DISTRIBUTION OF TEACHING HOURS

GURUDAS KHILNANI

MD (GEN MED), MD (PHARMACOLOGY), DHRM

FIPS, FISC

DRGURUDAS@GMAIL.COM

DISCLAIMER

- This is a suggestive format for learning to prepare syllabus and teaching schedules
- There could be similar formats incorporating elements of CBME-Pharmacology
- Please prepare your own pharmacology teaching schedule and time table for your institution/University
- *Please Acknowledge if material in this presentation is used for Educational purpose*

TEACHING SCHEDULE

- This presentation shall enable participants to-
- A: analyze CBME pharmacology curriculum for effective implementation
- B: assign teaching hours according to the competencies of Pharmacology to prepare teaching schedule
- C: prepare Phase-II teaching time table incorporating these teaching hours and topics.

TRADITIONAL VERSUS CBME CURRICULUM

Plan-Forward

- Teach

- Assess
- (Extent to which achieved)

Plan Backward

Plan a teaching and Assessment activity

Outcome (Competency)

Objectives

TLM
Alignment
and Integration

Assessment

CBME-PHARMACOLOGY CURRICULUM DISTINGUISHING FEATURES V/S TRADITIONAL CURRICULUM

- Division of clinically oriented competencies (outcomes) into subject based competencies.
- Boundaries of theory and practicals of traditional curriculum being overarched by learning domains in knowledge and skills. Thus, practicals form a part of skill domain.
- Reduction in total training hours (from 300 to 230) and hours for Deductive lectures from 100 to 80 only (1/3rd of total hours)

CBME-PHARMACOLOGY CURRICULUM DISTINGUISHING FEATURES V/S TRADITIONAL CURRICULUM

- Non-lecture hours (150) emphasize on SGDs, and Self Directed Learning (SDL for 12 hours).
- Scope for alignment (to the extent possible) and integration (≈ 20%) for reducing redundancy and enhancing applicative use of previously acquired training.
- Certification of core skill competencies (Four)
- Emphasis on Formative Assessment during teaching, and periodic/internal assessments.
- Increase in total marks from 150 to 300 (200+100)
- Internal assessment is now an eligibility & pass criteria but does not contribute to grades.
- Viva Marks to be added in practicals

Comparative Distribution of Hours

Nonlecture=TuPITS=Tutorial, Practicals, Integrated Teaching, SGD

Subject	Old Curriculum(18 Months)			New Curriculum (12 Months)				
Details TL Activities	**Theory**	**Pract**	**Total**	**Lect**	**TuPITS***	**Clinical Posting**	**SDL**	**Total**
Pathology	1/3CBS,PB,	2/3	300	80	138		12	230
Pharmacology	**100**	**200**	**300**	**80**	**138**		**12**	**230**
Microbiology			250	70	110		10	190
Forensic Medicine			100	15	30		5	50
Comm Med			200	20	30		10	60
Clinical Subjects			Clinics (58wks) 1044 hrs	75		540		615
AETCOM (Prof and Ethics) 8 Modules				-	29		8	37
Sports/EC/Yoga							28	28
Total			**2194**	**340**	**475**	**540**	**85**	**1440**

PHASE-II TOTAL HOURS REQUIRED **1440**

- Phase-II Total period 12 months; 11Months for teaching and last 1 month for assessment
- 240 Teaching Days including examinations
- Each teaching day=7 hours
- Method-I:
  - 7 hours per day (6 days per v = 1540

Pandemic Module 6- PH/IM hours (Total 28 hrs Phase-II

PANDEMIC MANAGEMENT MODULE LONGITUDINAL PROGRAM OF 80 HOURS

- 16 Modules to be covered by Interdisciplinary Team under supervision of institutional Curriculum committee
- Phase-II Module 2.5: Therapeutic Strategies including New Drug Development
  - 4 Competencies to be addressed
  - Major Deptts: Pharmacology and General Medicine
  - Hours Allotted -6
  - TLM: L-1 hr; SGD -2 hrs; Pharmacy Lab visit-2 hrs and Discussion-1 hrs

TEACHING HOURS …

- Lecture=I hour (This would include integration as well)
  - Lecture methods can be modified according to availability of teaching faculty
- SGD, Seminar= one hour (May be 2 hours if shifted to skill session)
  - SGD followed by Practicals
- SDL=equivalent to one hour or longer but must be well planned
- Skills sessions =2 hours, as in old curriculum
  - Modules should be prepared for each session.

COMPOSITION OF CBME PHARMACOLOGY CURRICULUM

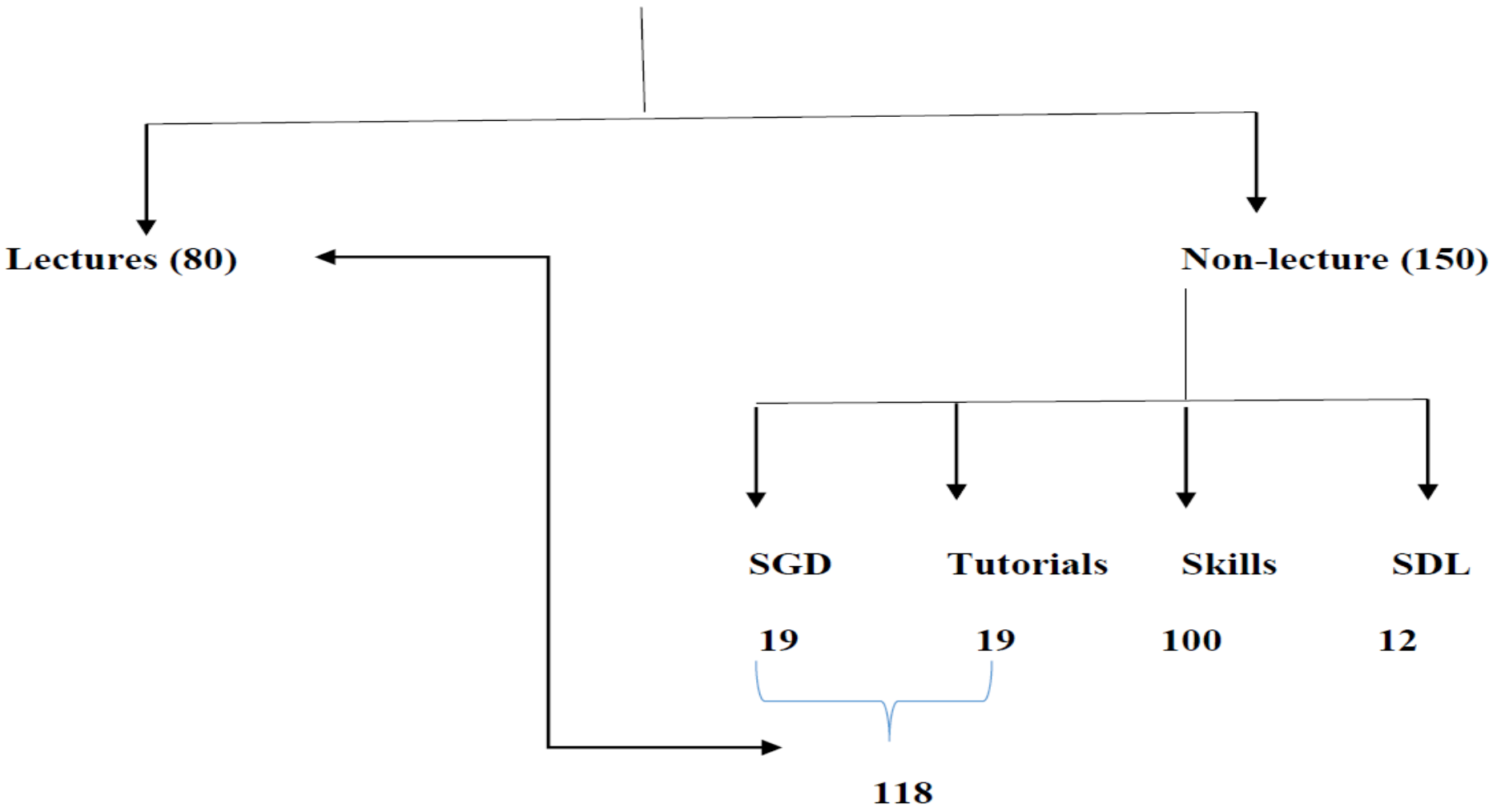
S. No	Topic	Domain	Level	Number of competencies
A	Knowledge-Pharmacology	K	K/ KH	64
B: Skills				
B1	Clinical Pharmacy	S, S/C	SH	4
B2	Clinical Pharmacology	S, S/C	SH, P	8
B3	Experimental Pharmacology	S	SH	2
B4	Communication	A/C, K	KH, SH	7
Total	5			85

