

**(MEDICAL COLLEGE & HOSPITAL)****Accredited by NAAC 'A' Grade****ISO 9001:2008 Recognised**

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## **PROGRAMMES SPECIFIC LEARNING OUTCOMES**

### **Indian Medical Graduate Training Programme (Medical Graduate attributes)**

#### **• Indian Medical Graduate Training Programme Specific Attributes:**

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 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 programme are hereby prescribed:

#### **• National Goals**

At the end of undergraduate program, the Indian Medical Graduate should be able to:

1. Recognize “health for all” as a national goal and health right of all citizens and by undergoing training for medical profession to fulfill his/her social obligations towards realization of this goal.
2. Learn every aspect of National policies on health and devote her/him to its practical implementation.
3. Achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
4. Develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
5. Become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

#### **• Institutional Goals**

1. 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, palliative and rehabilitative medicine in respect to the commonly encountered health problems.
  - c. Appreciate rationale for different therapeutic modalities; be familiar with the administration of “essential medicines” and their common adverse 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 Programmes 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 levels of service delivery
  - VII. Bio-medical waste disposal
  - VIII. Organizational and/or institutional arrangements.
- a. Acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, hospital management, inventory skills and counseling.
- b. 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.
- c. Be able to work as a leading partner in health care teams and acquire proficiency in communications skills.
- d. Be competent to work in a variety of health care settings.
- e. 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.

• **Goals and Roles for the Learner**

In order to fulfill the goal of the IMG training programme, the medical graduate must be able to function in the following roles appropriately and effectively:-

- 2.3.1. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
- 2.3.2. Leader and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.
- 2.3.3. Communicator with patients, families, colleagues and community.
- 2.3.4. Lifelong learner committed to continuous improvement of skills and knowledge.
- 2.3.5. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfill the roles as listed above the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

**1. *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, behavioural 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, judgement 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 frame works.
- 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:

- i. Disease prevention,
- ii. Health promotion and cure,
- iii. Pain and distress alleviation, and
- iv. Rehabilitation.
  - 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.

## **2. *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) cancers, in collaboration with other members of the health care team.

## **3. *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.

4. ***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 evaluate 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.

5. ***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.

➤ **Course/Subject-wise outcomes**

- **Human Anatomy:**

The undergraduate must demonstrate:

- 1 Understanding of the gross and microscopic structure and development of human body,
- 2 Comprehension of the normal regulation and integration of the functions of the organs and systems on basis of the structure and genetic pattern,
- 3 Understanding of the clinical correlation of the organs and structures involved and interpret the anatomical basis of the disease presentations.

- **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems with clinical correlation that will provide a context for the learner to understand the relationship between structure and function and interpret the anatomical basis of various clinical conditions and procedures.

- **Physiology:**

The undergraduates must demonstrate:

- 1 Understanding of the normal functioning of the organs and organ systems of the body,

- 2 Comprehension of the normal structure and organization of the organs and systems on basis of the functions,
  - 3 Understanding of age-related physiological changes in the organ functions that reflect normal growth and development,
  - 4 Understand the physiological basis of diseases.
- **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems in order to provide a context in which normal function can be correlated both with structure and with the biological basis, its clinical features, diagnosis and therapy.

- **Biochemistry:**

The learner must demonstrate an understanding of:

- 1 Biochemical and molecular processes involved in health and disease,
- 2 Importance of nutrition in health and disease,
- 3 Biochemical basis and rationale of clinical laboratory tests, and demonstrate ability to interpret these in the clinical context.

- **Integration:** The teaching/learning programme should be integrated horizontally and vertically, as much as possible, to enable learners to make clinical correlations and to acquire an understanding of the cellular and molecular basis of health and disease.

- **Introduction to Community Medicine:**

The undergraduate must demonstrate:

- 1 Understanding of the concept of health and disease,
- 2 Understanding of demography, population dynamics and disease burden in National and global context,
- 3 Comprehension of principles of health economics and hospital management,
  - Understanding of interventions to promote health and prevent diseases as envisioned in National and State Health Programmes.

- **Pathology:**

The undergraduate must demonstrate:

- 1 Comprehension of the causes, evolution and mechanisms of diseases,
  - 2 Knowledge of alterations in gross and cellular morphology of organs in disease states,
  - 3 Ability to correlate the natural history, structural and functional changes with the clinical manifestations of diseases, their diagnosis and therapy,
- **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems recognizing deviations from normal structure and function and clinically correlated so as to provide an overall understanding of the etiology, mechanisms, laboratory diagnosis, and management of diseases.

