



REPORT NO.

157

**PARLIAMENT OF INDIA
RAJYA SABHA**

**DEPARTMENT-RELATED PARLIAMENTARY STANDING
COMMITTEE ON HEALTH AND FAMILY WELFARE**

ONE HUNDRED FIFTY SEVENTH REPORT

ON

QUALITY OF MEDICAL EDUCATION IN INDIA

*(Presented to the Rajya Sabha on 9th February, 2024)
(Laid on the Table of Lok Sabha on 9th February, 2024)*



**Rajya Sabha Secretariat, New Delhi
February, 2024/Magha, 1945 (Saka)**

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*To be appended at a later stage.

COMPOSITION OF THE COMMITTEE

(2023-24)

1. Shri Bhubaneswar Kalita - Chairman

RAJYA SABHA

2. Dr. Anil Agrawal
3. Shri Sanjeev Arora
4. Dr. L. Hanumanthaiah
5. Shri Shambhu Sharan Patel
6. Shri Imran Pratapgarhi
7. Shri B. Parthasaradhi Reddy
8. Shri S. Selvaganabathy
9. Dr. Santanu Sen
10. Shri A. D. Singh

LOK SABHA

11. Shrimati Mangal Suresh Angadi
12. Ms. Bhavana Gawali (Patil)
13. Shri MaddilaGurumoorthy
14. Ms. Ramya Haridas
15. Shri K. Navas Kani
16. Dr. Amol Ramsing Kolhe
17. Shri C. Lalrosanga
18. Dr. Sanghmitra Maurya
19. Shri Arjunlal Meena
20. Shrimati Pratima Mondal
21. Dr. Pritam Gopinath Rao Munde
22. Dr. Lorho S. Pfoze
23. Adv. Adoor Prakash
24. Shri Haji Fazlur Rehman
25. Dr. Rajdeep Roy
26. Dr. DNV Senthilkumar S.
27. Dr. Jadon Chandra Sen
28. Shri Anurag Sharma
29. Dr. Mahesh Sharma
30. Dr. Sujay Radhakrishna Vikhepatil
31. Dr. Krishna Pal Singh Yadav

SECRETARIAT

- | | |
|-------------------------------|-----------------------|
| 1. Shri Sumant Narain | Joint Secretary |
| 2. Shri Shashi Bhushan | Director |
| 3. Dr. Saket Kumar | Deputy Secretary |
| 4. Smt. Noyaline Vinitha F.C. | Joint Director |
| 5. Shri Saurav Trivedi | Secretariat Assistant |

PREFACE

I, the Chairman of the Department-related Parliamentary Standing Committee on Health and Family Welfare, having been authorized by the Committee to present the Report on its behalf, present this One Hundred Fifty Seventh Report on the subject “Quality of Medical Education in India” which was adopted by the Committee in its meeting held on the 7th February, 2024.

2. The assessment of the quality of medical education in India becomes paramount considering the escalating healthcare needs of this vast country with a diverse population and geography. As the demand for competent healthcare professionals continues to rise, ensuring that medical education meets the best standards becomes crucial to addressing the multifaceted challenges in the healthcare sector. The primary objective of the Committee behind identifying the subject – “Quality of Medical Education in India” was to find areas of improvement to ensure that medical graduates are well-equipped to navigate the evolving landscape of healthcare delivery. By scrutinizing the curriculum, clinical training, institutional infrastructure, and faculty expertise, the Committee can contribute to the production of skilled and specialized medical professionals who can effectively meet the diverse healthcare demands of India. Additionally, assessing the quality of medical education aligns with the intention to produce healthcare professionals with a deep understanding of public health challenges, cultural sensitivities, and innovative solutions, thereby enhancing the overall quality of healthcare delivery in the country.

