Bharati Vidyapeeth (Deemed to be University) Medical College, Pune

Name of the Programme

MBBS

Bharati Vidyapeeth (DTU) Medical College, Pune

Name of the Programme: MBBS

Based on Medical Council of India Regulations on Graduate Medical Education, 1997

Programme Outcome:

To train the students to be COMPETENT, COMPASSIONATE & CONFIDENT basic doctors/specialists to deliver the health care needs of the society.

At the end of undergraduate program, the medical student should be able to :

- 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.
- Learn every aspect of National policies on health and devote himself/herself to its practical implementation.
- Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
- Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
- Become exemplary citizen by observation of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

Programme Specific Outcome:

The undergraduate students passing out of this medical college should:

a. be competent in the 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 and be familiar with the administration of 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 attitudes towards patients in discharging their professional responsibilities.
e. possess the attitude for continued self-learning and seek further expertise or pursue research in any chosen area of medicine, action research and documentation skills.
f. be familiar with the requirements 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

vi. IPHS standards of health at various level of service delivery, medical waste disposal.
vii. Organizational institutional arrangements.

g. acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, general and hospital management, principal inventory skills and counseling.
h. be able to identify community health problems and learn to work to resolve these by designing and 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.
k. 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.

COMPETENCIES

Competencies: The graduate passing out of this institution should obtain the following set of competencies at the time of graduation:

a. As a **clinician**, demonstrate knowledge of normal and abnormal human structure, function and development, medico-legal, societal, ethical and humanitarian principles that influence health care, national and regional health care policies, ability to elicit and record histories, perform relevant physical examinations, effective clinical problem solving, judgment and ability to interpret and integrate available data, maintain accurate clear and appropriate record of the patient, choose the appropriate diagnostic tests, prescribe and safely administer appropriate therapies, provide a continuum of care at the primary and/or secondary level, ability to appropriately identify and refer patients and familiarity with basic, clinical and translational research as it applies to the care of the patient.
b. As a **leader and member of the health care team and system** work effectively and appropriately with colleagues in an inter-professional healthcare team, recognize and function effectively, responsibly and appropriately as a health care team leader, educate and motivate other members of the team, access and utilize components of the health care system and health delivery, participate appropriately in measures that will advance quality of health care and patient safety, recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer.
c. As a **communicator** demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients, establish professional relationships with patients and families, be respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy and in a manner that encourages participation and shared decision-making.
d. As a **lifelong learner** committed to continuous improvement of skills and knowledge demonstrate ability to perform an objective self-assessment, apply newly gained knowledge or skills to the care of the patient, introspect and utilize experiences, search (including through electronic means), and critically evaluate and apply medical literature for patient care and identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.
e. As a **professional who is committed to excellence**, practice selflessness, integrity, responsibility, accountability and respect, respect and maintain professional boundaries between patients, colleagues and society, demonstrate ability to recognize and manage ethical and professional conflicts, abide by prescribed ethical and legal codes of conduct

and practice and demonstrate a commitment to the growth of the medical profession as a whole.

Training Period and Time Distribution

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 study for the subjects comprising the medical curriculum up to the date of completion of the examination which will be followed by one-year compulsory rotating internship.

Each semester will consist of approximately 120 teaching days of 8 hours each in college working hours, including one hour of lunch.

The period of 4 ½ years will be divided into three phases as follows: -

1. **Phase-1**(two semesters) – This Phase will consist of Pre-clinical subjects (Human Anatomy, Physiology including Bio-Physics, Biochemistry and introduction to Community Medicine including Humanities). Besides 60 hours for Introduction to Community Medicine including Humanities, the rest of the time shall be somewhat equally divided between Anatomy and Physiology plus Biochemistry combined (Physiology 2/3 & Biochemistry 1/3).
2. **Phase-II** (3 semesters) – This Phase will consist of para-clinical/ clinical subjects. During this phase teaching of para-clinical and clinical subjects shall be done concurrently. The paraclinical 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 shall be allotted to Pathology, Pharmacology, Microbiology and Forensic Medicine and Community Medicine combined (1/3 Forensic Medicine & 2/3 Community Medicine).
3. **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 postings as per schedule mentioned herewith, the rest of the teaching hours will be utilized for didactic lectures, demonstrations, seminars, group discussions etc. in various subjects.
   Medicine and its allied specialties will include General Medicine, Paediatrics, Tuberculosis and Chest, Skin and Sexually Transmitted Diseases, Psychiatry, Radio-diagnosis, Infectious diseases etc.
   Surgery and its allied specialties training will include General Surgery, Orthopaedic Surgery including Physiotherapy and Rehabilitation, Ophthalmology, Otorhinolaryngology, Anaesthesia, Dentistry, Radio-therapy etc.
   Obstetrics &Gynaecology will include family medicine, family welfare planning etc.
4. The first 2 semesters (approximately 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) training until he/she has passed in all the Phase I (Pre-clinical subjects).
5. After passing pre-clinical subjects, 1 ½ year (3 semesters) shall be devoted to paraclinical 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.

6. Didactic lectures shall not exceed one third of the time schedule. The remaining two thirds of the schedule shall include practicals, clinicals and other forms of small group teaching. Learning processes shall include living experiences, problem oriented approach, case studies and community health care activities.
7. Teaching in first semester shall commence on 1st of August each year. For this purpose, they shall follow the time schedule as indicated in the following table.
8. The supplementary examination for 1st Professional MBBS examination will be conducted within 6 months so that the students who pass can join the main batch. 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.

Prescribed Teaching Hours and Suggested Model Time Tables

The 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-5th to 7th 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.