System/Section	PH Codes	Total PH codes	Total hours needed			
			Lectures	Non lecture		
				Tutorials	SGD	SDL
General Pharmacology	PH 1.1-1.12, PH 1.59-1.61, 1.63, 1.64	17	16	2	2	-
CNS	PH 1.18-1.23	6	10	3	2	1
Autacoids	PH 1.16	1	4	2	-	
ANS	PH 1.13-1.14	2	2	2	2	1
PNS	PH 1.15, 1.17	2	2	1	-	-
Renal	PH 1.24	1	1	-	1	1
Blood	PH 1.25, 1.31, 1.35	3	5	1	1	1

CVS	PH 1.26-1.30	5	7	2	1	1
Respiratory	PH 1.32-1.33	2	2	-	1	1
GIT	PH 1.34	1	3	1	2	1
Endocrinology	PH 1.36-1.41	6	6	2	2	2
Chemotherapy General	PH 1.42-1.43	2	2	-	1	1
Specific Chemotherapy	PH 1.44-1.48	5	7	1	2	1

Vaccines	PH 1.54	1	1		-	
Antiseptics and disinfectants	PH 1.62	1	1		-	
Chemotherapy of cancer	PH 1.49	1	1		1	
Miscellaneous: Immunomodulators and suppressants	PH 1.50	1	1	1	-	
Miscellaneous: Environmental pharmacology	PH 1.51	1	2		-	1
Miscellaneous: Stings and bites	PH 1.52	1	1			
Miscellaneous: Chelating agents	PH 1.53	1	1	-	-	
NHP: CD &NCDs**	PH 1.55	1	2		-	
Geriatric & Paediatric Pharmacology	PH 1.56	1	1	-	1	
Skin	PH 1.57	1	1	1	-	
Ocular pharmacology	PH 1.58	1	1	-	-	
Total	**PH 1.1-1.64**	**64**	**80**	**19**	**19**	**12**

Flow Diagram: Suggested breakup of teaching hours:



SKILL COMPETENCIES: BREAK UP OF 100 HOURS

Topic /Level/Domain*	Competency (N)	Type	Required number of practical sessions (each of 2 hours)	Total number of hours
K/S (SH)	PH 1.3	Enumerate and identify drug formulations and drug delivery systems	2	4 (SGD)
	PH 1.9	Describe nomenclature of drugs i.e. generic, branded drug	1	2
	PH 1.10	Describe parts of a correct, complete and legible generic prescription. Identify errors in prescription and correct appropriately	2	4
	PH 1.12	Calculate the dosage of drugs using appropriate formulae for an individual patient, including children, elderly and patient with renal dysfunction.	2	4
Total	4		L+P	14

*** These 4 competencies are mentioned in Topic on Knowledge but would require practical sessions**

SKILL COMPETENCY

Skills Clinical Pharmacy (SH)	**PH 2.1**	**Demonstrate use of dosage forms**	**2**	**4**
	PH 2.2	ORS	1	2+2(revision)**
	PH 2.3	IV set-up	1	2
	PH 2.4	Dose calculation in diseases	1	2
Total	4		DOAPs	12

** Can be certified

DOAP: Demonstrate, Observe, Assist, Perform

Skills Clinical Pharmacology (Performs/SH) Red=Certifiable	***PH 3.1****	***Write and communicate Generic prescription***	***Skill Station 1***	***2 + (3 hours for Certification) 5 Times=17 hours***
	PH 3.2*	***Prescription audit***	***Skill Lab 1***	***2 +(2 hours for Certification) 3 Times=8 hours***
	PH 3.3*	***Evaluation of Drug Promo Literature***	***Skill Lab 1***	***2+(2 hours for Certification) 3 times=8hours***
	PH 3.4	**ADR Reporting**	**Skill Station 1**	**2**
	PH 3.5*	***P-Drug***	***Practical 1***	***2+ (2 hours for certification) 3 times=8 hours***
	PH 3.6	**Interaction with Medical Representative**	**Skill Station 1**	**2 hours**
	PH 3.7	**Essential Medicine List**	**Skill Station 1**	**3 hours**
	PH 3.8	**Communicate with Patient: Proper use of prescribed Drugs**	**Skill Lab 1**	**2 hours**
Total	**8**		**Skill lab/station**	**50**

Experimental Pharmacology (SH)	PH 4.1	Drug Administration by routes in mannequins	DOAP 2	4
	PH 4.2	Drugs on BP (CAL)	Skill Lab 2	4
Total	2			8

Communication (SH)			**SGD/Skill station**	
	PH 5.1	Communicate with the patient with empathy and ethics on all aspects of drug use	1	2
	PH 5.2	Communicate with the patient regarding optimal use of a) drug therapy, b) devices and c) storage of medicines	2	4
	PH 5.3	Motivate patients with chronic diseases to adhere to the prescribed management by the health care provider	1	2
	PH 5.4	Explain to the patient the relationship between cost of treatment and patient compliance	1	2
	PH 5.5	Demonstrate an understanding of the caution in prescribing drugs likely to produce dependence and recommend the line of management	1	2
	PH 5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs	1	2
	PH 5.7	Demonstrate an understanding of the legal and ethical aspects of prescribing drugs	1	2
Total	7			16

