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COMPETENCY BASED UNDERGRADUATE CURRICULUM
FOR THE INDIAN MEDICAL GRADUATE

Knows Knows how Shows Shows how Performs

Describe Observe Demonstrate
Enumerate Assist

Counsel Prescribe

Analyse Integrate

ELECTIVES

Guide Communicate

Module 6

Correlate Interpret

Critique Collaborate

Clinician Communicator Team Leader Professional Lifelong Learner

Knowledge | Skills | Attitude | Values | Responsiveness | Communication

Curriculum Implementation Support Program

Module on Electives

for

Undergraduate Medical Education

Program

2020

Medical Council of India
Pocket-14, Sector-8, Dwarka,
New Delhi 110 077

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Foreword
ELECTIVES

Students who join medicine come in with many professional and personal aspirations. While meeting the needs of the profession and nation, the MBBS program is also designed to create time and opportunity for students to explore future interests. Allowing students time to experience a specialty or project of their choice is thus key to helping student interest bloom.

Creating a diversity of choices within a specified framework that will allow students to be part of a laboratory, participate in research, be part of a super-specialty care team or interact with patients in a community care setting is a mandate of the new regulations notified by the Government of India. Electives allow students to get a taste of a future career; they also allow them to pursue academic interests, do projects and work in diverse environments. These experiences outside the traditional boundaries of the core program allow students to reflect, plan and grow their careers. They also allow students to begin the process of professional networking early.

Institutions must give sufficient importance to the planning and execution of electives. Besides creating diverse opportunities, thought must be given to providing a safe and enabling environment for students to learn. Identifying and orienting preceptors for this purpose, developing portfolio and log book events and continuous program evaluation are key to the success of the program. I urge all institutions to look beyond traditional boundaries to create areas of opportunity for students. Strategic collaborations with centers of excellence will increase value for students while building bridges of collaborative work among institutions.

This booklet is designed to help institutions plan and execute elective rotations. The Expert Group has elucidated a balanced approach that can be followed by all institutions. As always we are keen to learn and share any best practices that institutions develop. I am grateful to the Academic Cell of MCI and the Expert Group as well as the nodal and regional centers of the MCI for their continued contribution in supporting institutions and teachers in implementing the forward looking changes in the new competency based UG curriculum.

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Foreword

Electives

Changes in the Graduate Medical Education Regulations notified by the Government of India in 2019 have been done with a view to create physicians of first contact who are relevant to both their community and the globe. These regulations aim at defining outcomes and help students work towards these. These Regulations also envisage a broader role for trainees as scholars, researchers and specialists. In order to diversify experience, stimulate interest in research and discover learning beyond primary care, an opportunity has been created in the new MBBS program for the student to undertake electives of his or her choice subject to availability. Two months of elective time one each in the basic sciences or research and the other in clinical sciences or community clinics have been created. Leverage has been given to institutions to create these electives based on local circumstances and perceived need. Elective postings are compulsory for students and its successful completion is necessary for students to be able to attend the final examination.

This booklet is intended as a guide for institutions to plan the elective postings. Institutions are requested to provide the opportunity for students to take electives of their choice, if needed through external collaborations, if such opportunities are limited while following the guidelines mentioned in the Graduate Medical Education Regulations and this booklet. I would like to express my gratitude to the Academic Cell of MCI and the Expert Group whose constant guidance has helped in the successful roll out of the new curriculum.

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Curriculum Implementation Support Program

Module:

ELECTIVES

Electives

Introduction

The MBBS program is geared to create a primary care provider of first contact. It also visualises the student as a future scholar, specialist, researcher and scientist.

Provision of avenues in the competency based undergraduate MBBS program for the student to explore and experience various streams of the profession is important. Electives are learning experiences that will provide the learner with an opportunity to gain immersive experience of a career stream, discipline or research project.

The opportunity to “work” in a clinical, laboratory, research, community set up or in a team-based setting at an early stage in the profession is an invaluable experience for learners as this will have lasting impact on their professional life. An elective allows students to think of a career beyond examinations and gives them an impetus to think laterally besides laying down the foundation for future professional pathways. It also allows students to match their aspirations with the ground reality in a field of their dreams.

