



All India Institute of Medical Sciences, Patna

Assessment of Postgraduate MD Pharmacology

As per recent guidelines of CBME curriculum by National Medical Commission

Date and time : Monday 20th February, 2023 at 11 AM Venue: AIIMS Auditorium, Patna

SPEAKER



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Organized by

**Department of Pharmacology
All India Institute of Medical Sciences, Patna**

in association with

National Association of Pharmacology & Therapeutics
Promoting Pharmacology & Therapeutics for a Better Tomorrow...



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This presentation

- **Historical aspect in assessment of Post Graduate MD Pharmacology**
- **Basic principles of assessments for Post Graduate MD Pharmacology**
- **What to assess for Post Graduate MD Pharmacology?**
- **How to assess Post Graduate MD Pharmacology based on current NMC recommendations?**

Assessment MD Pharmacology postgraduates

History



Assessment MD Pharmacology postgraduates

History



Current status of bioassay for Postgraduate MD Pharmacology

Original Article

Restructuring the syllabus for MD Pharmacology: Retrospection of bioassay

Sarita Mulkalwar, Bhalchandra Rane, Lopamudra Behera

Department of Pharmacology, Padmashree Dr. D.Y. Patil Medical College, Hospital and Research Centre, Dr. D.Y. Patil Vidyapeeth, Pimpri, Pune, India

Medical Journal of Dr. D.Y. Patil University

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96.6% did not use their knowledge of Bioassay during their 10 years of post MD career, whether in pharmaceutical industry or in academics.



- Medical science is changing on weekly basis
- Time to change the assessment in line with demand?

PRINCIPLES OF ASSESSMENTS

Back to basics: Miller model.



- Miller proposed a hierarchical model for the assessment of clinical competence.
- Model starts with the assessment of cognition and ends with the assessment of behavior in practice.
- Professional authenticity increases as we move up the hierarchy and as assessment tasks resemble real practice.



FORMATIVE ASSESSMENT



SUMMATIVE ASSESSMENT

Formative Assessment

Gather evidence to provide feedback about learning to the learner and the instructor

Summative Assessment

Use evidence of learning to make a judgment (marks, ratings)

► Formative Assessment (Assessment FOR Learning)

- For improvement & growth
- Feedback
- During learning process
- Low stakes marks

PURPOSES OF
ASSESSMENT

LEARNING
OUTCOMES/GOALS

► Summative Assessment (Assessment OF Learning)

- For decision making
- A judgment or verdict
- End of learning process
- Higher stakes marks

What to assess?

Based on

- Possibilities of future career of MD Pharmacology.
- What has been covered during training of MD Pharmacology.

Animal Experiments



Current status in MD Pharmacology training

- Animal experimentation is desirable not mandatory by now
- Animal Experiments: All animal experiments must be compliant with the Regulations of Government of India, notified from time to time. **Amphibian/Dog/Cat experiments should be conducted by computer assisted simulation models/facilities.**
- Other experiments can be performed, but as permissible by existing 'Committee for the Purpose of Control and Supervision of Experiments on Animals (CPCSEA)' guidelines and other Government regulations.



Assessment

Formative assessment of PG Pharmacology

- FORMATIVE ASSESSMENT, i. e., assessment to improve learning.
- Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self-directed learning and ability to practice in the system.
- The formative internal Assessment should include quarterly assessment.
- The internal assessment should be conducted in theory and practical/clinical examination
- Should, cover all domains of learning and used to provide feedback to improve learning
- It should also cover professionalism and communication skills.
- All teachers of the Department should be involved in assessment
- The student to be assessed periodically as per categories listed in postgraduate student appraisal form

Formative assessment

Quarterly Formative assessment during the MD training ★

Should be based on

- Case presentation/Case work up, Case handling/management : once a week
- Laboratory performance : twice a week
- Journal club : once a week
- Seminar : once a fortnight
- Case discussions : once a month
- Interdepartmental case or seminar : once a month



Laboratory work / Bedside clinics

- Laboratory work / Bedside clinics: Minimum - once every 1-2 weeks.
- Laboratory work/clinics/bedside teaching should be coordinated and guided by faculty from the department.
- Various methods like DOAP (Demonstrate, Observe, Assist, Perform), simulations in skill lab, and case-based discussions etc. are to be used.
- Faculty from the department should participate in moderating the teaching-learning sessions during clinical rounds.



