

**NATIONAL MEDICAL COMMISSION  
ACADEMIC CELL**

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**GUIDELINES FOR COMPETENCY BASED POSTGRADUATE  
TRAINING PROGRAMME FOR MD IN LABORATORY  
MEDICINE**

**Preamble**

Clinical management of patients today is highly dependent on results of laboratory investigations which has seen rapid advances in technology and automation. The presence of a Central laboratory to handle majority of laboratory investigations, quick receipt of quality investigation reports and access and availability of laboratory physicians in the Laboratory Medicine Department to consult helps the consulting clinician in the rapid diagnosis, management and follow-up of patients. Further, the MD in Laboratory Medicine course would assist in bringing newer techniques from research to the diagnostic level.

The MD Laboratory Medicine course is consistent with the 3-tier laboratory concept of an ideal tertiary care hospital attached to a medical college/institute. Tier I is related to laboratory medicine department itself. Tier II encompasses specialty laboratories of Pathology, Microbiology, Biochemistry, Hematology, Endocrinology and Immunology departments while tier III is the high-end research facility laboratory in the medical college hospital. The creation of an MD laboratory Medicine course would help in the availability of Laboratory physicians of first contact for both clinicians and patients thus helping in the treatment and management of patients.

***SUBJECT SPECIFIC LEARNING OBJECTIVES***

A post graduate student upon successfully qualifying for MD in Laboratory Medicine, should be able to demonstrate following clinical, teaching and research skills:

**A. Clinical Skills:**

1. Demonstrate competence in skills related to different sections of disciplines of Laboratory Medicine.
2. Interact effectively with allied departments by rendering services in basic and in advanced laboratory investigations.

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3. Demonstrate application of laboratory medicine techniques in a variety of clinical settings to solve diagnostic and therapeutic problems.
4. Demonstrate understanding of instrumentation including automation and maintenance of various laboratory equipment.
5. Interact with clinical colleagues during ward round, clinical combined round and clinico-laboratory conference.
6. Contribute along with the clinical colleagues in the formulation of the panel of investigations, whenever the requirement arises.
7. Actively participate in interpretation of test results, further refer for other investigations, if necessary, and help in comprehensive decision making in patient's management and follow up.
8. Collect specimens by routinely performed procedures such as venipuncture, finger-prick, and bone-marrow aspiration. Whenever necessary must be able to provide appropriate help to colleagues performing an invasive procedure.

**B. Teaching skills:**

1. Sensitize the undergraduate students on the importance of diagnostic laboratory in patient management.
2. Guide the clinical post graduate students on test selection and its interpretation, rational use of laboratory facilities, and make them aware of pre-analytical, analytical and post-analytical sources of error in laboratory investigations.
3. Acquire the skill of guiding their junior colleagues and managing laboratory staff.
4. Present relevant topics in seminar and review published articles during Journal club
5. Participate in case discussions.
6. Learn the operational and quality management of the investigations in the Laboratory Medicine Department and guide the technical staff on the same.
7. Develop communication skills to interact with patients, relatives, peers and paramedical staff and present reports and opinions effectively.

**C. Research:**

1. Identify a research problem for conducting research in basic or applied aspects.
2. Clearly state the objectives in terms of what is expected to be achieved in the end.

3. Design study taking care of adequate no. of cases with age and gender-matched controls with full awareness of the statistical validity of the size of experimental material.
4. Carry out the technical procedures required to conduct the research topic.
5. Accurately, systematically and objectively record the results and observations made during the course of research.
6. Analyze the data with the aid of an appropriate statistical methodology.
7. Interpret the observations in the light of existing knowledge and highlight how the study has advanced existing knowledge on the subject and what further remains to be done.
8. Prepare the data for publication in an indexed scientific journal.
9. Write the thesis or a scientific paper in accordance with prescribed instructions in a journal of international standards.
10. Present one poster, read one paper at a national/state conference and 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 eligible to appear at the postgraduate degree examination.

**D. Group Approach:**

1. Participate in group discussion of cases by attending undergraduate multidisciplinary seminars, clinical rounds and contributing to the Journal Club.
2. Participate in instructing and guiding the technical staff of the laboratory, in operational aspects of the tests and quality management.
3. Acquire knowledge on Quality Assurance, Accreditation, Laboratory Audit, Laboratory safety, legal aspects of Laboratory Medicine, Laboratory Management, training of technicians and allocation of work.

## ***SUBJECT SPECIFIC COMPETENCIES***

**A. Cognitive domain**

At the end of the training in M.D. Laboratory Medicine, the post graduate student should acquire knowledge and competence in conducting relevant procedures in: i) Medical Biochemistry, ii) Pathology and Hematology, iii) Medical microbiology, iv) Endocrinology,