The revised Regulations on Graduate Medical Education, part II 2019 (GMER 2019) have created such opportunity in the MBBS program providing students options to do electives in basic sciences, join in ongoing clinical programs and in research settings. This document is meant to guide institutions, Curriculum Committee members and MEU faculty of colleges, and teachers on how to prepare and experience the conduct of an elective that incorporates the principles enshrined in the GMER document, 2019.

Objectives

The participant must be able to develop electives for block 1 and block 2 as envisaged in GMER 2019 document.

Glossary

Elective: An elective is a learning experience created in the curriculum to provide an opportunity for the learner to explore, discover and experience areas or streams of interest.

Block: is a defined time period during which learning experiences are created in a particular specialty, subject or theme.

Log Book: Is a *verified record* of the progression of the learner documenting the acquisition of the requisite knowledge, skills, attitude and/or competencies.

Portfolio: is a collection of the learner's progression in tasks and competencies. A portfolio is an evidence of events documented in the log book. It includes selected assignments, self-assessment, feedback, work-based and in-training formative assessments, reflections and learnings from planned activity in the curriculum.

Log books are thus linked to portfolios and may be included in the portfolio.

Definitions

An Elective is a learning experience created in the curriculum to provide an opportunity for the learner to explore, discover and experience areas or streams interest in the profession.

Curricular Element or Program addressed

Electives

Relevant extract from Regulations on Graduate Medical Education, Regulations on Graduate Medical Education (Amendment), 2019, part - II for MBBS course starting from academic year 2019-20 onwards

9.3. Electives

9.3.1 Objectives: To provide the learner with opportunities:

(a) For diverse learning experiences,

(b) To do research/community projects that will stimulate enquiry, self-directed, experiential learning and lateral thinking.

9.3.2 Two months are designated for elective rotations after completion of the examination at end of the third MBBS Part I and before commencement of third MBBS Part II.

9.3.3 It is mandatory for learners to do an elective. The elective time should not be used to make up for missed clinical postings, shortage of attendance or other purposes.

9.3.4 Structure

(a) The learner shall rotate through two elective blocks of 04 weeks each.

(b) Block 1 shall be done in a pre-selected preclinical or para-clinical or other basic sciences laboratory OR under a researcher in an ongoing research project. During the electives, regular clinical postings shall continue.

(c) Block 2 shall be done in a clinical department (including specialties, super-specialties, ICUs, blood bank and casualty) from a list of electives developed and available in the institution OR as a supervised learning experience at a rural or urban community clinic.

(d) Institutions will pre-determine the number and nature of electives, names of the supervisors, and the number of learners in each elective based on the local conditions, available resources and faculty.

9.3.5 Each institution will develop its own mechanism for allocation of electives.

9.3.6 It is preferable that the list of elective choices are made available to the learners in the beginning of the academic year.

9.3.7 The learner must submit a learning log book based on both blocks of the elective.

9.3.8 75% attendance in the electives and submission of log book maintained during elective postings is required for eligibility to appear in the final MBBS examination.

9.3.9 Institutions may use part of this time for strengthening basic skill certification.

Description of Curricular program

Two choices of electives are offered to medical students before the commencement of III MBBS part 2. For the purpose of this document these shall be called Block 1 and Block 2. The salient features of each block and their differences are summarised in Table 1.

Table 1: Salient features of Electives in Block 1 and Block 2

	Block 1	Block 2
When	Before commencement of IIIrd MBBS part 2	Before commencement of IIIrd MBBS part 2
Duration	4 weeks	4 weeks
Focus of electives	Pre-/para - clinical disciplines or in other basic sciences laboratory or join ongoing research programs	Clinical specialties or community clinics (rural or urban)
Nature of learning	Supervised Experiential Immersive Self-directed	Supervised Experiential Immersive Self-directed
Regular clinical postings	Will continue	Will not be offered
Attendance	Mandatorily 75% attendance is required as prerequisite to be allowed	Mandatorily 75% attendance is required as prerequisite to be allowed