SUMMARY: BREAK UP OF 100 HOURS (SKILL TOPICS)

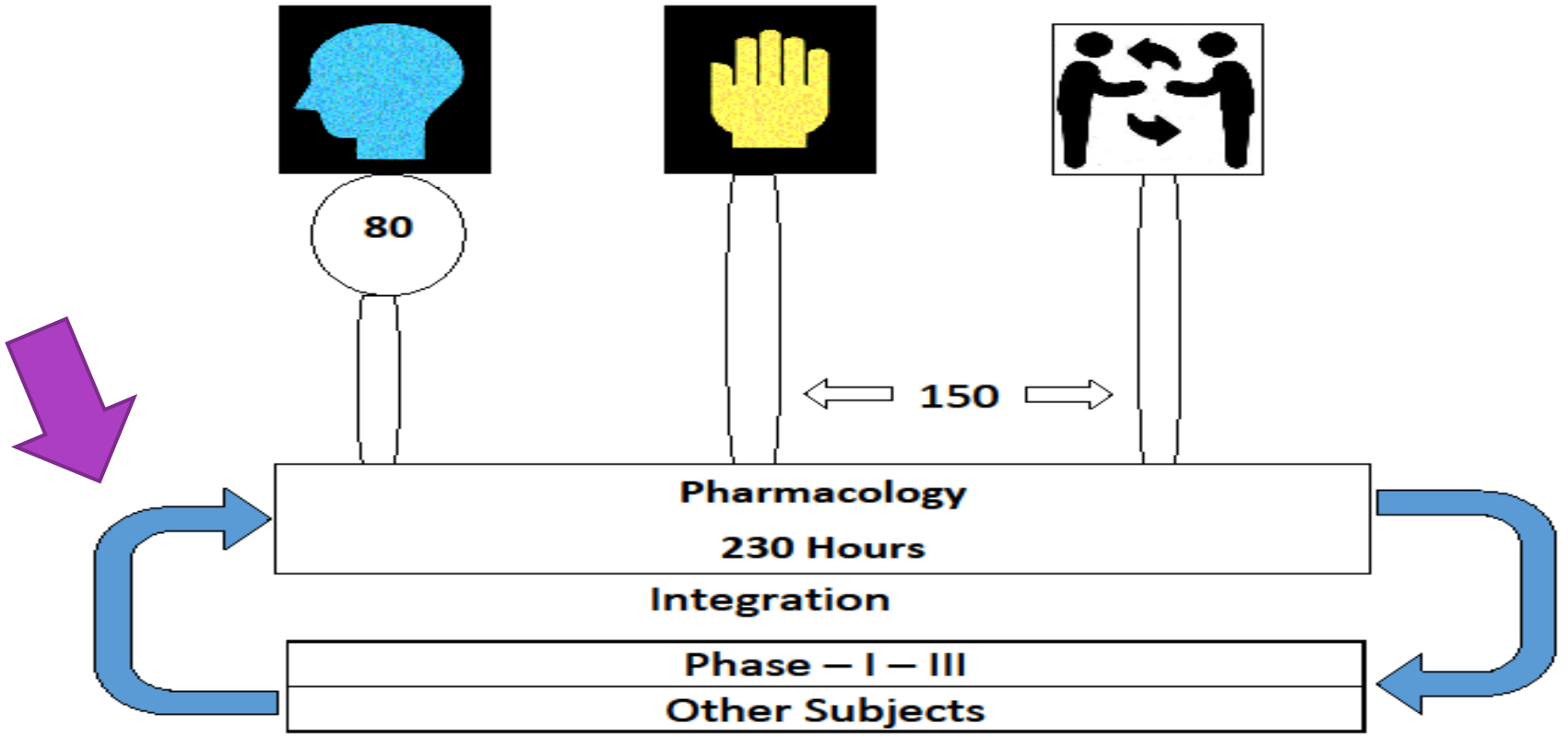
Topic	Competencies	2-hour Practical sessions	Total hours
Knowledge (SH)*	4	L+P	14
Clinical Pharmacy (SH)	4	DOAPs	12
Clinical Pharmacology (SH)	8	Skill Lab/skill station	50
Exp Pharmacol	2	DOAP/Skill lab	8
Communication	7	SGD/Skill station	16
Total	**21+4**		**100**

*** Some of competencies of knowledge topic are such that they must be taken as skill/practical sessions**

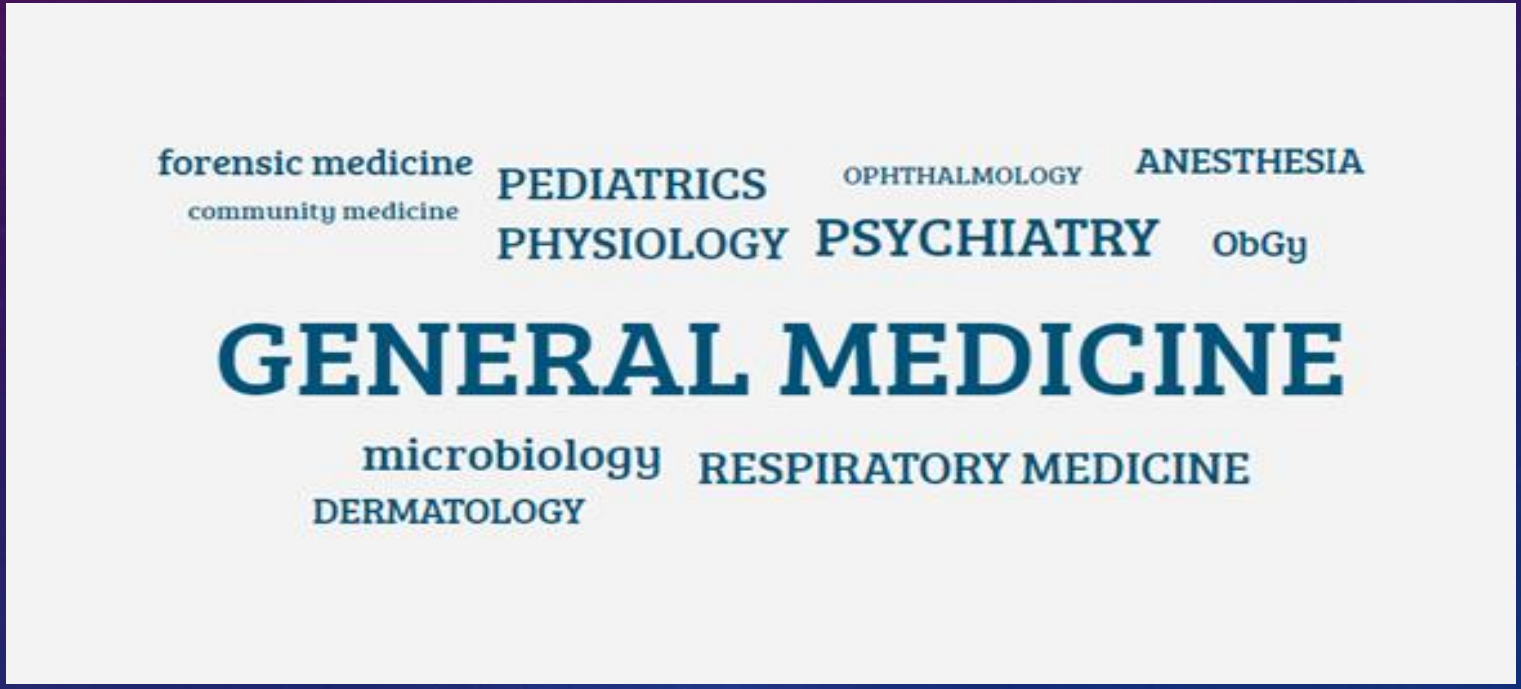
CONCEPT OF INTEGRATION IN NEW CURRICULUM