3. The Committee held deliberations with the representatives of the Ministry of Health & Family Welfare & NMC during its meeting held on the 6th July, 2023 for a holistic examination of the subject. The Committee also heard representatives from AIIMS, New Delhi, Vardhman Mahavir Medical College, Safdarjung Hospital, New Delhi, Delhi Medical Council, New Delhi, Maulana Azad Medical College, New Delhi, Sharda University, Greater Noida in its meeting held on 31st July, 2023 and representatives from Dr. RML Hospital & Atal Bihari Vajpayee Institute of Medical Science (ABVIMS), New Delhi, Lady Hardinge Medical College and Associated Hospitals, New Delhi and Swami Vivekanand Subharti University, Meerut, Uttar Pradesh in its meeting held on 21st August, 2023. The

Committee further heard the Chairman of NMC; Presidents of UGMEB & PGMEB; Member, EMRB along with others on 5th February 2024 on various issues related to medical education.

4. Besides, the Committee undertook study visits to Mumbai and Goa from the 10th July to 11th July 2023 to assess the ground realities related to the quality of medical education imparted in the medical colleges.

5. For facility of reference and convenience, the observations and recommendations of the Committee have been printed in bold letters in the body of the Report and reproduced at the end of the Report at ‘Observations/Recommendations-at a Glance’.

6. On behalf of the Committee, I extend special thanks to the NMC, Secretary of the Department of Health and Family Welfare, Director, AIIMS, New Delhi, and all representatives of other medical institutions who gave their views and enriched the Committee with their deep insight and valuable suggestions on the subject during interactions. I further extend special appreciation to the officers of the Committee Secretariat for their valuable efforts in assimilating all relevant information and enabling the Committee to produce this Report.

New Delhi
7th February, 2024
Magha, 1945 (Saka)

BHUBANESWAR KALITA
Chairman,
Department-related Parliamentary Standing
Committee on Health and Family Welfare

ACRONYMS

AETCOM	Attitude, Ethics and Communication
AEBAS	Aadhar Enabled Biometric Attendance System
AIIMS	All India Institute of Medical Sciences
BCLS	Basic Cardiac Life Support
CBME	Competency-based Medical Education
CCTV	Closed Circuit Television
DHR	Department of Health Research
DRPSC	Department -Related Parliamentary Standing Committee
ECLS	Extracorporeal Life Support
EMRB	Ethics and Medical Registration Board
FMGL	Foreign Medical Graduate Licentiate
FC	Foundational Courses
FDP	Faculty Development Programs
GDP	Gross Domestic Product
HWCs	Health and Wellness Centres
ICMR	Indian Council of Medical Research
KGMU	King George Medical University
LHMC	Lady Hardinge Medical College
LMP	Licentiate of Medical Practice
LoP	Letter of Permission
MARB	Medical Assessment and Rating Board
MEU	Medical Education Units
MBBS	Bachelor of Medicine, Bachelor of Surgery
MCI	Medical Council of India
MCQ	Multiple Choice Questions
MoU	Memorandum of Understanding
NBE	National Board of Examinations
NEET	National Eligibility cum Entrance Test
NExT	National Exit Test
NMC	National Medical Commission
NIRF	National Institutional Ranking Framework
PGMEB	Post-Graduate Medical Education Board
QCI	Quality Council of India
UGMEB	Under-Graduate Medical Education Board
UT	Union Territory
WFME	World Federation for Medical Education

Chapter-I

Introduction

Significance of Assessing the Quality of Medical Education

1.1 Quality assurance of the 3As of healthcare - affordability, accessibility, and availability is a major prerogative for any country more so, in a country as diverse and populous as India, where healthcare challenges are multifaceted, maintaining high-quality standards becomes imperative. Quality healthcare not only prevents medical errors and complications but also enhances patient satisfaction and trust in the healthcare system. It fosters timely diagnosis, appropriate treatments, and the utilization of evidence-based practices, all of which contribute to better health outcomes. Moreover, it reduces the economic burden on patients by minimizing the need for repeat treatments and hospitalizations.