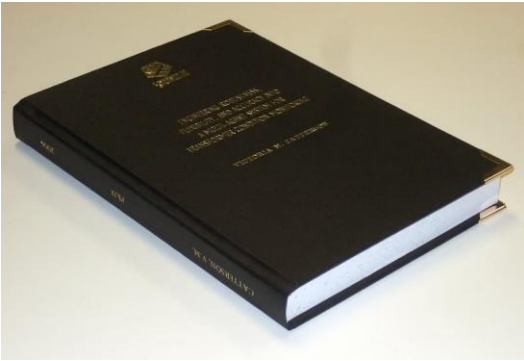
SUMMATIVE ASSESSMENT

Assessment at the end of training i.e. after 36 months of training

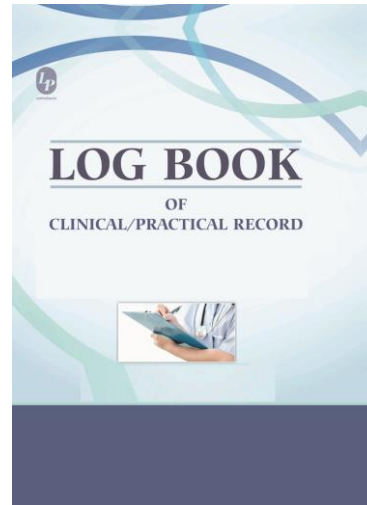
SUMMATIVE ASSESSMENT

Postgraduate MD Pharmacology

Essential pre-requisites for appearing in examination



- Submitted at least six months before the Theory and Clinical / Practical examination.
- Examined by a minimum of three examiners
- One internal and two external examiners, who shall not be the examiners for Theory and Clinical examination.
- Acceptance of thesis is mandatory to appear for the Theory and Practical/Clinical examination.



Log Book of work done during the training period including rotation postings, departmental presentations, and internal assessment reports should be submitted.



At least two presentations at national level conference. One research paper should be published / accepted in an indexed journal. (It is suggested that the local or University Review committee assess the work sent for publication).

SUMMATIVE ASSESSMENT

Postgraduate MD Pharmacology

To be conducted in three parts

Thesis

Acceptance of thesis is mandatory to appear for the Theory and Practical/Clinical examination.

Theory examination

There shall be four theory papers

- **Paper I:** Basic sciences as applied to Pharmacology
- **Paper II:** Systemic Pharmacology
- **Paper III:** Clinical Pharmacology, Experimentation, Research, Biostatistics and Medical Education
- **Paper IV:** Recent advances in the Pharmacology

Practical examination

Long exercise

1-2

Short exercises

2-3

OSPE/OSCE exercises

8-15

Grand Viva

By two examiners separately

Thesis Presentation

Microteaching

MD Pharmacology Practical examination

(As per recent recent NMC guidelines)

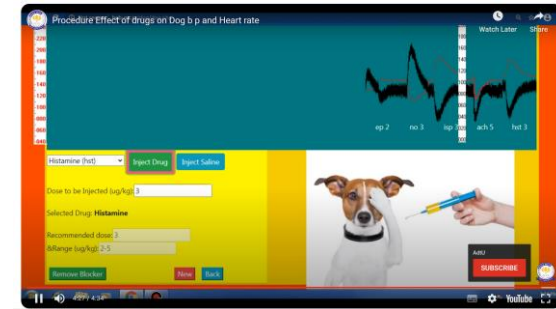
Long exercise



Protocol designing



Case audit



Perform experiments or
simulated experiments

(as per PG Regulations)

MD Pharmacology Practical examination

(As per recent recent NMC guidelines)

Short exercises



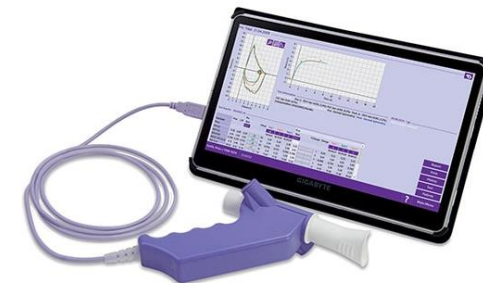
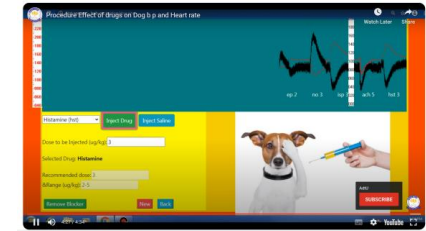
Demonstration of effects of drugs/interpretation of results in human

(eg. Dilatation of pupil with Tropicamide)