Teaching of para-clinical subjects shall be 4 hrs per day in 3rd Semester and 3hrs per day in 4th and 5th Semesters (See attached Time Table)

C. Clinical Subjects

1. Clinical postings will be as per chart attached.

2. Theory lectures, demonstrations and Seminars etc. will be conducted in addition to clinical postings as under. The clinical lectures to be held from 4th Semester onwards

- Gen-Medicine 300 Hours
- Gen. Surgery 300 Hours
- Paediatrics 100 hrs
- Orthopaedics 100 hrs
- T.B. and Chest Diseases 20 hrs
- Ophthalmology 100 hrs
- Psychiatry 20 hrs
- ENT 70 hrs
- Skin and STD 30 hrs
- Radiology 20 hrs
- Community Medicine 50 hrs

- Dentistry 10 hrs
- Anaesthesia 20 hrs
- Obst & Gynae. 300 hrs

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

Note:

Clinical methods in Medicine and Surgery for the whole class will be held for 2 weeks each respectively at the start of 3rd semester

* This posting includes training in Radiodiagnosis and Radiotherapy where existent.

** 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.

Course Objectives:

DEPARTMENT OF ANATOMY:

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.

Objectives:

Knowledge:

At the end of the course the student shall 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 pre requisite for understanding the altered state in various disease processes.
c) Comprehend the basic structure and connections of the central nervous system to analyze the integrative and regulative functions of the organs and systems. He/she shall 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; recognize the critical stages of development and the effects of common teratogens, genetic mutations and environmental hazards. He/she shall be able to explain the developmental basis of the major variations and abnormalities.

Skills:

At the end of the course the student shall 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 congenital anomalies.
d) Understand principles of newer imaging techniques and interpretation of CT scan, ultra-sonograph etc.
e) Understand clinical basis of some common clinical procedures i.e. intramuscular and intravenous injection, lumbar puncture and kidney biopsy etc.

Communication:

At the end of the course the student shall have the necessary communication skills required for explaining the anomalies and the anatomical basis of certain procedures and interpreting the X-rays and other imaging techniques.

Integration

At the end of the integrated teaching the student shall acquire an integrated knowledge of organ structure and function and its regulatory mechanisms and deviation from normal function as judged by clinical examination and biochemical investigations.

Competencies:

The student will be able to demonstrate- the various bony and other surface landmarks in the human body, the actions of different muscles and movements of the joints and identify and interpret the human parts in various imaging techniques.

The student will be able to identify and discuss the anatomy of all the parts of the body and identify under the microscope the basic structure of the tissues of the body.

DEPARTMENT OF PHYSIOLOGY:

Goal

The broad goal of the teaching physiology is to provide comprehensive knowledge of normal functioning of organ systems of the body to students. This facilitates an understanding of the physiological basis of health and diseases and helps students in learning medicine.

Objectives

Knowledge:

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

1. Explain the normal functioning of all the organ systems of the body and their coordinated activity for total body functions.
2. Describe the contribution of each organ system to the maintenance of 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 some of the diseases.

Skills:

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

1. Perform experiments (hematology & human experiments) designed for the study of physiological phenomena and for assessment of function.
2. Analyze and interpret experimental/investigative data.
3. Perform clinical examination of various systems.

Communication:

At the end of the course, the student will have the necessary communication skills required for history-taking of the patient & eliciting various clinical findings in the patient.

Integration:

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

Competencies:

At the end of the course, student will have following competencies:

1. To demonstrate knowledge of normal functioning of human body and their coordinated activity for total body functions.
2. To demonstrate the ability to perform & interpret various experiments (hematology & human) designed for the study of physiological phenomena and for assessment of function.
3. To demonstrate the ability to analyze experimental/investigative data.
4. To demonstrate the ability to perform a physical examination of various systems that is complete and relevant to disease identification.

DEPARTMENT OF BIOCHEMISTRY

Goal:

To provide medical students the knowledge of basic and applied biochemistry in order to understand the basis of health and diseases and to implement good laboratory services for patient care.

Objectives:

Knowledge:

At the end of the course, the student should be able to: demonstrate his knowledge and

understanding on the:

1. Structure, function and interrelationship of biomolecules (Carbohydrates, Lipids and Proteins) and consequences of deviation from normal; role of mitochondria in generating energy.

2. Basic and clinical aspects of enzymology and regulation of enzymatic activity;

3. Digestion and assimilation of nutrients and consequences of malnutrition;

4. Integration of the various aspects of metabolism, and their regulatory pathways;

5. Biochemical basis of inherited disorders and their associated squeal;

6. Mechanisms involved in maintenance of body fluid and pH homeostasis;

7. Structure and functions of nucleotides, metabolism and nucleic acids DNA and RNA.

8. Molecular mechanisms of gene expression and regulation, the principles of genetic engineering and their application in medicine;

9. Biochemical basis of environmental health hazards; and biochemical basis of cancer and carcinogenesis, principles of metabolism, and detoxication of xenobiotics.

10. Principles of various conventional and specialized laboratory investigations and

instrumentation, analysis and interpretation of a given data; the ability to suggest experiments to support theoretical concepts and clinical diagnosis.

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 clinical problems and decision making.

Communication:

At the end of the course, the student should be able to explain the biochemical findings and its clinical correlation with the disease.

Integration:

At the end of the integrated teaching the student shall acquire an integrated knowledge of organ structure (Anatomy) and function and its regulatory mechanisms (Physiology) and deviation from normal function as judged by clinical examination and biochemical investigations (Biochemistry).

Competencies:

At the end of the course, the student will have the competencies:

1. To explain the chemistry and metabolism of biomolecules (e.g Carbohydrates, Lipids and Proteins) and their role in normal functioning of various cells and systems.

2. To understand how the abnormalities in these biomolecules can lead to deranged functions of the body, and altered biochemical profiles in various diseases.

3. To perform & interpret various biochemical tests to diagnose, assess and monitor the progression of various diseases.

DEPARTMENT OF PHARMACOLOGY:

Goal

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

Objectives

a. KNOWLEDGE

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

- understand the basis of drug handling by the body (pharmacokinetics) and clinical pharmacokinetic parameters and their clinical applications.
- understand the concepts underlying drug action like receptor, drug receptor interaction, drug interactions and adverse drug reactions with their clinical implications.
- understand the process of new drug development with ethical implications.
- describe the pharmacokinetics and pharmacodynamics (mechanism of action, action profile) of essential and commonly used drugs.
- list the indications, contraindications, interactions and adverse reactions of
- commonly used drugs.
- indicate the use of appropriate drug in a particular disease with consideration to its cost, efficacy and safety for individual needs.
- describe the pharmacokinetic basis, clinical presentation and diagnosis of toxicity of commonly used drugs with measures to prevent & treat the same.
- list the drugs of addiction and recommend the management.
- indicate need for special care while prescribing drugs for special medical situations such as pregnancy, lactation, infancy and old age.
- state the principles underlying the concept of 'Essential Drugs' and ‘P drug list’

Skills

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

prescribe drugs for common ailments.