- Integration concept helps understand inter connectedness and ultimate applicative use of concept in patientcare
- Two ways
  - Alignment with temporal coordination
    - to the extent possible
  - Vertical and horizontal integration $(\approx 20\%)$
    - Sharing, nesting, coordination and linkers

Two Types of Integrations



PHARMACOLOGY REQUIRING INTEGRATION WITH OTHER SUBJECTS *(ANSWER GARDEN)*



UPPER CASE=VERTICAL INTEGRATION
Lower Case= Horizontal Integration

OPERATIONAL INTRADISCIPLINARY REARRANGEMENT (ALIGNMENT OF TOPICS WITHIN PHARMACOLOGY)

Competency code	Title	Domain/level	Session tactics
PH 5.6	Demonstrate ability to educate public & patients about various aspects of drug use including drug dependence and OTC drugs	SH	
PH 1.59	Describe and discuss the following: Essential medicines, Fixed dose combinations, Over the counter drugs, Herbal medicines	KH	Teach it First
PH 3.7	Prepare a list of essential medicines for a healthcare facility	SH	
PH 1.59	Describe and discuss the following: Essential medicines…….	KH	Teach First
PH 1.37	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of the drugs used as sex hormones, their analogues and anterior Pituitary hormones	KH	Aligned/merged session
PH 1.39	Describe mechanism of action, types, doses, side effects, indications and contraindications the drugs used for contraception	KH	

GDK

OPERATIONAL INTRADISCIPLINARY REARRANGEMENT (FROM COMPETENCIES TO SUBCOMPETENCIES

Competency Code	Title	Number of subcompetencies
PH 1.19	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs which act on CNS: *(including anxiolytics, sedatives & hypnotics, anti-psychotic, antidepressant drugs, anti-maniacs, opioid agonists and antagonists, drugs used for neurodegenerative disorders, anti-epileptics drugs)*	8
PH 1.21	Describe the symptoms and management of methanol and ethanol poisonings	
PH 1.25	Describe the mechanism/s of action, types, doses, side effects, indications and contraindications of the drugs acting on blood, like anticoagulants, antiplatelets, fibrinolytics, plasma expanders	3+ 1*
PH 1.27	Describe the mechanisms of action, types, doses, side effects, indications and contraindications of antihypertensive drugs and drugs used in shock	1+1*

PANDEMIC MANAGEMENT MODULE

- Learning Experience: Case Studies

The student should be able to	Level	Corresponding PH/FM competencies
Describe and discuss the various phases of drug trials	KH	PH1.64:Describe overview of drug development, Phases of clinical trials and Good Clinical Practice
Prepare a plan for evaluation of " Off Label" use of drug	SH	PH 1.1:Define and describe the principles of pharmacology and Pharmacotherapeutics
Organize Pharmacovigilance activities	SH	PH 1.6: Describe principles of Pharmacovigilance & ADR reporting systems
Discuss ethical aspects of Clinical trials in Pandemics	SH	FM 4.17:Describe and discuss ethical Principles: Respect for autonomy, non malfeasance, beneficence & justice: FM4.25:Clinical research & Ethics: Discuss human experimentation including clinical trials IM 26.14: Identify, discuss and defend medicolegal, socio-cultural and ethical issues as it pertains to research in human subjects

AETCOM MODULE IN PHASE-II

- **Phase-II (37 hrs)**
  - Foundation of Communication-2
  - The Foundation of Bioethics
  - Health Care as a right
  - Working in a health care team
  - Bioethics (Autonomy and Decision making)
  - Bioethics (Autonomy and decision making-Case studies)
  - Bioethics (Autonomy and Decision making-Case studies)
  - What does it mean to be a family member of sick

AETCOM COMPETENCIES RELATED TO PHARMACOLOGY

- No Direct AETCOM Competency in Pharmacology
- Individual Components (Particularly COMMUNICATION) is related to a number of Skill competencies of Pharmacology

Subject	Component of AETCOM				
	C	C/A	S/C	K/C	K
Pharmacology(PH) 2=Cl Pharmacy 3=Cl Pha'cology 5=Communication	-	3.8; 5.1; 5.2; 5.3; 5.4; 5.6	2.1; 2.2; 3.1	-	-
Other subjects (Integration)					
Internal Medicine (IM)	4.26; 5.7; 25.11	17.14; 21.4; 21.7	11.19; 12.14	7.20; 7.21; 7.22; 7.23; 10.25	-
Forensic Medicine (FM) AETCOM	-	-	-	-	4.11; 4.12; 4.17; 4.22; 4.23; 4.25; 4.26; 4.27

C=Communication; S=Skill; A=Attitude and K=Knowledge

PHASE-II: 34-35 WEEK- TIME TABLE

Suggested weekly format				
Wk-1	Wk-2	Wk-3	Wk-4	Wk5 (if there)
Wk-6				
Wk-11				
Wk-16				
Wk-21				
Wk-26				
Wk-32				

		2 Week					
Sr No.	Day	9 AM to 10 AM	10AM to 1 PM	1 PM to 2 PM	2 PM to 3 PM	3 PM to 4 PM	4 PM to 5 PM
1	Monday 5/10/2020	Patho	Clinical Posting	Lunch	Medical	Patho	
2	Tuesday 6/10/2020	Pharma			Surgery	Pharma	
3	Wednesday 7/10/2020	Micro			OBG	Micro	
4	Thursday 8/10/2020	Patho			Comm Med	Patho	
5	Friday 9/10/2020	Pharma			FM	Pharma	
6	Saturday 10/10/2020	Micro	1,3&5 Comm Med. 2 & 4 FM		Sports & Extra Curricular Activities/Assessments		