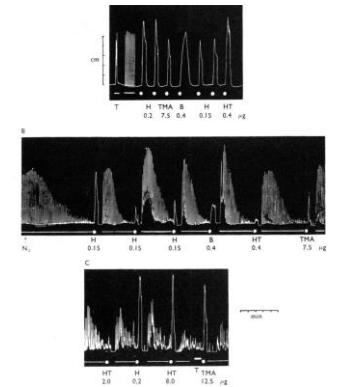


Demonstration of effects of drugs/interpretation of results in small, animals (optional) as per regulations.

eg. Rabbit eye in animal or CAL



Interpretation of results of a previous tracing ECG, Spirometry , CAL Soft ware Dog BP , Muscle Contraction (Guinea pig ileum)



MD Pharmacology Practical examination

(As per recent recent NMC guidelines)

OSPE/OSCE exercises



- 10-15 stations.
- Stations should be mixture of observed (observer present) and unobserved stations

SUMMETIVE ASSESSMENT PG MD PHARMACOLOGY

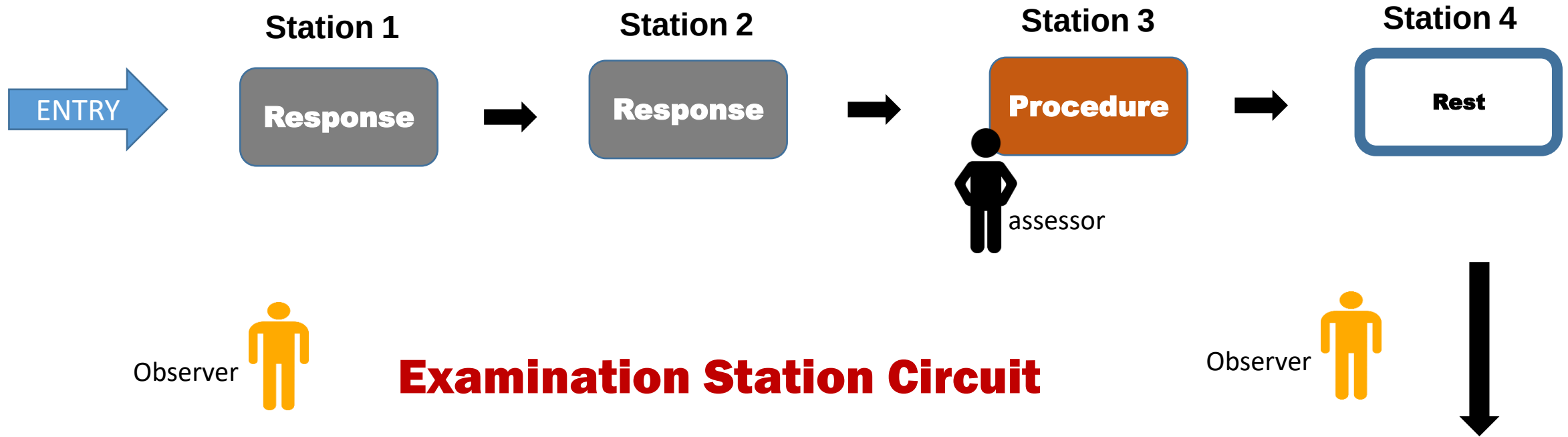
Suggested OSPE/OSCE during MD Pharmacology examination

1. Various drug delivery systems
2. Drug dosage forms
3. Calculating pharmacokinetic parameters
4. Pharmaceutical calculations
5. Statistical exercise
6. Pharmacoeconomics
7. Critical appraisal of a published paper (Pharmacology related research article)
8. Abstract writing of a published paper (P I C O) **Population Intervention Comparison Outcome**
9. Evaluation of drug promotional literature.
10. Adverse Drug Reaction (ADR) reporting and causality assessment