- recognize adverse reactions and interactions of commonly used drugs.
- evaluate experiments designed for study of effects of drugs, bioassay and interpretation of the experimental data.
- scan information on common pharmaceutical preparations and critically evaluate drug formulations.
- communicate effectively with patients to ensure understanding of the of drugs prescribed, precautions to be followed and importance of follow up to report outcomes in terms of therapeutic as well as adverse effects and ensure patient compliance.

Competencies

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

a. prescribe and safely administer appropriate therapies for common health problems in the society, based on the principles of rational drug therapy which includes scientific validity, evidence and cost effectiveness.
b. work effectively and appropriately with colleagues in an inter-professional health care team.

c. communicate effectively and respectfully with patients and family members in a language that they understand to ensure the understanding of the prescribed drugs and ensure patient compliance.
d. search (including through electronic means) and critically evaluate the medical literature to update the knowledge about evolving understanding of pathophysiology of diseases and changing trends of treatment and apply the information in the care of the patient.
e. evaluate new drugs continuously being added to the existing drug armamentarium to ensure rational selection of drugs available.
f. be committed to excellence & ethical practice, responsive and accountable to patients, community and profession, practice with selflessness, integrity, responsibility, not deviating from rationality of treatment for any material gains.

Integration

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

Examples of Topics for Integrated teaching through faculty / student participation are:

1. Hypertension 2. Inflammation 3. TB 4.HIV 5. Antimicrobial Resistance 6. Diabetes 7. Thyroid

DEPARTMENT OF PATHOLOGY

Goal:

To provide the students with a comprehensive knowledge of the causes and pathogenesis of disease, in order to enable the student to understand morphological changes and natural history of disease.

Objectives:

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

1. Describe the structure of a sick cell, mechanism of cell injury, inflammation and repair and to correlate structural & functional alterations.
2. Explain the mechanisms which govern the disturbances of circulation and their morphological and clinical manifestations. Describe the general principles of neoplasia, immunological and genetic disorders.
3. Describe the pathophysiology of anaemias, leukaemias and disorders of coagulation and correlate haematologic changes with their clinical manifestations. Describe the common indications and procedures of safe blood transfusion.
4. Correlates the altered morphology (Gross & microscopic) of different organ systems in common diseases to the extent needed for understanding of disease processes and their clinical significance.

Skills:

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

1. Describe the principles of technical procedures of diagnostic laboratory tests in clinical pathology and haematology and interpretation of the results.
2. Perform simple bedside tests on blood and urine.
3. Draw rational schemes of investigations aimed at diagnosing & managing the cases of common diseases.
4. Carry out tissue diagnosis and clinicopathologic correlation in common systemic diseases.

Integration

At the end of training in pathology the student should be able to integrate the causes of disease and the relationship of different social, economic and environmental factors with the natural history of diseases most prevalent in India.

Competencies

III SEMESTER:

At the end of the III semester of 6 mth duration in Pathology training the MBBS student should be able to

-Demonstrate knowledge of the structure of a sick cell, mechanism of cell injury, inflammation and repair and to correlate structural & functional alterations.

- Demonstrate knowledge of the mechanisms which govern the disturbances of circulation and their morphological and clinical manifestations.

- Demonstrate knowledge of the general principles of neoplastic, immunological and genetic disorders.

IV SEMESTER

At the end of the IV semester of 6 mth duration in Pathology training the MBBS student should be able to

- Demonstrate knowledge of the pathophysiology of anaemias, leukaemias and disorders of coagulation and correlate haematologic changes with their clinical manifestations.
- Demonstrate knowledge of the common indications and procedures of safe blood transfusion.
- Demonstrate knowledge of the altered morphology (Gross & microscopic) of common diseases of the cardiovascular, respiratory, reticuloendothelial, gastrointestinal, hepatobiliary and urinary systems and correlate the same to the extent needed for understanding of disease processes of these systems and their clinical significance.
- Demonstrate knowledge of the principles of technical procedures of common diagnostic laboratory tests in clinical pathology and haematology and interpretation of the results.
- Demonstrate knowledge of the ability to perform simple bedside tests on blood and urine.

V SEMESTER

- Demonstrate knowledge of the altered morphology (Gross & microscopic) of common diseases of the male and female genital including breast, musculoskeletal, nervous, endocrine and integumentary systems and correlate the same to the extent needed for understanding of disease processes of these systems and their clinical significance
- Draw rational schemes of investigations aimed at diagnosing & managing the cases of common diseases of various systems.
- Carry out tissue diagnosis and clinicopathologic correlation in common systemic diseases.
- At the end of training in pathology the student should be able to integrate the causes of disease encountered in the Indian environment and the relationship of different social, economic and environmental factors with the natural history of these diseases most prevalent in India

DEPARTMENT OF MICROBIOLOGY

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, pathologenesis, laboratory diagnosis, treatment and control of infections in the community.

Objectives

Knowledge

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

1. describe the infective micro-organisms of the human body and describe the host parasite relationship.
2. enlist pathogenic micro-organisms (bacteria, viruses, parasites, fungi) and describe the pathogenesis of the diseases produced by them.
3. 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. enlist the methods of disinfection and sterilization to control and prevent hospital and community acquired infections.
6. enumerate laboratory investigations regarding bacteriological examination of food, water, milk and air.
7. choose appropriate laboratory investigations required for clinical diagnosis.

SKILLS

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

1. choose 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. choose the correct method of collection, storage and transport of clinical material for microbiological investigations.
5. describe the principles of immunology and its application in the diagnosis and prevention of infectious diseases including immunization schedule, and different vaccines available for the prevention of communicable diseases.
6. enumerate the methods of disinfection and sterilization and their application to control and prevent hospital and community acquired infections including biosafety precautions and waste disposal.
7. enumerate laboratory investigations regarding bacteriological examination of food, water, milk and air.