- **Microbiology:**

The undergraduate learner demonstrates:

- 1 Understanding of role of microbial agents in health and disease,
- 2 Understanding of the immunological mechanisms in health and disease,
- 3 Ability to correlate the natural history, mechanisms and clinical manifestations of infectious diseases as they relate to the properties of microbial agents,
- 4 Knowledge of the principles and application of infection control measures,
- 5 An understanding of the basis of choice of laboratory diagnostic tests and their

interpretation, antimicrobial therapy, control and prevention of infectious diseases.

- **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems with emphasis on host-microbe-environment interactions and their alterations in disease and clinical correlations so as to provide an overall understanding of the etiological agents, their laboratory diagnosis and prevention.

- **Pharmacology:**

The undergraduate must demonstrate:

- 1 Knowledge about essential and commonly used drugs and an understanding of the pharmacologic basis of therapeutics,
- 2 Ability to select and prescribe medicines based on clinical condition and the pharmacologic properties, efficacy, safety, suitability and cost of medicines for common clinical conditions of national importance,
- 3 Knowledge of pharmacovigilance, essential medicine concept and sources of drug information and industry-doctor relationship,
- 4 Ability to counsel patients regarding appropriate use of prescribed drug and drug delivery systems.

- **Integration:** The teaching should be aligned and integrated horizontally and vertically in organ systems recognizing the interaction between drug, host and disease in order to provide an overall understanding of the context of therapy.

- **Forensic Medicine and Toxicology:**

The learner must demonstrate:

- 1 Understanding of medico-legal responsibilities of physicians in primary and secondary care settings,
- 2 Understanding of the rational approach to the investigation of crime, based on scientific and legal principles,
- 3 Ability to manage medical and legal issues in cases of poisoning / overdose,
- 4 Understanding the medico-legal framework of medical practice and medical negligence,
- 5 Understanding of codes of conduct and medical ethics.

- **Integration:** The teaching should be aligned and integrated horizontally and vertically recognizing the importance of medico-legal, ethical and toxicological issues as they relate to the practice of medicine.

- **General Medicine:**

The student must demonstrate ability to do the following in relation to common medical problems of the adult in the community:



- 1 Demonstrate understanding of the patho-physiologic basis, epidemiological profile, signs and symptoms of disease and their investigation and management,
- 2 Competently interview and examine an adult patient and make a clinical diagnosis,
- 3 Appropriately order and interpret laboratory tests,
- 4 Initiate appropriate cost-effective treatment based on an understanding of the rational drug prescriptions, medical interventions required and preventive measures,
- 5 Follow up of patients with medical problems and refer whenever required,
- 6 Communicate effectively, educate and counsel the patient and family,
- 7 Manage common medical emergencies and refer when required,
- 8 Independently perform common medical procedures safely and understand patient safety issues.

- **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide sound biologic basis and incorporating the principles of general medicine into a holistic and comprehensive approach to the care of the patient.

- **General Surgery:**

The 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, resuscitate, stabilize and provide Basic & Advanced Life Support to 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.

- **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide a sound biologic basis and a holistic approach to the care of the surgical patient.

- **Obstetrics and Gynaecology:**

**Obstetrics:** The student must demonstrate ability to:

- 1 Provide peri-conceptional counseling and antenatal care,
- 2 Identify high-risk pregnancies and refer appropriately,
- 3 Conduct normal deliveries, using safe delivery practices in the primary and secondary care settings,
- 4 Prescribe drugs safely and appropriately in pregnancy and lactation,
- 5 Diagnose complications of labor, institute primary care and refer in a timely manner,
- 6 Perform early neonatal resuscitation,
- 7 Provide postnatal care, including education in breast-feeding,
- 8 Counsel and support couples in the correct choice of contraception,
- 9 Interpret test results of laboratory and radiological investigations as they apply to the care of the obstetricpatient,
- 10 Apply medico-legal principles as they apply to tubectomy, Medical Termination of Pregnancy (MTP), Pre-conception and Prenatal Diagnostic Techniques (PC-PNDT Act) and other related Acts.