ANTIAMOEBIC DRUGS: FORMAT-GDK

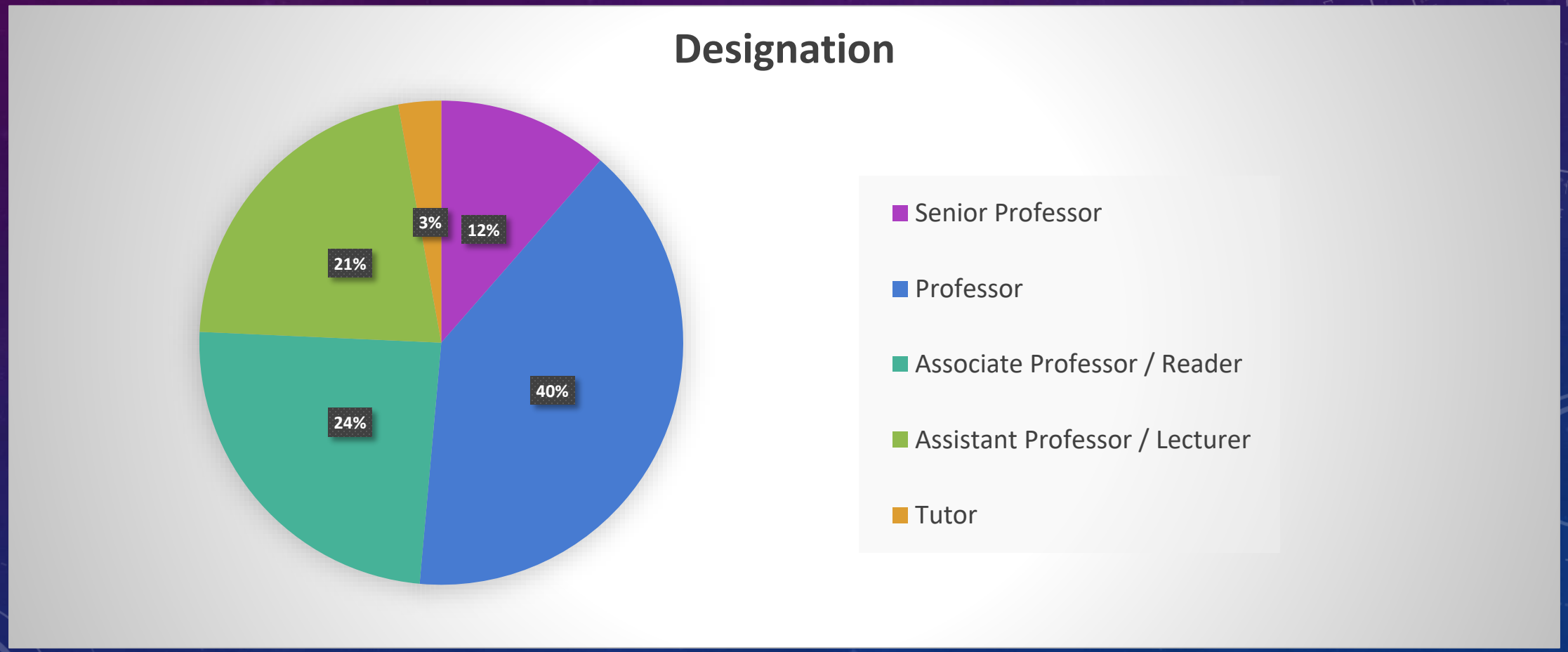
Sr No.	Day	9 AM to 10 AM	10AM to 1 PM	1 PM to 2 PM	2 PM to 3 PM	3 PM to 4 PM	4 PM to 5 PM
1	Monday 20/09/2021	Micro	Clinical Posting	Lunch	Medicine	Patho Practical	
2	Tuesday 21/09/2021	Pathology			Surgery	Pharma Practicals	
3	Wednesday 22/09/2021	Pharmacology			OBG	Micro Practicals	
4	Thursday 23/09/2021	Patho			Comm Med	Patho Practical	
5	Friday 24/09/2021	Pharma			FM	Pharma Practical	
6	Saturday 25/09/2021	Micro	1,3&5 Comm Med. 2 & 4 FM		Assessment		

PARTICIPANTS PERCEPTION ABOUT CBME-PHARMACOLOGY

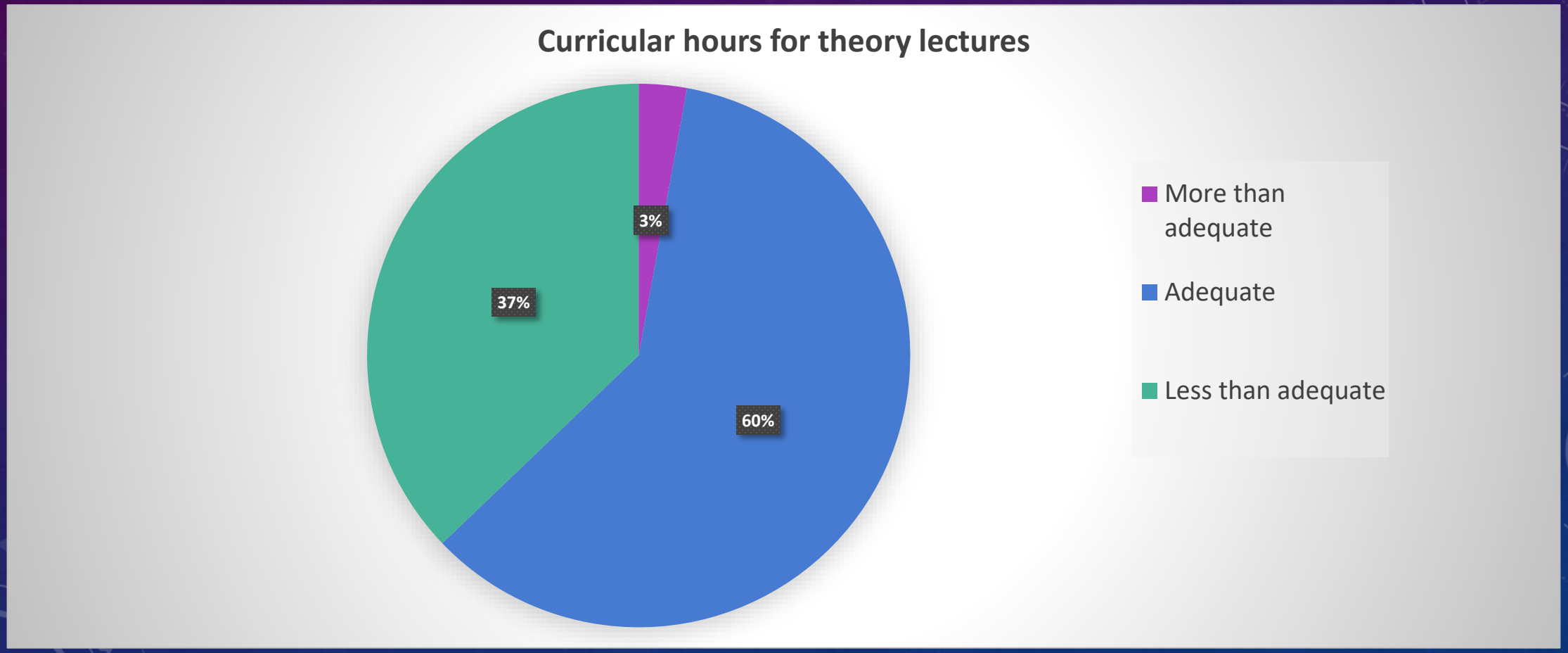
Thank you for participation

- 71 Participants responded in Google Form
- Their Responses are Analyzed and Presented Here

