following subjects - Physics, Chemistry, Biology and English.

or

(f) Any other examination which, in scope and standard is found to be equivalent to the intermediate science examination of an Indian University/Board, taking Physics, Chemistry and Biology including practical test in each of these subjects and English.

Note:

The pre-medical course may be conducted either at Medical College or a Science College.

Marks obtained in mathematics are not to be considered for admission to MBBS course.

After the 10+2 course is introduced, the integrated courses should be abolished.

**5 Selection to Students:** The selection of students to medical college shall be based solely on merit of the candidate and for determination of merit, the following criteria be adopted uniformly throughout the country:

(1) In states, having only one Medical College and one university / board/examining body conducting the qualifying examination, the marks obtained at such qualifying examination may be taken into consideration.

(2) In states, having more than one university/board/examining body conducting the qualifying examination (or where there is more than one medical college under the administrative control of one authority) a competitive entrance

examination should be held so as to achieve a uniform evaluation as there may be variation of standards at qualifying examinations conducted by different agencies.

(3) Where there are more than one college in a state and only one university/board conducting the qualifying examination, then a joint selection board be constituted for all the colleges.

(4) A competitive entrance examination is absolutely necessary in the cases of Institutions of All India character.

**5** Procedure for selection to MBBS course shall be as follows :-

i) In case of admission on the basis of qualifying examination under Clause(1) based on merit, candidate for admission to MBBS course must have passed in the subjects of Physics, Chemistry, Biology & English individually and must have obtained a minimum of 50% marks taken together in Physics, Chemistry, and Biology at the qualifying examination as mentioned in Clause(2) of regulation 4. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes, the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination be 40% instead of 50% as above.

ii) In case of admission on the basis of competitive entrance examination under Clause (2) to (4) of this regulation, a candidate must have passed in the subjects of Physics, Chemistry, Biology and English individually and must have obtained a minimum of 50% marks taken together in Physics, Chemistry & Biology at the qualifying examination as mentioned in Clause (2) of Regulation 4 and in addition must have come in the merit list prepared as a result of such competitive entrance examination by securing not less than 50% marks in Physics, Chemistry and Biology taken together in the competitive examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or other Backward Classes the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination and competitive entrance examination be 40% instead of 50% as stated above.

Provided that a candidate who has appeared in the qualifying examination the result of which has not been declared, he may be provisionally permitted to take up the competitive entrance examination and in case of selection for admission to the MBBS course, he shall not be admitted to that course until he fulfils the eligibility criteria under Regulation 4.

## **6. Migration**

(1) Migration from one medical college to other is not a right of a student. However, migration of students from one medical college to another medical college in India may be considered by the Medical Council of India only in exceptional cases on extreme compassionate grounds\*, provided following criteria are fulfilled. Routine migrations on other grounds shall not be allowed.

(2) Both the colleges, i.e. one at which the student is studying at present and one to which migration is sought, are recognised by the Medical Council of India.

(3) The applicant candidate should have passed first professional MBBS examination.

(4) The applicant candidate submits his application for migration, complete in all respects, to all authorities concerned within a period of one month of passing (declaration of results) the first professional Bachelor of Medicine and Bachelor of Surgery (MBBS) examination.

(5) The applicant candidate must submit an affidavit stating that he/she will pursue 18 months of prescribed study before appearing at IInd professional Bachelor of Medicine and Bachelor of Surgery (MBBS) examination at the transferee medical college, which should be duly certified by the Registrar of the concerned University in which he/she is seeking transfer. The transfer will be applicable only after receipt of the affidavit.

### **Note 1**

(i) Migration during clinical course of study shall not be allowed on any ground.

(ii) All applications for migration shall be referred to Medical Council of India by college authorities. No institution / University shall allow migrations directly without the approval of the Council.

(iii) Council reserves the right, not to entertain any application which is not under the prescribed compassionate grounds and also to take independent decisions where applicant has been allowed to migrate without referring the same to the Council.

Note 2 : \* Compassionate grounds criteria :

(i) Death of a supporting guardian.

(ii) Illness of the candidate causing disability.

- (iii) Disturbed conditions as declared by Government in the Medical College area.

## 7. Training Period and Time Distribution

(1) Every student shall undergo a period of certified study extending over 4 ½ academic years divided into 9 semesters,(i.e. of 6 months each) from the date of commencement of his study for the subjects comprising the medical curriculum to the date of completion of the examination and followed by one year compulsory rotating internship. Each semester will consist of approximately 120 teaching days of 8 hours each college working time, including one hour of lunch.

(2) The period of 4 ½ years is divided into three phases as follows :-

a) **Phase-1**(two semesters) - consisting of Pre-clinical subjects (Human Anatomy, Physiology including Bio-Physics, Bio- chemistry and introduction to Community Medicine including Humanities). Besides 60 hours for introduction to Community Medicine including Humanities, rest of the time shall be somewhat equally divided between Anatomy and Physiology plus Biochemistry combined (Physiology 2/3 & Biochemistry 1/3).

b) **Phase-II** (3 semesters) - consisting of para-clinical/ clinical subjects.

During this phase teaching of para-clinical and clinical subjects shall be done concurrently.

The para-clinical subjects shall consist of Pathology, Pharmacology, Microbiology, Forensic Medicine including Toxicology and part of Community Medicine.

The clinical subjects shall consist of all those detailed below in Phase III.

Out of the time for Para-clinical teaching approximately equal time be allotted to Pathology, Pharmacology, Microbiology and Forensic Medicine and Community Medicine combined (1/3 Forensic Medicine & 2/3 Community Medicine). See Appendix-C.

c) **Phase-III** (Continuation of study of clinical subjects for seven semesters after passing Phase-I)

The clinical subjects to be taught during Phase II & III are Medicine and its allied specialties, Surgery and its allied specialties, Obstetrics and Gynaecology and Community Medicine.

Besides clinical posting as per schedule mentioned herewith, rest of the teaching hours be divided for didactic lectures, demonstrations, seminars, group discussions etc. in various subjects. The time distribution shall be as per Appendix-C.

The Medicine and its allied specialties training will include General Medicine, Paediatrics, Tuberculosis and Chest, Skin and Sexually Transmitted Diseases, Psychiatry, Radio-diagnosis, Infectious diseases etc. The Surgery and its allied specialties training will include General Surgery, Orthopaedic Surgery including Physio-therapy and Rehabilitation, Ophthalmology, Otorhinolaryngology, Anaesthesia, Dentistry, Radio-therapy etc. The Obstetrics & Gynaecology training will include family medicine, family welfare planning etc.

(3) The first 2 semester (approximatly 240 teaching days) shall be occupied in the Phase I (Pre-clinical) subjects and introduction to a broader understanding of the perspectives of medical education leading to delivery of health care. No student shall be permitted to join the Phase II (Para-clinical/clinical) group of subjects until he has passed in all the Phase I (Pre-clinical subjects) for which he will be permitted not more than four chances (actual examination), provided four chances are completed in three years from the date of enrollment.

(4) After passing pre-clinical subjects, 1 ½ year (3 semesters) shall be devoted to para-clinical subjects.

Phase II will be devoted to para-clinical & clinical subjects, along with clinical postings. During clinical phase (Phase III) pre-clinical and para-clinical teaching will be integrated into the teaching of clinical subjects where relevant.

(5) Didactic lectures should not exceed one third of the time schedule; two third schedule should include practicals, clinicals or/and group discussions. Learning process should include living experiences, problem oriented approach, case studies and community health care activities.

(6) Universities shall organize admission timings and admission process in such a way that teaching in first semester starts by 1<sup>st</sup> of August each year.

(7) Supplementary examination may be conducted within 6 months so that the students who pass can join the main batch and the failed students will have to appear in the subsequent year.

## 8. Phase Distribution and Timing of Examinations:-

6 MONTHS	6 MONTHS	6 MONTHS	
1	2		Ist professional examination (during second semester)
3	4	5	IIInd professional examination (during fifth semester)
6	7		IIIrd professional Part I (during 7th semester)
8	9		IIIrd professional Part II (Final Professional).

Note:

- a) Passing in Ist Professional is compulsory before proceeding to Phase II training.
- b) A student who fails in the IIInd professional examination, should not be allowed to appear IIIrd Professional Part I examination unless he passes all subjects of IIInd Professional examination.
- c) Passing in IIIrd Professional (Part I) examination is not compulsory before entering for 8th & 9th semester training, however passing of IIIrd Professional (Part I) is compulsory for being eligible for IIIrd Professional (Part II) examination.

During third to ninth semesters, clinical postings of three hours duration daily as specified in the Table below is suggested for various departments, after Introductory Course in Clinical Methods in Medicine & Surgery of two weeks each for the whole class.

TABLE

Total Subject:	3 <sup>rd</sup> Semester (Wks)	4 <sup>th</sup> Semester (Wks)	5 <sup>th</sup> Semester (Wks)	6 <sup>th</sup> Semester (Wks)	7 <sup>th</sup> Semester (Wks)	8 <sup>th</sup> Semester (Wks)	9 <sup>th</sup> Semester (Wks)	Total (Wks)
General*** Medicine	6	-	4	-	4	6	6	26
Paediatrics	-	2	-	2	2	4	-	10
Tuberculosis And Chest Diseases	-	2	-	-	-	-	-	02
Skin & STD	-	2	-	2	-	2	-	06
Psychiatry	-	-	2	-	-	-	-	02
Radiology*	-	-	-	-	2	-	-	02
General **** Surgery	6	-	4	-	4	6	6	26
Orthopaedics**	-	-	4	4	-	-	2	10
Ophthalmology	-	4	-	4	-	-	2	10
Ear Nose And Throat	-	4	-	4	-	-	-	08
Obstetrics and Gynaecology including Family Welfare Planning	2	4	4	-	4	4	6	24
Community Medicine	4	4	-	4	-	-	-	12
Casualty	-	-	-	2	-	-	-	02
Dentistry	-	-	-	-	2	-	-	02
<b>Total</b> (in Weeks)	<b>18</b>	<b>22</b>	<b>18</b>	<b>22</b>	<b>18</b>	<b>22</b>	<b>22</b>	<b>142</b>

- Clinical methods in Medicine and Surgery for whole class will be for 2 weeks each respectively at the start of 3<sup>rd</sup> semester

\* This posting includes training in Radiodiagnosis and Radiotherapy where existant.

\*\* This posting includes exposure to Rehabilitation and Physiotherapy.

\*\*\* This posting includes exposure to laboratory medicine and infectious diseases.

\*\*\*\* This posting includes exposure to dressing and Anesthesia.

\*\*\*\*\* This includes maternity training and Family medicine and the 3rd semester posting shall be in Family Welfare Planning.

## CHAPTER III

### CURRICULUM (SUBJECT-WISE)

**9. Pre-clinical subjects - Phase I :** In the teaching of these subjects stress shall be laid on basic principles of the subjects with more emphasis on their applied aspects.

(1) **HUMAN ANATOMY**

(i) **Goal**

The broad goal of the teaching of undergraduate students in Anatomy aims at providing comprehensive knowledge of the gross and microscopic structure and development of human body to provide a basis for understanding the clinical correlation of organs or structures involved and the anatomical basis for the disease presentations.

**ii) Objectives :**

**A) Knowledge :**

At the end of the course the student should be able to

- a. comprehend the normal disposition, clinically relevant interrelationships, functional and cross sectional anatomy of the various structures in the body.
- b. identify the microscopic structure and correlate elementary ultra-structure of various organs and tissues and correlate the structure with the functions as a prerequisite for understanding the altered state in various disease processes.
- c. comprehend the basic structure and connections of the central nervous system to analyse the integrative and regulative functions of the organs and systems. He/She should be able to locate the site of gross lesions according to the deficits encountered.
- (d) demonstrate knowledge of the basic principles and sequential development of the organs and systems, recognise the critical stages of development and the effects of common teratogens, genetic mutations and environmental hazards. He/She should be able to explain the developmental basis of the major variations and abnormalities.

## **(B) Skills :**

At the end of the course the student should be able to:

- (a) identify and locate all the structures of the body and mark the topography of the living anatomy.
- (b) identify the organs and tissues under the microscope.
- (c) understand the principles of karyotyping and identify the gross congenital anomalies.
- (d) understand principles of newer imaging techniques and interpretation of Computerised Tomography (CT) Scan, Sonogram etc.
- (e) understand clinical basis of some common clinical procedures i.e., intramuscular & intravenous injection, lumbar puncture and kidney biopsy etc.

## **(C) Integration**

From the integrated teaching of other basic sciences, student should be able to comprehend the regulation and integration of the functions of the organs and systems in the body and thus interpret the anatomical basis of disease process.

## **(2) HUMAN PHYSIOLOGY INCLUDING BIO-PHYSICS**

### **(A) PHYSIOLOGY**

#### **i) GOAL**

The broad goal of the teaching of undergraduate students in Physiology aims at providing the student comprehensive knowledge of the normal functions of the organ systems of the body to facilitate an understanding of the physiological basis of health and disease.

## **ii) OBJECTIVES**

### **a) KNOWLEDGE**

At the end of the course the student will be able to :

- (1) explain the normal functioning of all the organ systems and their interactions for well coordinated total body function.
- (2) assess the relative contribution of each organ system to the maintenance of the milieu interior.
- (3) elucidate the physiological aspects of normal growth and development.
- (4) describe the physiological response and adaptations to environmental stresses.
- (5) list the physiological principles underlying pathogenesis and treatment of disease.

### **b) SKILLS**

At the end of the course the student should be able to :

- (1) conduct experiments designed for study of physiological phenomena.
- (2) interpret experimental/investigative data.
- (3) distinguish between normal and abnormal data derived as a result of tests which he/she has performed and observed in the laboratory.

### **c) INTEGRATION**

At the end of the integrated teaching the student should acquire an integrated knowledge of organ structure and function and its regulatory mechanisms.

## **(B) BIOPHYSICS**

- (a) **GOAL & OBJECTIVES :** The broad goal of teaching Biophysics to undergraduate students is that they should understand basic physical principles involved in the functioning of body organs in normal and diseased conditions.

Total time for teaching Biophysics	= 5 hours
Out of which : 1. Didactic lectures	= 3 hours
2. Tutorial/group discussion	= 1 hour
3. Practical	= 1 hour

**(b) Topic distribution**

(1) Lectures :

- (i) Physical principles of transport across cell membranes and across capillary wall.
- ii) Biopotentials.
- iii) Physical principles governing flow of blood in heart and blood vessels.

Also physical principles governing flow of air in air passages.

2. Tutorial/group discussion: On the topic covered in didactic lectures.

3. Practicals:

Demonstration of :

- a) Biopotential on oscilloscope
- b) Electro Encephalogram (EEG)
- c) Electro Myelogram (EMG)
- d) Electro Cardiogram (ECG)

(3) **BIOCHEMISTRY**

Biochemistry including medical physics and Molecular Biology.

i) **GOAL**

The broad goal of the teaching of undergraduate students in biochemistry is to make them understand the scientific basis of the life processes at the molecular level and to orient them towards the application of the knowledge acquired in solving clinical problems.

## ii) **OBJECTIVES**

### a) **KNOWLEDGE**

At the end of the course, the student should be able to :

- (1) describe the molecular and functional organization of a cell and list its subcellular components;
- (2) delineate structure, function and inter-relationships of biomolecules and consequences of deviation from normal;
- (3) summarize the fundamental aspects of enzymology and clinical application wherein regulation of enzymatic activity is altered;
- (4) describe digestion and assimilation of nutrients and consequences of malnutrition;
- (5) integrate the various aspects of metabolism and their regulatory pathways;
- (6) explain the biochemical basis of inherited disorders with their associated sequelae;
- (7) describe mechanisms involved in maintenance of body fluid and pH homeostasis;
- (8) outline the molecular mechanisms of gene expression and regulation, the principles of genetic engineering and their application in medicine;
- (9) summarize the molecular concepts of body defence and their application in medicine;
- (10) outline the biochemical basis of environmental health hazards, biochemical basis of cancer and carcinogenesis;
- (11) familiarize with the principles of various conventional and specialized laboratory investigations and instrumentation analysis and interpretation of a given data;
- (12) the ability to suggest experiments to support theoretical concepts and clinical diagnosis.

