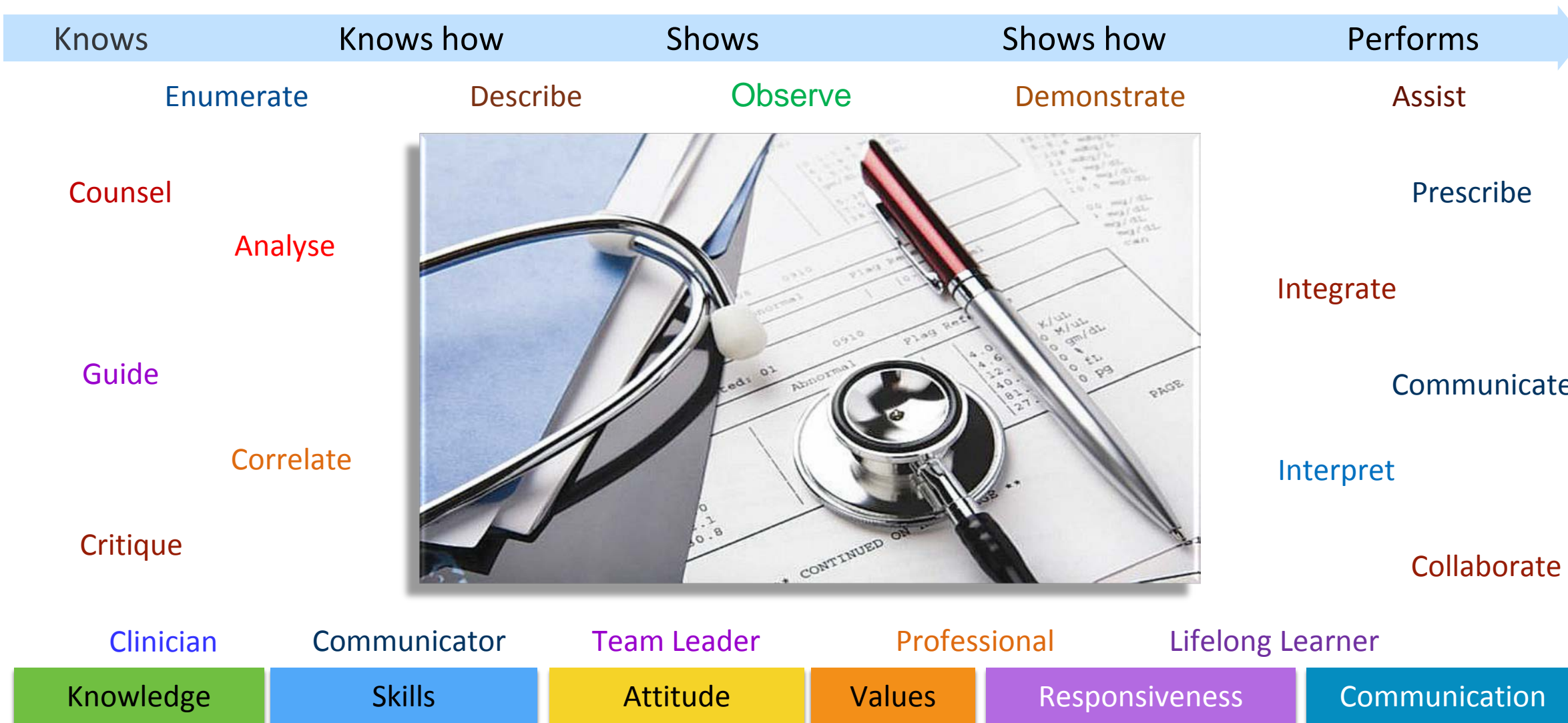




MEDICAL COUNCIL OF INDIA

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE



**COMPETENCY BASED UNDERGRADUATE CURRICULUM
FOR THE
INDIAN MEDICAL GRADUATE**

2018



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

दूरभाष/Phone : 25367033, 25367035, 25367036

फैक्स /Fax : 0091-11-25367024

ई-मेल /E-mail : mci@bol.net.in

वेबसाईट /Website : www.mciindia.org



पॉकेट -14, सेक्टर-8, द्वारका,

फेस-1, नई दिल्ली-110077

Pocket- 14, Sector- 8, Dwarka,

Phase – 1, New Delhi-110077

भारतीय आयुर्विज्ञान परिषद के अधिक्रमण में शासी बोर्ड

BOARD OF GOVERNORS IN SUPERSESSION OF MEDICAL COUNCIL OF INDIA

FOREWORD

The Medical Council of India, aware of its responsibilities in creation of trained health manpower, has been engaged for the past few years in updating the medical curriculum for undergraduates and postgraduates to be in consonance with the changing health needs of the country. The task of updating and reorganization of the postgraduate curriculum in nearly 50 broad specialty disciplines to the competency pattern was accomplished by the Academic Cell of the Council with the help of subject experts and members of its Reconciliation Board and have been uploaded on the Council Website for use of the medical fraternity.

The Council visualized that the Indian Medical Graduate, at the end of the undergraduate training program, should be able to recognize "health for all" as a national goal and should be able to fulfill his/her societal obligations towards the realization of this goal. To fulfill the mandate of the undergraduate medical curriculum which is to produce a clinician, who understands and is able to provide preventive, promotive, curative, palliative and holistic care to his patients, the curriculum must enunciate clearly the competencies the student must be imparted and must have learnt, with clearly defined teaching-learning strategies and effective methods of assessment. The student should be trained to effectively communicate with patients and their relatives in a manner respectful of the patient's preferences, values, beliefs, confidentiality and privacy and to this purpose, a book on Attitude, Ethics & Communication was prepared by the Medical Council of India; the teaching faculty of medical colleges have been receiving training on this module since 2015.

दूरभाष / Phone : 25367033, 25367035,

25367036

फैक्स / Fax : 0091-11-25367024

ई-मेल / E-mail : mci@bol.net.in

वेबसाइट / Website : www.mciindia.org



पॉकेट -14, सेक्टर-8, द्वारका,

फेस-1, नई दिल्ली-110077

Pocket- 14, Sector- 8, Dwarka,

Phase – 1, New Delhi-110077

भारतीय आयुर्विज्ञान परिषद के अधिक्रमण में शासी बोर्ड

BOARD OF GOVERNORS IN SUPERSESSION OF MEDICAL COUNCIL OF INDIA

-2-

Competency based Medical Education provides an effective outcome-based strategy where various domains of teaching including teaching learning methods and assessment form the framework of competencies. Keeping this objective as the core ingredient, the Medical Council of India with the help of panel of experts drawn from across the country, laid the basic framework for the revised undergraduate medical curriculum. Over the past four years, a group of highly committed medical professionals working as Members of the MCI Reconciliation Board developed this information into a document incorporating appropriate teaching-learning strategies, tools and techniques of teaching, and modes of assessment which have culminated in the current competency based undergraduate curriculum. We understand that maximum efforts were made to encourage integrated teaching between traditional subject areas using a problem-based learning approach starting with clinical or community cases and exploring the relevance of various preclinical disciplines in both the understanding and resolution of the problem. All efforts have been made to de-emphasize compartmentalisation of disciplines so as to achieve both horizontal and vertical integration in different phases. We are proud of their work accomplishment and congratulate them in the onerous task accomplished.

It gives us great satisfaction to state that the '**competency based undergraduate curriculum**' that has been prepared by the Medical Council of India would definitely serve the cause of medical education and in creating a competent Indian Medical Graduate to serve the community.