1.2 Medical Education in India is comprehensive, comprising education in various streams of Indian systems of medicine and modern allopathic medical education. Being a vast field with many mainstream and allied branches, the focus of the Committee in this study is to assess the quality, availability, and accessibility of medical education in undergraduate and postgraduate programs in allopathic system of medicine across the country. The allopathic system represents a significant portion of medical education in the country and plays a pivotal role in shaping the healthcare landscape. The Committee aims to comprehensively address critical issues and improvements needed in this segment of medical education.

Evolution of Modern Medical Education in India

1.3 Significant transformations and legislative changes have marked the evolution of modern medical education in India. It reflects the country's quest to provide high-quality healthcare to its population and align with global standards. The British introduced Western-style medicine to the Indian subcontinent, leading to the establishment of institutions such as the Calcutta Medical College (1835) and the Madras Medical College (1835). To regulate medical practice, the

Licentiate of Medical Practice (LMP) was introduced, followed by the Medical Registration Act in 1858.

1.4 Indian Medical Council Act:In 1916, the Indian Medical Council Act was enacted, which subsequently led to the establishment of the Medical Council of India (MCI) in 1933. The MCI was entrusted with overseeing and regulating medical education standards, defining curricula, and ensuring the quality of medical practice nationwide. This marked a significant step toward standardizing and formalizing medical education in India.

1.5 Committee on Health Care and Infrastructure: The first effort to study the healthcare infrastructure in India was the formation of a Health Survey and Development Committee in 1943 under the chairmanship of Sir Joseph William Bore. The Committee, in its report submitted in 1946, chartered a course for public health investment and infrastructure in India. It *inter alia* dealt with the establishment of Primary Health Centers and major central institutes for postgraduate medical education and research. The Committee also paved the way to abolish Licentiate in Medical Practice and to replace it with a single qualification of an MBBS degree. The Committee, however, overlooked the indigenous practitioners of medicine who formed the mainstay of health care in those times.

1.6 Post-Independence Expansion (1947 Onwards):This period saw the establishment of numerous medical colleges and universities throughout India, aimed at producing a larger pool of healthcare professionals. **All India Institute of Medical Sciences, New Delhi**, was set up in 1956 through the AIIMS Act, 1956. During this period, the MCI continued to play a crucial role in regulating and accrediting these medical institutions while setting educational and ethical standards for medical profession.

1.7 National Medical Commission Act, 2019: One of the most significant legislative reforms recently was the introduction of the National Medical Commission (NMC) Act in 2019. This Act replaced the MCI, ushering in a new era in medical education and practice regulation. The major objectives of the NMC Act are to provide for a medical education system that improves access to quality and affordable medical education, ensure availability of adequate and high-quality

medical professionals in all parts of the country; to promote equitable and universal healthcare that encourages community health perspective and makes services of medical professionals accessible to all the citizens; that promotes national health goals. The Act also encourages medical professionals to adopt latest medical research in their work and to contribute to research; and has an objective periodic and transparent assessment of medical institutions. The said Act facilitates maintenance of a medical register for India and enforces high ethical standards in all aspects of medical services; that is flexible to adapt to changing needs and has an effective grievance redressal mechanism.

Current Medical Education System in India

1.8 India's medical education system presents a peculiar paradox on the global front. On the one hand, it prides itself on producing a significant number of physicians, making a substantial contribution to the global healthcare workforce. On the other hand, many Indian students pursue their medical education abroad, even though India is home to prestigious institutions. This paradox deepens when considering that India hosts some of the world's finest medical colleges yet concerns persist about the quality of medical education and healthcare delivery within the country.

1.9 India has one of the largest medical education systems in the world. According to the Ministry of Health and Family Welfare, there were 702 medical colleges in the country at the time of this study in 2023-24. However, the quality of medical education in India varies widely, and the system faces several challenges, the most prominent among them being the uneven distribution of medical colleges. Medical colleges in India are concentrated in urban areas which creates a vacuum in the rural areas. The creation of medical colleges in rural areas can solve the problem of the dearth of rural access to medical education. Another significant challenge is the non-availability of sufficient funds for medical research in India and there is an urgent need to create a research ecosystem in medical colleges. This necessitates continuous upgradation of the curriculum with the latest advances in medical science.