## **b. SKILLS:**

At the end of the course, the student should be able to :

- (1) make use of conventional techniques/instruments to perform biochemical analysis relevant to clinical screening and diagnosis;
- (2) analyze and interpret investigative data;
- (3) demonstrate the skills of solving scientific and clinical problems and decision making;

## **c. INTEGRATION**

The knowledge acquired in biochemistry should help the students to integrate molecular events with structure and function of the human body in health and disease.

## **(4) INTRODUCTION TO HUMANITIES & COMMUNITY MEDICINE**

Including Introduction to the subjects of Demography, Health Economics, Medical Sociology, Hospital Management, Behavioral Sciences inclusive of Psychology.

## **OBJECTIVES**

### **a) KNOWLEDGE**

The student shall be able to :

1. explain the principles of sociology including demographic population dynamics;
2. identify social factors related to health, disease and disability in the context of urban and rural societies;
3. appreciate the impact of urbanization on health and disease;
4. observe and interpret the dynamics of community behavior;
5. describe the elements of normal psychology and social psychology;
6. observe the principles of practice of medicine in hospital and community setting;

## (b). **SKILLS**

At the end of the course, the student should be able to make use of:

- (1) Principles of practice of medicine in hospital and community settings and familiarization with elementary nursing practices.
- (2) Art of communication with patients including history taking and medico-social work.

Teaching of community medicine, should be both theoretical as well as practical. The practical aspects of the training programme should include visits to the health establishments and to the community where health intervention programmes are in operation.

In order to inculcate in the minds of the students the basic concepts of community medicine to be introduced in this phase of training, it is suggested that the detailed curriculum drawn should include at least 30 hours of lectures, demonstrations, seminars etc. together with atleast 15 visits of two hours each.

## 10. **PARA CLINICAL SUBJECTS OF PHASE II**

### 9.1 **PATHOLOGY:**

#### i) **GOAL**

The broad goal of the teaching of undergraduate student in Pathology is to provide the students with a comprehensive knowledge of the mechanisms and causes of disease, in order to enable him/her to achieve complete understanding of the natural history and clinical manifestations of disease.

#### ii) **OBJECTIVES**

##### a) **KNOWLEDGE**

At the end of the course, the student should be able to :-

- (1) describe the structure and ultrastructure of a sick cell, mechanisms of cell degeneration, cell death and repair and be able to correlate structural and functional alterations.
- (2) explain the pathophysiological processes which govern the maintenance of homeostasis, mechanisms of their disturbance and the morphological and clinical manifestations associated with it.

3. describe the mechanisms and patterns to tissue response to injury such that she/he can appreciate the pathophysiology of disease processes and their clinical manifestations.
4. correlate normal and altered morphology (gross and microscopic) of different organ systems in common diseases to the extent needed for understanding of disease processes and their clinical significance.

b. **SKILLS**

At the end of the course, the student should be able to:-

1. describe the rationale and principles of technical procedures of the diagnostic laboratory tests and interpretation of the results;
2. perform the simple bed-side tests on blood, urine and other biological fluid samples;
3. draw a rational scheme of investigations aimed at diagnosing and managing the cases of common disorders;
4. understand biochemical/physiological disturbances that occur as a result of disease in collaboration with pre clinical departments.

c. **INTEGRATION**

At the end of training he/she should be able to integrate the causes of disease and relationship of different etiological factors (social, economic and environmental) that contribute to the natural history of diseases most prevalent in India.

## 9.2 **MICROBIOLOGY**

i) **GOAL**

The broad goal of the teaching of undergraduate students in Microbiology is to provide an understanding of the natural history of infectious disease in order to deal with the etiology, pathogenesis, laboratory diagnosis, treatment and control of infections in the community.

## ii) OBJECTIVES

### a. KNOWLEDGE

At the end of the course, the student should be able to:

1. state the infective micro-organisms of the human body and describe the host parasite relationship.
2. list pathogenic micro-organisms (bacteria, viruses, parasites, fungi) and describe the pathogenesis of the diseases produced by them.
3. state or indicate the modes of transmission of pathogenic and opportunistic organisms and their sources, including insect vectors responsible for transmission of infection.
4. describe the mechanisms of immunity to infections.
5. acquire knowledge on suitable antimicrobial agents for treatment of infections and scope of immunotherapy and different vaccines available for prevention of communicable diseases.
6. apply methods of disinfection and sterilization to control and prevent hospital and community acquired infections.
7. recommend laboratory investigations regarding bacteriological examination of food, water, milk and air.

### (b). SKILLS

At the end of the course, the student should be able to:

1. plan and interpret laboratory investigations for the diagnosis of infectious diseases and to correlate the clinical manifestations with the etiological agent.
2. identify the common infectious agents with the help of laboratory procedures and use antimicrobial sensitivity tests to select suitable antimicrobial agents.
3. perform commonly employed bed-side tests for detection of infectious agents such as blood film for malaria, filaria, gram staining and AFB staining and stool sample for ova cyst.
4. Use the correct method of collection, storage and transport of clinical material for microbiological investigations.

### c. **INTEGRATION**

The student should understand infectious diseases of national importance in relation to the clinical, therapeutic and preventive aspects.

### (3) **PHARMACOLOGY**

#### i) **GOAL:**

The broad goal of the teaching of undergraduate students in Pharmacology is to inculcate a rational and scientific basis of therapeutics.

#### ii) **OBJECTIVES**

##### a. **KNOWLEDGE**

At the end of the course, the student should be able to:

1. describe the pharmacokinetics and pharmacodynamics of essential and commonly used drugs.
2. list the indications, contraindications, interactions and adverse reactions of commonly used drugs.
3. indicate the use of appropriate drug in a particular disease with consideration to its cost, efficacy and safety for
  - i) individual needs.
  - ii) mass therapy under national health program.
4. describe the pharmacokinetic basis, clinical presentation, diagnosis and management of common poisonings.
5. list the drugs of addiction and recommend the management.
6. classify environmental and occupational pollutants and state the management issues.
7. indicate cautions in prescription of drugs in special medical situations such as pregnancy, lactation, infancy and old age.
8. integrate the concept of rational drug therapy in clinical pharmacology.
9. state the principles underlying the concept of 'Essential Drugs'

10. evaluate the ethics and modalities involved in the development and introduction of new drugs.

**b. SKILLS**

At the end of the course, the student should be able to:

1. prescribe drugs for common ailments.
2. recognise adverse reactions and interactions of commonly used drugs.
3. observe experiments designed for study of effects of drugs, bioassay and interpretation of the experimental data.
4. scan information on common pharmaceutical preparations and critically evaluate drug formulations.

**c. INTEGRATION**

Practical knowledge of use of drugs in clinical practice will be acquired through integrated teaching with clinical departments and pre clinical departments.

**(4) FORENSIC MEDICINE INCLUDING TOXICOLOGY**

**i) GOAL;**

The broad goal of the teaching of undergraduate students in Forensic Medicine is to produce a physician who is well informed about medicolegal responsibilities in practice of medicine. He/She will also be capable of making observations and inferring conclusions by logical deductions to set enquiries on the right track in criminal matters and connected medicolegal problems. He/She acquires knowledge of law in relation to medical practice, medical negligence and respect for codes of medical ethics.

**ii) OBJECTIVES**

**a. KNOWLEDGE**

At the end of the course, the student should be able to:

1. identify the basic medicolegal aspects of hospital and general practice.
2. define the medicolegal responsibilities of a general physician while rendering community service either in a rural primary health centre or an urban health centre.

3. appreciate the physician's responsibilities in criminal matters and respect for the codes of medical ethics.
4. diagnose, manage and identify also legal aspects of common acute and chronic poisonings.
5. describe the medicolegal aspects and findings of post-mortem examination in case of death due to common unnatural conditions & poisonings.
6. detect occupational and environmental poisoning, prevention and epidemiology of common poisoning and their legal aspects particularly pertaining to Workmen's Compensation Act.
7. describe the general principles of analytical toxicology.

#### b) SKILLS

At the end of the course, the student should be able to :-

1. make observations and logical inferences in order to initiate enquiries in criminal matters and medicolegal problems.
2. diagnose and treat common emergencies in poisoning and manage chronic toxicity.
3. make observations and interpret findings at postmortem examination.
4. observe the principles of medical ethics in the practise of his profession.

#### (c) INTEGRATION

Department shall provide an integrated approach towards allied disciplines like Pathology, Radiology, Forensic Sciences, Hospital Administration etc. to impart training regarding medicolegal responsibilities of physicians at all levels of health care. Integration with relevant disciplines will provide scientific basis of clinical toxicology e.g. medicine, pharmacology etc.

#### (5) COMMUNITY MEDICINE

##### i) GOAL :

The broad goal of the teaching of undergraduate students in Community Medicine is to prepare them to function as community and first level physicians in accordance with the institutional goals.

## ii) **OBJECTIVES**

### a) **KNOWLEDGE**

At the end of the course, the student should be able to :-

- (1) describe the health care delivery system including rehabilitation of the disabled in the country;
- (2) describe the National Health Programmes with particular emphasis on maternal and child health programmes, family welfare planning and population control.
- (3) list epidemiological methods and describe their application to communicable and non-communicable diseases in the community or hospital situation.
- (4) apply biostatistical methods and techniques;
- (5) outline the demographic pattern of the country and appreciate the roles of the individual, family, community and socio-cultural milieu in health and disease.
- (6) describe the health information systems.
- (7) enunciate the principles and components of primary health care and the national health policies to achieve the goal of 'Health for All'.
- (8) identify the environmental and occupational hazards and their control.
- (9) describe the importance of water and sanitation in human health.
- (10) to understand the principles of health economics, health administration, health education in relation to community.

### b) **SKILLS**

At the end of the course, the student should be able to :-

- (1) use epidemiology as a scientific tool to make rational decisions relevant to community and individual patient intervention.
- (2) collect, analyse, interpret and present simple community and hospital based data.

- (3) diagnose and manage common health problems and emergencies at the individual, family and community levels keeping in mind the existing health care resources and in the context of the prevailing socio-cultural beliefs.
- (4) diagnose and manage maternal and child health problems and advise a couple and the community on the family planning methods available in the context of the national priorities.
- (5) diagnose and manage common nutritional problems at the individual and community level.
- (6) plan, implement and evaluate a health education programme with the skill to use simple audio-visual aids.
- (7) interact with other members of the health care team and participate in the organisation of health care services and implementations of national health programmes.

c). **INTEGRATION ;**

Develop capabilities of synthesis between cause of illness in the environment or community and individual health and respond with leadership qualities to institute remedial measures for this.

## **11. CLINICAL SUBJECTS OF PHASE II & PHASE III**

The teaching and training in clinical subjects will commence at the beginning of Phase II and continue throughout

The clinical subjects will be taught to prepare the MBBS graduates to understand and manage clinical problems at the level of a practitioner. Exposure to subject matter will be limited to orientation and knowledge required of a general doctor. Maximum attention to the diagnosis and management of the most common and important conditions encountered in general practice should be emphasised in all clinical subject areas. Instructions in clinical subjects should be given both in out patient and in-patient during clinical posting.

Each of the clinical departments shall provide integrated teaching calling on pre-clinical, para-clinical and other clinical departments to join in exposing the students to the full range of disciplines relevant to each clinical area of study. Problem approach will be emphasised based on basic social sciences and a continuation of clinical and laboratory syllabi to optimally understand and manage each clinical condition.

The course shall comprise of:

**(1) MEDICINE & ITS ALLIED SPECIALITIES;**

**(A) MEDICINE:**

**i) GOAL:**

The broad goal of the teaching of undergraduate students in Medicine is to have the knowledge, skills and behavioral attributes to function effectively as the first contact physician.

**ii) OBJECTIVES**

**(a) KNOWLEDGE**

At the end of the course, the student should be able to:

- (1) diagnose common clinical disorders with special reference to infectious diseases, nutritional disorders, tropical and environmental diseases.
- (2) outline various modes of management including drug therapeutics especially dosage, side effects, toxicity, interactions, indications and contra-indications.
- (3) propose diagnostic and investigative procedures and ability to interpret them.
- (4) provide first level management of acute emergencies promptly and efficiently and decide the timing and level of referral, if required.
- (5) recognize geriatric disorders and their management.

**b. SKILLS;**

At the end of the course, the student should be able to:

- (1) develop clinical skills (history taking, clinical examination and other instruments of examination) to diagnose various common medical disorders and emergencies.
- (2) refer a patient to secondary and/or tertiary level of health care after having instituted primary care.
- (3) perform simple routine investigations like haemogram, stool, urine, sputum and biological fluid examinations.

- (4) assist the common bedside investigative procedures like pleural tap, lumbar puncture, bone marrow aspiration/biopsy and liver biopsy.

**c. INTEGRATION;**

- (1) with community medicine and physical medicine and rehabilitation to have the knowledge and be able to manage important current national health programs, also to be able to view the patient in his/her total physical, social and economic milieu.
- (2) with other relevant academic inputs which provide scientific basis of clinical medicine e.g. anatomy, physiology, biochemistry, microbiology, pathology and pharmacology.

**(B) PEDIATRICS**

**Pediatrics including Neonatology**

The course includes systematic instructions in growth and development, nutritional needs of a child, immunization schedules and management of common diseases of infancy and childhood, scope of Social Pediatrics and counselling.

**i) GOAL**

The broad goal of the teaching of undergraduate students in Pediatrics is to acquire adequate knowledge and appropriate skills for optimally dealing with major health problems of children to ensure their optimal growth and development.

**ii) OBJECTIVES**

**a. KNOWLEDGE**

At the end of the course, the student should be able to:

- (1) describe the normal growth and development during foetal life, neonatal period, childhood and adolescence and outline deviations thereof.
- (2) describe the common paediatric disorders and emergencies in terms of epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation.
- (3) state age related requirements of calories, nutrients, fluids, drugs etc. in health and disease.

- (4) describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisonings, accidents and child abuse.
- (5) outline national programmes relating to child health including immunisation programmes.

**b. SKILLS**

At the end of the course, the student should be able to:

- (1) take a detailed pediatric history, conduct an appropriate physical examination of children including neonates, make clinical diagnosis, conduct common bedside investigative procedures, interpret common laboratory investigation results and plan and institute therapy.
- (2) take anthropometric measurements, resuscitate newborn infants at birth, prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current national programs, perform venesection, start an intravenous saline and provide nasogastric feeding.
- (3) conduct diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap and ascitic tap.
- (4) distinguish between normal newborn babies and those requiring special care and institute early care to all new born babies including care of preterm and low birth weight babies, provide correct guidance and counselling in breast feeding.
- (5). provide ambulatory care to all sick children, identify indications for specialized/inpatient care and ensure timely referral of those who require hospitalization.

**(c). INTEGRATION**

The training in pediatrics should prepare the student to deliver preventive, promotive, curative and rehabilitative services for care of children both in the community and at hospital as part of a team in an integrated form with other disciplines, e.g. Anatomy, Physiology, Biochemistry, Microbiology, Pathology, Pharmacology, Forensic Medicine, Community Medicine and Physical Medicine and Rehabilitation.

(C) **PSYCHIATRY**

i) **GOAL**

The aim of teaching the undergraduate student in psychiatry is to impart such knowledge and skills that may enable him to diagnose and treat common psychiatric disorders, handle psychiatric emergencies and to refer complications/unusual manifestations of common disorders and rare psychiatric disorders to the specialist.

ii) **OBJECTIVES**

a. **KNOWLEDGE**

At the end of the course, the student should be able to:

- (1) comprehend nature and development of different aspects of normal human Behaviour like learning, memory, motivation, personality and intelligence;
- (2) recognize differences between normal and abnormal behaviour;
- (3) classify psychiatric disorders;
- (4). recognize clinical manifestations of the following common syndromes and plan their appropriate management of organic psychosis, functional psychosis, schizo-phrenia, affective disorders, neurotic disorders, personality disorders, psycho-physiological disorders, drug and alcohol dependence, psychiatric disorders of childhood and adolescence;
- (5) describe rational use of different modes of therapy in psychiatric disorders.

b. **SKILLS;**

The student should be able to:

- (1) interview the patient and understand different methods of communications in patient-doctor relationship;
- (2) elicit detailed psychiatric case history and conduct clinical examination for assessment of mental status;
- (3) define, elicit and interpret psycho-pathological symptoms and signs.
- (4) diagnose and manage common psychiatric disorders;

(5) identify and manage psychological reactions and psychiatric disorders in medical and surgical patients in clinical practice and in community setting.