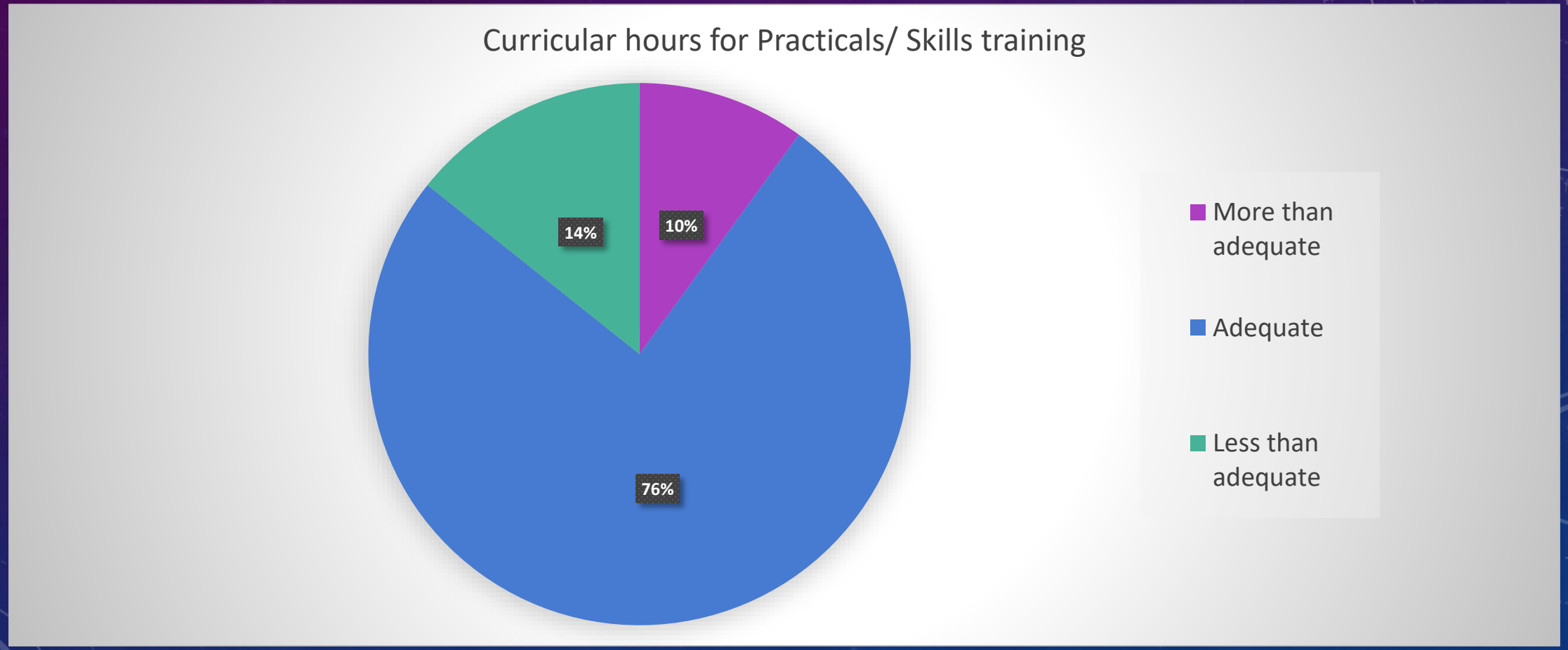
DESIGNATION



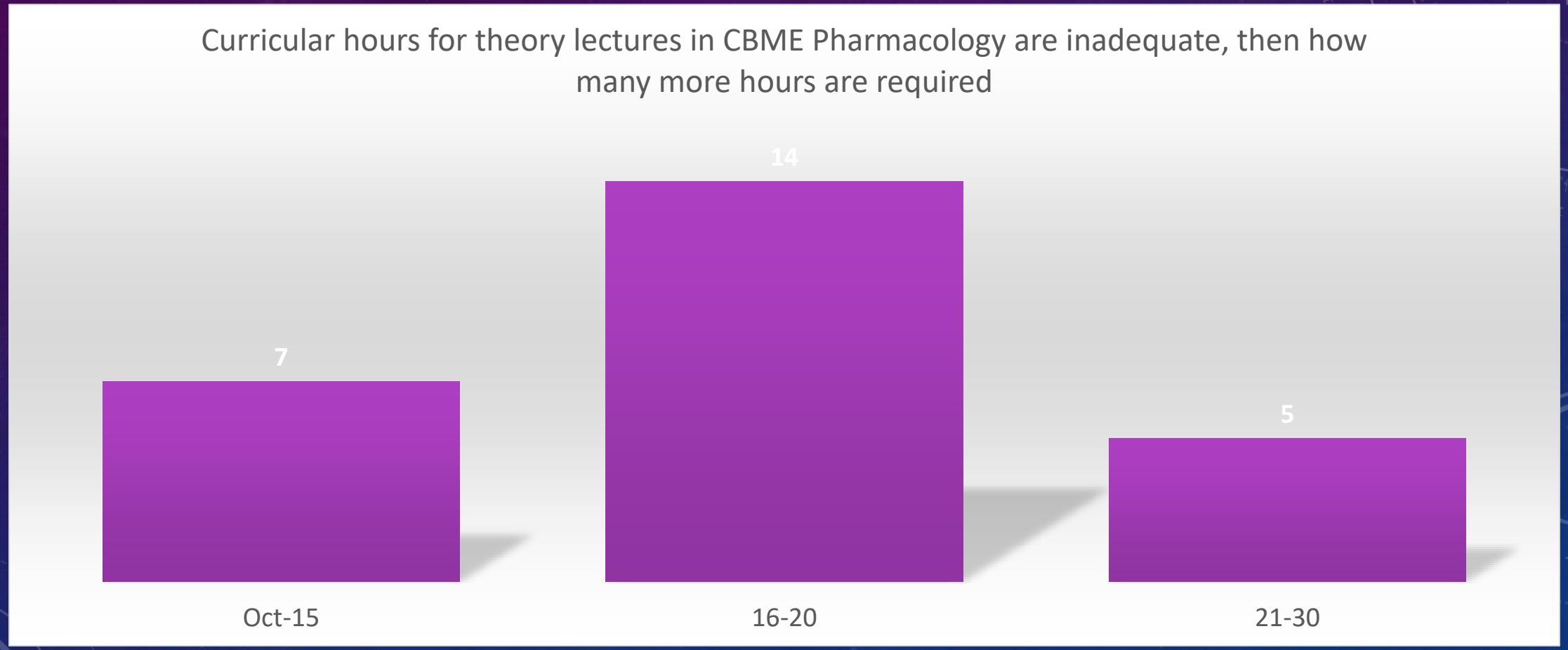
IN YOUR OPINION, THE CURRICULAR HOURS FOR THEORY LECTURES IN CBME PHARMACOLOGY ARE-