	to take Part 2 summative examination	to take Part 2 summative examination
Assessment	Formative Record of activities in log book and portfolio (or annexure to log book) to be submitted as prerequisite to be allowed to take Part 2 summative exam	Formative Record of activities in log book and portfolio (or annexure to log book) to be submitted as prerequisite to be allowed to take Part 2 summative exam
Out of institution experience	Allowed (note clinical postings allowed to continue)*	Allowed within the city*
Out of city or state experience	Continuation of clinical postings makes this difficult	Allowed with due approval*

* See caveat in text

The primary purpose of block 1 is to provide the learner with research experience in basic sciences OR laboratory sciences OR in clinical sciences. The purpose of block 2 is to provide the learner an explorative experience with guided patient care in a specialty of choice.

Electives in both blocks will require planning and coordination by the institution, various departments involved and preceptors who will directly supervise and guide students. Coordination will also be required with external institutions, community clinics and preceptors as may be required for the conduct of electives.

1. Planning the learning experience

The first step in the process is to plan the learning experience. Given the diversity of blocks there will be some variation in the content style and degree of learning; however, each elective should have the following:

a. defined learning objectives,
b. an identified preceptor responsible for guiding the student,

c. a pre-published timetable of activities identified for the learner during the elective,
d. list of learning resources for the learner to be used during the elective,
e. provision to be part of the team to obtain an immersive learning experience,
f. prerequisites, if any, to be completed before joining the elective,
g. defined formative assessments with appropriate requirements for portfolio and log book entry, and
h. program evaluation by the stakeholders.

A template for planning learning experiences is provided in Table 2.

Examples of several kinds of learning experiences are found in annexure 1.

Table 2: Template for planning learning experiences in electives

Name of Block	
Name of Elective	
Location of hospital lab or research facility	
Name of internal preceptor(s)	
Name of external preceptor (if any)	
Learning objectives of the elective	
Number of students that can be accommodated in this elective	
Prerequisites for the elective	
Learning resources for students	
List of activities in which the student will participate	
Portfolio entries required	
Log book entry required	
Assessment	
Other comments	

2. Identifying learning experiences

To ensure that there is an immersive learning experience and greater attention to the learner, each preceptor identified must be tagged with only a minimum number of students. Therefore, it is important to identify a sufficient number of preceptors, laboratory positions, and existing research projects (for block 1) and specialties and community clinics, for block 2. Input from both faculty and students can be sourced to identify electives that are feasible and desired.

If required and feasible, collaboration with external resources including central and private research institutes and laboratories, hospitals and clinics can be done ensuring that the quality and principles outlined in section 1 are maintained. Student-initiated external rotations may be permitted as long as they do not violate institutional rules and conform with the broad principles outlined. Rotations outside the city will require prior permission from the Medical Council of India. Examples (neither exhaustive nor comprehensive) of block 1 and block 2 electives are provided in Table 3.

Table 3: Examples of Block 1 and Block 2 learning experiences

Block 1	Block 2
Laboratory Experience:	**Clinical Specialty Experience:**
Pathology	Emergency room
Microbiology, Virology	Intensive Care unit
Biochemistry	Psychiatry
Genetics	Adolescent Reproductive Health issues
Molecular biology	Neonatology
Immunology	Dermatology
Pharmaco-vigilance and clinical pharmacology	Health care quality and safety

Infection Control	Rehabilitation and palliative care
Community outreach experience	Sports medicine
Assisted living	Clinical Ethics
Hospice care	**Super-specialty experience**
School Health programs	Hematology
Community outreach for National Health Programs	Oncology
Maternal and child health outreach	Rheumatology
Research	Endocrinology and Diabetes
Student initiated research	Nephrology
Participation in faculty research	Neurosurgery
Community and epidemiologic surveys	Cardiology / Cardiac Surgery
Others	GI surgery
Bioinformatics / Tissue engineering	Organ Transplant Anesthesia
Computers and artificial intelligence in health care	**Urban or Rural community experience**
	Rural Community Health Center
	Primary Health Center
	Corporation health clinic
	Selected private primary care clinic

3. Student counseling and allocation of electives

The list of available learning experiences for each block and the names of preceptors for each should be available to students on the institutional notice board at least three months before the commencement of the electives. A process for submitting applications for both blocks with choices should be made available to

the students. Written information on each learning experience must be available for students to examine and make an informed choice.