**c. INTEGRATION;**

Training in Psychiatry should prepare the students to deliver preventive, promotive, curative and re-habilitative services for the care of patients both in the family and community and to refer advance cases to a specialised Psychiatry/Mental Hospital. Training should be integrated with the departments of Medicine, Neuro Anatomy, Behavioral Sciences and Forensic medicine.

**D DERMATOLOGY AND SEXUALLY TRANSMITTED DISEASES**

**i) GOAL:**

The aim of teaching the undergraduate student in Dermatology, S.T.D. and Leprology is to impart such knowledge and skills that may enable him to diagnose and treat common ailments and to refer rare diseases or complications/unusual manifestations of common diseases, to the specialist.

**ii) OBJECTIVES:**

**a. KNOWLEDGE:**

At the end of the course of Dermato-S.T.D. and Leprology, the student Shall be able to:

1. demonstrate sound knowledge of common diseases, their clinical manifestations, including emergent situations and of investigative procedures to confirm their diagnosis;
2. demonstrate comprehensive knowledge of various modes of therapy used in treatment of respiratory diseases;
3. describe the mode of action of commonly used drugs, their doses, side-effects/toxicity, indications and contra-indications and interactions;
4. describe commonly used modes of management including the medical and surgical procedures available for the treatment of various diseases and to offer a comprehensive plan of management for a given disorder;

**b. SKILLS:**

The student should be able to:

1. interview the patient, elicit relevant and correct information and describe the history in a chronological order.
2. conduct clinical examination, elicit and interpret physical findings and diagnose common disorders and emergencies;
3. perform simple, routine investigative and office procedures required for making the bed-side diagnosis, especially the examination of scrapings for fungus, preparation of slit smears and staining for AFB for leprosy patients and for STD cases;
4. take a skin biopsy for diagnostic purposes;
5. manage common diseases recognizing the need for referral for specialized care, in case of inappropriateness of therapeutic response;
6. assist in the performance of common procedures, like laryngoscopic examination, pleural aspiration, respiratory physiotherapy, laryngeal intubation and pneumo-thoracic drainage/aspiration.

**c. INTEGRATION:**

The broad goal of effective teaching can be obtained through integration with departments of Medicine, Surgery, Microbiology, Pathology, Pharmacology and Preventive & Social Medicine.

**(2) SURGERY & ITS ALLIED SPECIALITIES**

**(A) SURGERY - including Paediatric Surgery:**

**i) GOAL:**

The broad goal of the teaching of undergraduate students in Surgery is to produce graduates capable of delivering efficient first contact surgical care.

ii) **OBJECTIVES:**

a. **KNOWLEDGE:**

At the end of the course, the student should be able to:

1. describe aetiology, pathophysiology, principles of diagnosis and management of common surgical problems including emergencies, in adults and children.
2. define indications and methods for fluid and electrolyte replacement therapy including blood transfusion.
3. define asepsis, disinfection and sterilization and recommended judicious use of antibiotics.
4. describe common malignancies in the country and their management including prevention.
5. enumerate different types of anaesthetic agents, their indications, mode of administration, contraindications and side effects.

b. **SKILLS:**

At the end of the course, the student should be able to:

1. diagnose common surgical conditions both acute and chronic, in adult and children.
2. plan various laboratory tests for surgical conditions and interpret the results.
3. identify and manage patients of hemorrhagic, septicaemic and other types of shock.
4. be able to maintain patent air-way and resuscitate
  - i) a critically injured patient
  - ii) patient with cardio-respiratory failure
  - iii) a drowning case
5. monitor patients of head, chest, spinal and abdominal injuries, both in adults and children.
6. provide primary care for a patient of burns.

7. acquire principles of operative surgery, including pre-operative, operative and post operative care and monitoring.
8. treat open wounds including preventive measures against tetanus and gas gangrene.
9. diagnose neonatal and pediatric surgical emergencies and provide sound primary care before referring the patient to secondary/tertiary centres.
10. identify congenital anomalies and refer them for appropriate management.

In addition to these he should have observed/assisted/ performed the following:

1. Incision and drainage of abscess
2. Debridement and suturing open wound
3. Venesection
4. Excision of simple cyst and tumours
5. Biopsy of surface malignancy
6. Catheterisation and nasogastric intubation
7. Circumcision
8. Meatotomy
9. Vasectomy
10. Peritoneal and pleural aspirations
11. Diagnostic proctoscopy
12. Hydrocele operation
13. Endotracheal intubation
14. Tracheostomy and cricothyroidotomy
15. Chest tube insertion.

(c). **INTEGRATION:**

The undergraduate teaching in surgery should be integrated at various stages with different pre and para and other clinical departments.

B. **ORTHOPEDICS:**

a. **KNOWLEDGE:**

The student should be able to:

1. explain the principles of recognition of bone injuries and dislocation.
2. apply suitable methods to detect and manage common infections of bones and joints.

3. identify congenital, skeletal anomalies and their referral for appropriate correction or rehabilitation.
4. recognize metabolic bone diseases as seen in this country.
5. explain etiogenesis, manifestations, diagnosis of neoplasm affecting bones.

**b. SKILLS**

At the end of the course, the student should be able to:

1. Detect sprains and deliver first aid measures for common fractures and sprains and manage uncomplicated fractures of clavicle, Colles's, forearm, phalanges etc.
2. Techniques of splinting, plaster, immobilization etc.
3. Management of common bone infections, learn indications for sequestration, amputations and corrective measures for bone deformities.
4. Aspects of rehabilitation for Polio, Cerebral Palsy and Amputation.

**c. APPLICATION:**

Be able to perform certain orthopedic skills, provide sound advice of skeletal and related conditions at primary or secondary health care level.

**d. INTEGRATION:**

Integration with anatomy, surgery, pathology, radiology and Forensic Medicine be done.

**C. RADIO-DIAGNOSIS AND RADIOTHERAPY**

**A RADIODIAGNOSIS & IMAGING:**

**i) GOAL:**

The broad goal of teaching the undergraduate medical students in the field of Radio-diagnosis should be aimed at making the students realise the basic need of various radio-diagnostic tools in medical practice. They should be aware of the techniques required to be undertaken in different situations for the diagnosis of various ailments as well as during prognostic estimations.

ii) **OBJECTIVES**

a. **KNOWLEDGE:**

The student should be able to:

1. understand basics of X-ray production, its uses and hazards.
2. appreciate and diagnose changes in bones - like fractures, infections, tumours and metabolic bone diseases.
3. identify and diagnose various radiological changes in disease conditions of chest and mediastinum, skeletal system, G.I. Tract, Hepatobiliary system and G.U. system.
4. learn about various imaging techniques, including isotopes C.T., Ultrasound, M.R.I. and D.S.A.

b. **SKILL**

At the end of the course the student should be able to:

1. use basic protective techniques during various imaging procedures.
2. Interpret common X-ray, radio-diagnostic techniques in various community situations.
3. advise appropriate diagnostic procedures in specialized circumstances to appropriate specialists.

**B RADIOTHERAPY**

i) **GOAL:**

The broad goal of teaching the undergraduate medical students in the field of Radiotherapy is to make the students understand the magnitude of the ever-increasing cancer problem in the country. The students must be made aware about steps required for the prevention and possible cure of this dreaded condition.

ii) **OBJECTIVES**

a. **KNOWLEDGE:**

The students should be able to:

1. identify symptoms and signs of various cancers and their steps of investigations and management.
2. explain the effect of radiation therapy on human beings and the basic principles involved in it.
3. know about radio-active isotopes and their physical properties
4. be aware of the advances made in radiotherapy in cancer management and knowledge of various radio therapeutic equipment while treating a patient.

**b. SKILL:**

At the completion of the training programme, the student should be able to:

1. take a detailed clinical history of the case suspected of having a malignant disease.
2. assist various specialists in administration of anticancer drugs and in application and use of various radiotherapeutic equipment, while treating a patient.

**(3) OTO-RHINO-LARYNGOLOGY**

**i) GOAL:**

The broad goal of the teaching of undergraduate students in Otorhinolaryngology is that the undergraduate student have acquired adequate knowledge and skills for optimally dealing with common disorders and emergencies and principles of rehabilitation of the impaired hearing.

**ii) OBJECTIVES**

**a. KNOWLEDGE**

At the end of the course, the student should be able to:

1. describe the basic pathophysiology of common ENT diseases and emergencies.
2. adopt the rational use of commonly used drugs, keeping in mind their adverse reactions.
3. suggest common investigative procedures and their interpretation.

## **b. SKILLS**

At the end of the course, the student should be able to:

1. examine and diagnose common ENT problems including the pre-malignant and malignant disorders of the head and neck.
2. manage ENT problems at the first level of care and be able to refer whenever necessary.
3. Assist/carry out minor surgical procedures like ear syringing, ear dressings, nasal packing etc.
4. assist in certain procedures such as tracheostomy, endoscopies and removal of foreign bodies.

## **c. INTEGRATION:**

The undergraduate training in ENT will provide an integrated approach towards other disciplines especially neurosciences, ophthalmology and general surgery.

## **4. OPHTHALMOLOGY**

### **i) GOAL:**

The broad goal of the teaching of students in ophthalmology is to provide such knowledge and skills to the students that shall enable him to practice as a clinical and as a primary eye care physician and also to function effectively as a community health leader to assist in the implementation of National Programme for the prevention of blindness and rehabilitation of the visually impaired.

### **ii) OBJECTIVES**

#### **a. KNOWLEDGE**

At the end of the course, the student should have knowledge of:

1. common problems affecting the eye:
2. principles of management of major ophthalmic emergencies
3. main systemic diseases affecting the eye
4. effects of local and systemic diseases on patient's vision

and the necessary action required to minimise the sequelae of such diseases;

5. adverse drug reactions with special reference to ophthalmic manifestations;
6. magnitude of blindness in India and its main causes;
7. national programme of control of blindness and its implementation at various levels
8. eye care education for prevention of eye problems
9. role of primary health centre in organization of eye camps
10. organization of primary health care and the functioning of the ophthalmic assistant.
11. integration of the national programme for control of blindness with the other national health programmes;
12. eye bank organization

**b. SKILLS:**

At the end of the course, the student should be able to:

1. elicit a history pertinent to general health and ocular status;
2. assist in diagnostic procedures such as visual acuity testing, examination of eye, Schiottz tonometry, Staining for Corneal pathology, confrontation perimetry, Subjective refraction including correction of presbyopia and aphakia, direct ophthalmoscopy and conjunctival smear examination and Cover test.
3. diagnose and treat common problems affecting the eye;
4. interpret ophthalmic signs in relation to common systemic disorders;
5. assist/observe therapeutic procedures such as subconjunctival injection, Corneal/Conjunctival foreign body removal, Carbolic cautery for corneal ulcers, Nasolacrimal duct syringing and tarsorrhaphy;
6. provide first aid in major ophthalmic emergencies;

7. assist to organise community surveys for visual check up;
8. assist to organise primary eye care service through primary health centres;
9. use effective means of communication with the public and individual to motivate for surgery in cataract and for eye donation;
10. establish rapport with his seniors, colleagues and paramedical workers, so as to effectively function as a member of the eye care team.

### **c. INTEGRATION**

The undergraduate training in Ophthalmology will provide an integrated approach towards other disciplines especially neurosciences, Otorhino-laryngology, General Surgery and Medicine.

### **10.5. OBSTETRICS AND GYNAECOLOGY**

Obstetrics and Gynaecology to include family welfare and family planning.

#### **i) GOAL:**

The broad goal of the teaching of undergraduate students in Obstetrics and Gynaecology is that he/she should acquire understanding of anatomy, physiology and pathophysiology of the reproductive system and gain the ability to optimally manage common conditions affecting it.

#### **ii) OBJECTIVES**

##### **a. KNOWLEDGE**

At the end of the course, the student should be able to:

1. Outline the anatomy, physiology and pathophysiology of the reproductive system and the common conditions affecting it.
2. detect normal pregnancy, labour puerperium and manage the problems he/she is likely to encounter therein.
3. list the leading causes of maternal and perinatal morbidity and mortality.
4. understand the principles of contraception and various techniques employed, methods of medical termination of pregnancy, sterilisation and their complications.

5. identify the use, abuse and side effects of drugs in pregnancy, pre-menopausal and post-menopausal periods.

6. describe the national programme of maternal and child health and family welfare and their implementation at various levels.

7. identify common gynaecological diseases and describe principles of their management.

8. state the indications, techniques and complications of surgeries like Caesarian section, laparotomy, abdominal and vaginal hysterectomy, Fothergill's operation and vacuum aspiration for M.T.P.

#### **b. SKILLS**

At the end of the course, the student should be able to:

1. examine a pregnant woman; recognise high risk pregnancies and make appropriate referrals.

2. conduct a normal delivery, recognise complications and provide postnatal care.

3. resuscitate the newborn and recognise congenital anomalies.

4. advise a couple on the use of various available contraceptive devices and assist in insertion in and removal of intra-uterine contraceptive devices.

5. perform pelvic examination, diagnose and manage common gynaecological problems including early detection of genital malignancies.

6. make a vaginal cytological smear, perform a post coital test and wet vaginal smear examination for *Trichomonas vaginalis*, moniliasis and gram stain for gonorrhoea.

7. interpretation of data of investigations like biochemical, histopathological, radiological, ultrasound etc.

#### **c. INTEGRATION:**

The student should be able to integrate clinical skills with other disciplines and bring about coordinations of family welfare programmes for the national goal of population control.

#### **d. GENERAL GUIDELINES FOR TRAINING:**

1. attendance of a maternity hospital or the maternity wards of a general hospital including (i) antenatal care (ii) the management of the puerperium and (iii) a minimum period of 5 months in-patient and out-patient training including family planning.
2. of this period of clinical instruction, not less than one month shall be spent as a resident pupil in a maternity ward of a general hospital.
3. during this period, the student shall conduct at least 10 cases of labour under adequate supervision and assist in 10 other cases.
4. a certificate showing the number of cases of labour attended by the student in the maternity hospital and/or patient homes respectively, should be signed by a responsible medical officer on the staff of the hospital and should state:
  - (a) that the student has been present during the course of labour and personally conducted each case, making the necessary abdominal and other examinations under the supervision of the certifying officer who should describe his official position.
  - (b) that satisfactory written histories of the cases conducted including wherever possible antenatal and postnatal observations, were presented by the student and initialed by the supervising officer.

#### **5. FAMILY PLANNING:**

Training in Family Planning should be emphasized in all the three phases and during internship as per guideline provided in Appendix A.

#### **6. COMMUNITY MEDICINE**

The teaching and training of community medicine will continue during the first two semesters of phase III (clinical Phase). The goals, objectives and skills to be acquired by the student has already been outlined in Phase II(Para Clinical Phase).

### **CHAPTER – IV**

#### **12. Examination Regulations**

##### **Essentialities for qualifying to appear in professional examinations.**

The performance in essential components of training are to be assessed, based on:

(1) **ATTENDANCE**

75% of attendance in a subject for appearing in the examination is compulsory provided he/she has 80% attendance in non lecture teaching. i.e. seminars, group discussions, tutorials, demonstrations, practicals, Hospital (Tertiary, Secondary, Primary) postings and bed side clinics, etc.

(2) **Internal Assessment :**

- (i) It shall be based on day to day assessment ( see note), evaluation of student assignment, preparation for seminar, clinical case presentation etc.:
- (ii) Regular periodical examinations shall be conducted throughout the course. The questions of number of examinations is left to the institution:
- (iii) Day to day records should be given importance during internal assessment :
- (iv) Weightage for the internal assessment shall be 20% of the total marks in each subject :
- (v) Student must secure at least 50% marks of the total marks fixed for internal assessment in a particular subject in order to be eligible to appear in final university examination of that subject.

**Note**

Internal assessment shall relate to different ways in which students participation in learning participation in learning process during semesters in evaluated.

Some examples are as follows:

- (i) Preparation of subject for students seminar.
- (ii) Preparation of a clinical case for discussion.
- (iii) Clinical case study/problem solving exercise.
- (iv) Participation in Project for health care in the community ( planning stage to evaluation).
- (v) Proficiency in carrying out a practical or a skill in small research project.
- (vi) Multiple choice questions (MCQ) test after completion of a system/teaching.

Each item tested shall be objectively assessed and recorded. Some of the items can be assigned as Home work/Vacation work.

(3) **UNIVERSITY EXAMINATIONS :**

Theory papers will be prepared by the examiners as prescribed. Nature of questions will be short answer type/objective type and marks for each part indicated separately.