- **Gynecology:**

The student must demonstrate ability to:

- 1 Elicit a gynaecologic history; perform appropriate physical and pelvic examinations and PAP smear in the primary care setting,
- 2 Recognize, diagnose and manage common reproductive tract infections in the primary care setting,
- 3 Recognize and diagnose common genital cancers and refer them appropriately.
  - **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for women in their reproductive years and beyond, based on a sound knowledge of structure, functions and disease and their clinical, social, emotional, psychological correlates in the context of national health priorities

- **Paediatrics:**

The student must demonstrate:

- 1 Ability to assess and promote optimal growth, development and nutrition of children and adolescents and identify deviations from normal,
- 2 Ability to recognize and provide emergency and routine ambulatory and First Level Referral Unit care for neonates, infants, children and adolescents and refer as may be

appropriate,

- 3 Ability to perform procedures as indicated for children of all ages in the primary care setting,
- 4 Ability to recognize children with special needs and refer appropriately,
- 5 Ability to promote health and prevent diseases in children,
- 6 Ability to participate in National Programmes related to child health and in conformation with the Integrated Management of Neonatal and Childhood Illnesses (IMNCI) Strategy,
- 7 Ability to communicate appropriately and effectively.

- **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for neonates, infants, children and adolescents based on a sound knowledge of growth, development, disease and their clinical, social, emotional, psychological correlates in the context of national health priorities.

- **Orthopedics (including Trauma):**

The student must demonstrate:

- 1 Ability to recognize and assess bone injuries, dislocation and poly-trauma and provide first contact care prior to appropriate referral,
- 2 Knowledge of the medico-legal aspects of trauma,
- 3 Ability to recognize and manage common infections of bone and joints in the primary care setting,
- 4 Recognize common congenital, metabolic, neoplastic, degenerative and inflammatory bone diseases and refer appropriately,
- 5 Ability to perform simple orthopaedic techniques as applicable to a primary care setting,
- 6 Ability to recommend rehabilitative services for common orthopaedic problems across all ages.

- **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of orthopaedic problems, their management and correlation with function, rehabilitation and quality of life.

- **Community Medicine (Phase III MBBS)**

The learner 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 including malnutrition and emergencies.
  - **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the learner 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.

- **Dermatology, Venereology & Leprosy:**

The undergraduate student must demonstrate:

- 1 Understanding of the principles of diagnosis of diseases of the skin, hair, nail and mucosa,
  - 2 Ability to recognize, diagnose, order appropriate investigations and treat common diseases of the skin including leprosy in the primary care setting and refer as appropriate,
  - 3 A syndromic approach to the recognition, diagnosis, prevention, counseling, testing and management of common sexually transmitted diseases including HIV based on national health priorities,
  - 4 Ability to recognize and treat emergencies including drug reactions and refer as appropriate.
- **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to emphasize the biologic basis of diseases of the skin, sexually transmitted diseases and leprosy and to provide an understanding that skin diseases may be a manifestation of systemic disease.

- **Psychiatry:**

The student must demonstrate:

- 1 Ability to promote mental health and mental hygiene,
- 2 Knowledge of etiology (bio-psycho-social-environmental interactions), clinical features, diagnosis and management of common psychiatric disorders across all ages,
- 3 Ability to recognize and manage common psychological and psychiatric disorders in a primary care setting, institute preliminary treatment in disorders difficult to manage,

and refer appropriately,

- 4 Ability to recognize alcohol/ substance abuse disorders and refer them to appropriate centers,
- 5 Ability to assess risk for suicide and refer appropriately,
- 6 Ability to recognize temperamental difficulties and personality disorders,
- 7 Assess mental disability and rehabilitate appropriately,
- 8 Understanding of National and State programmes that address mental health and welfare of patients and community.

- **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand bio-psycho-social-environmental interactions that lead to diseases/disorders for preventive, promotive, curative, rehabilitative services and medico-legal implications in the care of patients both in family and community.

- **Otorhinolaryngology:**

The learner must demonstrate:

- 1 Knowledge of the common Otorhinolaryngological (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.
- **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the learner to understand the structural basis of ENT problems, their management and correlation with function, rehabilitation and quality of life.

- **Ophthalmology:**

The student must demonstrate:

- 1 Knowledge of common eye problems in the community
  - 2 Recognize, diagnose and manage common eye problems and identify indications for referral,
  - 3 Ability to recognize visual impairment and blindness in the community and implement National programmes as applicable in the primary care setting.
- **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to allow the student to understand the structural basis of ophthalmologic problems, their management and correlation with function, rehabilitation and quality of life.