A counseling session with faculty mentors to help students choose electives is desirable. The faculty mentors must ascertain a student's expectation from the electives he/she has chosen. Students must also be made aware of the rules regarding attendance, work schedule, documentation and assessment requirements for each elective. The allocation of electives may be done based on student choice and availability of rotation by faculty who have been identified to be in-charge of the electives program, for each block. The allocation must be done sufficiently in advance and the students informed so that the prerequisites for the electives, if any (such as knowledge training in good laboratory practices, good research practices, CPR training etc.) can be completed by the student. A process to identify the veracity of student initiated electives must be in place.

4. Student research

Block 1 may also be used by students under the guidance of a preceptor to complete funded (e.g. ICMR student grant, institutional grant etc,) or unfunded research projects. In addition, predefined work, monitoring, presentation and writing plan may be finalised by the learner and the preceptor, prior to starting the elective. Students may also participate in a pre-existing research project ongoing under the preceptor.

It is important to define the objectives, role of the student in the project and his or her part in the writing and publication or presentation of a part of the project. An assessment by the preceptor of the student’s role, contribution, involvement and performance must be made. Documentation of experiences, observations, reflections and presentations by the student may be added to the portfolio or as annexure to the log book. Appropriate log book entries that document the student participation and which are verified by the preceptor are critical for successful

completion of the work undertaken. Similar arrangements must be made if an external preceptor or institution is identified.

5. External institutions

Given the number of positions available in each elective and the need to provide a broad diverse experience for students, colleges can enter into agreements with external institutions within the country to accommodate students for undertaking an elective experience in both block 1 and block 2, as long as this is not in conflict with the rules and policies of the Medical Council of India, the college of the student and the institution identified and the conditions outlined above are complied with. Student-initiated external rotations may not be discouraged provided they meet the expectations of the program as outlined. Out of city/state experiences may be decided based on institutional policy (since clinical postings will continue during block 1, out of city programs may not be feasible here). Out of state electives in block 2 require prior permission from the Medical Council of India. Identifying suitable preceptors in the host institution and briefing them of the expectations and requirements of the program is important. A local preceptor or faculty who can liaise with the external preceptor will help to solve problems and ensure smooth conduct of the elective.

6. Student safety

In each of these electives especially in those involving external rotations, safety of the student should be paramount. Rotations in which the student may be exposed to potentially hazardous situations must be avoided. It must be made clear to the preceptors by the college authorities that students need to be supervised and must not be involved in patient care as the responsible health provider. When required, students must complete the prerequisite training such as good laboratory practice, universal precautions, good clinical practice etc. before being allowed to participate in electives. The student must be oriented to the program through a formal

orientation process that spells out the expectations/outcomes and the precautions to be observed.

7. Assessment

Assessment will be formative (refer to MCI module no. 3 on Assessment, for details). Attendance of not less than 75% and successful completion of items that require log book entry and their submission is a requirement for the student to become eligible to take the final examination. Assessment elements could include participation in grand rounds, seminars, case records, submission of assignments, reflection on learnings, preparation of abstracts for research posters, design and participation in patient education programs etc. The module on Log book available on the MCI Website may be consulted for further information.

8. Program evaluation

Provision for evaluation of the program based on information from all stakeholders should be made in order to evaluate the effectiveness of the program and need for modifications and improvement.

9. Curricular governance

The Curriculum Committee of the college constituted as per MCI norms and headed by the Dean of the college will be responsible for the design, conduct, implementation and evaluation of the elective program. The design and conduct of block 1 may be assigned to Phase 1 and Phase 2 subcommittees constituted by the Dean while that of block 2 may be assigned to Phase 2 Sub-committee. The departmental heads and preceptors are responsible for the day-to-day conduct of the program, guiding and supervising and assessing students.