Integration

The student should understand and be well equipped with the knowledge of prevalent infectious diseases and new emerging pathogens of national importance in relation to their clinical, therapeutic and preventive aspects.

Competencies

Knowledge:

At the end of the III semester, the student should be able to:

1. describe the morphology, cultural characteristic, biochemical activity and virulence factors of infective micro-organisms
2. enlist the methods of disinfection and sterilization required in Microbiology service laboratory and to control and prevent hospital and community acquired infections.
3. describe the modes and sources of transmission of pathogenic organisms.
4. describe universal safety precautions, biomedical waste disposal.
5. give examples and explain genetic mechanisms of drug resistance in bacteria.
6. explain the various mechanisms and types of immunity.
7. enlist various immunological reactions and their role in diagnostic microbiology
8. describe normal and abnormal immune response and their role in the pathogenesis of various clinical conditions.

Skill:

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

1. perform commonly used staining techniques like Gram stain and ZN stain.
2. choose the correct method of collection, storage and transport of clinical material for microbiological investigations.
3. interpret laboratory investigations (eg. culture, biochemical reactions, antibiotic sensitivity, serological reactions etc.) for the diagnosis of infectious diseases.
4. enlist methods of sterilization used, biomedical waste management and hand hygiene.

Knowledge:

At the end of the IV semester, the student should be able to:

1. list pathogenic bacteria and fungi and state their sources and modes of transmission
2. Describe the pathogenesis of the diseases produced by them
3. Select the appropriate laboratory procedures for identification of causative agents (bacteria and fungi).
4. Justify treatment, general measures and vaccines available for prevention of infections caused by bacteria and fungi.

Skill:

At the end of the IV semester, the student should be competent to:

1. Perform commonly employed bed-side tests for detection of bacteria and fungi such as Gram staining, ZN staining.
2. Choose laboratory investigations for the diagnosis of infectious diseases caused by bacteria / fungi and correlate the clinical manifestations with the etiological agent.
3. Choose and interpret antimicrobial sensitivity tests to select suitable antimicrobial agents
4. Perform commonly employed bed-side tests for detection of infectious agents such as blood film for malaria, kala azar and stool sample for ova/cyst.

Knowledge:

At the end of the V semester, the student should be able to:

1. list pathogenic micro-organisms (Parasites and viruses) and describe the life cycle (for parasites) and pathogenesis of the diseases produced by them
2. Identify the common infectious agents with the help of laboratory procedures.
3. Describe the scope of immunotherapy and different vaccines available for prevention of communicable diseases.

4. Enumerate organisms causing various clinical syndromes. Describe laboratory diagnosis of these clinical syndromes

Skill:

At the end of the V semester, the student should be competent to:

1. Perform commonly employed bed-side tests for detection of infectious agents such as blood film for Filariasis and stool sample for ova/cyst.
2. Analyze laboratory investigations for the diagnosis of parasitic, fungal and viral infectious diseases and to correlate the clinical manifestations with the etiological agent.
3. Organize various laboratory tests for diagnosis of clinical syndromes Caused by infectious agents.

DEPARTMENT OF FMT

Goal

To create a physician who has knowledge about medico-legal responsibility during his/her practice of medicine. He/ she acquires knowledge of law in relation to Medical Practice, Medical Negligence and respect for codes of Medical Ethics.

Objectives

Knowledge

At the end of the course in Forensic Medicine, the M.B.B.S. student will be able to

1. Understand the basic concept, scope and importance of this subject.
2. Understand the medico-legal responsibilities of a physician while rendering community service in rural or urban health centre.
3. Appreciate the physician's responsibilities in criminal matters and respect forcodes of Medical Ethics.
4. Diagnose, manage and identify the legal aspects of common acute and chronic poisoning cases.
5. Observe medico-legally important findings and their interpretation in medicolegal autopsies.
6. Preserve and dispatch relevant viscera, articles and trace evidence to Forensic science laboratory and interpret the FSL report.
7. Detect occupational and environmental poisoning, their legal aspects, particularly pertaining to Workman's Compensation Act.
8. Identify the basic medico-legal aspects of hospital and general practice.

Skills

At the end of the course, the student shall be able to

1. Make observations and logical inferences to initiate enquiries in medico-legal problems and criminal matters.
2. Conduct medico-legal examination and proper documentation/ reporting of cases of injuries and age estimation.
3. Conduct examination in cases of sexual offences and alcohol intoxication.
4. Preserve relevant ancillary materials for further medico-legal examination.
5. Understand the process of diagnosis and management of poisoning cases.
6. Identify important post-mortem findings in common unnatural deaths.
7. Understand the importance of preparations of certificates eg. Birth and Death, Dying declaration, etc.
8. Observe ten medico-legal autopsies and prepare the records in practical journal.
9. Understand the proper drafting of consent forms.

Competencies

The ideal way to observe some competencies is to conduct examination and assessment in casualty, wards or mortuary.

Skill	Module	Observable in students
External examination of patient/ dead body	Photographs/A-V media	Interpretation by student

Skill	Module	Observable in students
Injuries/Pattern of injuries	Photographs, Actual cases (not feasible)	Identification and interpretation
Asphyxia signs	Photographs of various types	Identification and interpretation
Medico-legal/ Pathological conditions	Gross specimens	Identification and interpretation
MCCD	Case reports	Preparation of report
Sexual assault reporting	Case reports	Report preparation
Sickness certificate	Case reports	Report preparation
Evidence collection in admitted cases	Poisoning cases	Preparation of list of samples to be preserved
Reporting to appropriate authorities	Notifiable diseases/ correspondence with police	Report preparation
Determining natural/unnatural deaths	Case reports	Report preparation
Signs of death	Photos/ e-modules	Interpretation and inference
Consent	Hypothetical operations/case scenarios	Forming of consent
Communication skills	Hypothetical cases	How student communicates to fellow student/ teacher
Collection of trace evidence	Hypothetical cases of assault/alcohol/drugs/sexual offences	List to be prepared by the student
Medical Records	Hypothetical cases	Method and duration of preservation

Integration

The department shall provide an integrated approach towards allied disciplines like Pathology, Pharmacology, Medicine, Psychiatry, Radiology, Forensic Sciences, Hospital administration, etc. to impart thorough and comprehensive training regarding medico-legal duties and responsibilities of physician at all levels of health care.