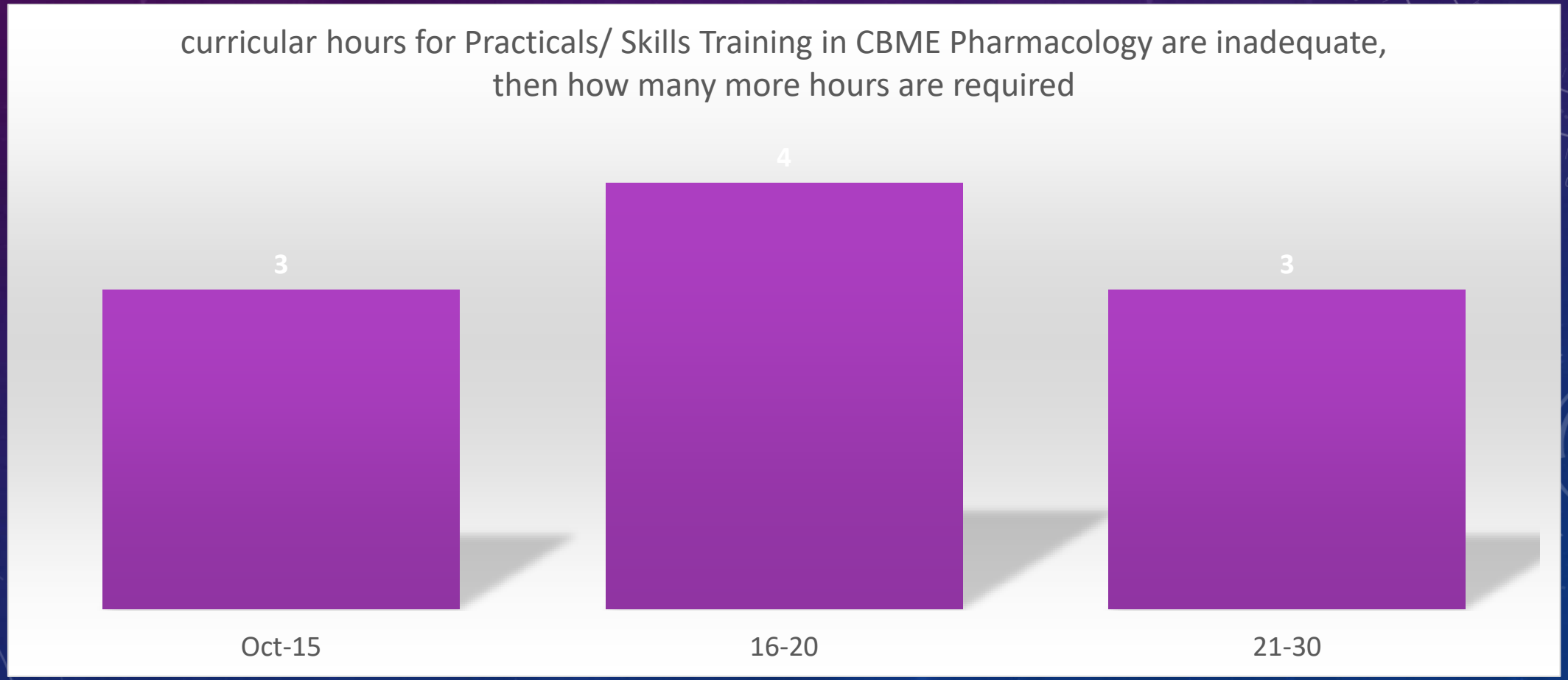
IN YOUR OPINION, THE CURRICULAR HOURS FOR PRACTICALS/ SKILLS TRAINING IN CBME PHARMACOLOGY ARE:



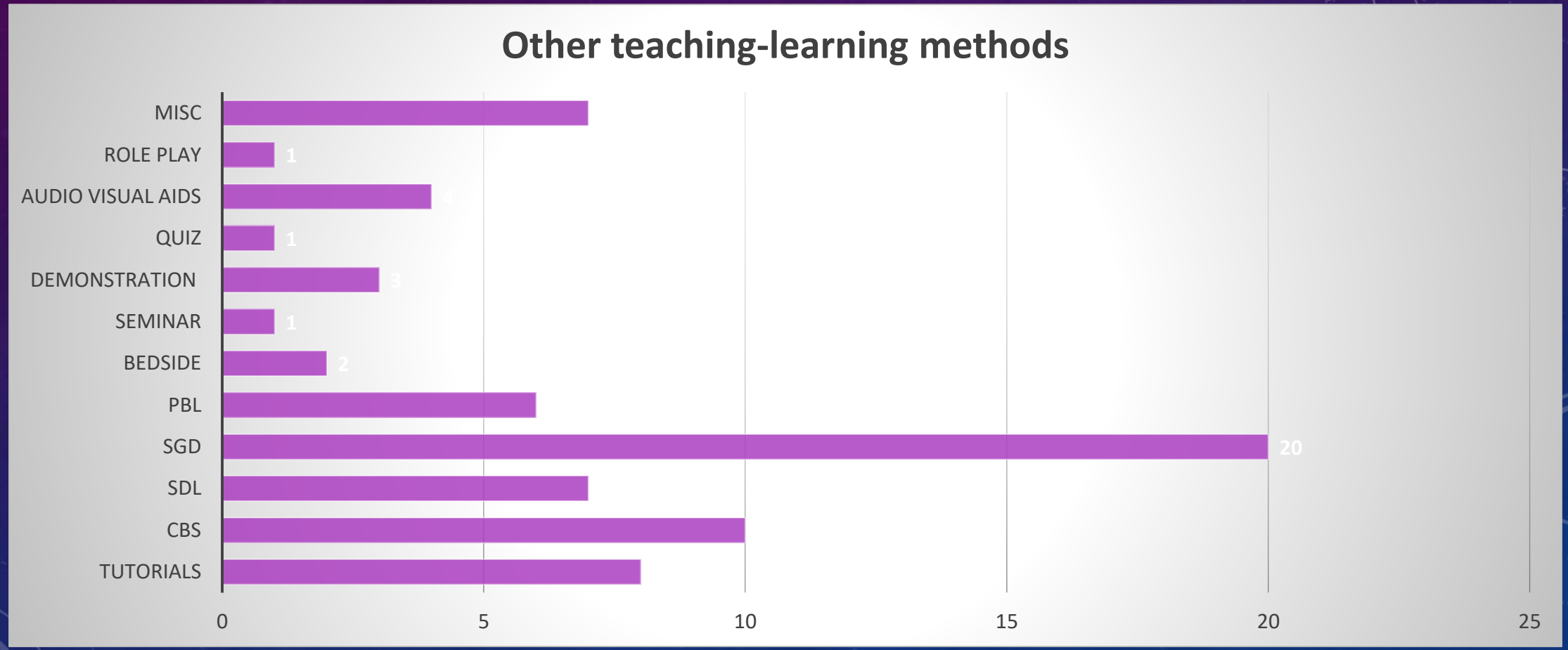
IF YOU FEEL THAT THE NUMBER OF CURRICULAR HOURS FOR THEORY LECTURES IN CBME PHARMACOLOGY ARE INADEQUATE, THEN HOW MANY MORE HOURS ARE REQUIRED?