BOARD OF GOVERNORS

Contributors

1. Dr. Avinash Supe

Chairman, Reconciliation Board
Director (ME & MH) and Dean
Professor, Departments of G I Surgery and Medical Education
Seth GSMC and KEM Hospital
Mumbai - 400012

2. Dr. Krishna G. Seshadri

Member, Reconciliation Board
Member, Board of Management
Visiting Professor, Departments of Endocrinology, Diabetes and Medical Education
Sri Balaji Vidyapeeth
Puducherry - 607 403

3. Dr. Praveen Singh

Member, Reconciliation Board
Professor and Head, Departments of Anatomy and Medical Education
Convenor, MCI Nodal Centre
Pramukhswami Medical College
Karamsad, Gujarat - 388325

4. Dr. R. Sajith Kumar

Member, Reconciliation Board
Professor and Head, Departments of Infectious Disease and Medical Education
Convenor, MCI Nodal Centre
Government Medical College
Kottayam, Kerala - 686008

5. Dr. PV Chalam

Member, Reconciliation Board
Principal & Professor, Department of Surgery
Bhaskar Medical College, RR Dist.
Telangana - 500075

6. Dr. Subir K. Maulik

Member, Reconciliation Board
Professor, Department of Pharmacology
All India Institute of Medical Sciences
New Delhi-110029

7. Dr. Dinesh Kumar Badyal

Member, Reconciliation Board
Professor and Head, Department of Pharmacology
Professor, Department of Medical Education
Co-Convenor, MCI Nodal Centre
Christian Medical College
Ludhiana - 141008, Punjab

8. Dr. Alka Rawekar

Member, Reconciliation Board
Professor, Departments of Physiology and Medical Education
Head, Department of Physiology
Co-Convenor, MCI Nodal Centre
Jawaharlal Nehru Medical College
Sawangi (Meghe), Wardha - 442004, Maharashtra

9. Dr. Sunita Y Patil

Member, Reconciliation Board
Professor, Departments of Pathology and Medical Education
Resource Faculty, MCI Nodal Centre
Jawaharlal Nehru Medical College, KLE Academy of Higher Education & Research
Belagavi - 590 010, Karnataka

10. Dr. M. Rajalakshmi

Chief Consultant, Academic Cell
Medical Council of India
New Delhi-110077

Grant of Copyright to the Competency based Undergraduate Curriculum

The Competency based Undergraduate Curriculum for MBBS students prepared by subject experts was scrutinized by members of the Reconciliation Board and Academic Cell. The contents, embodied in this document, have received Copyright from the Register of Copyrights, Copyright Office, Government of India with Registration Number L-63913/2016.

Reproducing any part of this document in any form must be with the prior written permission of the competent authorities of the Medical Council of India.

The most recent version of this document may be obtained from the Medical Council of India.

How to cite this document: Medical Council of India, Competency based Undergraduate curriculum for the Indian Medical Graduate, 2018. Vol. 1; pg --- (give page nos.)

Contents Vol. I

Sl. No.	Subject	Legend	Page No.
(i)	Preamble		11
(ii)	How to use the Manual		14
(iii)	Definitions used in the Manual		37
	Competency based Undergraduate Curriculum in Pre-clinical and Para-clinical subjects		
1.	Human Anatomy	AN	41
2.	Physiology	PY	92
3.	Biochemistry	BI	119
4.	Pharmacology	PH	136
5.	Pathology	PA	160
6.	Microbiology	MI	205
7.	Forensic Medicine & Toxicology	FM	228
(iv)	List of contributing subject experts		252

Contents Vol. II

Sl. No.	Subject	Legend	Page No.
(i)	Preamble		11
(ii)	How to use the Manual		14
(iii)	Definitions used in the Manual		37
	Competency based Undergraduate Curriculum in Medicine and Allied subjects		
1.	Community Medicine	CM	41
2.	General Medicine	IM	60
3.	Respiratory Medicine	CT	143
4.	Pediatrics	PE	150
5.	Psychiatry	PS	203
6.	Dermatology, Venereology & Leprosy	DR	219
7.	Physical Medicine & Rehabilitation	PM	229
(iv)	List of contributing subject experts		235

Contents Vol. III

Sl. No.	Subject	Legend	Page No.
(i)	Preamble		11
(ii)	How to use the Manual		14
(iii)	Definitions used in the Manual		37
	Competency based Undergraduate Curriculum in Surgery and Allied subjects		
1.	General Surgery	SU	41
2.	Ophthalmology	OP	79
3.	Otorhinolaryngology	EN	89
4.	Obstetrics & Gynaecology	OG	102
5.	Orthopedics	OR	130
6.	Anesthesiology	AS	145
7.	Radiodiagnosis	RD	154
8.	Radiotherapy	RT	160
9.	Dentistry	DE	163
(iv)	List of contributing subject experts		166

COMPETENCY BASED UNDERGRADUATE CURRICULUM FOR THE INDIAN MEDICAL GRADUATE

Preamble

The new Graduate Medical Education Regulations attempts to stand on the shoulder of the contributions and the efforts of resource persons, teachers and students (past and present). It intends to take the learner to provide health care to the evolving needs of the nation and the world.

More than twenty years have passed since the existing Regulations on Graduate Medical Education, 1997 was notified, necessitating a relook at all aspects of the various components in the existing regulations and adapt them to the changing demography, socio-economic context, perceptions, values and expectations of stakeholders. Emerging health care issues particularly in the context of emerging diseases, impact of advances in science and technology and shorter distances on diseases and their management also need consideration. The strong and forward looking fundamentals enshrined in the Regulations on Graduate Medical Education, 1997 has made this job easier. A comparison between the 1997 Regulations and proposed Graduate Medical Education Regulations, 2018 will reveal that the 2018 Regulations have evolved from several key principles enshrined in the 1997 Regulations.

The thrust in the new regulations is continuation and evolution of thought in medical education making it more learner-centric, patient-centric, gender-sensitive, outcome -oriented and environment appropriate. The result is an outcome driven curriculum which conforms to global trends. Emphasis is made on alignment and integration of subjects both horizontally and vertically while respecting the strengths and necessity of subject-based instruction and assessment. This has necessitated a deviation from using “broad competencies”; instead, the reports have written end of phase subject (sub) competencies. These “sub-competencies” can be mapped to the global competencies in the Graduate Medical Education Regulations.

A significant attempt has been made in the outcome driven undergraduate curriculum to provide the orientation and the skills necessary for life-long learning to enable proper care of the patient. In particular, the curriculum provides for early clinical exposure, electives and longitudinal care. Skill acquisition is an indispensable component of the learning process in medicine. The curriculum reinforces this aspect by necessitating certification of certain essential skills. The experts and the writing group have factored in patient availability, access, consent, number of students in a class etc. in suggesting skill acquisition and assessment methods; use of skills labs, simulated and guided environments are encouraged. In the pre-internship years,- the highest level of skill acquisition is a show how (SH) in a simulated or guided environment; few skills require independent performance and certification - these are marked with P (for performance). Opportunity to 'perform' these skills will be available during internship.

The importance of ethical values, responsiveness to the needs of the patient and acquisition of communication skills is underscored by providing dedicated curriculum time in the form of a longitudinal program based on Attitude, Ethics and Communication (AETCOM) competencies. Great emphasis has been placed on collaborative and inter-disciplinary teamwork, professionalism, altruism and respect in professional relationships with due sensitivity to differences in thought, social and economic position and gender.

In addition to the above, an attempt has been made to allow students from diverse educational streams and backgrounds to transition appropriately through a Foundation Course. Dedicated time has been allotted for self directed learning and co-curricular activities.

Formative and internal assessments have been streamlined to achieve the objectives of the curriculum. Minor tweaks to the summative assessment have been made to reflect evolving thought and regulatory requirements. Curricular governance and support have been strengthened, increasing the involvement of Curriculum Committee and Medical Education Departments/Units.

The curriculum document in conjunction with the new Graduate Medical Education Regulations (GMR), when notified, must be seen as a "living document" that should evolve as stakeholder requirements and aspirations change. We hope that the current GMR does just that. The Medical Council of India is

grateful to all the teachers, subject experts, process experts, patients, students and trainees who have contributed through invaluable inputs, intellectual feedbacks and valuable time spent to make this possible. This document would not have been possible without the dedicated and unstinting intellectual, mental and time-consuming efforts of the members of the Reconciliation Board of the Council and the Academic Cell of MCI.

How to use the Manual

This Manual is intended for curriculum planners in an institution to design learning and assessment experiences for the MBBS student. Contents created by subject experts have been curated to provide guidance for the curriculum planners, leaders and teachers in medical schools. They must be used with reference to and in the context of the Regulations.

Section 1

Competencies for the Indian Medical Graduate

Section 1 - provides the global competencies extracted from the Graduate Medical Education Regulations, 2018. The global competencies identified as defining the roles of the **Indian Medical Graduate** are the broad competencies that the learner has to aspire to achieve; teachers and curriculum planners must ensure that the learning experiences are aligned to this Manual.