Practicals/clinicals will be conducted in the laboratories or hospital wards. Objective will be assess proficiency in skills, conduct of experiment, interpretation of data and logical conclusion. Clinical cases should preferably include common diseases not esoteric syndromes or rare disorders. Emphasis should be on candidate's capability in eliciting physical signs and their interpretation.

Viva/oral includes evaluation of management approach and handling of emergencies. Candidate's skill in interpretation of common investigative data, x-rays, identification of specimens, ECG,etc. also is to be evaluated.

The examinations are to be designed with a view to ascertain whether the candidate has acquired the necessary for knowledge, minimum skills alongwith clear concepts of the fundamentals which are necessary for him to carry out his professional day to day work competently. Evaluation will be carried out on an objective basis.

Question papers should preferably be of short structure/objective type.

Clinical cases/practicals shall take into account common diseases which the student is likely to come in contact in practice. Rare cases/obscure syndromes, long cases of neurology shall not be put for final examination.

During evaluation (both Internal and External) it shall be ascertained if the candidate has acquired the skills as detailed in Appendix-B.

There shall be one main examination in a year and a supplementary to be held not later than 6 months after the publication of its results. Universities Examinations shall beheld as under:-

### **First Professional:-**

In the second Semester of Phase 1 training, in the subjects of Anatomy, Physiology and Bio-Chemistry.

### **Second Professional:-**

In the Fifth Semester of Phase II training, in the subjects of Pathology, Microbiology, Pharmacy and Forensic Medicine.

### **Third Profesional :-**

Part 1- in the Seventh Semester of Phase III, in the subjects of Ophthalmology, Oto-rhyno-laryngology and Community Medicine.

**Third Professional :-**

Part II-(Final Professional) – At the end of Phase III training in the subjects of Medicine, Surgery, Obstetrics & Gynecology and Pediatrics.

**Note :**

Results of all university examinations shall be declared before the start of teaching for next semester.

**(4) DISTRIBUTION OF MARKS TO VARIOUS DISCIPLINES :**

**(A) First Professional examination:(Pre-clinical Subjects):-**

**(a) Anatomy:**

Theory-Two papers of 50 marks each  
(One applied question of 10 marks in each paper) 100 marks.

Oral(Viva)	20 marks
Practical	40 marks
Internal Assessment (Theory-20; Practical-20)	40 marks
Total	200 marks

**(b) Physiology including Biophysics**

Theory-Two papers of 50 marks each  
( One applied question of 10 marks in each paper) 100 marks

Oral (Viva)	20 marks
Practical	40 marks
Internal Assessment (Theory-20; Practical-20)	40 marks
Total	200 marks

**(c) Biochemistry :**

Theory-Two papers of 50 marks each  
( One applied question of 10 marks in each paper) 100 marks

Oral (Viva)	20 marks
Practical	40 marks
Internal Assessment (Theory-20; Practical-20)	40 marks

Total

200 marks

Pass: In each of the subjects, a candidate must obtain 50% in aggregate with a minimum of 50% in Theory including orals and minimum of 50% in Practicals.

**(B) SECOND PROFESSIONAL EXAMINATION;**

(Para-clinical subjects)

:

- (a) Pathology :
- |  |           |
|--|-----------|
| Theory-Two papers of 40 marks each<br>(One applied question of 10 marks in each paper) | 80 marks  |
| Oral (Viva)  | 15 marks  |
| Practical  |           |
| Internal assessment<br>(Theory-15; Practical-15)                                       | 30 marks  |
| Total  | 150 marks |
- (b) Microbiology :
- |  |           |
|--|-----------|
| Theory-Two papers of 40 marks each<br>(One applied question of 10 marks in each paper) | 80 marks  |
| Oral (Viva)  | 15 marks  |
| Practical  |           |
| Internal assessment<br>(Theory-15; Practical-15)                                       | 30 marks  |
| Total  | 150 marks |
- (c) Pharmacology
- |  |           |
|--|-----------|
| Theory-Two papers of 40 marks each<br>Containing one question on clinical therapeutics | 80 marks  |
| Oral (Viva)  | 15 marks  |
| Practical  | 25 marks  |
| Internal assessment<br>(Theory-15; Practical-15)                                       | 30 marks  |
| Total  | 150 marks |
- (d) Forensic Medicine
- |  |           |
|--|-----------|
| Theory-one papers                                | 40 marks  |
| Oral (Viva)                                      | 10 marks  |
| Practical/Clinicals                              | 30 marks  |
| Internal assessment<br>(Theory-10; Practical-10) | 20 marks  |
| Total  | 100 marks |

Pass: In each of the subjects, a candidate must obtain 50 % in aggregate with a minimum of 50% in Theory including oral and minimum of 50% in Practicals/clinical.

**(d) THIRD PROFESSIONAL**

**(i) PART 1**

(Clinical subjects)

Part 1: To be conducted during end period of seventh semester.

**(a) Ophthalmology:**

Theory : One paper (should contain one question on pre-clinical and para-clinical aspects, of 10 marks)	40 marks
Oral (Viva)	10 marks
Clinical	30 marks
Internal assessment (Theory-10; Practical-10)	20 marks
Total	100 marks

**(b) Oto-Rhino-Laryngology :**

Theory:One paper (should contain one question on pre-clinical and para-clinical aspects, of 10 marks)	40 marks
Oral(Viva)	10 marks
Clinical	30 marks
Internal assessment (Theory –10 Practical-10)	20 marks
Total	100 marks

**(c) Community Medicine including Humanities:**

Theory : Two papers of 60 marks each (includes problem solving, applied aspects of management at primary level including essential drugs, occupational (agro based) diseases, rehabilitation and social aspects of community).	120 marks
Oral (Viva)	10 marks
Practical/Project evaluation	30 marks
Internal assessment (Theory -20; Practical-20)	40 marks
Total	200 marks

Pass: In each of the subjects a candidate must obtain 50% in aggregate with a minimum of 50% in Theory including orals and minimum of 50% in practicals/clinical.

## PART-II

Each paper shall have two sections. Questions requiring essay type answers may be avoided.

- (a) **Medicine :**
- |   |           |
|---|-----------|
| Theory- Two papers of 60 marks each                                       | 120 marks |
| Paper 1- General Medicine   |           |
| Paper II- General Medicine (including Psychiatry, Dermatology and S.T.D.) |           |
| (Shall contain one question on basic sciences and allied subjects)        |           |
| Oral (Viva) Interpretation of X-ray ECG, etc. 20 marks                    |           |
| Clinical (Bed side)   | 100 marks |
| Internal assessment   | 60 marks  |
| (Theory-30; Practical-30)   |           |
| Total   | 300 marks |
- (b) **Surgery:**
- |                                     |           |
|-------------------------------------|-----------|
| Theory-Two papers of 60 marks each  | 120 marks |
| Paper-1-General Surgery (Section 1) |           |
| Orthopaedics (Section 2)            |           |

### PAPER II-General Surgery including

Anaesthesiology, Dental diseases and Radiology.  
(shall contain one question on basic sciences and allied subjects)

Oral (Viva) Interpretation of Investigative data	20 marks
Clinical (Bed Side)	100 marks
Internal assessment	60 marks
(Theory-30; Practical-30)	60 marks
Total	300 marks

Paper 1 of Surgery shall have one section in Orthopaedics. The questions on Orthopaedic Surgery be set and assessed by examiners who are teachers in the Orthopaedic surgery.

### (c) **Obstetrics and Gynaecology**

Theory Two papers of 40 marks each	80 marks
Paper I- Obstetrics including social obstetrics.	
Paper II – Gynaecology, Family Welfare and Demography	
(Shall contain one question on basic sciences and allied subjects)	
Oral (Viva) including record of delivery cases(20+10)	30 marks
Clinical	60 marks
Internal assessment	

	(Theory-30; Practical-30)	
	Total	200 marks
(d)	Pediatrics : (Including Neonatology)	
	Theory : One paper	40 marks
	(Shall contain one question on basic sciences and allied subjects)	
	Oral (Viva)	10 marks
	Clinical	30 marks
	Internal assessment	20 marks
	(Theory-10; Practical-10)	
	Total	100 marks

Pass : In each of the subjects a candidate must obtain 50% in aggregate with a minimum of 50% in Theory including orals and minimum of 50% in Practicals/clinicals.

### 13 APPOINTMENT OF EXAMINERS:

- (1) No person shall be appointed as an examiner in any of the subjects of the Professional examination leading to and including the final Professional examinations for the award of the MBBS degree unless he has taken atleast five years previously, a doctorate degree of a recognized university or an equivalent qualification in the particular subject as per recommendation of the Council on teachers' eligibility qualifications and has had at least five years of total teaching experience in the subject concerned in a college affiliated to a recognized university at a faculty position.
- (2) There shall be at least four examiners for 100 students, out of whom not less than 50% must be external examiners. Of the four examiners, the senior most internal examiner will act as the Chairman and co-ordinator of the whole examination programme so that uniformity in the matter of assessment of candidates is maintained. Where candidates appearing are more than 100, one additional examiner, for every additional 50 or part thereof candidates appearing, be appointed.
- (3) Non medical scientists engaged in the teaching of medical students as whole time teachers, may be appointed examiners in their concerned subjects provided they possess requisite doctorate qualifications and five year teaching experience of medical students after obtaining their postgraduate qualifications. Provided further that the 50% of the examiners (Internal & External) are from the medical qualification stream

- (4) External examiners shall not be from the same university and preferably be from outside the state.
- (5) The internal examiner in a subject shall not accept external examinership for a college from which external examiner is appointed in his subject.
- (6) A university having more than one college shall have separate sets of examiners for each college, with internal examiners from the concerned college.
- (7) External examiners shall rotate at an interval of 2 years.
- (8) There shall be a Chairman of the Board of paper-setters who shall be an internal examiner and shall moderate the questions.
- (9) Except Head of the department of subject concerned in a college/institution, all other with the rank of reader or equivalent and above with requisite qualifications and experience shall be appointed internal examiners by rotation in their subjects; provided that where there are no posts of readers, then an Assistant Professor of 5 years standing as Assistant Professor may be considered for appointment as examiner.
- (10) The grace marks up to a maximum of five marks may be awarded at the discretion of the University to a student who has failed only in one subject but has passed in all other subjects.

## **CHAPTER - V**

### **14. INTERNSHIP**

#### **(1) General**

Internship is a phase of training wherein a graduate is expected to conduct actual practice of medical and health care and acquire skills under supervision so that he/she may become capable of functioning independently.

#### **(2) SPECIFIC OBJECTIVES**

At the end of the internship training, the student shall be able to:

- i. diagnose clinical common disease conditions encountered in practice and make timely decision for referral to higher level;
  - ii. use discreetly the essential drugs, infusions, blood or its substitutes and laboratory services.
  - iii. Manage all type of emergencies-medical, surgical obstetric, neonatal and paediatric, by rendering first level care;
  - iv. Demonstrate skills in monitoring of the National Health Programme and schemes, oriented to provide preventive and promotive health care services to the community;
  - v. Develop leadership qualities to function effectively as a leader of the health team organised to deliver the health and family welfare service in existing socio-economic, political and cultural environment;
  - vi. Render services to chronically sick and disabled (both physical and mental) and to communicate effectively with patient and the community.
- (3) Time allocation to each discipline is approximate and shall be guided more specifically by the actual experience obtained. Thus a student serving in a district or taluk hospital emergency room may well accumulate skill in surgery, orthopaedics, medicine, obstetrics and Gynaecology and Paediatrics during even a single night on duty. Responsible authorities from the medical college shall adjust the intern experience to maximize intern's opportunities to practice skills in patient care in rough approximation of the time allocation suggested.

#### **(4) INTERNSHIP – TIME DISTRIBUTION**

##### **Compulsory**

Community Medicine	3 months
Medicine	2 months
Surgery including Orthopaedics	2 months
Obst./Gynae. Including Family Welfare Planning	2 months
Paediatric	15 days
Ophthalmology	15 days
Otorhinolaryngology	15 days
Casualty	15 days
<b>Elective Postings</b>	One month

Elective subjects-

Elective posting will include two of the following for 15 days in each subject.

- i) Dermatology and Sexually Transmitted Diseases,
- ii) Psychiatry,
- iii) Tuberculosis and Respiratory Diseases,
- iv) Anaesthesia,
- v) Radio-diagnosis,
- vi) Physical Medicine and Rehabilitation,
- vii) Forensic Medicine and Toxicology,
- viii) Blood bank and Transfusion Department

#### **(5) OTHER DETAILS:**

- i) All parts of the internship shall be done as far as possible in institutions of India. In case of any difficulties, the matter may be referred to the Medical Council of India to be considered on individual merit.

- ii) Every candidate will be required after passing the final MBBS examination to undergo compulsory rotational internship to the satisfaction of the College authorities and University concerned for a period of 12 months so as to be eligible for the award of the degree of Bachelor of Medicine and Bachelor of Surgery (MBBS) and full registration.
- iii) The University shall issue a provisional MBBS pass certificate on passing the final examination.
- iv) The State Medical Council will grant provisional registration to the candidate on production of the provisional MBBS pass certificate. The provisional registration will be for a period of one year. In the event of the shortage or unsatisfactory work, the period of provisional registration and the compulsory rotating internship may be suitably extended by the appropriate authorities.
- v) The intern shall be entrusted with clinical responsibilities under direct supervision of senior medical officer. They shall not be working independently.
- vi) Interns will not issue a medical certificate or a death certificate or a medicolegal document under their signature.
- vii) In recognition of the importance of hands-on experience, full responsibility for patient care and skill acquisition, internship should be increasingly scheduled to utilize clinical facilities available in District Hospital, Taluka Hospital, Community Health Centre and Primary Health Centre, in addition to Teaching Hospital. A critical element of internship will be the acquisition of specific experiences and skill as listed in major areas:

Provided that where an intern is posted to District/Sub Divisional Hospital for training, there shall be a committee consisting of representatives of the college/university, the State Government and the District administration, who shall regulate the training of such trainee.

Provided further that for such trainee a certificate of satisfactory completion of training shall be obtained from the relevant administrative authorities which shall be countersigned by the Principal/Dean of College;

- viii) Adjustment to enable a candidate to obtain training in elective clinical subjects may be made.
- ix) Each medical college shall establish links with one entire district extending out-reach activities. Similarly, Re-orientation of Medical

Education (ROME) scheme may be suitably modified to assure teaching activities at each level of District health system which will be coordinated by Dean of the medical college;

- x) Out of one year, 6 months shall be devoted to learning tertiary care being rendered in teaching hospital/district hospital suitably staffed with well qualified staff, 3 months of secondary care in a small District or Taluka Hospital/Community Health Centre and 3 months in Primary Health care out of which 2 months should be in Primary Health Programme at the Community level. One month of primary care training may be in the form of preceptorship with a practicing family physician or voluntary agency or other primary health care provider.
- xi) One year's approved service in the Armed Forces Medical Services, after passing the final MBBS examination shall be considered as equivalent to the pre-registration training detailed above; such training shall, as far as possible, be at the Base/General Hospital.

(6) **ASSESSMENT OF INTERNSHIP:**

- i) The intern shall maintain a record of work which is to be verified and certified by the medical officer under whom he works. Apart from scrutiny of the record of work, assessment and evaluation of training shall be undertaken by an objective approach using situation tests in knowledge, skills and attitude during and at the end of the training. Based on the record of work and date of evaluation, the Dean/Principal shall issue certificate of satisfactory completion of training, following which the University shall award the MBBS degree or declare him eligible for it.
- ii) Satisfactory completion shall be determined on the basis of the following:-
  - (1) Proficiency of knowledge required for each case  
SCORE 0-5
  - (2) The competency in skills expected to manage each case:
    - a) Competency for performance of self performance,
    - b) of having assisted in procedures,
    - c) of having observed.SCORE 0-5
  - (3) Responsibility, punctuality, work up of case, involvement in treatment, follow-up reports.  
SCORE 0-5

(4) Capacity to work in a team (Behaviour with colleagues, nursing staff and relationship with paramedicals).

SCORE 0-5

(5) Initiative, participation in discussions, research aptitude.

SCORE 0-5

Poor / Fair / below average / average / above average / excellent  
0    1                    2                    3                    4                    5

A Score of less than 3 in any of above items will represent unsatisfactory completion of internship.

(7) Full registration shall only be given by the State Medical Council/Medical Council of India on the award of the MBBS degree by the university or its declaration that the candidate is eligible for it.