DEPARTMENT OF COMMUNITY MEDICINE

Goal

To prepare students to function as proficient Community Physician in contemporary health needs and accountable to community.

Objectives

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 to understand the principles of health economics, health administration,
10. Health education in relation to community.

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, analyze, 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 organization of health care services and implementations of national health programmes.

Integration

The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the impact of environment, society and national health priorities as they relate to the promotion of health and prevention and cure of disease.

Competencies

The student must demonstrate:

1. Understanding of physical, social, psychological, economic and environmental determinants of health and disease,
2. Ability to recognize and manage common health problems including physical, emotional and social aspects at individual family and community level in the context of National Health Programmes,
3. Ability to Implement and monitor National health programmes in the primary care setting
4. Knowledge of maternal and child wellness as they apply to national health care priorities and programmes,
5. Ability to recognize, investigate, report, plan and manage community health problems and emergencies
6. Ability to recognize, investigate, report and manage community health problems and emergencies.

DEPARTMENT OF ENT:

Goal

To create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness in the field of ENT, so that he or she may function appropriately and effectively as a general physician or Surgeons

OBJECTIVES

Knowledge

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

1. Common Oto-rhino laryngological (ENT) problems and emergencies.
2. Ability to recognize, diagnose and
3. Ability to recognize hearing impairment and refer to the appropriate Hearing Impairment Rehabilitation Programme

Skills

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

1. Perform simple ENT procedures
2. Manage common ENT emergencies and problems as applicable in a primary care setting.

Integration

The teaching will be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of ENT problems, their management and correlation with function, rehabilitation and quality of life.

Competencies

At the end of the course, the student must demonstrate:

1. Knowledge of the common Oto-rhino laryngological (ENT) emergencies and problems,
2. Ability to recognize, diagnose and manage common ENT emergencies and problems in primary care setting.
3. Ability to perform simple ENT procedures as applicable in a primary care setting.
4. Ability to recognize hearing impairment and refer to the appropriate hearing impairment rehabilitation programme

DEPARTMENT OF OPHTHALMOLOGY

GOAL

The broad goal of the teaching of students in ophthalmology is to provide such knowledge and skills to the student that shall enable him/her 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.

OBJECTIVES

Knowledge

At the end of the course, the student shall have the knowledge of

1. Common problems affecting the eye
2. Principles of management of 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 minimize 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 for control of blindness and its implementation at various levels
8. Eye care education for prevention of communicable eye problems
9. Role of primary health centre in organization of eye camps
10. Role of the ophthalmic assistant / ASHA workers in providing primary ophthalmic care
11. Integration of the national programme for control of blindness with the other national health Programmes
12. Eye bank organization

Skills

At the end of the course, the student shall 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 the eye, non-contact tonometry, conjunctival smear examination, corneal staining, confrontation perimetry, direct ophthalmoscopy, and Cover test
3. Diagnose and treat common problems affecting the eye
4. Interpret ophthalmic signs in relation to common systemic disorders conjunctival foreign body removal, contact lens insertion and care, Nasolacrimal duct syringing and tarsorrhaphy
5. Provide first aid in major ophthalmic emergencies
6. Assist to organize community surveys for visual check up
7. Assist to organize primary eye care service through primary health centres
8. Use effective means of communication with the public and individual to motivate for surgery in cataract and for eye donation.

Integration

The undergraduate training will provide an integrated approach towards other disciplines especially Neuro-sciences, ENT, Radiology, Pediatrics and Medicine in relation to ophthalmology

Competencies:

At the end of the course, the student must demonstrate:

1. Knowledge of common eye problems in the community
2. Recognize, diagnose and manage common eye problems
3. Identify indications for referral
4. Ability to recognize visual impairment and blindness in the community and implement National programmes as applicable in the primary care setting

DEPARTMENT OF GENERAL MEDICINE:

GOALS

Goal of medical graduate course is aligned with National Goal and Bharati Vidyapeeth Deemed University Goal as 'Efficient first contact physician' and 'Social transformation through Dynamic education'respectively.

The undergraduate medical education programme is designed with a **goal** to create an **"Indian Medical Graduate" (IMG)** possessing requisite knowledge, skills, attitudes, values and responsiveness, so that he or she may function appropriately and effectively **as a physician of first contact of the community** while being globally relevant.

In order to fulfil this goal, the IMG must be able to function in the following **ROLES** Appropriately and effectively and these are viz. a Clinician, a Leader and member of the health care team and system, a Communicator, a Professional and a Lifelong learner.

OBJECTIVES

Knowledge Based –

At the end of the course, Student should be able to-

1. Diagnose common clinical disorders in various system such as respiratory, gastrointestinal, neurological, endocrinological, nutritional, hematological, renal & rheumatological & geriatrics.
2. Order appropriate 1st line investigations & able to interpret the results of the same to make a diagnosis.
3. Provide basic treatment for the above conditions.
4. Outline various modes of management including but not limited to drug therapeutics especially dosage, side effects, toxicity, interactions, indications, & contraindications.
5. Provide prompt 1st level management of various medical emergencies in a competent & efficient manner.
6. Decide the level & timing of referral independently according to patient's condition.
7. Understand the basic concept of triage in cases of natural /artificial calamities.
8. Know about basic life support system.

Skill Based –

At the end of the course, Student should be able to-

1. Develop basic clinical skills & appropriate bedside manners & etiquettes e.g History taking
2. Competently & independently perform general as well as various systemic examinations.
3. Be familiar to instruments needed for examination & properly use them as & when needed.
4. Perform simple investigations like Blood, urine, stool, sputum examinations
5. Assist in common bedside procedures, like Pleural tapping, Ascitic tapping, Lumbar puncture, Bone marrow aspiration, Liver & Kidney biopsy, CVP line insertion, intubation.
6. Secure airway protection & perform CPR
7. Give intramuscular injection, Intravenous injection, Subcutaneous injection, Intradermal injection
8. Perform simple procedures like Intracath insertion, Foley's catheter, Ryle's tube insertion

Attitudinal & Communication based

At the end of the course, Student should be able to-

1. Do counselling of patients & relatives regarding the illness.

2. Communicate with the patient and relatives about the severity of the disease and help them making informed decisions and consent for the same.
3. Communicate regarding investigation and treatment plans especially if any interventional management is needed.
4. Show empathy in cases of general patient problems & in case of terminal illness e.g. Malignancies.