Extract from the Graduate Medical Education Regulations, 2018

2. Objectives of the Indian Graduate Medical Training Programme

The undergraduate medical education program is designed with a goal to create an “Indian Medical Graduate” (IMG) possessing requisite knowledge, skills, attitudes, values and responsiveness, so that she or he may function appropriately and effectively as a physician of first contact of the community while being globally relevant. To achieve this, the following national and institutional goals for the learner of the Indian Medical Graduate training program are hereby prescribed:-

2.1. National Goals

At the end of undergraduate program, the Indian Medical Graduate should be able to:

- (a) recognize “health for all” as a national goal and health right of all citizens and by undergoing training for medical profession fulfill his/her social obligations towards realization of this goal.
- (b) learn every aspect of National policies on health and devote herself/himself to its practical implementation.
- (c) achieve competence in practice of holistic medicine, encompassing promotive, preventive, curative and rehabilitative aspects of common diseases.
- (d) develop scientific temper, acquire educational experience for proficiency in profession and promote healthy living.
- (e) become exemplary citizen by observance of medical ethics and fulfilling social and professional obligations, so as to respond to national aspirations.

2.2. Institutional Goals

In consonance with the national goals, each medical institution should evolve institutional goals to define the kind of trained manpower (or professionals) they intend to produce. The Indian Medical Graduates coming out of a medical institute should:

- (a) be competent in diagnosis and management of common health problems of the individual and the community, commensurate with his/her position as a member of the health team at the primary, secondary or tertiary levels, using his/her clinical skills based on history, physical examination and relevant investigations.
- (b) be competent to practice preventive, promotive, curative and rehabilitative medicine in respect to the commonly encountered health problems.
- (c) appreciate rationale for different therapeutic modalities, be familiar with the administration of the "essential drugs" and their common side effects.
- (d) be able to appreciate the socio-psychological, cultural, economic and environmental factors affecting health and develop humane attitude towards the patients in discharging one's professional responsibilities.

- (e) possess the attitude for continued self learning and to seek further expertise or to pursue research in any chosen area of medicine, action research and documentation skills.
- (f) be familiar with the basic factors which are essential for the implementation of the National Health Programs including practical aspects of the following:
 - (i) Family Welfare and Maternal and Child Health (MCH);
 - (ii) Sanitation and water supply;
 - (iii) Prevention and control of communicable and non-communicable diseases;
 - (iv) Immunization;
 - (v) Health Education;
 - (vi) Indian Public Health Standards (IPHS) at various level of service delivery;
 - (vii) Bio-medical waste disposal; and
 - (viii) Organizational and or institutional arrangements.
- (g) acquire basic management skills in the area of human resources, materials and resource management related to health care delivery, General and hospital management, principal inventory skills and counseling.
- (h) be able to identify community health problems and learn to work to resolve these by designing, instituting corrective steps and evaluating outcome of such measures.
- (i) be able to work as a leading partner in health care teams and acquire proficiency in communication skills.
- (j) be competent to work in a variety of health care settings.
- (k) have personal characteristics and attitudes required for professional life including personal integrity, sense of responsibility and dependability and ability to relate to or show concern for other individuals.

All efforts must be made to equip the medical graduate to acquire the skills as detailed in Table 11 Certifiable procedural skills – A Comprehensive list of skills recommended as desirable for Bachelor of Medicine and Bachelor of Surgery (MBBS) – Indian Medical Graduate, as given in the Graduate Medical Education Regulations, 2018

2.3. Goals for the Learner

In order to fulfil this goal, the Indian Medical Graduate must be able to function in the following roles appropriately and effectively:-

- 2.3.1. Clinician who understands and provides preventive, promotive, curative, palliative and holistic care with compassion.
- 2.3.2. Leader and member of the health care team and system with capabilities to collect, analyze, synthesize and communicate health data appropriately.
- 2.3.3. Communicator with patients, families, colleagues and community.
- 2.3.4. Lifelong learner committed to continuous improvement of skills and knowledge.
- 2.3.5. Professional, who is committed to excellence, is ethical, responsive and accountable to patients, community and profession.

3. Competency Based Training Programme of the Indian Medical Graduate

Competency based learning would include designing and implementing medical education curriculum that focuses on the desired and observable ability in real life situations. In order to effectively fulfil the roles as listed in clause 2, the Indian Medical Graduate would have obtained the following set of competencies at the time of graduation:

3.1. *Clinician, who understands and provides preventive, promotive, curative, palliative and holistic care with compassion*

- 3.1.1 Demonstrate knowledge of normal human structure, function and development from a molecular, cellular, biologic, clinical, behavioral and social perspective.
- 3.1.2. Demonstrate knowledge of abnormal human structure, function and development from a molecular, cellular, biological, clinical, behavioural and social perspective.
- 3.1.3 Demonstrate knowledge of medico-legal, societal, ethical and humanitarian principles that influence health care.

- 3.1.4 Demonstrate knowledge of national and regional health care policies including the National Health Mission that incorporates National Rural Health Mission (NRHM) and National Urban Health Mission (NUHM), frameworks, economics and systems that influence health promotion, health care delivery, disease prevention, effectiveness, responsiveness, quality and patient safety.
- 3.1.5. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is complete and relevant to disease identification, disease prevention and health promotion.
- 3.1.6. Demonstrate ability to elicit and record from the patient, and other relevant sources including relatives and caregivers, a history that is contextual to gender, age, vulnerability, social and economic status, patient preferences, beliefs and values.
- 3.1.7 Demonstrate ability to perform a physical examination that is complete and relevant to disease identification, disease prevention and health promotion.
- 3.1.8 Demonstrate ability to perform a physical examination that is contextual to gender, social and economic status, patient preferences and values.
- 3.1.9 Demonstrate effective clinical problem solving, judgment and ability to interpret and integrate available data in order to address patient problems, generate differential diagnoses and develop individualized management plans that include preventive, promotive and therapeutic goals.
- 3.1.10 Maintain accurate, clear and appropriate record of the patient in conformation with legal and administrative frameworks.
- 3.1.11 Demonstrate ability to choose the appropriate diagnostic tests and interpret these tests based on scientific validity, cost effectiveness and clinical context.
- 3.1.12 Demonstrate ability to prescribe and safely administer appropriate therapies including nutritional interventions, pharmacotherapy and interventions based on the principles of rational drug therapy, scientific validity, evidence and cost that conform to established national and regional health programmes and policies for the following:
 - i) Disease prevention,
 - ii) Health promotion and cure,
 - iii) Pain and distress alleviation, and
 - iv) Rehabilitation and palliation.

- 3.1.13 Demonstrate ability to provide a continuum of care at the primary and/or secondary level that addresses chronicity, mental and physical disability.
- 3.1.14 Demonstrate ability to appropriately identify and refer patients who may require specialized or advanced tertiary care.
- 3.1.15 Demonstrate familiarity with basic, clinical and translational research as it applies to the care of the patient.

3.2. *Leader and member of the health care team and system*

- 3.2.1 Work effectively and appropriately with colleagues in an inter-professional health care team respecting diversity of roles, responsibilities and competencies of other professionals.
- 3.2.2 Recognize and function effectively, responsibly and appropriately as a health care team leader in primary and secondary health care settings.
- 3.2.3 Educate and motivate other members of the team and work in a collaborative and collegial fashion that will help maximize the health care delivery potential of the team.
- 3.2.4 Access and utilize components of the health care system and health delivery in a manner that is appropriate, cost effective, fair and in compliance with the national health care priorities and policies, as well as be able to collect, analyze and utilize health data.
- 3.2.5 Participate appropriately and effectively in measures that will advance quality of health care and patient safety within the health care system.
- 3.2.6 Recognize and advocate health promotion, disease prevention and health care quality improvement through prevention and early recognition: in a) life style diseases and b) cancer, in collaboration with other members of the health care team.

3.3. *Communicator with patients, families, colleagues and community*

- 3.3.1 Demonstrate ability to communicate adequately, sensitively, effectively and respectfully with patients in a language that the patient understands and in a manner that will improve patient satisfaction and health care outcomes.
- 3.3.2 Demonstrate ability to establish professional relationships with patients and families that are positive, understanding, humane, ethical, empathetic, and trustworthy.
- 3.3.3 Demonstrate ability to communicate with patients in a manner respectful of patient's preferences, values, prior experience, beliefs, confidentiality and privacy.

3.3.4 Demonstrate ability to communicate with patients, colleagues and families in a manner that encourages participation and shared decision-making.

3.4. Lifelong learner committed to continuous improvement of skills and knowledge

3.4.1. Demonstrate ability to perform an objective self-assessment of knowledge and skills, continue learning, refine existing skills and acquire new skills.

3.4.2. Demonstrate ability to apply newly gained knowledge or skills to the care of the patient.

3.4.3. Demonstrate ability to introspect and utilize experiences, to enhance personal and professional growth and learning.

3.4.4. Demonstrate ability to search (including through electronic means), and critically reevaluate the medical literature and apply the information in the care of the patient.

3.4.5. Be able to identify and select an appropriate career pathway that is professionally rewarding and personally fulfilling.