(8) Some guidelines in the implementation of the training programme are given below.

**(9) INTERNSHIP – DISCIPLINE RELATED:**

**(i) Community Medicine**

Interns shall acquire skills to deal effectively with an individual and the community in the context of primary health care. This is to be achieved by hands on experience in the district hospital and primary health Centre. The details are as under: -

**(I) Community Health Centre/District Hospital/Attachment to General Practitioner:**

(1) During this period of internship an intern must acquire

(a) clinical competence for diagnosis of common ailments, use of bed side investigation and primary care techniques;

(b) gain information on 'Essential drugs' and their usage;

(c) recognise medical emergencies, resuscitate and institute initial treatment and refer to suitable institution.

- (2) Undergo specific Government of India/Ministry of Health and Family Welfare approved training using Government of India prescribed training manual for Medical Officers in all National Health Programmes (e.g. child survival and safe motherhood-EPI, CDD, ARI, FP, ANC, safe delivery, Tuberculosis, Leprosy and others as recommended by Ministry of Health and Family Welfare:-
  - (a) gain full expertise in immunization against infectious disease;
  - (b) participate in programmes in prevention and control of locally prevalent endemic diseases including nutritional disorders;
  - (c) learn skills first hand in family welfare planning procedures;
  - (d) learn the management of National Health Programmes;
- (3) Be capable of conducting a survey and employ its findings as a measure towards arriving at a community diagnosis.
- (4)
  - (a) conduct programmes on health education,
  - (b) gain capabilities to use Audiovisual aids,
  - (c) acquire capability of utilization of scientific information for promotion of community health
- (5) Be capable of establishing linkages with other agencies as water supply, food distribution and other environmental/social agencies.
- (6) Acquire quality of being professional with dedication, resourcefulness and leadership.
- (7) Acquire managerial skills, delegation of duties to paramedical staff and other health professionals.

## **(II) TALUQA HOSPITAL**

Besides clinical skill, in evaluation of patient in the environment and initiation of primary care, an Intern shall: -

- (1) effectively participate with other members of the health team with qualities of leadership;
- (2) make a community diagnosis in specific situations such as epidemics and institute relevant control measures for communicable diseases;
- (3) develop capability for analysis of hospital based morbidity and mortality statistics.

- (4) Use essential drugs in the community with the awareness of availability, cost and side effects;
- (5) Provide health education to an individual/community on :
  - a) tuberculosis;
  - b) small family, spacing, use of appropriate contraceptives;
  - c) applied nutrition and care of mothers and children;
  - d) immunization;
  - e) participation in school health programme.

### **(III) PRIMARY HEALTH CENTRE**

- (1) Initiate or participate in family composite health care (birth to death), Inventory of events;
- (2) Participation in all of the modules on field practice for community health e.g. safe motherhood, nutrition surveillance and rehabilitation, diarrhea disorders etc.
- (3) Acquire competence in diagnosis and management of common ailments e.g. malaria, tuberculosis, enteric fever, congestive heart failure, hepatitis, meningitis acute renal failure etc.;
- (4) Acquire proficiency for Family Welfare Programmes (ante natal care, normal delivery, contraception care etc.)

### **(ii) GENERAL MEDICINE**

- (I) Interns shall acquire following training during their term.
  - (1) acquire competence for clinical diagnosis based on history physical examination and relevant laboratory investigation and institute appropriate line of management;
  - (2) this would include diseases common in tropics (parasitic, bacterial or viral infections, nutritional disorders, including dehydration and electrolyte disturbances) and system illnesses
- (II) The intern shall have assisted as a care team in intensive care of cardiac, respirator, hepatic, neurological and metabolic emergencies.
- (III) The intern shall be able to conduct the following laboratory investigations:
  - (a) Blood: (Routine haematology smear and blood groups);
  - (b) Urine: (Routine chemical and microscopic);
  - (c) Stool: (for ova/cyst and occult blood);
  - (d) Sputum and throat swab for gram stain or acid fast stain and

(e) Cerebro Spinal Fluid (CSF) for smear.

(IV) Conduct following diagnostic procedures:

(a) Urethral catheterisation;

Proctoscopy;

Ophthalmoscopy/Otoscopy;

Indirect laryngoscopy;

(b) therapeutic procedures;

Insertion of Ryles Tube;

Pleural, ascetic tap, Cerebro Spinal Fluid (CSF) tap, installing or air way tube, Oxygen administration etc.

(V) Biopsy Procedures:

Liver, Kidney, Skin, Nerve, Lymph node, and muscle biopsy, Bone marrow aspiration, Biopsy of Malignant lesions on surface, Nasal/nerve/skin smear for leprosy.

(VI) (a) Familiarity with usage of life saving procedures:

including use of aspirator, respirator and defibrillator,

(b) Competence in interpretation of different monitoring devices such as cardiac monitor, blood gas analysis etc.

(VII) Participate as a team member in total health care of an individual including appropriate follow-up and social rehabilitation.

(VIII) Other competencies as indicated in general objectives.

### **(iii) PAEDIATRICS:**

The details of the skills that an intern shall acquire during his/her tenure in the department of Paediatrics are as follows:

The intern shall be able to:

(1) diagnose and manage common childhood disorders including neonatal disorders and acute emergencies( enquiry from parents of sick children), examining sick child making a record of information;

(2) carry out activities related to patient care such as laboratory work, investigative procedures and use of special equipments. The details are given as under:-

- (a) diagnostic techniques: blood (including from femoral vein and umbilical cord), abscess, cerebrospinal fluid, urine, pleura and peritoneum and common tissue biopsy techniques;
  - (b) techniques related to patient care: immunization, perfusion techniques, feeding procedures, tuberculin testing & breast feeding counselling;
  - (c) use of equipment: vital monitoring, temperature monitoring, resuscitation at birth and care of children receiving intensive care;
- (3) screening of newborn babies and those with objective risk factors for any anomalies and steps for prevention in future;
- (4) plan in collaboration with parents and individual, collective surveillance of growth and development of new born babies, infants and children so that he/she is able to:
- (a) recognise growth abnormalities;
  - (b) recognise anomalies of psychomotor development;
  - (c) detect congenital abnormalities;
- (5) assess nutritional and dietary status of infants and children and organise prevention, detection and follow up of deficiency disorders both at individual and community level such as:
- (a) protein-energy malnutrition
  - (b) deficiencies of vitamins especially A, B, C and D;
  - (c) Iron deficiency;
- (6) institute early management of common childhood disorders with special reference to Paediatrics dosage and oral rehydration therapy.
- (7) Participate actively in public health programme oriented towards children in the community.

**(iv) GENERAL SURGERY**

An intern is expected to acquire following skills during his/her posting:

- (A) Diagnose with reasonable accuracy all surgical illnesses including emergencies
- (B) (a) resuscitate a critically injured patient and a severe burns patient;  
(b) control surface bleeding and manage open wound;
- (C) (a) monitor patients of head, spine, chest abdominal and pelvic injury;

(b) institute first-line management of acute abdomen;

- (D) (a) perform venesection;  
(b) perform tracheostomy and endotracheal intubation;  
(c) catheterise patients with acute retention or perform trocar cystostomy,  
(d) drain superficial abscesses,  
(e) suturing of wound,  
(f) perform circumcision,  
(g) biopsy of surface tumours,  
(h) Perform vasectomy

**(v) CASUALTY:**

The intern after training in Casualty must be able to:

- (1) identify acute emergencies in various disciplines of medical practice;
- (2) manage acute anaphylactic shock;
- (3) manage peripheral-vascular failure and shock;
- (4) manage acute pulmonary oedema and Left Ventricular failure (LVF);
- (5) undertake emergency management of drowning poisonings and seizures;
- (6) undertake emergency management of bronchial asthma and status asthmaticus;
- (7) undertake emergency management of hyperpyrexia;
- (8) undertake emergency management of comatose patients regarding airways positioning, prevention of aspiration and injuries;
- (9) assess and administer emergency management of burns;
- (10) assess and do emergency management of various trauma victims;
- (11) identify medicolegal cases and learn filling up forms as well as complete other medicolegal formalities in cases of injury, poisoning, sexual offenses, intoxication and other unnatural conditions.

**(vi) OBSTETRICS AND GYNAECOLOGY :**

Technical skills that interns are expected to learn:

- (1) diagnosis of early pregnancy and provision of ante-natal care;
- (2) diagnosis of pathology of pregnancy related to
  - (a) abortions;
  - (b) ectopic pregnancy;
  - (c) tumours complicating pregnancy;

- (d) acute abdomen in early pregnancy;
  - (e) hyperemesis gravidarum;
- (3) detection of high risk pregnancy cases and suitable advise e.g. PIH, hydramanios, antepartum haemorrhage, multiple pregnancies, abnormal presentations and intra-uterine growth retardation;
- (4) antenatal pelvic assessment and detection of cephalopelvic disproportion;
- (5) induction of labour and amniotomy under supervision;
- (6) management of normal labour, detection of abnormalities, post-partum hemorrhage and repair of perennial tears;
- (7) assist in forceps delivery;
- (8) assist in caesarean section and postoperative care thereof;
- (9) detection and management of abnormalities of lactation;
- (10) perform non-stress test during pregnancy;
- (11) per speculum, per vaginum and per rectal examination for detection of common congenital, inflammatory, neoplastic and traumatic conditions of vulva, vagina, uterus and ovaries;
- (12) medicolegal examination in Gynecology and obstetrics.
- (13) To perform the following procedures:-
- (a) dilation and curettage and fractional curettage;
  - (b) endometrial biopsy;
  - (c) endometrial aspiration;
  - (d) pap smear collection;
  - (e) Intra Uterine Contraceptive Device (IUCD) insertion;
  - (f) Minilap ligation;
  - (g) Urethral catheterisation;
  - (h) Suture removal in postoperative cases;
  - (i) Cervical punch biopsy;

- (14) to assist in major abdominal and vaginal surgery cases in Obstetrics and Gynaecology.
- (15) to assist in follow-up postoperative cases of obstetrics and gynaecology such as:
  - (a) Colposcopy;
  - (b) Second trimester Medical Termination of Pregnancy (MTP) procedures e.g. Emcredyl Prostaglandin instillations;
- (16) To evaluate and prescribe oral contraceptive.

**(vii) OTO RHINO LARYNGOLOGY (ENT)**

- (1) Interns shall acquire ability for a comprehensive diagnosis of common Ear, Nose and Throat (ENT) diseases including the emergencies and malignant neoplasma of the head and neck;
- (2) he/she shall acquire skills in the use of head mirror, otoscope and indirect laryngoscopy and first line of management of common Ear Nose and Throat (ENT) problems;
- (3) he/she shall be able to carry out minor surgical procedures such as:
  - (a) earsyringing antrum puncture and packing of the nose for epistaxis,
  - (b) nasal douching and packing of the external canal,
  - (c) Remove the foreign bodies from the nose and ear
  - (d) Observed or assisted in various endoscopic procedures and trachesotomy;
- (4) an item shall have participated as a team member in the community diagnosis e.g. Chronic Suppurative Otitis Media (CSOM) and be aware of national programme on prevention of deafness
- (5) he/she shall possess knowledge of various ENT rehabilitative programmes.

**(viii) OPHTHALMOLOGY**

An intern shall acquire following skills: -

- (1) he/she shall be able to diagnose and manage common ophthalmological conditions such as:-  
Trauma, Acute conjunctivitis, allergic conjunctivitis, xerosis, entropion, corneal ulcer, iridocyclitis, myopia, hypermetropia, catarct, glaucoma, ocular injury and sudden loss of vision;

- (2) he shall be able to carry out assessment of refractive errors and advise its correction;
- (3) he shall be able to diagnose ocular changes in common systemic disorders;
- (4) he/she shall be able to perform investigative procedures such as:-  
Tonometry, syringing, direct ophthalmoscopy, subjective refraction and fluorescein staining of cornea.
- (5) he/she shall have carried out or assisted the following procedures:
  - (1) Subconjunctival injection;
  - (2) Ocular bandaging;
  - (3) Removal of concretions;
  - (4) Epilation and electrolysis;
  - (5) Corneal foreign body removal;
  - (6) Cauterization of corneal ulcers;
  - (7) Chalazion removal;
  - (8) Entropion correction;
  - (9) Suturing conjunctival tears;
  - (10) Lids repair
  - (10) Glaucoma surgery (assisted);
  - (11) Enucleation of eye in cadaver;
- (6) he/she shall have full knowledge on available methods for rehabilitation of the blind.

**(ix) ORTHOPAEDICS ;**

**GOAL:**

The aim of teaching the undergraduate student in Orthopaedics and Rehabilitation is to impart such knowledge and skills that may enable him to diagnose and treat common ailments. He shall have ability to diagnose and suspect presence of fracture, dislocation, acute osteomyelitis, acute poliomyelitis and common congenital deformities such as congenital talipes equinovarus (CTEV) and dislocation of hip (CDH).

**(A) THERAPEUTIC-** An intern must know:

- (a) Splinting (plaster slab) for the purpose of emergency splintage, definitive splintage and post operative splintage and application of Thomas splint;
- (b) Manual reduction of common fractures – phalangeal, metacarpal, metatarsal and Colles’s fracture;
- (c) Manual reduction of common dislocations – interphalangeal, metacarpophalangeal, elbow and shoulder dislocations;
- (d) Plaster cast application for undisplaced fractures of arm, fore arm, leg and ankle;
- (e) Emergency care of a multiple injury patient;
- (f) Precautions about transport and bed care of spinal cord injury patients.

**(B) Skill that an intern should be able to perform under supervision:**

- (1) Advise about prognosis of poliomyelitis, cerebral palsy, CTEV and CDH;
- (2) Advise about rehabilitation of amputees and mutilating traumatic and leprosy deformities of hand;

**(C) An intern must have observed or preferably assisted at the following operations:**

- (1) drainage for acute osteomyelitis;
- (2) sequestrectomy in chronic osteomyelitis;
- (3) application of external fixation;
- (4) internal fixation of fractures of long bones.

**(x) DERMATOLOGY AND SEXUALLY TRANSMITTED DISEASES**

An intern must be able to: -

- (1) conduct proper clinical examination; elicit and interpret physical findings, and diagnose common disorders and emergencies.
- (2) Perform simple, routine investigative procedures for making bedside diagnosis, specially the examination of scraping for fungus, preparation of slit smears and staining for AFB for leprosy patient and for STD cases;
- (3) Take a skin biopsy for diagnostic purpose;
- (4) Manage common diseases recognizing the need for referral for specialized care in case of inappropriateness of therapeutic response.

**(xi) PSYCHIATRY :**

An Intern must be able to:

- (1) diagnose and manage common psychiatric disorders;
- (2) identify and manage psychological reaction and psychiatric disorders in medical and surgical patients in clinical practice and community setting.

**(xii) TUBERCULOSIS AND RESPIRATORY DISEASES :**

An intern after training must be able to: -

- (1) conducting proper clinical examination, elicit and interpret clinical findings and diagnose common respiratory disorders and emergencies;
- (2) perform simple, routine investigative procedures required for making bed side diagnosis, specially sputum collection, examination for etiological organism like AFB, interpretation of chest X-rays and respiratory function tests;
- (3) Interpret and manage various blood gases and pH abnormalities in various respiratory diseases;
- (4) Manage common diseases recognizing need for referral for specialized care in case of inappropriateness of therapeutic response;
- (5) Perform common procedures like laryngoscopy, pleural aspiration, respiratory physiotherapy, laryngeal intubation and pneumo-thoracic drainage aspiration.

**(xiii) ANAESTHESIA :**

After the internship in the department of Anesthesiology an intern shall acquire knowledge, skill and attitude to:

- (1) perform pre-anaesthetic check up and prescribe pre-anaesthetic medications;
- (2) perform venepuncture and set up intravenous drip;
- (3) perform laryngoscopy and endotracheal intubation;
- (4) perform lumbar puncture, spinal anaesthesia and simple nerve blocks;
- (5) conduct simple general anaesthetic procedures under supervision;
- (6) monitor patients during anaesthesia and post operative period;
- (7) recognise and manage problems associated with emergency anaesthesia;
- (8) maintain anaesthetic records;
- (9) recognise and treat complication in post operative period;
- (10) perform cardio-pulmonary brain resuscitation (C.P.B.R.) correctly, including recognition of cardiac arrest.