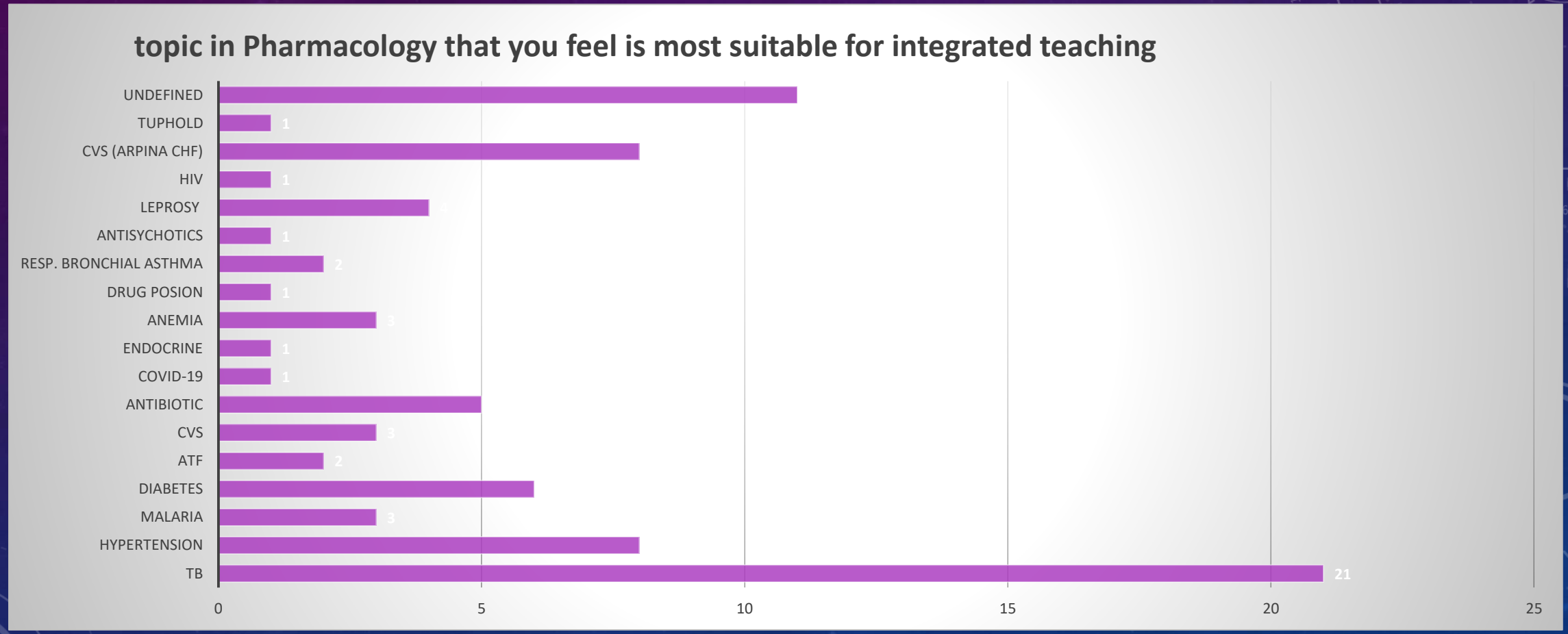
IF YOU FEEL THAT THE NUMBER OF CURRICULAR HOURS FOR PRACTICALS/ SKILLS TRAINING IN CBME PHARMACOLOGY ARE INADEQUATE, THEN HOW MANY MORE HOURS ARE REQUIRED?



APART FROM LECTURES, WHICH OTHER TEACHING-LEARNING METHOD WOULD YOU CONSIDER MOST APPROPRIATE FOR TEACHING KNOWLEDGE (K) ABOUT PHARMACOLOGY?



MENTION ONE TOPIC IN PHARMACOLOGY THAT YOU FEEL IS MOST SUITABLE FOR INTEGRATED TEACHING.



Mention topics that do not appear in CBME Pharmacology curriculum, but were present in traditional curriculum.

General Pharmacology		Systematic Pharmacology		
Topic	No. of Responses	Topic		No. of Responses
		Systematic	Topic	
Pharmacokinetics	4	CNS	Memory	1
			Depression	2
			Many topics	1
Sources of Drugs	2		Autacoids Pharmacology	1
		ANS	Gangion stimu/blockes	2
Antagonism	1	Antibiotics	Individual Antibacterials	17
			Antifungals	6
Graphs	1		Antiamoebic agents	1
		MISC	Chelating agents	1
			Calcium balance	1
Gene Therapy	1		drugs for skin	1
			Diagnostics	1
None	5		Epidemic management	1
Don't know	3		BMW	1

Mention topics that do not appear in CBME Pharmacology curriculum, but were present in traditional curriculum.

II. Skills & Practicals	
Topics	**No. of Responses**
Experimental	1
Frog rectus	8
Rabbit eye	2
CAL	2
Pharmacy Practicals	6

REFERENCES

1. **https://mciindia.org/ActivitiWebClient/open/getDocument?path=/Documents/Public/Portal/Gazette/GME-06.11.2019.pdf, downloaded on 02-01-20**
2. **Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; pp 136-159.**
3. **Curriculum Implementation Support Program of the Competency Based Undergraduate Medical Education Curriculum, 2019**
4. **Khilnani G, Khilnani AK, Thaddanee R. Competency based assessment in pharmacology: implications of changed recommendations in viva voce and internal assessment. Int J Basic Clin Pharmacol. 2020;9(4):683-9.**
5. **Khilnani AK, Thaddanee R, Khilnani G, Rao G. The Competency-Based Medical Education Curriculum: An Appraisal of the Remedial Measures for Internal Assessment. Med J DY Patil Vidyapeeth 2020;13:101-3Medical Council of India. Assessment Module for Undergraduate Medical Education Training Program, 2019: pp 1-29.**
6. **https://www.jipmer.edu.in/sites/default/files/Curricular%20reforms%20for%20Phase%20II%20MBBS%20final%2007092018%20%281%29.pdf downloaded on 6th May, 2020.**

adani
GAIMS
GUJARAT ADANI INSTITUTE OF MEDICAL SCIENCES

Thank you