3.5. *Professional who is committed to excellence, is ethical, responsive and accountable to patients, community and the profession*

3.5.1. Practice selflessness, integrity, responsibility, accountability and respect.

3.5.2. Respect and maintain professional boundaries between patients, colleagues and society.

3.5.3. Demonstrate ability to recognize and manage ethical and professional conflicts.

3.5.4. Abide by prescribed ethical and legal codes of conduct and practice.

3.5.5. Demonstrate a commitment to the growth of the medical profession as a whole.

Section 2

Subject-wise outcomes

Section 2 contains subject-wise outcomes so called “sub-competencies” that must be achieved at the end of instruction in that subject. These are organised in tables and have two parts. The core subject outcomes are in first part. The second part in the same document (titled Integration) contains outcomes/competencies in other subjects which have been identified by experts in those subjects as requiring alignment or integration with the core subject.

Outcomes (competencies) in each subject are grouped according to topics number-wise. It is important to review the individual outcomes (competencies) in the light of the topic outcomes as a whole. For each competency outlined - the learning domains (Knowledge, Skill, Attitude, Communication) are identified. The expected level of achievement in that subject is identified as – [knows (K), knows how (KH), shows how (SH), perform (P)]. As a rule, ‘perform’ indicates independent performance without supervision and is required rarely in the pre-internship period. The outcome is a core (Y - must achieve) or a non-core (N - desirable) outcome. Suggested learning and assessment methods (these are suggestions) and explanation of the terms used are given under the section “definitions used in this document”. The suggested number of times a skill must be performed independently for certification in the learner’s log book is also given. Last two columns indicate subjects within the same phase and other phases with which the topic can be taught - together - aligned (temporal coordination), shared, correlated or nested.

The number of topics and competencies in each subject are given below:

Topics & outcomes in Pre-clinical & Para-clinical subjects

Sr. No.	Subjects	Number of topics	Number of outcomes
1.	Human Anatomy	82	409
2.	Physiology	11	137
3.	Biochemistry	11	89
4.	Pharmacology	05	85
5.	Pathology	36	182
6.	Microbiology	08	54
7.	Forensic Medicine & Toxicology	14	162
	Total	167	1118

Topics & outcomes in Medicine and Allied subjects

Sr. No.	Subjects	Number of topics	Number of outcomes
1.	Community Medicine	20	107
2.	General Medicine	26	506
3.	Respiratory Medicine	02	47
4.	Pediatrics	35	406
5.	Psychiatry	19	117
6.	Dermatology, Venereology & Leprosy	18	73
7.	Physical Medicine & Rehabilitation	09	43
	Total	129	1299

Topics & outcomes in Surgery and Allied subjects

Sr. No.	Subjects	Number of topics	Number of outcomes
1.	General Surgery	30	133
2.	Ophthalmology	09	60
3.	Otorhinolaryngology	04	76
4.	Obstetrics & Gynaecology	38	126
5.	Orthopedics	14	39
6.	Anesthesiology	10	46
7.	Radiodiagnosis	01	13
8.	Radiotherapy	05	16
9.	Dentistry	05	23
	Total	116	532

Section 3

Sample topics used for alignment & integration

Section 3 contains a sample selection of topics that run across the phases which can be used for alignment and integration. These are suggestions and institutions can select their own set of topics which can run across phases.

It is important to design the curriculum with a view to ensure with several broad outcomes in mind: a) achievement of the broad competencies by the learner at the end of the MBBS program, b) retain the subject - wise character of learning and assessment and ensure that phase-wise subject outcomes are met and assessed, c) teaching topics that are similar together thereby reducing redundancy and allowing the learner to integrate the concept as the most important step in integration (alignment or temporal coordination) (see document on integration), and d) align learning and assessment experiences to the outcome and the level of achievement specified.

Understanding the competencies table

Understanding the competencies table

A	B	C	D	E	F	G	H	I	J
No.	Competencies	Domain	K/KH/SH/P	Core	Suggested Teaching Learning Method	Suggested Assessment method	No. required to certify (P)	Vertical Integration	Horizontal Integration
Physiology									
Summary									
Name of Topic: General Physiology									
Number of Competencies: (08)									
PY1.1	Describe the structure and functions of a	K	KH	Y	Lectures, Small group discussion	Written/Viva			Biochemistry
IM15.4	Elicit <i>document</i> and present a medical history that helps delineate the	S	SH	Y	Bed Side clinic, DOAP	Skill assessment		Community Medicine	

Description of competency

Unique number of the competency. First two alphabets represent the subject (see list); number following alphabet reflects topic number, following period is a running number.

Identifies the domain or domains addressed
 K - Knowledge
 S - Skill
 A - Attitude
 C - Communication

Identifies the level of competency required based on the Miller's pyramid
 K - Knows
 KH - Knows How
 S - Skill
 SH - Show How
 P - Perform independently

Identifies if the competency is core or desirable.
 Y indicates Core;
 N-non-core

Identifies the suggested learning method.
 DOAP - Demonstrate (by Student) Observe, Assist Perform)

Identifies the suggested assessment method
 Skill assessment - Clinics, Skills lab, Practicals etc.

no of times a skill needs to be done independently to be certified for independent performance;
 Rarely used in UG

Subject (s) in other phases with which the competency can be vertically integrated to increase relevance or improve basic understanding

Subject (s) in the same phase with which the competency can be horizontally integrated or aligned to allow a more wholesome understanding

***Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

Deriving learning objectives from competencies

Deriving learning objectives from competencies

K	Knows	A knowledge attribute – Usually enumerates or describes
KH	Knows how	A higher level of knowledge – is able to discuss or analyse
S	Shows	A skill attribute: is able to identify or demonstrate the steps
SH	Shows how	A skill attribute: is able to interpret / demonstrate a complex procedure requiring thought, knowledge and behaviour
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3*	Identify the etiology of meningitis based on given CSF parameters	K/S	SH	Y
---------	---	-----	----	---

PA42.1*	At the end of the session the phase II student must be able to enumerate the most common causes of meningitis correctly
PA42.2*	At the end of the session the phase II student must be able to enumerate the components of CSF analysis correctly
PA42.3*	At the end of the session the phase II student must be able to describe the CSF features for a given etiology of meningitis accurately
PA42.4*	At the end of the session the phase II student must be able to identify the aetiology of meningitis correctly from a given set of CSF parameters

Audience - who will do the behavior

Behavior - What should the learner be able to do?

Condition - Under what conditions should the learner be able to do it?

Degree – How well must it be done

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

***Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents**

Deriving learning methods from competencies

Deriving learning methods from competencies

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3*	Identify the etiology of meningitis based on given CSF parameters	K/S	SH	Y
---------	---	-----	----	---

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

PA42.1*	At the end of the session the Phase II student must be able to enumerate the most common causes of meningitis correctly	Lecture → small group discussion
PA42.2*	At the end of the session the Phase II student must be able to enumerate the components of a CSF analysis correctly	Related objectives can be combined into one teaching session
PA42.3*	At the end of the session the Phase II student must be able to describe the CSF features for a given etiologic of meningitis accurately	
PA42.4*	At the end of the session the Phase II student must the able to identify the aetiology of meningitis correctly from a given set of CSF parameters	small group discussion, practical session

*Numbers given are for illustrative purposes only and should not be compared with the same in curriculum documents

Deriving assessment methods from competencies

Deriving assessment methods from competencies-1

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

PA42.3*	Identify the etiology of meningitis based on given CSF parameters	K/S	SH	Y
---------	---	-----	----	---

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

PA42.1*	At the end of the session the Phase I Phase II student must be able to enumerate the most common causes of meningitis correctly	Short note or part of structured essay: Enumerate 5 causes of meningitis based on their prevalence in India
PA42.2*	At the end of the session the Phase II student must be able to enumerate the components of a CSF analysis correctly	Short note or part of structured essay: Enumerate the components tested in a CSF analysis
PA42.3*	At the end of the session the Phase II student must be able to describe the CSF features for a given aetiology of meningitis accurately	Short note or part of structured essay: Describe the CSF findings that are characteristic of tuberculous meningitis
PA42.4*	At the end of the session the Phase II student must be able to identify the aetiology of meningitis correctly from a given set of CSF parameters	Short note / part of the structured essay/ Skill station/ Viva voce Review the CSF findings in the following patient and identify (write or vocalise) the most likely etiology

* Numbers given are for illustrative purposes only and should not be compared with numbers in the curriculum document

Deriving assessment methods from competencies-2

Competency: An **observable** ability of a health professional, **integrating multiple components** such as knowledge, skills, values and attitudes.