**(xiv) RADIO-DIAGNOSIS:**

An intern after training must be able to identify and diagnose:

- (1) all aspects of 'Emergency Room' Radiology like –
  - (a) all acute abdominal conditions;
  - (b) all acute traumatic conditions with emphasis on head injuries;
  - (c) differentiation between Medical and surgical radiological emergencies;
- (2) Basic hazards and precautions in Radio-diagnostic practices.

**(xv) PHYSICAL MEDICINE AND REHABILITATION:**

An intern is expected to acquire the following skills during his/her internship: -

- (1) competence for clinical diagnosis based on details history an assessment of common disabling conditions like poliomyelitis, cerebral palsy, hemiplegia, paraplegia, amputations etc;
- (2) participation as a team member in total rehabilitation including appropriate follow up of common disabling conditions;
- (3) principles and procedures of fabrication and repair of artificial limbs and appliances;
- (4) various therapeutic modalities;
- (5) use of self help devices and splints and mobility aids;
- (6) familiarity with accessibility problems and home making for disabled;
- (7) ability to demonstrate simple exercise therapy in common conditions like prevention of deformity in polio, stump exercise in an amputee etc.;

**(xvi) FORENSIC MEDICINE AND TOXICOLOGY**

The intern is to be posted in the casualty department of the hospital while attached under Forensic Medicine Department with the following objectives:

- (1) to identify medicolegal problem in a hospital and general practice;
- (2) to identify and learn medicolegal responsibilities of a medical man in various hospital situations;
- (3) to be able to diagnose and learn management of basic poisoning conditions in the community;
- (4) to learn how to handle cases of sexual assault;
- (5) to be able to prepare medico-legal reports in various medicolegal situations;
- (6) to learn various medicolegal post-mortem procedures and formalities during its performance by police.

## **APPENDIX 'A'**

Curriculum in 'Family Welfare' for the Bachelor of Medicine and Bachelor of Surgery (MBBS) Course.

The Curriculum may be considered under various pre and para clinical heads and the following details are worked out for each of the disciplines.

### **1. Anatomy**

- (1) Gross and microscopic anatomy of the male and female generative organs.
- (2) The menstrual cycle.
- (3) Spermatogenesis and Oogenesis
- (4) Fertilization of the ovum.
- (5) Tissue and organ changes in the mother in pregnancy.
- (6) Embryology and Organogenesis.
- (7) Principles of Genetics.
- (8) Applied anatomy of mechanical methods of preventing conception.
  - a) in female- chemical contraceptive, pessaries, Intra-Uterine Contraceptive Device (IUCD), tubectomy etc.
  - b) in male – condom, vasectomy etc.

### **2. Physiology**

- (1) Physiology of reproduction.
- (2) Endocrines and regulations of reproduction in the female
- (3) Endocrines and physiology of reproduction in the male.
- (4) Physiology and Endocrinology of pregnancy, parturition and lactation.
- (5) Nutritional needs of mother and child during pregnancy and lactation.
- (6) The safe period-rhythm method of contraceptions.
- (7) Principles of use of oral contraceptive.

### **3. Pharmacology**

- (1) Mode of action and administration of:
  - (a) Chemical contraceptive
  - (b) Oral contraceptive
- (2) Contra indication for administration of contraceptives.
- (3) Toxic effects of contraceptives.

### **4. Community Medicine**

- (1) The need for family welfare Planning.

- (2) **Organization of Family Welfare Planning service.**
- (3) **Health Education in relating to Family Welfare Planning.**
- (4) **Nutrition.**
- (5) **Psychological needs of the mother, the child and the family.**
- (6) **Demography and vital Statistics.**

## 5. **Obstetrics & Gynaecology**

- (1) Contraceptive methods in male/female.
  - (a) Mechanical
    - A. Pessaries, Intra Uterine Contraceptive Device (IUCD), Condoms,
    - B. Tubectomy and vasectomy
  - (b) Chemical
  - (c) Oral
  - (d) Rhythm Method
- (2) Demonstrations of use of Pessaries, IUCD, Condoms and technique of tubectomy
- (3) Advice on family planning to be imparted to parents.

## 6. **Paediatrics:**

- (1) Problems of child health in relation to large family.
  - (a) Organization of pediatric services.
  - (b) Nutritional problems of mother and child.
  - (c) Childhood diseases due to overcrowding.

## 7. **Surgery**

Technique of Vasectomy.

### I. **Compulsory Internship**

Placement of a student for in-service training in a family welfare planning clinic for a period of at least one month.

### II. **Examination**

It is necessary that questions on family welfare planning be introduced in the theory, practical and oral examination throughout the MBBS course.

The curriculum content has been indicated subjectwise. However, it would be more advantageous to the student for purpose of integrated learning and for understanding of the subject if family welfare planning instruction with the curriculum content indicated could be divided into two parts.

**Part-I**  
**Anatomy, Physiology, Biochemistry and Pharmacology**

There shall be close integration in the teaching of these subjects. It is suggested that during the early para-clinical years, two to three weeks may be set apart for instruction in Family Welfare Planning relating to these subjects; so that the student gets an overall understanding of the principles and practice of "Family Planning" within the limited time available for covering all the subjects of the medical course. The method suggested would save time and repetition of essential facts.

**Part-II**

This includes the later para-clinical and clinical courses. The practical aspects of Family Welfare Planning methods should be emphasized. The program of instruction shall be supervised by the Department of Obstetrics and Gynaecology. The department of Community Medicine Internal Medicine, Psychiatry, Paediatrics and Surgery must be closely associated in imparting instruction relating to the problems arising for want of family welfare planning and the advantages to society and the individual which will be gained by adopting the measures suggested.

**Seminars:**

The medical colleges shall organise occasional seminars in which staff from all departments and the in-service trainees shall participate.

## **APPENDIX-B**

### **A comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) Graduate:**

#### **1. Clinical Evaluation:**

- (a) To be able to take a proper and detailed history.
- (b) To perform a complete and thorough physical examination and elicit clinical signs.
- (c) To be able to properly use the stethoscope, Blood Pressure, Apparatus Auroscope, Thermometer, Nasal Speculum, Tongue Depressor, Weighing Scales, Vaginal Speculum etc.:
- (d) To be able to perform internal examination-Per Rectum (PR), Per Vaginum (PV) etc.
- (e) To arrive at a proper provisional clinical diagnosis.

#### **II. Bed side Diagnostic Tests:**

- (a) To do and interpret Haemoglobin(HB), Total Count (TC), Erythrocytic Sedimentation Rate (ESR), Blood smear for parasites, Urine examination /albumin /sugar /ketones /microscopic.:
- (b) Stool exam for ova and cysts;
- (c) Gram, staining and Siehl-Nielsen staining for AFB;
- (d) To do skin smear for lepra bacilli
- (e) To do and examine a wet film vaginal smear for Trichomonas
- (f) To do a skin scraping and Potassium Hydroxide (KOH) stain for fungus infections;
- (g) To perform and read Montoux Test.

#### **III. Ability to Carry Out Procedures.**

- (a) To conduct CPR (Cardiopulmonary resuscitation) and First aid in newborns, children and adults.
- (b) To give Subcutaneous (SC) /Intramuscular (IM) /Intravenous (IV) injections and start Intravenous (IV) infusions.
- (c) To pass a Nasogastric tube and give gastric leavage.
- (d) To administer oxygen-by mask/catheter
- (e) To administer enema
- (f) To pass a urinary catheter- male and female
- (g) To insert flatus tube
- (h) To do pleural tap, Ascitic tap & lumbar puncture
- (i) Insert intercostal tube to relieve tension pneumothorax
- (j) To control external Haemorrhage.

#### **IV Anaesthetic Procedure**

- (a) Administer local anaesthesia and nerve block
- (b) Be able to secure airway patency, administer Oxygen by Ambu bag.

#### **IV. Surgical Procedures**

- (a) To apply splints, bandages and Plaster of Paris (POP) slabs;
- (b) To do incision and drainage of abscesses;
- (c) To perform the management and suturing of superficial wounds;
- (d) To carry on minor surgical procedures, e.g. excision of small cysts and nodules, circumcision, reduction of paraphimosis, debridement of wounds etc.
- (e) To perform vasectomy;
- (f) To manage anal fissures and give injection for piles.

#### **VI Mechanical Procedures**

- (a) To perform thorough antenatal examination and identify high risk pregnancies.
- (b) To conduct a normal delivery;
- (c) To apply low forceps and perform and suture episiotomies;
- (d) To insert and remove IUD's and to perform tubectomy

#### **VII Paediatrics**

- (a) To assess new borns and recognise abnormalities and I.U. retardation
- (b) To perform Immunization;
- (c) To teach infant feeding to mothers;
- (d) To monitor growth by the use of 'road to health chart' and to recognize development retardation;
- (e) To assess dehydration and prepare and administer Oral Rehydration Therapy (ORT)
- (f) To recognize ARI clinically;

#### **VIII ENT Procedures:**

- (a) To be able to remove foreign bodies;
- (b) To perform nasal packing for epistaxis;
- (c) To perform tracheotomy

#### **IX Ophthalmic Procedures:**

- (a) To invert eye-lids;

- (b) To give Subconjunctival injection;
- (c) To perform appellation of eye-lashes;
- (d) To measure the refractive error and advise correctional glasses;
- (e) To perform nasolacrimal duct syringing for potency

X. **Dental Procedures:**

To perform dental extraction

XI **Community Healthy:**

- (a) To be able to supervise and motivate, community and para-professionals for corporate efforts for the health care;
- (b) To be able to carry on managerial responsibilities, e.g. Management of stores, indenting and stock keeping and accounting
- (c) Planning and management of health camps;
- (d) Implementation of national health programmes;
- (e) To effect proper sanitation measures in the community, e.g. disposal of infected garbage, chlorination of drinking water;
- (f) To identify and institute and institute control measures for epidemics including its proper data collecting and reporting.

XII **Forensic Medicine Including Toxicology**

- (a) To be able to carry on proper medicolegal examination and documentation of injury and age reports.
- (b) To be able to conduct examination for sexual offences and intoxication;
- (c) To be able to preserve relevant ancillary material for medico legal examination;
- (d) To be able to identify important post-mortem findings in common unnatural deaths.

XII **Management of Emergency**

- (a) To manage acute anaphylactic shock;
- (b) To manage peripheral vascular failure and shock;
- (c) To manage acute pulmonary oedema and LVF;
- (d) Emergency management of drowning, poisoning and seizures
- (e) Emergency management of bronchial asthma and status asthmaticus;
- (f) Emergency management of hyperpyrexia;
- (g) Emergency management of comatose patients regarding airways, positioning prevention of aspiration and injuries
- (h) Assess and administer emergency management of burns

## APPENDIX-C

### Prescribed Teaching Hours and Suggested Model Time Tables:-

Following minimum teaching hours are prescribed in various disciplines:

**A. Pre-Clinical Subjects :** (Phase-1-First and Second Semester)

Anatomy	650 Hrs.
Physiology	480 Hrs.
Biochemistry	240 Hrs.
Community Medicine	60 Hrs.

**B. Para-Clinical Subjects:** (Phase-II-5<sup>th</sup> to 7<sup>th</sup> Semester)

Pathology	300 Hrs.
Pharmacology	300 Hrs.
Microbiology	250 Hrs.

Community Medicine 200 Hrs. (including 8 weeks postings of 3 hrs each)

Forensic Medicine	100 Hrs.
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Teaching of para-clinical subjects shall be 4 hrs per day in 3<sup>rd</sup> Semester and 3Hrs per day in 4<sup>th</sup> and 5<sup>th</sup> Semesters (See attached Time Table)

**C. Clinical Subjects**

1. Clinical postings as per chart attached.
2. Theory lectures, demonstrations and Seminars etc.in addition to clinical postings as under. The clinical lectures to be held from 4<sup>th</sup> Semester onwards (See attached Time Table)

- Gen-Medicine	300 Hours	Gen. Surgery	300 Hours
- Paediatrics	100 "	Orhopedics	100 "
- T.B. and Chest	20 "	Ophthalmology	100 "
- Psychiatry	20 "	ENT	70 "
- Skin and STD	30 "	Radiology	20 "
- Community Medicine	50 "	Dentistry	10 "
- Anaesthesia	20 "	Obst & Gynae.	300 "
		inclusive	

### Note

This period of training is minimum suggested. Adjustments where required depending on availability of time be made.

This period of training does not include university examination period.

Extra time available be devoted to other Sub-specialities.

During semesters 3 to 9 following clinical postings for each student, of 3 hrs. duration is suggested for various departments after introductory course in Clinical Methods in Medicine and surgery of 2 weeks each for the whole class.

Subjects	3 <sup>rd</sup> Sem- ester weeks	4 <sup>th</sup> Sem- ester weeks	5 <sup>th</sup> Sem- ester weeks	6 <sup>th</sup> Sem- ester weeks	7 <sup>th</sup> Sem- ester weeks	8 <sup>th</sup> Sem- ester weeks	9 <sup>th</sup> Sem- ester weeks	Total
General Medicine	6	-	4	-	4	6	6	26
Paediatrics	-	2	-	2	2	4	-	10
TB and Chest	-	2	-	-	-	-	-	02
Skin and STD	-	2	-	2	-	2	-	06
Psychiatry	-	-	2	-	-	-	-	02
Radiology	-	-	-	-	2	-	-	02
Gen Surgery	6	-	4	-	4	6	6	26
Orthopaed- ics	-	-	4	4	-	-	2	10
Ophthalmo- logy	-	4	-	4	-	-	2	10
ENT	-	4	-	4	-	-	-	08
Obst. &Gyn. And Family Planning	2	4	4	-	4	4	6	24
Comm. Med.	4	4	-	4	-	-	-	12
Casualty	-	-	-	2	-	-	-	02
Dentistry	-	-	-	-	2	-	-	02
<b>Total</b>	<b>18</b>	<b>22</b>	<b>18</b>	<b>22</b>	<b>18</b>	<b>22</b>	<b>22</b>	<b>142</b>

Clinical methods in Medicine and Surgery for whole class will be for 2 weeks each respectively at the start of 3<sup>rd</sup> semsester.

This posting will include training in Radiodiagnosis & Radiotherapy where existent.

This posting includes exposure to Rehabilitation Physiotherapy

This posting includes exposure to laboratory medicine and infectious diseases.

This posting includes exposure to dressing and Anaesthesia

This include maternity training and Family medicine and the 3<sup>rd</sup> semester posting shall be in Family Welfare Planning.

**PHASE -II**

**Third Semester**

Days/8-9 Time	9-10	10-11	11-12	12-1	1-2	2-3	3-4
Mon	Para Clinical Lectures	Clinical Postings		Para Clinical Lectures			Practicals
Tues	do	do		do	L		Para-Clinical
Wed	do	do		do	U		Do
Thurs	do	do		do	N		Do
Fri	do	do		do	C		Do
Sat	do	do		do	H		Do

Note : These are suggested time tables. Adjustments where required, depending upon the availability of time and facility, be made.

**Fourth and Fifth Semester**

Days/8-9 Time	9-10	10-11	11-12	12-1	1-2	2-3	3-4
Mon	Lectures In Clinical Subjects Subjects	Clinical Posting		Lectures in Para- Lectures			Practicals
Tues	do	do		do	L		Para-Clinical
Wed	do	do		do	U		Do
Thurs	do	do		do	N		Do
Fri	do	do		do	C		Do
Sat	do	do		do	H		Do

### Sixth,Seventh,Eighth & Ninth Semester

Days/8-9 Time	<u>9-10</u>	10-11	11-12	12-1	1- 2	2-3	3-4
Mon	Lectures In Clinical Subjects	Clinical Postings		Lectures in Demonstration in clinical subjects		Practicals Demonstrations in Clinical Subjects	
Tues	do	do		do	L		
Wed	do	do		do	U	Do	
Thurs	do	do		do		Do	
Fri	do	do		do	N	Do	
Sat	do	do		do	C	Do	
					H		

**Note:** These are suggested time tables. Adjustments where required, depending upon the availability of time and facility, be made.

### AMENDMENTS NOTIFIED IN THE GAZETTE OF INDIA IN EXISTING REGULATIONS

#### I. REGULATIONS ON GRADUATE MEDICAL EDUCATION

1. *Published in Part III Section 4 of the Gazette of India on 29<sup>th</sup> May, 1999.*

In the Regulations on Graduate Medical Education, 1997 –

(a) In Regulation 4 for clause (1), the following shall be substituted, namely -

“(1) He/She shall complete the age of 17 years on or before 31<sup>st</sup> December of the year of admission to the MBBS course.”