Annexure 1

1. Example of a learning experience in block 1

Table 4: Example of a block 1 learning experience

Name of Block	Block 1
Name of Elective	Medical Genetics
Location of hospital Lab or research facility	Medical College hospital
Name of internal preceptor(s)	Name/s
Name of external preceptor (if applicable)	N/A
Learning objectives of elective	1. to demonstrate the conduct of commonly available genetic tests in a controlled environment 2. to enumerate indications for common genetic tests 3. To enumerate the testing protocol for commonly performed genetic tests 4. to demonstrate the correct method to perform a karyotype 5. to present a genetic history and determine the nature of inheritance of a given condition
Number of students that can be accommodated in this elective	4
Prerequisites for elective	Necessary immunisations, Universal precaution certification
Learning resources for students	Departmental handbook provided
List of activities of student participation	1. Work daily with a supervisor in observing, assisting and performing genetic tests 2. Participate in departmental education activities 3. Present at least two tests done by student as a case work up

Portfolio entries required	1. Documentation of worked up cases 2. Documentation of presentation done
Log book entry required	Completion of posting signed by preceptor with a “meets expectation ‘(M)’ grade”
Assessment	**Formative:** attendance; day-to-day participation in departmental activity; performance of assigned tasks and presentation of worked up case in department
Other comments	

2. Example of a learning experience in block 2

Table 5: Example of a block 2 learning experience

Name of Block	Block 2
Name of Elective	Diabetology
Location of hospital Lab or research facility	Medical College hospital
Name of internal preceptor(s)	Name/s
Name of external preceptor if applicable	N/A
Learning objectives of elective	1. To provide care for patients with diabetes in a supervised environment 2. To function effectively as a team member in a multidisciplinary team managing diabetes 3. To counsel patients about diabetes care appropriately 4. To describe the pathophysiological clinical correlates as they apply to care of patients with diabetes
Number of students that can be accommodated in this elective	6
Prerequisites for elective	Must have received necessary immunisations, Basic Life Support training
List of activities of student participation	1. Participate in OP and IP rounds 2. Participate in afternoon teaching sessions of the department 3. Present at least two cases that are fully worked up in the teaching session 4. Participate in patient education and multidisciplinary team meetings 5. Participate in audit meetings
Learning Resources	Seshadri K: Clinician's handbook of diabetes

Portfolio entries required	**Assignments provided** Two worked up case records that have been presented Documentation of self-directed learning as summary and reflection
Log book entry required	Satisfactory completion of posting by a preceptor with a “meets expectation ‘M’ grade”
Assessment	Attendance **Formative:** Participation in OP & IP rounds and team activities, Presentation of worked up cases, Documentation of attendance and required portfolio and log book entries
Other comments	

3. Example of a research rotation in block 1

Table 6: Example of a research learning experience in block 1

Name of Block	Block 1
Name of Elective	Research (Preceptor initiated)
Location of hospital Lab or research facility	Medical College hospital
Name of internal preceptor(s)	Name
Name of external preceptor	N/A
Learning objectives of elective	1. To collect data as prescribed in the protocol 2. To document data in the electronic case record correctly 3. To demonstrate the use of statistical software to do basic research calculations 4. To write an abstract based on the collated data 5. To present abstract to a group of peers and supervisors
Number of students that can be accommodated in this elective	4
Prerequisites for elective	Good clinical practice, Good laboratory practice
List of activities of student participation	1. Work with supervisor in making observations, collect data and document as per protocol 2. Work with statistician to provide a statistical analysis of the data 3. Participate in research meetings of the department, internal and external meetings 4. Write abstract of work done 5. Present abstract in an internal meeting and if possible at an external meeting as a poster or oral presentation

Learning Resources	Sackett DL: Clinical epidemiology Robbins & Cotran Pathological basis of disease
Portfolio entries required	Laboratory notes Statistical work sheet Abstract created
Log book entry required	Satisfactory completion of posting with a “meets expectation ‘(M)’ grade”
Assessment	Attendance Successful completion of research objectives and log book entry
Other comments	