MI2.4*	List the common microbial agents causing anemia. Describe the morphology, mode of infection and discuss the pathogenesis, clinical course, diagnosis and prevention and treatment of the common microbial agents causing Anemia.	K	KH	Y	Didactic Small group discussion	Written/ Viva voce	Medicine	Pathology
--------	--	---	----	---	---------------------------------------	-----------------------	----------	-----------

Objective: Statement of what a learner should be able to do at the end of a specific learning experience

MI2.1*	Enumerate the common microbial agents causing anaemia
MI2.2*	Describe the morphology of agent (1,2 etc)
MI2.3*	Describe the mode of infection of agent in humans
MI2.4*	Discuss the pathogenesis of anemia caused by agent
MI2.5*	Describe the clinical course of infection by agent
MI2.6*	Enumerate the diagnostic tests to identify the aetiology of agent as a cause of anemia
MI2.7*	Discuss the methods to prevent infection by agent
MI2.8*	Describe the treatment of infection by agent

Integrate concept - not necessarily teachers
Plan session with teachers of both subjects -teachers from both subjects usually not needed. Ensure redundancy and duplication by reviewing both subjects



Horizontally aligned and integrated with pathology

Vertically integrated with General Medicine



Integrate concept - not necessarily teachers Plan session with teachers from both phases. Make a decision on how much of the information needs to be brought down to this phase to make it relevant. Consider how a competency can ascend over phases: for eg. - can be at a KH -(know how) in phase II but becomes SH in phase III. For vertical integration with clinical subjects, use of a case to link the concept (a well written paper, case is sufficient). Using teachers from both phases is rarely required

The concept of integration

Concept of integration used in the Manual

Integration is a learning experience that allows the learner to perceive relationships from blocks of knowledge and develop a unified view of its basis and its application. The GMR 2018 applies these principles to the extent that will retain the strengths of silo - based education and assessment while providing experiences that will allow learners to integrate concepts.

Keeping this in mind, the Regulations recommend temporal coordination as described by Harden (called alignment in this document) as the major method to be followed allowing similar topics in different subjects to be thought separately but during the same time frame (Figure 1a).

In a small proportion - not to exceed 20% of the total curriculum an attempt can be made to Share (Figure 1b) topics or Correlate (Figure 1c) topics by using an integration session. The integration session most preferred will be a case based discussion in an appropriate format ensuring that elements in the same phase (horizontal) and from other phases are addressed. Care must be taken to ensure that achievement phase - based objectives are given primacy - the integrative elements from other phases are used only to provide adequate recall and understand the clinical application of concepts. It must be emphasized that integration does not necessarily require multiple teachers in each class. Experts from each phase and subject may be involved in the lesson planning but not it in its delivery unless deemed necessary.

As much as possible the necessary correlates from other phases must also be introduced while discussing a topic in a given subject - Nesting (Figure 1d) (Harden). Topics that cannot be aligned and integrated must be provided adequate time in the curriculum throughout the year.

Assessment will continue to be subject based. However, efforts must be made to ensure that phase appropriate correlates are tested to determine if the learner has internalized and integrated the concept and its application.

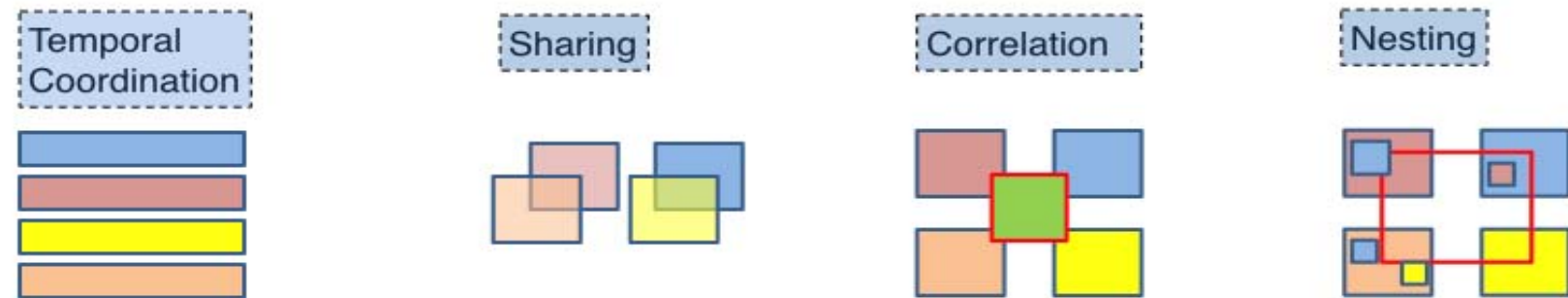


Figure 1 : Integration concepts framed in the GMR. Coloured boxes represent subjects. 1 a. Temporal coordination: The timetable is adjusted so that topics within the subjects or disciplines which are related, are scheduled at the same time. b. Sharing: Two disciplines may agree to plan and jointly implement a teaching program c. Correlation: the emphasis remains on disciplines or subjects with subject-based courses taking up most of the curriculum time. Within this framework, an integrated teaching session or course is introduced in addition to the subject-based teaching (green box with red border) d. Nesting: the teacher targets, within a subject-based course, skills relating to other subjects. Adapted from Harden R Med Edu 2000. 34; 551

Definitions used in the Manual

1. **Goal:** A projected state of affairs that a person or system plans to achieve.

In other words: Where do you want to go? or What do you want to become?

2. **Competency:** The habitual and judicious use of communication, knowledge, technical skills, clinical reasoning, emotions, values, and reflection in daily practice for the benefit of the individual and community being served.

In other words: What should you have? or What should have changed?

3. **Objective:** Statement of what a learner should be able to do at the end of a specific learning experience.

In other words: What the Indian Medical Graduate should know, do, or behave.

Action Verbs used in this manual

Knowledge	Skill	Attitude/communicate
Enumerate	Identify	Counsel
List	Demonstrate	Inform
Describe	Perform under supervision	Demonstrate understanding of
Discuss	Perform independently	
Differentiate	Document	
Define	Present	
Classify	Record	
Choose	Interpret	
Elicit		
Report		

Note:

1. Specified essential competencies only will be required to be performed independently at the end of the final year MBBS.
2. The word 'perform' or 'do' is used ONLY if the task has to be done on patients or in laboratory practical in the pre/para- clinical phases.
3. Most tasks that require performance during undergraduate years will be performed under supervision.
4. If a certification to perform independently has been done, then the number of times the task has to be performed under supervision will be indicated in the last column.

Explanation of terms used in this manual

Lecture	Any instructional large group method including traditional lecture and interactive lecture
Small group discussion	Any instructional method involving small groups of students in an appropriate learning context
DOAP (Demonstration- Observation - Assistance - Performance)	A practical session that allows the student to observe a demonstration, assist the performer, perform in a simulated environment, perform under supervision or perform independently
Skill assessment	A session that assesses the skill of the student including those in the practical laboratory, skills lab, skills station that uses mannequins/ paper case/simulated patients/real patients as the context demands
Core	A competency that is necessary in order to complete the requirements of the subject (traditional must know)
Non-Core	A competency that is optional in order to complete the requirements of the subject (traditional nice (good) to know/ desirable to know)
National Guidelines	Health programs as relevant to the competency that are part of the National Health Program

Domains of learning

K	Knowledge
S	Skill
A	Attitude
C	Communication

Levels of competency

K	Knows	A knowledge attribute - Usually enumerates or describes
KH	Knows how	A higher level of knowledge - is able to discuss or analyze
S	Shows	A skill attribute: is able to identify or demonstrate the steps
SH	Shows how	A skill attribute: is able to interpret/ demonstrate a complex procedure requiring thought, knowledge and behavior
P	Performs (under supervision or independently)	Mastery for the level of competence - When done independently under supervision a pre-specified number of times - certification or capacity to perform independently results

Note:

In the table of competency - the highest level of competency acquired is specified and implies that the lower levels have been acquired already. Therefore, when a student is able to SH - Show how - an informed consent is obtained - it is presumed that the preceding steps - the knowledge, the analytical skills, the skill of communicating have all been obtained.

It may also be noted that attainment of the highest level of competency may be obtained through steps spread over several subjects or phases and not necessarily in the subject or the phase in which the competency has been identified.