Integration

1. With community medicine to have adequate knowledge about basic prevention of disease and about the national health programmes.
2. With physical medicine & rehabilitation to be able to view patient in his/her total physical, social, & Economic milieu & accordingly suggest rehabilitation programme best suited to individual patient.
3. With other relevant departments which provide to form scientific basis of clinical medicine eg. Anatomy, Physiology, Biochemistry, Microbiology, Pathology, & Pharmacology.

Competencies

The undergraduate student must demonstrate:

- Understanding of the structural and functional basis, principles of diagnosis and management of common Medical problems in adults.
- Ability to choose, calculate and administer appropriately intravenous fluids, electrolytes, blood and blood products based on the clinical condition.
- Ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic utilities of antibiotics and universal precautions in Medical practice.
- Knowledge of common diseases in India e.g. Malaria, TB, Dengue, HIV and their prevention, early detection and therapy.
- Ability to perform common medical procedures at the primary care level.
- Ability to recognize, resuscitate, stabilize and provide basic life support to patients.
- Ability to take informed consent and counsel patient prior to Medical procedures,
- Commitment to advancement of quality and patient safety in Medical practice.

DEPARTMENT OF PSYCHIATRY

GOAL:

To teach undergraduate students the basics of Psychology and Psychiatry.

Impart such knowledge and skills that may enable them to approach psychiatry patients in an appropriate way, diagnose and treat common psychiatric disorders, handle common psychiatric emergencies and refer disorders to specialists.

OBJECTIVES:

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

1. Understand the biopsychosocial model of psychiatric disorders
2. Know the current classification of psychiatric disorders
3. Know the clinical features, diagnosis and management of common psychiatric and neuropsychiatric disorders
4. Have the ability to recognise and manage common psychological disorders in primary care settings and refer appropriately
5. Recognise substance use disorders and refer appropriately
6. Identify and assess risk of suicide and refer
7. Have the ability to recognise temperamental issues and personality disorders and refer
8. Be able to identify and refer cases of intellectual disability
9. Should be aware of preventive, promotive, curative, rehabilitative services and medicolegal implications in the care of psychiatric patients, both in family and community
10. Have the ability to promote mental health and hygiene

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

1. Interview patients and understand different methods of communications in Doctor Patient relationship
2. Elicit detailed psychiatric case history, mental status examination (MSE)
3. Define, elicit and interpret psychopathological symptoms & signs
4. Diagnose and manage common psychiatric disorders

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

Counsel patients and family on their understanding of the disorder, management of the disorder and guide them to seek expert help if required

COMPETENCIES: At the end the student should be able to

Use his knowledge to treat common psychiatric conditions and refer appropriately

DEPARTMENT OF DERMATOLOGY

GOALS:

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

OBJECTIVES:

Knowledge:

At the end of the course of Dermatology, Sexually Transmitted Diseases & Leprosy 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 comparative knowledge of various modes of topical therapy.
3. Demonstrate the mode of action of commonly used drugs, their doses, side effects / toxicity, indications and contraindication & interactions.
4. Describe commonly used modes of management including the medical & surgical procedures available for the treatment of various diseases and to offer a comparative plan of management for a given disorder.

Skills:

The student shall 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 laboratory 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.

DEPARTMENT OF PEDIATRICS

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.

OBJECTIVES:

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

- Describe the normal growth and development during foetal life, neonatal period, childhood and adolescence and outline deviations
- Describe the common pediatric disorders and emergencies in terms of epidemiology, etiopathogenesis, clinical manifestations, diagnosis, rational therapy and rehabilitation.
- State age related requirements of calories, nutrients, fluids, drugs etc. in health and disease.
- Describe preventive strategies for common infectious disorders, malnutrition, genetic and metabolic disorders, poisonings, accidents and child abuse.
- Outline national programmes relating to child health including immunization programmes.

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

- 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.
- Take anthropometric measurements, resuscitate newborn infants at birth (ambu bag) , prepare oral rehydration solution, perform tuberculin test, administer vaccines available under current national programs, know how to perform venesection, start an intravenous saline, perform intraosseus needle insertion and provide nasogastric feeding.
- Observe diagnostic procedures such as lumbar puncture, liver and kidney biopsy, bone marrow aspiration, pleural tap, ascitic tap.
- 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.
- Provide ambulatory care to all sick children, identify indications for specialized/inpatient care and ensure timely referral.

Communication

- Able to provide Counselling of mothers regarding breast feeding, weaning, immunization and hygiene.

INTEGRATION

- With Obstetrics for newborn care, PSM for Immunization and nutritional programs, pediatric surgery for common surgical problems in neonate and childhood.

Competencies:

The student is expected to demonstrate targeted history taking, basic clinical signs on general and systemic examination. Arrive at a plausible diagnosis, formulate rational differential diagnosis and plan appropriate investigations and treatment.

DEPARTMENT OF PULMONARY MEDICINE

GOAL

The aim of teaching the undergraduate student in Tuberculosis and Chest Diseases is to impart such knowledge and skills that may enable him/her to diagnose and manage common ailments affecting the chest with the special emphasis on management and prevention of Tuberculosis and especially National Tuberculosis control programme.

OBJECTIVES

Knowledge

At the end of the course of Tuberculosis and Chest diseases, the student shall be able to:

1. Demonstrate sound knowledge of common chest 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 medical and surgical procedures available for treatment of various diseases and to offer a comprehensive plan of management inclusive of National Tuberculosis Control Programme.