4. Example of an external rotation in block 2

Table 7: Example of a community clinic rotation in block 2

Name of Block	Block 2
Name of Elective	Community Clinic
Location of hospital Lab or research facility	Primary health care center in (name of) a village
Name of internal preceptor(s)	Name
Name of external preceptor if applicable	Name
Learning objectives of elective	1. To provide primary care to patients in a resource limited setting under supervision 2. To function as a member of a health care team in a primary care center 3. To participate in health outreach activities of a primary care center
Number of students that can be accommodated in this elective	6
Prerequisites for elective	Required immunisations to be taken, BLS, Basic Suturing and first aid
List of activities of student participation	1. Provide patient care under the supervision of a community clinic preceptor 2. Assist in common procedures in a community care clinic 3. Counsel patients in their own language 4. Participate in national health care programs offered through the PHC 5. Participate in team meetings of the PHC
Learning Resources	The Washington Manual of Medical Therapeutics, 2019

Portfolio entries required	Daily log of patients seen and activities participated At least 04 fully worked up patients to be documented
Log book entry required	Satisfactory completion of posting by external preceptor co-signed by institutional preceptor
Assessment	Attendance Successful verification of required portfolio entries, Successful completion of the posting as certified in the log book with a “meets expectation ‘M’ grade”
Other comments	

5. Example of a block 1 rotation in emerging infections

Table 8: Example of a learning experience in block 1 in virology

Name of Block	Block 1
Name of Elective	Emerging viral infections
Location of hospital Lab or research facility	Medical college hospital
Name of internal preceptor(s)	Name
Name of external preceptor if applicable	N/A
Learning objectives of elective	1. To obtain experience in the laboratory investigation of viral outbreaks 2. To obtain experience in diagnostic testing in viral diseases
Number of students that can be accommodated in this elective	6
Prerequisites for elective	Universal precautions and Good laboratory practice modules to be completed
List of activities of student participation	1. Participate in laboratory activities including sample processing, sequencing RT PCR viral cultures etc. 2. Participate in academic programs of the department 3. Write up the laboratory work up of two patients with viral illness 4. Visit to a center with electronic or confocal microscope 5. Present at least two cases in departmental academic forum
Learning Resources	Handbook of Virology testing
Portfolio entries required	Lab Notes and work book entries; Presentations done

Log book entry required	Satisfactory completion of posting authenticated by preceptor
Assessment	Attendance Successful verification of required portfolio entries, Successful completion of the posting as certified in the log book with a “meets expectation ‘M’ grade”
Other comments	

6. Example of a block 2 rotation in emerging infections

Table 9: Example of a learning experience in block 2 in virology

Name of Block	Block 2
Name of Elective	Clinical infectious disease and virology
Location of hospital Lab or research facility	Medical college hospital
Name of internal preceptor(s)	Name
Name of external preceptor if applicable	N/A
Learning objectives of elective	1. To function as part of an infectious disease team 2. To be able to approach and investigate infection outbreaks 3. Get hands on experience on contact tracing, community isolation measures, and use of technology 4. To understand the principles of the management of viral infections
Number of students that can be accommodated in this elective	6
Prerequisites for elective	Universal precautions and must have taken required immunizations; CPR training
List of activities of student participation	1. Participate in inpatient and outpatient team rounds 2. Participate in community outbreak investigations 3. Counsel patients on correct precautions during outbreaks 4. Diagnose and understand the principles in the management of viral diseases 5. Liaise with the laboratory in the diagnosis 6. Present at least one patient or outbreak investigation in the departmental meeting

Learning Resources	Handbook of clinical virology
Portfolio entries required	Case record of at least one patient Record of patient counseling session or contact tracing done
Log book entry required	Satisfactory completion of posting by preceptor
Assessment	Attendance, Successful verification of required portfolio entries, Successful completion of the posting as certified in the log book with a “meets expectation ‘M’ grade”
Other comments	