1.10 Medical education regulation in India is overseen by various authorities and bodies to ensure the quality of medical education, the competency of healthcare

professionals, and the delivery of healthcare services. Here's an overview of the key aspects of medical education regulation in India:

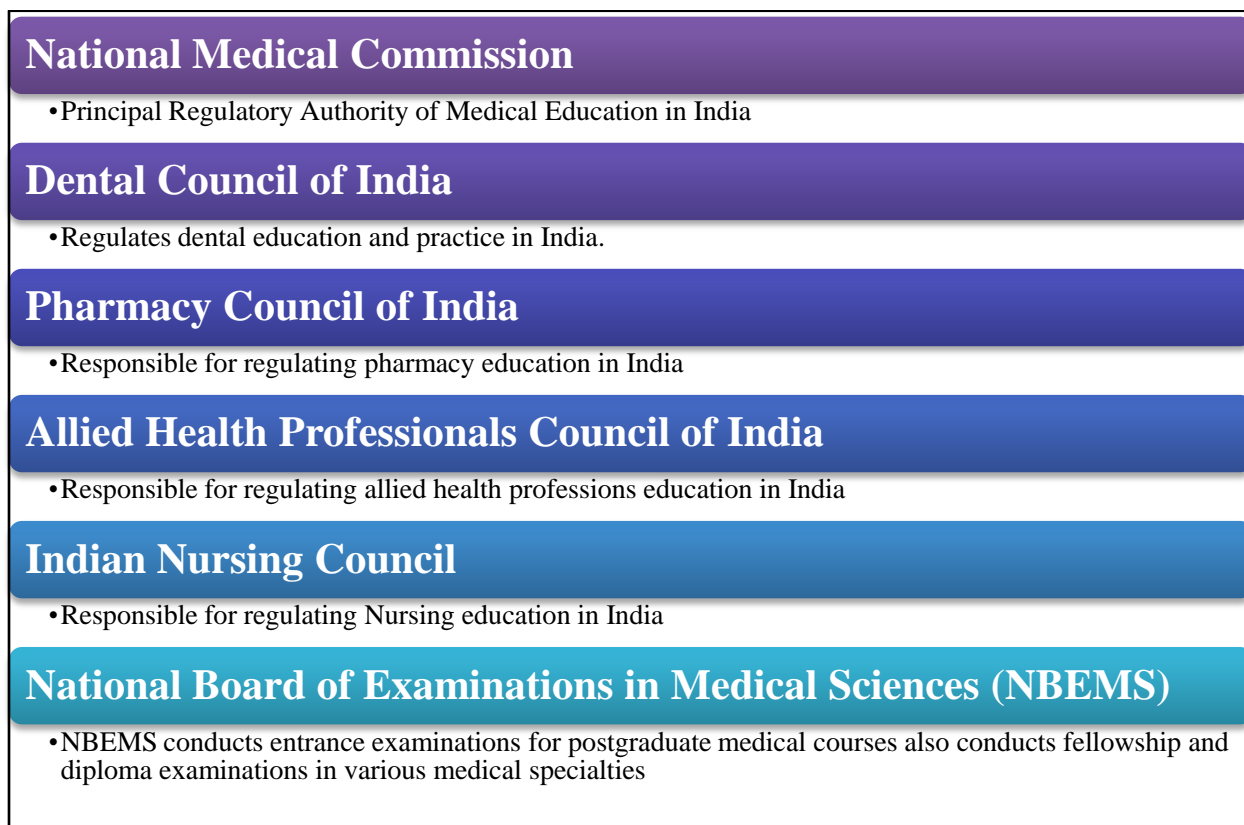
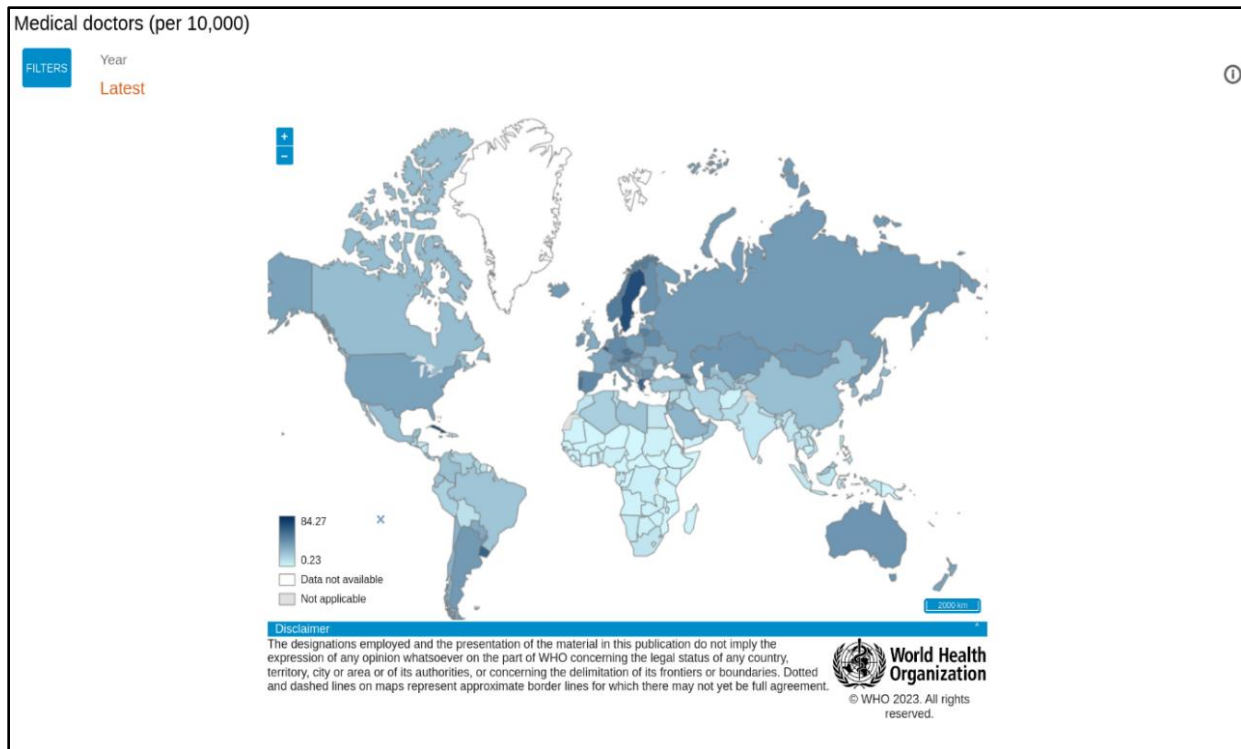