Skills

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

1. Interview the patient, elicit relevant and correct information and describe the history in chronological order;
2. Conduct clinical examination, elicit and interpret clinical findings and diagnose common respiratory disorders and emergencies;
3. Perform simple, routine investigative and office procedures required for making the bed side diagnosis, especially sputum collection and examination for etiologic organisms especially Acid Fast Bacilli (AFB), interpretation of the chest x-rays and respiratory function tests;
4. Interpret and manage various blood gases and PH abnormalities in various respiratory diseases.
5. Manage common diseases recognizing need for referral for specialized care, in case of inappropriateness of therapeutic response;

Communication

Integration

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

and Social Medicine

Competencies

The student is expected to:

Assist in the performance of common procedures, like laryngoscopic examination, pleural aspiration, respiratory physiotherapy, endotracheal intubation and pneumo-thoracic drainage/aspiration

DEPARTMENT OF GENERAL SURGERY

The learner must achieve the following objectives by the time he/she completes the course. The objectives are defined under following domains

Knowledge-

The Learner should --

1. Understand the Basic Sciences relevant to General Surgery.
2. Be able to describe aetiology, pathophysiology, principles of diagnosis and management of common surgical problems and emergencies of all age groups.
3. Be able to describe indications and methods for fluid and electrolyte replacement therapy and blood and blood product transfusions.
4. Be able to describe common malignancies and their management as well as prevention and screening program for early detection.
5. Be able to identify the need of surgery and timely reference to the center and specialist for further management.
6. Be able to identify the area of interest and field for specialization for postgraduate course
7. Be able to update himself/herself by self-study, CMEs, Conferences.

Skills -

The Learner should

1. Be able to take proper clinical history, conduct thorough clinical examination of the patient, perform essential diagnostic procedures and advice relevant tests and interpret them to come to a reasonable diagnosis.
2. Be able to provide basic and advanced life support (BLS & ATLS) in emergency conditions.
3. Be able to plan & manage acute surgical emergencies and trauma under supervision
4. Be able to manage wounds thoroughly including burns.
5. Be able to perform minor operative procedures under supervision.

Communication Abilities, Human Values, Ethical Practice

The learner should

1. Adopt ethical principles in all aspects of surgical practice.
    a. Foster professional honesty and integrity.
    b. Deliver surgical care to needy irrespective of social status, cast, creed or religion.
2. Develop communication skills
    a. To break bad news to the patient, relatives.
    b. To develop congenial working atmosphere.
3. Accept humbly limitations of his/her knowledge and skill and should not hesitate to ask for help from colleagues when needed.
4. Respect patient's rights to information and to seek a second opinion.

Integration –

Integration can be incorporated at various levels by -

a. Aligning our curriculum with the other related subjects taught at the same time e.g. Inflammation and wound healing with pathology department
b. Interdepartmental seminars
c. With the radiology department for tutorials on x-rays and related procedures

Competencies

The undergraduate student must demonstrate:

1. Understanding of the structural and functional basis, principles of diagnosis and management of common Surgical problems in adults and children,
2. Ability to choose, calculate and administer appropriately intravenous fluids electrolytes, blood and blood Products based on the clinical condition,
3. Ability to apply the principles of asepsis, sterilization, disinfection, rational use of prophylaxis, therapeutic Utilities of antibiotics and universal precautions in surgical practice,
4. Knowledge of common malignancies in India and their prevention, early detection and therapy,
5. Ability to perform common diagnostic and surgical procedures at the primary care level,
6. Ability to recognize, resuscitates, stabilize and provide basic life support patients following trauma,
7. Ability to administer informed consent and counsel patient prior to surgical procedures,
8. Commitment to advancement of quality and patient safety in surgical practice.

DEPARTMENT OF ANAESTHESIOLOGY

GOAL-: The UG student should know basic concepts in anaesthesia and resuscitation.

OBJECTIVES -: The UG student should know

1. Terminologies
2. Types of anaesthesia
3. Resuscitation: BLS and ACLS
4. Bag and mask ventilation

Knowledge

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

1) Different types of anaesthesia
2) Drugs used in general, regional and local anaesthesia.
3) Complications associated with different types of anaesthesia and their management.
4) Cardiopulmonary resuscitation

Skills

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

1) Perform venepuncture and set intravenous drip.
2) Able to secure airway patency, administer oxygen by AMBU bag
3) Perform BLS
4) Basic monitoring

Communication

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

1) Take proper history, during pre-anaesthesia evaluation.
2) Explain and take proper consent from patients and relatives (under super vision).

Integration: Anatomy & Critical Care Department

Competencies: The student is expected to demonstrate:

1) Venepuncture
2) Secure airway patency and administration of oxygen by AMBU bag (BMV- Bag mask ventilation).
3) Administer local anaesthesia
4) Able to perform BLS (CPR)

DEPARTMENT OF ORTHOPAEDICS

GOAL

Training A Student to Become A Physician Of First Contact.

OBJECTIVES

1. Diagnosis and Primary Treatment of General Orthopaedic Conditions.
2. Ii) Education of Society for Prevention and Primary Care in Road Traffic Accidents.
3. Iii) Recognizing Need of Multi -Specialty in Trauma Services.
4. Iv) Participation in National Programme for Paediatric Deformity Correction.

COMPETENCIES

1. Tests for Examination of Joints and Trauma Patients
2. Ii) Clinical Neurovascular Signs
3. Iii) Immobilization (Splints) Of Limb and Spine in Trauma Patients

DEPARTMENT OF OBSTETRICS AND GYNECOLOGY

GOALS:

The broad goal of the teaching of undergraduate students in Obstetrics and Gynecology is that he /she shall acquire understanding of anatomy, physiology and pathophysiology of the reproductive system.

The student shall learn the diagnostic and treatment modalities of management of common clinical conditions related to Obstetrics & Gynecology.