Volume II

Competency based Undergraduate Curriculum in Medicine and Allied subjects

COMMUNITY MEDICINE (CODE: CM)

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
COMMUNITY MEDICINE									
Topic: Concept of Health and Disease		Number of competencies: (10)			Number of procedures that require certification:(NIL)				
CM1.1	Define and describe the concept of Public Health	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM1.2	Define health; describe the concept of holistic health including concept of spiritual health and the relativeness & determinants of health	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM1.3	Describe the characteristics of agent, host and environmental factors in health and disease and the multi factorial etiology of disease	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM1.4	Describe and discuss the natural history of disease	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM1.5	Describe the application of interventions at various levels of prevention	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM1.6	Describe and discuss the concepts, the principles of Health promotion and Education, IEC and Behavioral change communication (BCC)	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM1.7	Enumerate and describe health indicators	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM1.8	Describe the Demographic profile of India and discuss its impact on health	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM1.9	Demonstrate the role of effective Communication skills in health in a simulated environment	S	SH	Y	DOAP sessions	Skill Assessment		AETCOM	
CM1.10	Demonstrate the important aspects of the doctor patient relationship in a simulated environment	S	SH	Y	DOAP sessions	Skill Assessment		AETCOM	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Relationship of social and behavioural to health and disease Number of competencies: (5) Number of procedures that require certification: (NIL)									
CM2.1	Describe the steps and perform clinico socio-cultural and demographic assessment of the individual, family and community	S	SH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce/ Skill assessment			
CM2.2	Describe the socio-cultural factors, family (types), its role in health and disease & demonstrate in a simulated environment the correct assessment of socio-economic status	S	SH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce/ Skill assessment			
CM2.3	Describe and demonstrate in a simulated environment the assessment of barriers to good health and health seeking behavior	S	SH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce/ Skill assessment			
CM2.4	Describe social psychology, community behaviour and community relationship and their impact on health and disease	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM2.5	Describe poverty and social security measures and its relationship to health and disease	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
Topic: Environmental Health Problems Number of competencies: (8) Number of procedures that require certification: (NIL)									
CM3.1	Describe the health hazards of air, water, noise, radiation and pollution	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine, ENT	
CM3.2	Describe concepts of safe and wholesome water, sanitary sources of water, water purification processes, water quality standards, concepts of water conservation and rainwater harvesting	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce			
CM3.3	Describe the aetiology and basis of water borne diseases /jaundice/hepatitis/ diarrheal diseases	K	KH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce		Microbiology, General Medicine, Pediatrics	
CM3.4	Describe the concept of solid waste, human excreta and sewage disposal	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
CM3.5	Describe the standards of housing and the effect of housing on health	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM3.6	Describe the role of vectors in the causation of diseases. Also discuss National Vector Borne disease Control Program	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Microbiology	
CM3.7	Identify and describe the identifying features and life cycles of vectors of Public Health importance and their control measures	S	SH	Y	Lecture, Small group discussion, DOAP session	Written / Viva voce/ Skill assessment		Microbiology	
CM3.8	Describe the mode of action, application cycle of commonly used insecticides and rodenticides	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pharmacology	
Topic: Principles of health promotion and education Number of competencies: (3) Number of procedures that require certification: (NIL)									
CM4.1	Describe various methods of health education with their advantages and limitations	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM4.2	Describe the methods of organizing health promotion and education and counselling activities at individual family and community settings	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM4.3	Demonstrate and describe the steps in evaluation of health promotion and education program	S	SH	Y	Small group session, DOAP session	Written / Viva voce/ Skill assessment			
Topic: Nutrition Number of competencies: (08) Number of procedures that require certification: (NIL)									
CM5.1	Describe the common sources of various nutrients and special nutritional requirements according to age, sex, activity, physiological conditions	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine, Pediatrics	
CM5.2	Describe and demonstrate the correct method of performing a nutritional assessment of individuals, families and the community by using the appropriate method	S	SH	Y	DOAP sessions	Skill Assessment		General Medicine, Pediatrics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
CM5.3	Define and describe common nutrition related health disorders (including macro-PEM, Micro-iron, Zn, iodine, Vit. A), their control and management	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine, Pediatrics	
CM5.4	Plan and recommend a suitable diet for the individuals and families based on local availability of foods and economic status, etc in a simulated environment	S	SH	Y	DOAP sessions	Skill Assessment		General Medicine, Pediatrics	
CM5.5	Describe the methods of nutritional surveillance, principles of nutritional education and rehabilitation in the context of socio-cultural factors.	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine, Pediatrics	
CM5.6	Enumerate and discuss the National Nutrition Policy, important national nutritional Programs including the Integrated Child Development Services Scheme (ICDS) etc	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pediatrics	
CM5.7	Describe food hygiene	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Microbiology
CM5.8	Describe and discuss the importance and methods of food fortification and effects of additives and adulteration	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pediatrics	
Topic: Basic statistics and its applications Number of competencies: (04) Number of procedures that require certification: (NIL)									
CM6.1	Formulate a research question for a study	K	KH	Y	Small group discussion, Lecture, DOAP sessions	Written / Viva voce/ Skill assessment		General Medicine, Pediatrics	
CM6.2	Describe and discuss the principles and demonstrate the methods of collection, classification, analysis, interpretation and presentation of statistical data	S	SH	Y	Small group, Lecture, DOAP sessions	Written / Viva voce/ Skill assessment		General Medicine, Pediatrics	
CM6.3	Describe, discuss and demonstrate the application of elementary statistical methods including test of significance in various study designs	S	SH	Y	Small group discussion, Lecture, DOAP sessions	Written / Viva voce/ Skill assessment		General Medicine, Pediatrics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
CM6.4	Enumerate, discuss and demonstrate Common sampling techniques, simple statistical methods, frequency distribution, measures of central tendency and dispersion	S	SH	Y	Small group discussion, Lecture, DOAP sessions	Written / Viva voce/ Skill assessment		General Medicine, Pediatrics	
Topic: Epidemiology Number of competencies: (09) Number of procedures that require certification: (NIL)									
CM7.1	Define Epidemiology and describe and enumerate the principles, concepts and uses	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine	
CM7.2	Enumerate, describe and discuss the modes of transmission and measures for prevention and control of communicable and non-communicable diseases	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine	
CM7.3	Enumerate, describe and discuss the sources of epidemiological data	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine	
CM7.4	Define, calculate and interpret morbidity and mortality indicators based on given set of data	S	SH	Y	Small group, DOAP sessions	Written/ Skill assessment		General Medicine	
CM7.5	Enumerate, define, describe and discuss epidemiological study designs	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine	
CM7.6	Enumerate and evaluate the need of screening tests	S	SH	Y	Small group discussion, DOAP sessions	Written/ Skill assessment		General Medicine	
CM7.7	Describe and demonstrate the steps in the Investigation of an epidemic of communicable disease and describe the principles of control measures	S	SH	Y	Small group discussion, DOAP sessions	Written/ Skill assessment		General Medicine	Microbiology
CM7.8	Describe the principles of association, causation and biases in epidemiological studies	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine	
CM7.9	Describe and demonstrate the application of computers in epidemiology	S	KH	Y	Small group discussion, DOAP sessions	Written			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Epidemiology of communicable and non- communicable diseases		Number of competencies:(7)			Number of procedures that require certification:(NIL)				
CM8.1	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for communicable diseases	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine, Pediatrics	Microbiology, Pathology
CM8.2	Describe and discuss the epidemiological and control measures including the use of essential laboratory tests at the primary care level for Non Communicable diseases (diabetes, Hypertension, Stroke, obesity and cancer etc.)	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine	
CM8.3	Enumerate and describe disease specific National Health Programs including their prevention and treatment of a case	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine, Pediatrics	
CM8.4	Describe the principles and enumerate the measures to control a disease epidemic	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine, Pediatrics	
CM8.5	Describe and discuss the principles of planning, implementing and evaluating control measures for disease at community level bearing in mind the public health importance of the disease	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		General Medicine, Pediatrics	
CM8.6	Educate and train health workers in disease surveillance, control & treatment and health education	S	SH	Y	DOAP sessions	Skill assessment			
CM8.7	Describe the principles of management of information systems	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
Topic: Demography and vital statistics		Number of competencies: (07)			Number of procedures that require certification: (NIL)				
CM9.1	Define and describe the principles of Demography, Demographic cycle, Vital statistics	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM9.2	Define, calculate and interpret demographic indices including birth rate, death rate, fertility rates	S	SH	Y	Lecture, Small group discussion, DOAP sessions	Skill assessment		Obstetrics & Gynaecology, Pediatrics	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
CM9.3	Enumerate and describe the causes of declining sex ratio and its social and health implications	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM9.4	Enumerate and describe the causes and consequences of population explosion and population dynamics of India.	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM9.5	Describe the methods of population control	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Obstetrics & Gynaecology	
CM9.6	Describe the National Population Policy	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM9.7	Enumerate the sources of vital statistics including census, SRS, NFHS, NSSO etc	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
Topic: Reproductive maternal and child health		Number of competencies:(09)			Number of procedures that require certification: (NIL)				
CM10.1	Describe the current status of Reproductive, maternal, newborn and Child Health	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Obstetrics & Gynaecology, Pediatrics	
CM10.2	Enumerate and describe the methods of screening high risk groups and common health problems	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Pediatrics, Obstetrics & Gynaecology	
CM10.3	Describe local customs and practices during pregnancy, childbirth, lactation and child feeding practices	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Pediatrics, Obstetrics & Gynaecology	
CM10.4	Describe the reproductive, maternal, newborn & child health (RMCH); child survival and safe motherhood interventions	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Obstetrics & Gynaecology, Pediatrics	
CM10.5	Describe Universal Immunization Program; Integrated Management of Neonatal and Childhood Illness (IMNCI) and other existing Programs.	K	KH	Y	Small group discussion, Lecture	Written / Viva voce		Pediatrics	
CM10.6	Enumerate and describe various family planning methods, their advantages and shortcomings	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
CM10.7	Enumerate and describe the basis and principles of the Family Welfare Program including the organization, technical and operational aspects	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM10.8	Describe the physiology, clinical management and principles of adolescent health including ARSH	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM10.9	Describe and discuss gender issues and women empowerment	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
Topic: Occupational Health Number of competencies: (05) Number of procedures that require certification: (NIL)									
CM11.1	Enumerate and describe the presenting features of patients with occupational illness including agriculture	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM11.2	Describe the role, benefits and functioning of the employees state insurance scheme	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM11.3	Enumerate and describe specific occupational health hazards, their risk factors and preventive measures	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM11.4	Describe the principles of ergonomics in health preservation	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
CM11.5	Describe occupational disorders of health professionals and their prevention & management	K	KH	Y	Small group discussion, Lecture	Written / Viva voce			
Topic: Geriatric services Number of competencies: (04) Number of procedures that require certification: (NIL)									
CM12.1	Define and describe the concept of Geriatric services	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	
CM12.2	Describe health problems of aged population	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	
CM12.3	Describe the prevention of health problems of aged population	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
CM12.4	Describe National program for elderly	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine	
Topic: Disaster Management Number of competencies: (04) Number of procedures that require certification: (NIL)									
CM13.1	Define and describe the concept of Disaster management	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Surgery, General Medicine	
CM13.2	Describe disaster management cycle	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Surgery, General Medicine	
CM13.3	Describe man made disasters in the world and in India	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Surgery, General Medicine	
CM13.4	Describe the details of the National Disaster management Authority	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Surgery, General Medicine	
Topic: Hospital waste management Number of competencies: (03) Number of procedures that require certification: (NIL)									
CM14.1	Define and classify hospital waste	K	KH	Y	Lecture, Small group discussion, visit to hospital	Written / Viva voce			Microbiology
CM14.2	Describe various methods of treatment of hospital waste	K	KH	Y	Lecture, Small group discussion, visit to hospital	Written / Viva voce			Microbiology
CM14.3	Describe laws related to hospital waste management	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Microbiology
Topic: Mental Health Number of competencies: (03) Number of procedures that require certification: (NIL)									
CM15.1	Define and describe the concept of mental Health	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Psychiatry	
CM15.2	Describe warning signals of mental health disorder	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Psychiatry	
CM15.3	Describe National Mental Health program	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Psychiatry	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Health planning and management		Number of competencies: (04)			Number of procedures that require certification: (NIL)				
CM16.1	Define and describe the concept of Health planning	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM16.2	Describe planning cycle	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM16.3	Describe Health management techniques	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM16.4	Describe health planning in India and National policies related to health and health planning	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
Topic: Health care of the communitiy		Number of competencies:(05)			Number of procedures that require certification: (NIL)				
CM17.1	Define and describe the concept of health care to community	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM17.2	Describe community diagnosis	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM17.3	Describe primary health care, its components and principles	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM17.4	Describe National policies related to health and health planning and millennium development goals	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM17.5	Describe health care delivery in India	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
Topic: International Health		Number of competencies: (2)			Number of procedures that require certionat(NIL)				
CM18.1	Define and describe the concept of International health	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM18.2	Describe roles of various international health agencies	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Topic: Essential Medicine		Number of competencies: (3)			Number of procedures that require certification: (NIL)				
CM19.1	Define and describe the concept of Essential Medicine List (EML)	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pharmacology
CM19.2	Describe roles of essential medicine in primary health care	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pharmacology
CM19.3	Describe counterfeit medicine and its prevention	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Pharmacology
Topic: Recent advances in Community Medicine		Number of competencies: (04)			Number of procedures that require certification: (NIL)				
CM20.1	List important public health events of last five years	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM20.2	Describe various issues during outbreaks and their prevention	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM 20.3	Describe any event important to Health of the Community	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
CM 20.4	Demonstrate awareness about laws pertaining to practice of medicine such as Clinical establishment Act and Human Organ Transplantation Act and its implications	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			
Column C: K- Knowledge, S – Skill, A - Attitude / professionalism, C- Communication. Column D: K – Knows, KH - Knows How, SH - Shows how, P- performs independently, Column F: DOAP session – Demonstrate, Observe, Assess, Perform. Column H: If entry is P: indicate how many procedures must be done independently for certification/ graduation									
Intergration									
Physiology									
PY9.6	Enumerate the contraceptive methods for male and female. Discuss their advantages & disadvantages	K	KH	Y	Lectures, Small group discussion	Written/ Viva voce		Obstetrics & Gynaecology, Community Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Biochemistry									
BI8.5	Summarize the nutritional importance of commonly used items of food including fruits and vegetables.(macro-molecules & its importance)	K	KH	Y	Lectures, Small group discussions	Written/ Viva voce		Community Medicine, General Medicine, Pediatrics	
Pathology									
PA12.1	Enumerate and describe the pathogenesis of disorders caused by air pollution, tobacco and alcohol	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			Community Medicine
PA26.5	Define and describe the etiology, types, exposure, environmental influence, pathogenesis, stages, morphology, microscopic appearance and complications of Occupational lung disease	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine, Community Medicine	
PA26.7	Define and describe the etiology, types, exposure, genetics environmental influence, pathogenesis, morphology, microscopic appearance and complications of mesothelioma	K	KH	N	Lecture, Small group discussion	Written / Viva voce		General Medicine, Community Medicine	
Microbiology									
MI1.3	Describe the epidemiological basis of common infectious diseases	K	KH	Y	Lecture	Written/ Viva voce			Community Medicine
MI8.4	Describe the etiologic agents of emerging Infectious diseases. Discuss the clinical course and diagnosis	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		General Medicine, Community Medicine	Community Medicine
MI8.5	Define Healthcare Associated Infections (HAI) and enumerate the types. Discuss the factors that contribute to the development of HAI and the methods for prevention	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		General Medicine, Community Medicine	
MI8.6	Describe the basics of Infection control	K	KH	Y	Lecture, Small group discussion	Written / Viva voce			

