

# Planning and implementation of learning experiences in elective modules in Biochemistry in the MBBS Medical curriculum in India: Our experience



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## **Objectives & context:**

Integration of elective modules in Biochemistry in MBBS curriculum:

- •To provide a deeper understanding of biochemical principles & clinical applications
- •Planning & implementation of elective modules in biochemistry

#### Student Participation: 32

- · Students enrolled:
- Batch 2019: 6.4% in 2023:16
- Batch 2020: 6.4% in 2024:16
- Four groups of two students each EM in 2 batches/ year
- Attendance: 75%

Assessment criteria	Evaluation 2023 2024	
Attempt at activity: (F/R/Re) First/ Reminder/ Repeat	F: 100%	F: 100%
Rating: (B/M/E) Below/ Meet Expectation/ Exceed Expectation	M: 100%	M: 25% E: 75%
Decision of faculty: (C/R/Re) Complete/ Repeat/ Remedial	C: 100%	C: 100%

#### **Methodology:** Planning:

- Curriculum Development:
- Interactive meeting in the Medical Education Unit
- Identification of elective modules
- Development of learning objectives
- Four electives selected:
- Diagnostic Lab for Liver Diseases
- Role of Lipid profile in Lab diagnostics
- Clinical Biochemistry Lab For Kidney Diseases
- Applied biochemistry in Thyroid lab

# In Biochemistry department: Development of:

- Learning objectives for EM
- Teaching module
- Skill assessment module
- Feedback

#### Resource Allocation:

- Allocation of internal preceptors: Faculty, PGs
- **Prerequisite:** immunization (hepatitis B and covid-19)
- Provision of lab facilities, & educational resources to students

#### List of activities:

Pre-elective Feedback

Lab management: Lab safety, GCP, BMW

management, ethical issues

Laboratory activities: Sampling, testing, QC

Daily working of lab

**Reporting, interpretations** of lab results **Educational activities** 

Recent trends in research in lab diagnostics

Presentation: 4 case reports

Presentation: Role of lab tests in diagnosis

Post-elective feedback

#### **Evaluation:** • Assessment:

• Formative Assessment:

Classroom discussions, case studies: discussion & presentation, feedback

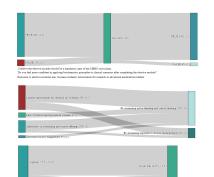
• **Summative Assessment** Lab performance, ability to analyze & interpret lab reports, case presentations, e-portfolio, and logbook.

- Feedback: Pre-elective and post-elective
- Presentation of case reports: 4
- Objectives and logbook entry:
  - Portfolio entries:
    - Class Notes
    - Presentation on topic
  - Logbook entry:
    - Stepwise assigned activities
    - Meets expectation "M" grade

Student perceptions & feedback:

50% knew about EM

- 75% agreed that EM has relevance in medical practice & 25% disagreed
- 87.5% agreed EM should be mandatory
- 94% agreed that EM addressed practical aspects of conducting research in biochemistry and medical research.
- Did elective module experience meet expectations:
- 12.5%: exceeds expectations
- 68.8%: met expectations.
- 18.8%: had no specific expectations.



## Potential challenges: Challenges and Solutions: Limited Resources:

55.6%: Limited opportunities for research involvement 27.8%: Lack of interest among students

11.1%: Decreased faculty engagement

Logistic constraints

#### Conclusion:

Our experience in designing and implementing educational programs for elective modules in biochemistry as part of the MBBS medical curriculum in India highlights the importance of adopting a student-centric approach, utilizing innovative teaching methodologies, and continually developing faculty.

#### **Future Directions:**

Introducing new EM based on emerging trends Interdisciplinary collaboration.