(b) In the Regulations 5, for clause (5) the following be substituted namely -

“(5) Procedure for selection to MBBS course shall be as follows:-

- (1) In case of admission on the basis of qualifying examination under clause (1) based on merit, a candidate for admission to MBBS course must have passed in the subjects of Physics, Chemistry, Biology and English individually and must have obtained a minimum of 50% marks taken together in Physics, Chemistry and Biology at the qualifying examination as mentioned in clause (2) of regulation 4. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward Classes, the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination be 40% instead of 50% as above.
- (2) In case of admission on the basis of competitive entrance examination under clause (2) to (4) of this regulation, a candidate must have passed in the subjects of Physics, Chemistry and Biology

and English individually and must have obtained a minimum of 50% marks taken together in Physics, Chemistry and Biology at the qualifying examination as mentioned in clause (2) of regulation 4 and in addition must have come in the merit list prepared as a result of such competitive entrance examination by securing not less than 50% marks in Physics, Chemistry and Biology taken together in the competitive examination. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or other Backward classes the marks obtained in Physics, Chemistry and Biology taken together in qualifying examination and competitive entrance examination be 40% instead of 50% as stated above. Provided that a candidate who has appeared in the qualifying examination the result of which has not been declared, he may be provisionally permitted to take up the competitive entrance examination and in case of selection for admission to the MBBS course, he shall not be admitted to that course until he fulfills the eligibility criteria under regulation 4.

Sd/

(Dr. M. Sachdeva)  
Secretary, MCI

2. *Published in Part III Section 4 of the Gazette of India 2nd July, 2002.*

In the Regulations on Graduate Medical Education, 1997, in regulation 13, after sub-section (9), the following sub-regulation shall be inserted, namely –

“(10) The grace marks upto a maximum of five marks may be awarded at the discretion of the University to a student who has failed only in one subject but has passed in all other subject.

Sd/

(Dr. M. Sachdeva)  
Secretary, MCI

3. *Published in Part III Section 4 of the Gazette of India on 30<sup>th</sup> September, 2003.*

“In Regulation 7, under Sub-Regulation, the words, “for which he will be permitted not more than four chances (actual examination), provided four chances are completed in three years from the date of enrolment” shall be deleted.”

Sd/-

Lt. Co. (Retd.) Dr. ARN Setalvad  
Secretary

4. *Published in Part III Section 4 of the Gazette of India on 16<sup>th</sup> October, 2003.*

*In Regulation 12 –*

(i) for sub-regulation (I), the following shall be substituted namely –

“(I) ATTENDANCE: 75% attendance in a subject for appearing in the examination is compulsory inclusive of attendance in non-lecture teaching i.e. seminars, group discussions, tutorials, demonstrations, practicals, hospital (Tertiary Secondary, Primary) posting and bed side clinics etc.”

(ii) in sub-regulation (2) for clause (v), the following shall be substituted, namely –

“(v) student must secure atleast 35% marks of the total marks fixed for internal assessment in a particular subject in order to be eligible to appear in final university examination of that subject.”

Sd/-  
Lt. Co. (Retd.) Dr. ARN Setalvad  
Secretary

5. *Published in Part III Section 4 of the Gazette of India on 1st March, 2004.*

In the Regulations on Graduate Medical Education, 1997, in regulation 7 –

(i) for sub-regulation (6) the following sub-regulation shall be substituted namely –

“(6) The Universities and other authorities concerned shall organize admission process in such a way that teaching in first semester starts by 1st of August each year. For this purpose, they shall follow the time schedule indicated in APPENDIX E”

(ii) after sub-regulation (6), the following sub-regulations shall be inserted:

“(6A) There shall be no admission of students in respect of any academic session beyond 30<sup>th</sup> September under any circumstance. The Universities shall not register any student admitted beyond the said date.

(6B) the Medical Council of India may direct, that any student identified as having obtained admission after the last date for closure of admission be discharged from the course of study, or any medical qualification granted to such a student shall not be a recognized qualification for the purpose of the Indian Medical Council Act, 1956.

The institution which grants admission to any student after the last date specified from the same shall also be liable to face such action as may be prescribed by MCI including surrender of seats equivalent to the extent of such admission made from its sanctioned intake capacity for the succeeding academic year”.

Sd/-  
Lt. Co. (Retd.) Dr. ARN Setalvad  
Secretary

## APPENDIX E

### TIME SCHEDULE FOR COMPLETION OF THE ADMISSION PROCESS FOR FIRST MBBS COURSE

Schedule for Admission	Seats filled up by Central Government through all India Entrance Examination	Seats filled up by the State Govts./Instt.
Conduct of Entrance Examination	Month of May	Month of May
Declaration of Result of Qualifying Exam./Entrance Exam.	By 5 <sup>th</sup> June	By 15 <sup>th</sup> June
Ist round of counseling/admission	To be over by 30 <sup>th</sup> June	To be over by 25 <sup>th</sup> July
Last date for joining the allotted college and course	Within 15 days from the date of allotment of seats @@	31 <sup>st</sup> July
2 <sup>nd</sup> round of counselling for allotment of seats from waiting list	To be over by 8 <sup>th</sup> August	Upto 28 <sup>th</sup> August
Last date for joining for candidates allotted seats in 2 <sup>nd</sup> round of conseling from the waiting list	Within 15 days from the date of allotment of seats. (seats vacant after 22 <sup>nd</sup> August will be surrendered back to the States / Colleges )	
Commencement of academic session	Ist of August	
Last date upto which students can be admitted against vacancies arising due to any reason	30 <sup>th</sup> September	

NOTE:@@ Head of the College should intimate the vacancies existing after the last date of joining the course by the candidate concerned in respect of the All India Quota of seats to the DGHS within seven days and latest by 23<sup>rd</sup> of July.

## MEDICAL COUNCIL OF INDIA

### AMENDMENT NOTIFICATION

New Delhi, the 20<sup>th</sup> October, 2008

No. MCI-34(41)/2008-Med./29527 - In exercise of the powers conferred by Section 33 of the Indian Medical Council Act, 1956(102 of 1956), the Medical Council of India with the previous approval of the Central Government hereby makes the following regulations to further amend the Regulations on Graduate Medical Education, 1997, namely:-

1. These Regulations may be called the “Regulations on Graduate Medical Education (Amendment), 2008.”
2. In the Regulations on Graduate Medical Education, 1997, the following **additions / modifications / deletions / substitutions**, shall be as indicated therein:-
3. Clause 6(1) under heading “**Migration/Transfer**” **shall be substituted** as under:

“(1) Migration of students from one medical college to another medical college in India shall be granted only in exceptional cases to the most deserving among the applicants for good and sufficient reasons and not on routine grounds. The number of students migrating to/from any one medical college shall be kept to the minimum which shall in any case not exceed the limit of 5% of its sanctioned intake in one academic year. There shall be no migration on any ground from one medical college to another located in the same city.

(2) Migration of students from one College to another is permissible only if both the colleges are recognised by the Central Government under section 11(2) of the Indian Medical Council Act, 1956 and further subject to the condition that it shall not result in increase in the sanctioned intake capacity for the academic year concerned in respect of the receiving medical college.

(3) The applicant candidate shall be eligible to apply for migration only after qualifying in the first professional MBBS examination. Migration during clinical course of study shall not be allowed on any ground.

(4) For the purpose of migration, an applicant candidate shall first obtain ‘No Objection Certificates’ from the college where he is studying for the present, the University to which it is affiliated to, the college to which migration is sought and the University to which that college is affiliated to. He shall submit his application for migration within a period of one month of passing (declaration of results) of the first professional MBBS examination alongwith the said ‘No Objection Certificates’ to the Director, Medical Education of the State where the College/Institutions including Deemed Universities to which migration is sought is situated or to the Head of the Institution in case migration is sought to a Central Government institution. The Director, Medical Education of the State concerned or the Head of the Central Government institution, as the case may be, shall take a final decision in the matter as to whether or not to allow migration in accordance with the provisions of these Regulations and communicate the same to the applicant student within a period of one month from the date of receipt of the request for migration.

(5) A student who has joined another college on migration shall be eligible to appear in the IInd professional MBBS examination only after attaining the minimum attendance in that college in the subjects, lectures, seminars etc. required for appearing in the examination prescribed under Regulation 12(1)

Note-1: The State Governments/Universities/Institutions may frame appropriate guidelines for grant of No Objection Certificate or migration, as the case may be, to the students subject to provisions of these regulations.

Note-2: Any request for migration not covered under the provisions of these Regulations shall be referred to the Medical Council of India for consideration on individual merits by the Director (Medical Education) of the State or the Head of Central Government Institution concerned. The decision taken by the Council on such requests shall be final.

Note-3: The College/Institutions shall send intimation to the Medical Council of India about the number of students admitted by them on migration within one month of their joining. It shall be open to the Council to undertake verification of the compliance of the provisions of the regulations governing migration by the Colleges at any point of time.”

4. In Clause 11 under heading “CLINICAL SUBJECTS OF PHASE II & PHASE III” the following **shall be added** after sub-clause (6) “COMMUNITY MEDICINE”:-

“(7)EMERGENCY MEDICINE - This must be a general department. Till such time a full fledged department is created this may be under the control of the department of anaesthesia.”

5. (i) In Clause 12(1), the words “provided he/she has 80%” **shall be substituted** by “inclusive of”.

(ii) In Clause 12(3) under heading “University Examinations”, para 1 & 2 **shall be substituted** by the following:

“Theory papers will be prepared by the examiners as prescribed. Nature of questions will be short answer type/objective type and marks for each part indicated separately. Question papers should preferably be of short structure/objective type.

Practicals/clinicals will be conducted in the laboratories or hospital wards. The objective will be to assess proficiency in skills, conduct of experiment, interpretation of data and logical conclusion. Clinical cases should preferably include common diseases and not esoteric syndromes or rare disorders. Emphasis should be on candidate’s capability in eliciting physical signs and their interpretation. **Clinical cases/practicals shall take into account common diseases which the student is likely to come in contact in practice. Rare cases/obscure syndromes, long cases of neurology shall not be put for final examination.”**

Note:

- a) Passing in Ist Professional is compulsory before proceeding to Phase II training.
  - b) A student who fails in the IInd professional examination, should not be allowed to appear IIIrd Professional Part I examination unless he passes all subjects of IInd Professional examination.
  - c) Passing in IIIrd Professional (Part-1) is compulsory for being eligible for IIIrd Professional (Part II) examination.”
- (iii) In Clause 12(4)(c) under the heading **Obstetrics and Gynaecology** the marks mentioned against “clinical i.e. 60 marks” **shall be substituted** “50 marks” and “Internal assessment 60(Theory-30; Practical-30)” **shall be substituted** by “Internal assessment 40(Theory–20; Practical-20)”
6. (i) In Clause 14(1), the word “conduct” **shall be substituted** by “**learn methods/modalities** for”
- (ii) Clause 14(4) under the heading “**INTERNSHIP- TIME DISTRIBUTION**” **shall be substituted** by the following:

**“COMPULSORY**

Community Medicine	<b>2 months</b>
Medicine including 15 days of Psychiatry	2 months
Surgery including 15 days Anaesthesia	2 months
Obst./Gynae. including Family	
Welfare Planning	2 months
Paediatrics	<b>1 month</b>
Orthopaedics including PMR	<b>1 month</b>
ENT	15 days
Ophthalmology	15 days
Casualty	15 days
Elective Posting (1x15 days)	15 days

Subjects for Elective posting will be as follows:

- i) Dermatology and Sexually Transmitted Diseases.
- ii) Tuberculosis and Respiratory Diseases.

- iii) Radio-Diagnosis
- iv) Forensic Medicine
- v) Blood Bank
- vi) Psychiatry

Note: Structure internship with college assessment at the end of the internship.”

**Foot Note** : The Principal Regulations namely, “Regulations on Graduate Medical Education, 1997” were published in Part – III, Section (4) of the Gazette of India vide Medical Council of India Notification dated the 4<sup>th</sup> March, 1997 and amended vide Council notification dated 29.05.1999, 02.07.2002, 30.09.2003, 16.10.2003 & 01.03.2004.

[Lt. Col.(Retd.) Dr. A.R.N. Setalvad]

Secretary

**MEDICAL COUNCIL OF INDIA**  
**NOTIFICATION**  
**New Delhi, the 22<sup>nd</sup> December, 2008**

No.MCI-34(41)/2008-Med./38099.- In exercise of the powers conferred by Section 33 of the Indian Medical Council Act, 1956 (102 of 1956), the Medical Council of India with the previous approval of the Central Government hereby makes the following regulations to further amend the Regulations on Graduate Medical Education, 1997, namely:-

1. These Regulations may be called the “Regulations on Graduate Medical Education (Amendment), 2008 part-III”.
2. In the Regulations on Graduate Medical Education, 1997, the following **additions/modifications/deletions/substitutions**, shall be made as indicated therein:-
- 3(i). In Chapter II, clause 6, under the heading “**Migration**”, Sub-Clause 6(1) **shall be substituted** as under:-

“6(1) Migration of students from one medical college to another medical college may be granted on any genuine ground subject to the availability of vacancy in the college where migration is sought and fulfilling the other requirements laid down in the Regulations. Migration would be restricted to 5% of the sanctioned intake of the college during the year. No migration will be permitted on any ground from one medical college to another located within the same city”.

- (ii) In Chapter II, clause 6, under the heading “**Migration**”, Sub-Clause 6(4) **shall be substituted** as under:-

“6(4) For the purpose of migration an applicant candidate shall first obtain “No Objection Certificate” from the college where he is studying for the present and the university to which that college is affiliated and also from the college to which the migration is sought and the university to which that college is affiliated. He/She shall submit his application for migration within a period of 1 month of passing (Declaration of result of the 1<sup>st</sup> Professional MBBS examination) alongwith the above cited four “No Objection Certificates” to: (a) the Director of Medical Education of the State, if migration is sought from one college to another within the same State **or** (b) the Medical Council of India, if the migration is sought from one college to another located outside the State”.

**Foot Note:** The Principal Regulations namely, “Regulations on Graduate Medical Education, 1997” were published in Part –III, Section (4) of the Gazette of India vide Medical Council of India Notification dated the 4<sup>th</sup> March, 1997 and amended vide Council notification dated 29.05.1999, 02.07.2002, 30.09.2003, 16.10.2003, 01.03.2004, 20.10.2008 & 15.12.2008.

(Lt. Col.(Retd.) Dr. A.R.N. Setalvad)  
Secretary

## MEDICAL COUNCIL OF INDIA

### AMENDMENT NOTIFICATION

New Delhi , the 25<sup>th</sup> March, 2009

No. MCI-34(41)/2008-Med./54469 - In exercise of the powers conferred by Section 33 of the Indian Medical Council Act, 1956(102 of 1956), the Medical Council of India with the previous approval of the Central Government hereby makes the following regulations to further amend the Regulations on Graduate Medical Education, 1997, namely:-

1. (i) These Regulations may be called the “Regulations on Graduate Medical Education (Amendment), 2009 Part – I.”

(ii) They shall come into force on the date of their publication in the Official Gazette.

2. In the Regulations on Graduate Medical Education, 1997, the following **additions / modifications / deletions / substitutions**, shall be as indicated therein:-

3. In Chapter II, Clause 4 under the heading “Admission to the Medical Course – Eligibility Criteria”, the following **shall be added** after sub-clause 2(f): -

“3. 3% seats of the annual sanctioned intake capacity shall be filled up by candidates with locomotory disability of lower limbs between 50% to 70%.

Provided that in case any seat in this 3% quota remains unfilled on account of unavailability of candidates with locomotory disability of lower limbs between 50% to 70% then any such unfilled seat in this 3% quota shall be filled up by persons with locomotory disability of lower limbs between 40% to 50% - before they are included in the annual sanctioned seats for General Category candidates.

Provided further that this entire exercise shall be completed by each medical college / institution as per the statutory time schedule for admissions and in no case any admission will be made in the MBBS course after 30<sup>th</sup> of September.”

4. The following proviso **shall be added** before the proviso to Clause 5 (5) (ii):-

“Provided that the eligibility criteria for admission to persons with locomotory disability of lower limbs in terms of Clause 4(3) above – will be a minimum of 45% marks instead of 50% taken together in qualifying examination and competitive entrance examination for admission in MBBS course.”