- **Radio-diagnosis:**

The student must demonstrate:

- 1 Understanding of indications for various radiological investigations in common clinical practice,
  - 2 Awareness of the ill effects of radiation and various radiation protective measures to be employed,
  - 3 Ability to identify abnormalities in common radiological investigations.
- **Integration:** Horizontal and vertical integration to understand the fundamental principles of radiologic imaging, anatomic correlation and their application in diagnosis and therapy.

- **Anaesthesiology:**

The student must demonstrate ability to:

1. Describe and discuss the pre-operative evaluation, assessing fitness for surgery and the modifications in medications in relation to anaesthesia / surgery,
2. Describe and discuss the roles of Anaesthesiologist as a peri-operative physician including pre-medication, endotracheal intubation, general anaesthesia and recovery (including variations in recovery from anaesthesia and anaesthetic complications),
3. Describe and discuss the management of acute and chronic pain, including labour analgesia,
4. Demonstrate awareness about the maintenance of airway in children and adults in various situations,
5. Demonstrate the awareness about the indications, selection of cases and execution of cardiopulmonary resuscitation in emergencies and in the intensive care and high dependency units,
6. Choose cases for local / regional anaesthesia and demonstrate the ability to administer the same,
7. Discuss the implications and obtain informed consent for various procedures and to maintain the documents.
  - **Integration:** The teaching should be aligned and integrated horizontally and vertically in order to provide comprehensive care for patients undergoing various surgeries, in patients with pain, in intensive care and in cardio respiratory emergencies. Integration with the preclinical department of Anatomy, para-clinical department of Pharmacology and horizontal integration with any/all surgical specialities is proposed.

## MD/MS Postgraduate Medical Education Program

### **Learning Outcomes (generic and programme-specific) and Postgraduate Attributes as per the provision of Regulatory bodies and the University**

#### **Goal:-**

The goal of postgraduate medical education shall be to produce a competent specialist and / or a medical teacher as stated in the Post Graduate Medical Education Regulations 2000 and its amendments there of [May2018] -

- (i) Who shall recognize the health needs of the community, and carry out professional obligations ethically and in keeping with the objectives of the national health policy.
- (ii) Who shall have mastered most of the competencies, pertaining to the specialty, that are required to be practiced at the secondary and the tertiary levels of the health care delivery system.
- (iii) Who shall be aware of the contemporary advances and developments in the discipline concerned.
- (iv) Who shall have acquired a spirit of scientific inquiry and is oriented to the principles of research methodology and epidemiology, and
- (v) Who shall have acquired the basic skills in teaching of the medical and paramedical professionals.

#### **General Objectives:-**

At the end of the postgraduate training in the discipline concerned the student shall be able to:

- i. Recognize the importance of the concerned specialty in the context of the health need of the community and the national priorities in the health sector.
- ii. Practice the specialty concerned ethically and in step with the principles of primary health care.
- iii. Demonstrate sufficient understanding of the basic sciences relevant to the concerned specialty.
- iv. Identify social, economic, environmental, biological and emotional determinants of health in a given case, and take them into account while planning therapeutic, rehabilitative, preventive and promotive measures/strategies.
- v. Diagnose and manage majority of the conditions in the specialty concerned on the basis of clinical assessment, and appropriately selected and conducted investigations.
- vi. Plan and advice measures for the prevention and rehabilitation of patients suffering from disease and disability related to the specialty.
- vii. Demonstrate skills in documentation of individual case details as well as morbidity and mortality data relevant to the assigned situation.

- viii. Demonstrate empathy and humane approach towards patients and their families and exhibit interpersonal behavior in accordance with the societal norms and expectations.
- ix. Play the assigned role in the implementation of national health programs, effectively and responsibly.
- x. Organize and supervise the chosen/assigned health care services demonstrating adequate managerial skills in the clinic/hospital or the field situation.
- xi. Develop skills as a self-directed learner; recognize continuing educational needs, select and use appropriate learning resources.
- xii. Demonstrate competence in basic concept of research methodology and epidemiology, and be able to critically analyse relevant published research literature.
- xiii. Develop skills in using educational methods and techniques as applicable to the teaching of medical/nursing students, general physicians and paramedical health workers.
- xiv. Function as an effective leader of a team engaged in health care, research or training.

### **Statement of the Competencies**

Keeping in view the general objectives of postgraduate training, each discipline shall aim at development of specific competencies, which shall be defined and spelt out in clear terms. Each department shall produce a statement and bring it to the notice of the trainees in the beginning of the program so that he or she can direct the efforts towards the attainment of these competencies.