OBJECTIVES:

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

1. Outline the anatomy, physiology and pathophysiology of the reproductive system and the common conditions affecting it.
2. Diagnose normal pregnancy, labour, puerperium and learn the management related to common obstetric emergencies.
3. List the leading causes of maternal, perinatal morbidity and mortality.
4. Understand the principles of contraception and various techniques/methods employed, methods of medical termination of pregnancy, sterilization and their complications.
5. Identify the use, abuse and side effects of drugs in pregnancy and gynaecological conditions.
6. Describe the national program of maternal and child health and family welfare and their implementation at various levels.
7. Learn common gynecological diseases and describe principles of their management..
8. State the indications, techniques and complications of surgeries like operative deliveries, laparotomy, hysterectomy, gynecological surgical procedures, and various methods for Medical Termination of Pregnancy (MTP).
9. Should be able to identify fertility related issues, causative factors, baseline investigations, examination and management principles.
10. Should know the implications of MTP & PCPNDT act.

Skills: At the end of the course, the student shall be able to:

1. Adopt the proper technique of detailed gynecological and obstetrical history taking
2. Properly examine a pregnant woman and identify high-risk pregnancies, and refer the high risk patient to tertiary care after giving proper basic management.
3. Conduct a normal delivery, identify complications and counsel regarding postnatal care including breast feeding and contraception.
4. To demonstrate mechanism of labour on dummy and pelvis.
5. Learn the technique of resuscitation of the new-born and examine a new-born for congenital anomalies.
6. Participate in counseling of a couple on the use of various available contraceptive techniques and assist in insertion and removal of intra-uterine contraceptive devices.
7. Perform pelvic examination under supervision to understand normal anatomy
8. Make a vaginal cytological smear (PAP smear), perform visual inspection of cervix with acetic acid (VIA test) and make a wet vaginal smear.
9. Interpret correctly the common investigations like biochemical, histopathological, microbiological, and radiological ultrasound etc and advice referral.

INTEGRATION

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

Also the student will be aware of judiciously using prescription medicines in women especially of reproductive age group.

The student shall be aware of the medico-legal issues related to the subject.

(III) COMPETENCIES:

a. Competency in Obstetrics: The student must demonstrate ability to:

i. Provide peri-conceptional counseling and antenatal care,

ii. Identify high-risk pregnancies and refer appropriately,

iii. Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings,

iv. Prescribe drugs safely and appropriately in pregnancy and lactation,

v. Diagnose complications of labor, institute primary care and refer in a timely manner,

vi. Perform early neonatal resuscitation,

vii. Provide postnatal care, including education in breast-feeding,

viii. Counsel and support couples in the correct choice of contraception,

ix. Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetric patient,

x. Apply medico-legal principles as they apply to tubectomy, Medical Termination of Pregnancy (MTP) and Pre-conception and Prenatal Diagnostic Techniques (PC PNDT Act).

b. Competency in Gynecology: The student must demonstrate ability to:

i. Elicit a gynecologic history perform appropriate physical, pelvic examination and PAP smear in the primary care setting,

ii. Recognize diagnose and manage common reproductive tract infections in the primary care setting.

DEPARTMENT OF RADIODIAGNOSIS

The learner must achieve the following objectives by the time he/she completes the course.

The objectives are defined under following domains

i. Knowledge

ii. Skills

iii. Communication Abilities, Human Values, Ethical Practice

i. Knowledge-

The Learner should --

1 Understand the basics of x ray production , ultrasound generation , MRI multislice CT and molecular imaging

2 They should have a basic knowledge of radiation protection

3 Be familiar with cross sectional anatomy along with the two dimensional appearances on x-rays and the physiological processes of the human body.

4 Be familiar with the indications for each modality and recent advances.

5 Be able to advise the patient regarding preparation for the procedures.

ii. Skills -

The Learner should

1. Interpret radiographs of chest, abdomen and bones.

2. Be familiar with FAST.

iii. Communication Abilities, Human Values, Ethical Practice

The learner should

1. Be able to communicate with the patient regarding the radiological findings and appropriate management.

2. Be able to communicate with the patient regarding the radiation hazards, contraindications and precautions of iodinated contrast, MRI.

3. Be able to convey the importance of the PCPNDT act

iv. Integration –

Integration can be incorporated at various levels by -

a) Interdepartmental seminars with Pediatric Neurology (weekly), ENT, Ophthalmology,

Surgery department

c) With the surgery and medicine departments for tutorials on x-rays and related procedures

Competency

The undergraduate student must demonstrate judicious use of the imaging modalities

available to enable efficient, appropriate and timely management of the patient.

As per Medical Council of India Competency Based Undergraduate Curriculum for The Indian Medical Graduate 2018

Objectives of the Indian Graduate Medical Training Programme:

The undergraduate medical education program is designed with a goal to create an "Indian Medical Graduate" (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant.

To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby prescribed: -

National Goals

At the end of undergraduate program, the Indian Medical Graduate 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 fulfil his/her social obligations towards realization of this goal.
(b) learn every aspect of National policies on health and devote herself/himself 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 observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

Institutional Goals

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 Indian Medical Graduates 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, action research and documentation skills.
(f) be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:

(i) Family Welfare and Maternal and Child Health (MCH);
(ii) Sanitation and water supply;
(iii) Prevention and control of communicable and non-communicable diseases;

(iv) Immunization;
(v) Health Education;
(vi) Indian Public Health Standards (IPHS) at various level of service delivery;
(vii) Bio-medical waste disposal; and
(viii) Organizational and or institutional arrangements.

(g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counselling.
(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.
(k) have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

Competency Based Training Programme

Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion

- Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.
- Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.
- Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural
- Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion,
- health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is
- contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.
- Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.

- Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:
    - Disease prevention,
    - Health promotion and cure,
    - Pain and distress alleviation, and
    - Rehabilitation and palliation.
- Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.
- Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.
- Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

Leader and member of the health care team and system

- Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.
- Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.
- Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.
- Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

Communicator with patients, families, colleagues and community

- Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.
- Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.
- Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision making.

Lifelong learner committed to continuous improvement of skills and knowledge

- Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.
- Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.
- Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.
- Demonstrate ability to search (including through electronic means), and critically revaluate the medical literature and apply the information in the care of the patient.
- Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession

- Practice selflessness, integrity, responsibility, accountability and respect.
- Respect and maintain professional boundaries between patients, colleagues and society.
- Demonstrate ability to recognize and manage ethical and professional conflicts.
- Abide by prescribed ethical and legal codes of conduct and practice.
- Demonstrate a commitment to the growth of the medical profession as a whole.