[Lt. Col.(Retd.) Dr. A.R.N. Setalvad]

Secretary

Medical Council of India

**Foot Note:** The Principal Regulations namely, “Regulations on Graduate Medical Education, 1997” were published in Part – III, Section (4) of the Gazette of India vide Medical Council of India Notification dated the 4<sup>th</sup> March, 1997 and amended vide Council notification dated 29.05.1999, 02.07.2002, 30.09.2003, 16.10.2003, 01.03.2004, 20.10.2008, 15.12.2008 & 22.12.2008

**MEDICAL COUNCIL OF INDIA**  
**AMENDMENT NOTIFICATION**

**New Delhi, the 19<sup>th</sup> April, 2010**

No. MCI-31(1)/2010-Med./4155- In exercise of the powers conferred by Section 33 of the Indian Medical Council Act, 1956(102 of 1956), the Medical Council of India with the previous approval of the Central Government hereby makes the following regulations to further amend the “Regulations on Graduate Medical Education, 1997”, namely: -

1. (i) These Regulations may be called the “Regulations on Graduate Medical Education (Amendment), 2010.”
- (ii) They shall come into force on the date of their publication in the Official Gazette.
2. In the Regulations on Graduate Medical Education, 1997, the following **additions / modifications / deletions / substitutions**, shall be as indicated therein:-
3. In Chapter II, Clause 7 under the heading “Training Period and Time Distribution”, sub-clause (7) **shall be substituted** as under: -

“7(7) The supplementary examination for Ist Professional MBBS examination may be conducted within 6 months so that the students who pass can join the main batch and the failed students will have to appear in the subsequent year provided that the students who pass the supplementary examination shall be allowed to appear in the second professional MBBS examination only after he/she completes the full course of study of three semesters (i.e. 18 months) for the second professional MBBS examination irrespective of the examination of the main batch.”

**(Lt. Col. (Retd.) Dr. A.R.N. Setalvad)**  
**Secretary**  
**Medical Council of India**

**Foot Note** : The Principal Regulations namely, “Regulations on Graduate Medical Education, 1997” were published in Part – III, Section (4) of the Gazette of India vide Medical Council of India Notification dated the 4<sup>th</sup> March, 1997 and amended vide Council notification dated 29.05.1999, 02.07.2002, 30.09.2003, 16.10.2003, 01.03.2004, 20.10.2008, 15.12.2008, 22.12.2008 & 25.03.2009.

## **MEDICAL COUNCIL OF INDIA**

### **AMENDMENT NOTIFICATION**

**New Delhi, the 7<sup>th</sup> October, 2010**

No. MCI-34(1)/2010-Med./32962. - In exercise of the powers conferred by Section 33 of the Indian Medical Council Act, 1956(102 of 1956), the Medical Council of India with the previous approval of the Central Government hereby makes the following regulations to further amend the “Regulations on Graduate Medical Education, 1997”, namely: -

1. (i) These Regulations may be called the “Regulations on Graduate Medical Education (Amendment), 2010.”  
  
(ii) They shall come into force on the date of their publication in the Official Gazette.
2. In the Regulations on Graduate Medical Education, 1997, the following **additions / modifications / deletions / substitutions**, shall be as indicated therein:-
3. In Chapter II, Clause 4 under the heading “Admission to the Medical Course-Eligibility Criteria”, sub-clause 2 under the heading “He/She has passed qualifying examination “& Clause 5 under the heading “Selection of Students”, sub-clause 5 under the heading “Procedure for selection to MBBS course”, **shall be substituted** as under :

**“4(2) He/She has passed qualifying examination as under :-**

(a) The higher secondary examination or the Indian School Certificate Examination which is equivalent to 10+2 Higher Secondary Examination after a period of 12 years study, the last two years of study comprising of **Physics, Chemistry, Biology/Bio-technology** and Mathematics or any other elective subjects with English at a level not less than core course of English as prescribed by the National Council of Educational Research and Training after the introduction of the 10+2+3 years educational structure as recommended by the National Committee on education;

Note: Where the course content is not as prescribed for 10+2 education structure of the National Committee, the candidates will have to undergo a period of one year pre-professional training before admission to the Medical colleges;

Or

(b) The intermediate examination in science of an Indian University/Board or other recognised examining body with **Physics, Chemistry and Biology/Bio-technology** which shall include a practical test in these subjects and also English as a compulsory subject;

Or

(c) The pre-professional/pre-medical examination with Physics, Chemistry and Biology/Bio-technology, after passing either the higher secondary school examination, or the pre-university or an equivalent Examination. The pre-professional/pre-medical examination shall include a practical test in **Physics, Chemistry and Biology/Bio-technology** and also English as a compulsory subject;

Or

(d) The first year of the three years degree course of a recognized university, with **Physics, chemistry and Biology/Bio-technology** including a practical test in three subjects provided the examination is a "University Examination" and candidate has passed 10+2 with English at a level not less than a core course;

Or

(e) B.Sc. examination of an Indian University, provided that he/she has passed the B.Sc. examination with not less than two of the following subjects **Physics, Chemistry, Biology (Botany, Zoology)/Bio-technology** and further that he/she has passed the earlier qualifying examination with the following subjects – Physics, Chemistry, Biology and English.

Or

(f) Any other examination which, in scope and standard is found to be equivalent to the intermediate science examination of an Indian University/Board, taking **Physics, Chemistry and Biology/Bio-technology** including practical test in each of these subjects and English.

**Note:**

The pre-medical course may be conducted either at Medical College, or a science College.

Marks obtained in Mathematics are not to be considered for admission to MBBS Course.

After the 10+2 course is introduced, the integrated courses should be abolished.

**5(5) Procedure for selection to MBBS course shall be as follows:-**

- (i) In case of admission on the basis of qualifying examination under clause (1) based on merit, candidate for admission to MBBS course must have passed in the subjects of **Physics, Chemistry, Biology/Bio-technology & English** individually and must have obtained a minimum of 50% marks taken together in **Physics, Chemistry and Biology/Bio-technology** at the qualifying examination as mentioned in the clause (2) of regulation 4.

In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or Other Backward classes. The marks obtained in **Physics, Chemistry and Biology/Bio-technology** taken together in qualifying examination be 40% instead of 50% as above;

- (ii) In case of admission on the basis of Competitive entrance examination under clause (2) to (4) of this regulation, a candidate must have passed in the subjects of **Physics, Chemistry, Biology/Bio-technology** and English individually and must have obtained a minimum of 50% of marks taken together in **Physics, Chemistry and Biology/Bio-technology** at the qualifying examination as mentioned in clause (2) of regulation 4 and in addition must have come in the merit list prepared as a result of such competitive entrance examination by securing not less than 50% marks in **Physics, Chemistry and Biology/Bio-technology** taken together in the competitive examination. In respect of candidates belonging to Schedule Caste, Schedule Tribes or other Backward Class the marks obtained in **Physics, Chemistry, and Biology/Bio-technology** taken together in qualifying examination and competitive entrance examination be 40% instead of 50% as stated above:

Provided that a candidate who has appeared in the qualifying examination the result of which has not been declared, he may be provisionally permitted to take up the competitive entrance examination and in case of selection for admission to the MBBS course, he shall not be admitted to that course until he fulfils the eligibility criteria under regulation 4.”

**(Dr. P. Prasannaraj)**  
**Additional Secretary**  
**Medical Council of India**

**Foot Note :** The Principal Regulations namely, “Regulations on Graduate Medical Education, 1997” were published in Part – III, Section (4) of the Gazette of India vide Medical Council of India Notification dated the 4<sup>th</sup> March, 1997 and amended vide Council notification dated 29.05.1999, 02.07.2002, 30.09.2003, 16.10.2003, 01.03.2004, 20.10.2008, 15.12.2008, 22.12.2008, 25.03.2009 & 19.04.2010.

**MEDICAL COUNCIL OF INDIA**

AMENDMENT NOTIFICATION

**New Delhi, the 21<sup>st</sup> December, 2010**

No. **MCI-31(1)/2010-Med./49068**- In exercise of the powers conferred by Section 33 of the Indian Medical Council Act, 1956(102 of 1956), the Medical Council of India with the previous approval of the Central Government hereby makes the following regulations to further amend the “Regulations on Graduate Medical Education, 1997”, namely: -

1. (i) These Regulations may be called the “Regulations on Graduate Medical Education (Amendment), 2010 (Part-II).”  
(ii) They shall come into force on the date of their publication in the Official Gazette.
2. In the Regulations on Graduate Medical Education, 1997, the following **additions / modifications / deletions / substitutions**, shall be as indicated therein:-
3. In Chapter II, Clause 4 under the heading “Admission to the Medical Course – Eligibility Criteria” of Graduate Medical Education Regulations, 1997 , the following **shall be added** after sub-clause 1: -  
“1 A. He/She has obtained a minimum of marks in National Eligibility-cum-Entrance Test as prescribed in Clause 5 of Chapter II.”
4. In Chapter II, Clause 4 (2) of Graduate Medical Education Regulations, 1997 , the following shall be added before words “He/She has passed qualifying examination as under:”  
“ In order to be eligible to take National Eligibility-cum-Entrance Test,”
- 5.(i) In Chapter II, Clause 4, para 2 of the Note section, the sentence “Marks obtained in Mathematics are not to be considered for admission to MBBS Course.” **shall be deleted.**  
(ii) In Chapter II, Clause 5 under the heading “Selection of Students”, sub-clause (1) to (4) **shall be deleted.**
6. In Chapter II, Clause 5, sub-clause - 5, under the Heading “Procedure for selection to MBBS Course shall be as follows” **shall be substituted** as under: -  
“I. There shall be a single eligibility cum entrance examination namely ‘National Eligibility-cum-Entrance Test for admission to MBBS course’ in each academic year. The overall superintendence, direction and control of National Eligibility-cum-Entrance Test shall vest with Medical Council of India. However, Medical Council of India with the previous approval of the Central Government shall select organization/s to conduct ‘National Eligibility-cum-Entrance Test for admission to MBBS course.  
II. In order to be eligible for admission to MBBS course for a particular academic year, it shall be necessary for a candidate to obtain minimum of 50% (Fifty Percent) marks in each paper of National Eligibility-cum-Entrance Test held for the said academic year. However, in respect of candidates belonging to Scheduled Castes, Scheduled Tribes and Other Backward Classes, the minimum percentage marks shall be 40% (Forty Percent) in each paper and in respect of candidates with locomotory

disability of lower limbs, the minimum percentage marks shall be 45% (Forty Five Percent) in each paper of National Eligibility-cum-Entrance Test :

Provided when sufficient number of candidates belonging to respective categories fail to secure minimum marks as prescribed in National Eligibility-cum-Entrance Test in any academic year for admission to MBBS Course, the Central Government in consultation with Medical Council of India may, at its discretion, lower the minimum marks required for admission to MBBS Course for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for the said year only.

- III. The reservation of seats in medical colleges for respective categories shall be as per applicable laws prevailing in States/ Union Territories. An all India merit list as well as State-wise merit list of the eligible candidates shall be prepared on the basis of the marks obtained in National Eligibility-cum-Entrance Test and candidates shall be admitted to MBBS course from the said lists only.
- IV. No Candidate who has failed to obtain the minimum eligibility marks as prescribed in Sub Clause (ii) above shall be admitted to MBBS Course in the said academic year.
- V. All admissions to MBBS course within the respective categories shall be based solely on marks obtained in the National Eligibility-cum-Entrance Test.”

**(Dr. P. Prasannaraj)**

**Addl. Secretary**

**Medical Council of India**

**Foot Note** : The Principal Regulations namely, “Regulations on Graduate Medical Education, 1997” were published in Part – III, Section (4) of the Gazette of India vide Medical Council of India Notification dated the 4<sup>th</sup> March, 1997 and amended vide Council notification dated 29.05.1999, 02.07.2002, 30.09.2003, 16.10.2003, 01.03.2004, 20.10.2008, 15.12.2008, 22.12.2008, 25.03.2009 & 19.04.2010.

**MEDICAL COUNCIL OF INDIA**  
**AMENDMENT NOTIFICATION**  
New Delhi, the 15<sup>th</sup> February, 2012

No. **MCI-31(1)/2010-Med/62051** In exercise of the powers conferred by Section 33 of the Indian Medical Council Act, 1956(102 of 1956), the Medical Council of India with previous approval of the Central Government hereby makes the following regulations to further amend the “Regulations on Graduate Medical Education, 1997”, namely: -

1. (i) These Regulations may be called the “Regulations on Graduate Medical Education (Amendment), 2012 (Part-I)”.  
  
(ii) They shall come into force from the date of their publication in the Official Gazette.
2. Regulations on Graduate Medical Education (Amendment), 2010 (Part II), vide notification No. MCI 31(1)/2010-Med/49068 dated 21<sup>st</sup> December 2010 published on 27<sup>th</sup> December 2010, shall be applicable from the academic year commencing from 2013-2014.
3. In the “Regulations on Graduate Medical Education, 1997”, the following additions / modifications / deletions / substitutions, shall be as indicated therein: -
4. In Chapter II, clause 5, sub-clause II, under the heading “ Procedure for selection to MBBS course shall be as follows”, as amended vide notification No. MCI-31(1)/2010-Med/49068 dated 21<sup>st</sup> December 2010, **shall be substituted** as under:

“II. In order to be eligible for admission to MBBS Course for a particular academic year, it shall be necessary for a candidate to obtain minimum of marks at 50<sup>th</sup> percentile in ‘National Eligibility-cum-Entrance Test to MBBS course’ held for the said academic year. However, in respect of candidates belonging to

Scheduled Castes, Scheduled Tribes, Other Backward Classes, the minimum marks shall be at 40<sup>th</sup> percentile. In respect of candidates with locomotory disability of lower limbs terms of Clause 4(3) above, the minimum marks shall be at 45<sup>th</sup> percentile. The percentile shall be determined on the basis of highest marks secured in the All-India common merit list in ‘National Eligibility-cum-Entrance Test for admission to MBBS course’.

Provided when sufficient number of candidates in the respective categories fail to secure minimum marks as prescribed in National Eligibility-cum-Entrance Test held for any academic year for admission to MBBS Course, the Central Government in consultation with Medical Council of India may at its discretion lower the minimum marks required for admission to MBBS Course for candidates belonging to respective categories and marks so lowered by the Central Government shall be applicable for the said academic year only.”

5. In Chapter II, clause 5, sub-clause II, under the heading “ Procedure for selection to MBBS course shall be as follows”, as amended vide notification No. MCI-31(1)/2010-Med/49068 dated 21<sup>st</sup> December 2010, **shall be added** as under:

“VI. To be eligible for admission to MBBS course, a candidate must have passed in the subjects of Physics, Chemistry, Biology/Bio-technology and English individually and must have obtained a minimum of 50% marks taken together in Physics, Chemistry and Biology/Bio-technology at the qualifying examination as mentioned in clause (2) of Regulation 4 and in addition must have come in the merit list of “National Eligibility-cum-Entrance Test” for admission to MBBS course. In respect of candidates belonging to Scheduled Castes, Scheduled Tribes or other Backward Classes the minimum marks obtained in Physics, Chemistry and Biology/Bio-technology taken together in qualifying examination shall be 40% instead of 50%. In respect of candidates with locomotory disability of lower limbs in terms of Clause 4(3) above, the minimum marks in qualifying examination in Physics, Chemistry and Biology/Bio-technology taken together in qualifying examination shall be 45% instead of 50%.

Provided that a candidate who has appeared in the qualifying examination the result of which has not been declared, he/she may be provisionally permitted to take up the National Eligibility-cum-Entrance Test and in case of selection for admission to the MBBS course, he/she shall not be admitted to that course until he fulfils the eligibility criteria under Regulation 4.

- VII. The Central Board of Secondary Education shall be the organization to conduct National Eligibility-cum-Entrance Test for admission to MBBS course.”

**(Dr. Sangeeta Sharma )**  
**Secretary**  
**Medical Council of India**

**Foot Note:** The Principal Regulations namely, “Regulations on Graduate Medical Education, 1997” were published in Part III, Section, Section (4) of the Gazette of India vide Medical Council of India Notification dated the 4<sup>th</sup> March, 1997 and amended vide Council notification dated 29.05.1999, 02.07.2002, 30.09.2003, 16.10.2003, 01.03.2004, 20.10.2008, 15.12.2008, 22.12.2008, 25.03.2009, 19.04.2010 & 27.12.2010.