### **Components of the PG Curriculum**

The major components of the PG curriculum shall be:

- Theoretical knowledge
- Practical/clinical Skills
- Training in writing thesis/research articles
- Attitudes, including communication.
- Training in research methodology, medical ethics & medicolegal aspects
- Teaching skills to the undergraduates, juniors and support teams

❖ **Source: Medical Council of India, Regulations on Postgraduate Medical Education, 2000.**

**[Amended up to May 2018].**



### **Course Duration :**

a. M.D. / M.S. Degree Courses:

The course of study shall be for a period of 3 completed years including examinations.(MCI PG REG 2000 10:1)

### **Training Method:**

The postgraduate training for degree shall be of residency pattern. The post graduate shall be trained with graded responsibilities in the management and treatment of patients entrusted to his/her care. The participation of the students in all facets of educational process is essential. Every candidate should take part in seminars, group discussions grand rounds, case demonstration, clinics, journal review meetings, CPC and clinical meetings. Every candidate should be required to participate in the teaching and training program of undergraduate students. Training should include involvement in laboratory and experimental work, and research studies. Basic medical sciences students should be posted to allied and relevant clinical departments or institutions. Exposure to applied aspects of their learning should be addressed. Similarly, clinical subjects' students should be posted to basic medical sciences and allied specialty departments or institutions.

Training of superspeciality [M.Ch] should follow similar pattern. In addition, they have to be trained in advanced techniques of diagnosis and treatment pertaining to their specialty, participate actively in surgical operations as well.

### **Attendance, Progress and Conduct:**

A candidate pursuing degree course should work in the concerned department of the institution for the full period as a full time student. No candidate is permitted to run a clinic/laboratory/nursing home while studying postgraduate course

Each year shall be taken as a unit for the purpose of calculating attendance. Every student shall attend symposia, seminars, conferences, journal review meetings, grand rounds, CPC, case presentation, clinics and lectures during each year as prescribed by the department and not absent himself / herself from work without valid reasons. Every Candidate is required to attend a minimum of 80% of the training during each academic year of the post graduate course. This shall include assignments, assessment of full time responsibilities and participation in all facets of educational process. Provided further, leave of any kind shall not be counted as part of academic term without prejudice to minimum 80% attendance of training period every year. Leave benefits shall be as per university rules.

A post graduate student pursuing degree course in broad specialties, MD, MS required to present one poster presentation, read one paper in national/state conference and to present one research paper which should be published/accepted for publication/sent for publication during the period of his postgraduate studies so as to make him/her to be eligible to appear at the university degree examinations. (MCI, PG 2000, 13.9)

Any student who fails to complete the course in the manner stated above shall not be permitted to appear for the University Examinations.

### **Monitoring Progress of Studies:**

The learning process of students should be monitored through continuous appraisal and regular assessment. It not only helps teachers to evaluate students, but also students to evaluate themselves. The monitoring is done by the staff of the department based on participation of students in various teaching / learning activities. It may be structured and assessment done by using checklists that assess various aspects.

### **The learning out comes to be assessed include:**

- Personal Attitudes,
- Acquisition of Knowledge,
- Clinical and operative skills, skills of performing necessary tests/experiments
- Teaching skills.
- Documentation skills

### **Personal Attitudes:**

The essential items are:

- Caring attitude, empathy
- Initiative in work and accepting responsibilities
- Organizational ability
- Potential to cope with stressful situations and undertake graded responsibility
- Trust worthiness and reliability
- To understand and communicate intelligibly with patients and others
- To behave in a manner which establishes professional relationships with patients and colleagues
- Ability to work in team
- A critical enquiring approach to the acquisition of knowledge

The Methods used mainly consist of observation. Any appropriate methods can be used to assess these. It is appreciated that these items require a degree of subjective assessment by the guide, supervisors and peers. However every attempt should be made to minimize subjectivity.

### **Acquisition of Knowledge:**

**Lectures:** Lectures/theory classes as necessary may be conducted. It is preferable to have one class per week if possible. They may, be employed for teaching certain topics. Lectures may be didactic or integrated.

The following selected common topics for post graduate students of all specialties to be covered are suggested here. These topics can be addressed in general with appropriate teaching-learning methods centrally or at departmental level.