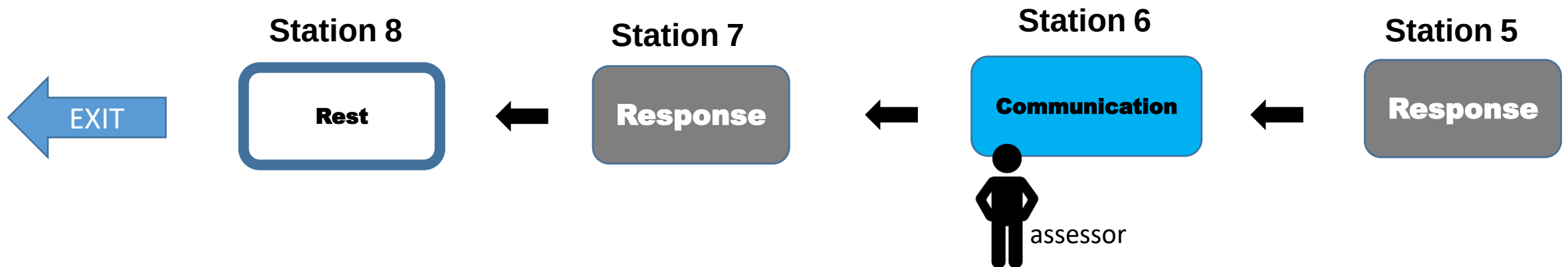
SUMMETIVE ASSESSMENT PG MD PHARMACOLOGY

Suggested OSPE/OSCE during MD Pharmacology examination

11. Assessment of preclinical toxicity data LD₅₀ ED₅₀ Calculation of Phase dosage
12. Analysis of rational and irrational formulations
13. Selecting a P-drug and writing rational prescriptions
14. Analytical instruments - use and interpretation Flame Photometer, UV Spectrophotometer ECH QT interval prolongation, Spirometry Read report of Constrictive/Obstructive
14. Identifying ethics related dilemmas / mistakes in clinical trial documents Checklist Ethics Committee



The Examination stations should be clearly marked in a logical sequence that allows easy, unimpeded transit from one station to the next.



Practical/clinical examination MD Pharmacology

Grand Viva



- Preferably conducted by each examiner separately
- Oral/Viva voce examination on defined areas should be conducted by each examiner separately.
- Should be comprehensive enough to test the postgraduate student's overall knowledge
- Focusing should be on psychomotor and affective domain.

Practical/clinical examination MD Pharmacology

Assessment of teaching/presentation skills



- Eg. Presentation of a UG lecture, making Question paper, Designing learning objectives
- Discussion on dissertation(Thesis presentation)

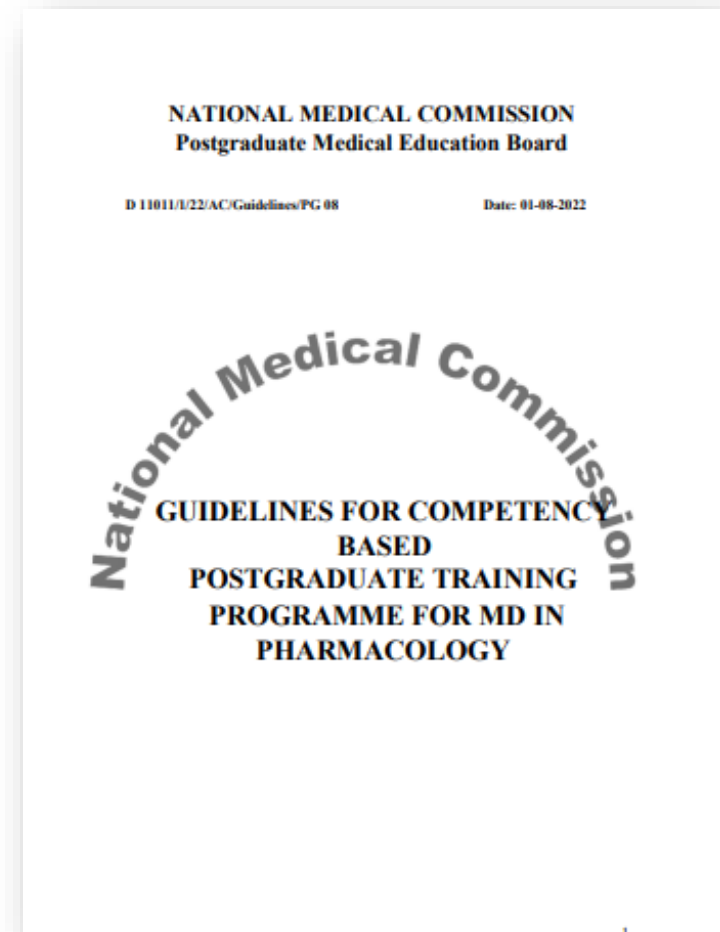
Summery

1. Assessment of Post Graduate is an integral part of PG training and mandatory for the award of MD Pharmacology degree.
2. Formative assessment should be continual and should assess medical knowledge, patient care, procedural & academic skills, interpersonal skills, professionalism, self-directed learning and ability to practice in the system.
3. Summative assessment is done at the end of training after completion of 3 years of PG training. During summative assessment Cognitive, Affective and psychomotor domain are evaluated thoroughly.
4. New guidelines of PG Pharmacology assessment of national medical commission has made the assessment of the PG student more realistic for ready to majority of future career aspects.
5. Multiple assessors, multiple tools and multiple assessments improve the validity and reliability of competency based assessment.

Reference

**Revised Guidelines for competency
based MD in Pharmacology Dated
02/08/2022**

Available on www.nmc.org.in



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THANKS

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