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
MI8.7	Demonstrate Infection control practices and use of Personal Protective Equipments (PPE)	S	P	Y	DOAP session	Skill assessment	3 each in (Hand hygiene & PPE)	General Surgery	Community Medicine
MI8.16	Describe the National Health Programs in the prevention of common infectious disease (for information purpose only as taught in CM)	K	K	Y	Lecture	Written / Viva voce			
Pharmacology									
PH1.55	Describe and discuss the following National Health programmes including Immunisation, Tuberculosis, Leprosy, Malaria, HIV, Filariasis, Kala Azar, Diarrhoeal diseases, Anaemia & nutritional disorders, Blindness, Non-communicable diseases, Cancer and Iodine deficiency	K	KH	Y	Lecture	Written / Viva voce			Community Medicine
Forensic Medicine & Toxicology									
FM2.33	Demonstrate ability to use local resources whenever required like in mass disaster situations	A & C	KH	Y	Lecture, Small group discussions	Written/ Viva voce		Community Medicine	
Dermatology, Venereology & Leprosy									
DR9.1	Classify, describe the epidemiology, etiology, microbiology pathogenesis and clinical presentations and diagnostic features of Leprosy	K	KH	Y	Lecture, Small group discussions	Written / Viva voce		General Medicine	Microbiology, Community Medicine
DR9.5	Enumerate the indications and describe the pharmacology, administration and adverse reaction of pharmacotherapies for various classes of leprosy based on national guidelines	K	KH	Y	Lecture, Small group discussions	Written / Viva voce		General Medicine	Pharmacology, Community Medicine
DR9.6	Describe the treatment of Leprosy based on the WHO guidelines	K	KH	Y	Lecture, Small group discussions	Written / Viva voce		General Medicine	Pharmacology, Community Medicine
Ophthalmology									
OP9.4	Enumerate, describe and discuss the causes of avoidable blindness and the National Programs for Control of Blindness (including vision 2020)	K	KH	Y	Lecture, Small group discussions	Written / Viva voce			Community Medicine