- History of medicine with special reference to ancient Indian medicine
- Basics of health economics and health insurance
- Medical sociology, Doctor –Patient relationship, role of family in disease
- Professionalism & Medical code of Conduct and Medical Ethics
- Research Methods, Bio-statistics
- Use of library, literature search, use of various software and databases.
- Responsible conduct of research
- How to write an article, publication ethics and Plagiarism
- Journal review and evidence based medicine
- Use of computers & Appropriate use of AV aids
- Rational drug therapy
- National Health and Disease Control Programmes
- Roles of specialist in system based practice
- Communication skills.
- Bio medical waste management
- Patient safety, medical errors and health hazards
- Patient's rights for health information and patient charter.

These topics may preferably taken up in the first few weeks of the 1<sup>st</sup> year commonly for all new postgraduates and later in 2<sup>nd</sup> year or 3<sup>rd</sup> year as required during their progression of the programme. The specialty wise topics can be planned and conducted at departmental level.

### **Integrated teaching:**

These are recommended to be taken by multidisciplinary teams for selected topics, eg. Jaundice, Diabetes mellitus, thyroid diseases etc. They should be planned well in advance and conducted.

### **Journal Review Meeting (Journal club):**

The ability to do literature search, in depth study, presentation skills, use of audio – visual aids, understanding and applying evidence based medicine are to be focused and assessed. The assessment is made by faculty members and peers attending the meeting using a

checklist.

**Seminars / symposia:**

The topics should be assigned to the student well in advance to facilitate in depth study. The ability to do literature search, in depth study, presentation skills and use of audio –visual aids are to be assessed using a checklist.

**Clinico-Pathological conferences:**

This should be a multidisciplinary case study of an interesting case to train the candidate to solve diagnostic and therapeutic problems by using an analytical approach. The presenter(s) are to be assessed using a check list similar to that used for seminar.

**Medical Audit:** Periodic morbidity and mortality meeting be held. Attendance and participation in these must be insisted upon. This may not be included in assessment.

**Clinical Skills:** Day to Day Work: Skills in outpatient and ward work should be assessed periodically. The assessment should include the candidates' sincerity and punctuality, analytical ability and communication skills.

**Clinical Meetings:**

Candidates should periodically present cases to his peers and faculty members. This should be assessed using a check list.

**Group discussions:**

Group discussions are one of the means to train and assess the student's ability to analyse the given problem or situation, apply the knowledge and make appropriate decisions. This method can be adopted to train and assess the competency of students in analyzing and applying knowledge.

**Death review meetings/Mortality meetings:**

Death review meetings is important method for reflective learning. A well conducted morbidity and mortality meetings bring about significant reduction in complications, improve patient care and hospital services. They also address system related issues. Monthly meetings should be conducted with active participation of faculty and students. Combined death review meetings may be required wherever necessary.

**Clinical and Procedural Skills:**

The candidate should be given graded responsibility to enable learning by apprenticeship. The performance is assessed by the guide by direct observation. Particulars are recorded by the student in the log book.

**Teaching Skills:**

Candidates should be encouraged to teach undergraduate medical students and paramedical students, if any. This performance should be based on assessment by the faculty members of the department and from feedback from the undergraduate students.

**Attitude and Communication skills:**

Candidates should be trained in proper communication skills towards interaction and communication with patients, attendees and society in general. There should be appropriate

training in obtaining proper written informed consent, discussion and documentation of the proceedings. Structured training in various areas like consent, briefing regarding progress and breaking bad news are essential in developing competencies.

**Variety of teaching:**

Learning methods like Role play, video based training, standardized patient scenarios, reflective learning and assisting the team leader in all these areas will improve the skills. Assessment can be done using OSCE simulated scenarios and narratives or any appropriate means. Training to work as team member, lead the team whenever situation demands is essential. Mock drills to train and assess the readiness are very helpful.

**Work diary / Log Book:**

Every candidate shall maintain a Work Diary/Log Book and record his/her participation in the training programs conducted by the department such as journal reviews, seminars, etc. Special mention may be made of the presentations by the candidate as well as details of clinical or laboratory procedures, conducted by the candidate. A well written and validated Log Book reflects the competencies attained by the learner and points to the gap which needs address. This Log Book shall be scrutinized by concerned teachers periodically and certified, by the Head of Department and Head of the Institution, and presented during University Practical / Clinical examination.

**Periodic tests:**

In case of degree courses of three years duration (MD/MS), the concerned departments may conduct three tests, two of them be annual tests, one at the end of first year and the other in the second year. The third test may be held three months before the final examination. The tests may include written papers, practical / clinical and viva voce.

One of these practical/clinical tests should be conducted by OSPE (objective structured practical examination or OSCE (objective structured clinical examination) method.

  
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