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
Psychiatry									
PS19.1	Describe the relevance, role and status of community psychiatry	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine	
PS19.2	Describe the objectives strategies and contents of the of the National Mental Health Programme	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine	
PS19.4	Enumerate and describe the salient features of the prevalent mental health laws in India	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine	
PS19.5	Describe the concept and principles of preventive psychiatry and mental health promotion (positive mental health); and community education	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine	
General Medicine									
IM2.1	Discuss and describe the epidemiology, antecedents and risk factors for atherosclerosis and ischemic heart disease	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pathology, Physiology, Community Medicine	
IM4.3	Discuss and describe the common causes, pathophysiology and manifestations of fever in various regions in India including bacterial, parasitic and viral causes (e.g. Dengue, Chikungunya, Typhus)	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM9.15	Describe the national programs for anemia prevention	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Pharmacology, Community Medicine	
IM12.12	Describe and discuss the iodisation programs of the government of India	K	KH	Y	Lecture, Bedside clinic	short note		Community Medicine	
IM14.4	Describe and discuss the impact of environmental factors including eating habits, food, work, environment and physical activity on the incidence of obesity	K	K	Y	Lectures, Small group discussions	short note/ Viva voce		Pathology, Community Medicine	
IM24.18	Describe the impact of the demographic changes in ageing on the population	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
IM25.1	Describe and discuss the response and the influence of host immune status, risk factors and comorbidities on zoonotic diseases (e.g. Leptospirosis, Rabies) and non-febrile infectious disease (e.g. Tetanus)	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM25.2	Discuss and describe the common causes, pathophysiology and manifestations of these diseases	K	K	Y	Lecture, Small group discussion	Written		Microbiology, Community Medicine	
IM25.4	Elicit document and present a medical history that helps delineate the aetiology of these diseases that includes the evolution and pattern of symptoms, risk factors, exposure through occupation and travel	S	SH	Y	Bedside clinic, DOAP session	Skill assessment		Community Medicine	
IM25.13	Counsel the patient and family on prevention of various infections due to environmental issues	C	SH	Y	DOAP session	Skill assessment		Community Medicine, General Medicine	

Obstetrics & Gynaecology

OG1.1	Define and discuss birth rate, maternal mortality and morbidity	K	KH	Y	Lecture, Small group discussions	Short notes		Community Medicine	
OG1.2	Define and discuss perinatal mortality and morbidity including perinatal and neonatal mortality and morbidity audit	K	KH	Y	Lecture, Small group discussions	Short notes		Community Medicine	Pediatrics
OG8.1	Enumerate describe and discuss the objectives of antenatal care, assessment of period of gestation; screening for high-risk factors	K	KH	Y	Small group discussions, Bedside clinics, Lecture	Written / Viva voce/ Skill assessment		Community Medicine	
OG19.2	Counsel in a simulated environment, contraception and puerperal sterilisation	S/A/C	SH	Y	DOAP session	Skill assessment		Community Medicine	
OG21.1	Describe and discuss the temporary and permanent methods of contraception, indications, technique and complications; selection of patients, side effects and failure rate including OC, male contraception, emergency contraception and IUCD	K	KH	Y	Lecture, Small group discussions, Bedside clinics	Written / Viva voce/ Skill assessment		Community Medicine	
OG33.3	Describe and demonstrate the screening for cervical cancer in a simulated environment	K/S	SH	Y	DOAP session	Skill assessment		Community Medicine	

Pediatrics

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PE3.5	Discuss the role of the child developmental unit in management of developmental delay	K	K	N	Lecture, Small group discussion	Written/ Viva voce		Community Medicine	
PE3.7	Visit a Child Developmental unit and observe its functioning	S	KH	Y	Lecture, Small group discussion	Log book Entry		Community Medicine	
PE8.1	Define the term Complementary Feeding	K	K	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine	
PE8.2	Discuss the principles the initiation, attributes , frequency, techniques and hygiene related to complementary feeding including	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine	
PE8.3	Enumerate the common complimentary foods	K	K	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine	
PE8.4	Elicit history on the Complementary Feeding habits	S	SH	Y	Bedside clinics, Skills lab	Skill Assessment		Community Medicine	
PE8.5	Counsel and educate mothers on the best practices in Complimentary Feeding	A/C	SH	Y	DOAP session	Document in Log Book		Community Medicine	
PE9.1	Describe the age related nutritional needs of infants, children and adolescents including micronutrients and vitamins	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine, Biochemistry	
PE9.2	Describe the tools and methods for Assessment and classification of Nutritional status of infants, children and adolescents	K	KH	Y	Lecture, Small group discussion,	Written / Viva voce		Community Medicine	
PE9.4	Elicit, Document and present an appropriate nutritional history and perform a dietary recall	S	SH	Y	Bedside clinic, Skill Lab	Skill Assessment		Community Medicine	
PE9.5	Calculate the age related Calorie requirement in Health and Disease and identify gap	S	SH	Y	Bedside clinics, Small group discussion	Skill assessment		Community Medicine	
PE9.6	Assess and classify the nutrition status of infants, children and adolescents and recognize deviations	S	SH	Y	Bedside clinic, Small group discussion	Skill Assessment		Community Medicine	
PE9.7	Plan an appropriate diet in Health and disease	S	SH	N	Bedside clinic, Small group discussion	Document in logbook		Community Medicine	

Number	COMPETENCY The student should be able to	Domain K/S/A/C	Level K/KH/ SH/P	Core Y/N	Suggested Teaching learning method	Suggested Assessment method	Number required to certify P	Vertical Integration	Horizontal Integration
PE10.4	Identify children with under nutrition as per IMNCI criteria and plan referral	S	SH	Y	DOAP session	Document in log book		Community Medicine	
PE17.1	State the vision and outline the goals, strategies and plan of action of NHM and other important national programs pertaining to maternal and child health including RMNCH A+, RBSK, RKSK, JSSK mission Indradhanush and ICDS	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine	
PE17.2	Analyse the outcomes and appraise the monitoring and evaluation of NHM	K	KH	Y	Debate	Written/ Viva voce		Community Medicine	
PE18.1	List and explain the components, plans, outcomes of Reproductive child health (RCH) program and appraise the monitoring and evaluation	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine	Obstetrics & Gynaecology
PE18.2	Explain preventive interventions for Child survival and safe motherhood	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine	Obstetrics & Gynaecology
PE18.3	Conduct Antenatal examination of women independently and apply at-risk approach in antenatal care	S	SH	Y	Bedside clinics	Skill station		Community Medicine	Obstetrics & Gynaecology
PE18.4	Provide intra-natal care and conduct a normal Delivery in a simulated environment	S	SH	Y	DOAP session, Skills lab	Document in Log Book		Community Medicine	Obstetrics & Gynaecology
PE18.6	Perform Postnatal assessment of newborn and mother, provide advice on breast feeding, weaning and on family planning	S	SH	Y	Bedside clinics, Skill Lab	Skill Assessment		Community Medicine	Obstetrics & Gynaecology
PE18.8	Observe the implementation of the program by Visiting the Rural Health Centre	S	KH	Y	Bedside clinics, Skill Lab	Document in log book		Community Medicine	Obstetrics & Gynaecology
PE19.1	Explain the components of the Universal immunization Program and the sub National Immunization Programs	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.2	Explain the epidemiology of Vaccine preventable diseases	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.3	Vaccine description with regard to classification of vaccines, strain used, dose, route, schedule, risks, benefits and side effects, indications and contraindications	K	KH	Y	Lecture, Small group discussion	Written/ Viva voce		Community Medicine, Microbiology	
PE19.4	Define cold chain and discuss the methods of safe storage and handling of vaccines	K	KH	Y	Lecture, Small group discussion	Written / Viva voce		Community Medicine, Microbiology	