Figure-1.1: Medical Education Regulation in India

Quality of Medical Education: Global Perspectives

1.11 Traditionally, European countries and the USA have excelled in the field of medical education (in the context of Western medicine) which dates back as far as the nineteenth century. A comparative map displaying the number of medical doctors per 10,000 of the population of the country, accessed from the website of the World Health Organisation reveals that the developed countries show better doctor-to-population ratio. To gain an insight into the structure of the medical education system in countries with high doctor-population ratios, the Committee had a panoramic view of some of the Countries for a comparative study.



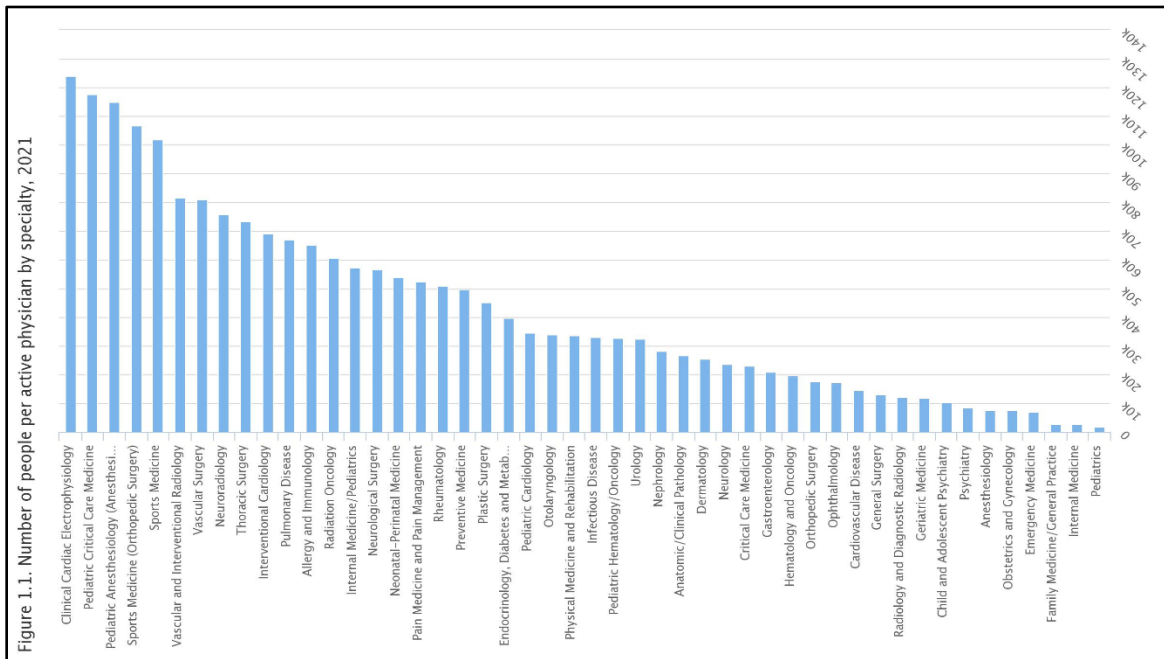
Source: World Health Organization

Figure 1.2: Medical Doctors per 10,000

U.S.A.

1.12 Medical Education in the U.S.A. comprises 3 phases: Medical School (undergraduate medical education), residency (Graduate Medical Education-GME), and continuous education and improvement (continuing medical education). Medical school is usually a four-year course; on completion of 4 years the doctors then choose their desired area of speciality to take up residency in that field termed as 'Graduate Medical Education'. The American Association of Medical Colleges governs the conduct of an entrance examination called as Medical College Admission Test (MCAT). According to the website of AAMC, the MCAT is a standardized, multiple-choice, computer-based test that has been a part of the medical school admissions process for more than 90 years and is taken up by more than 85,000 students every year. The MCAT scores are shared with medical colleges all over the country to which the students apply separately. AAMC states that the MCAT exam has undergone several changes and of late two new sections covering critical thinking as well as behavioural and social sciences have also been added. Medical education programs leading to an MD are accredited by the Liaison Committee on Medical Education (LCME) and jointly

sponsored by the AAMC certified by the U.S. Department of Education. The USA with a population of 333,287,557 has 173 medical colleges to impart medical education. However, it is worth mentioning here that the U.S.A. has a high influx of International Medical Graduates due to lucrative income and the state-of-the-art medical facilities in the country. Despite this fact, AAMC has predicted that by the year 2034, U.S.A. may face a shortage of 124,000 physicians in primary care. A speciality-wise number of physicians currently practicing in U.S.A. is depicted in the Figure 1.1 below:



Source: Website of Association of American Medical Colleges

Figure 1.3:Speciality-wise number of physicians practicing in USA.

1.13 Another notable feature, according to the website of AAMC, is the resident database and tracking system introduced in March 2000 known as GME Track. This dataset has reduced duplicative reporting by replacing the AAMC's and AMA's previously separate GME surveys. The GME track provides a real-time database on medical graduates under residency and provides medical students, residents, and the academic medicine community with information about specific

programs through online search tools (e.g., FREIDA™, the AMA Residency & Fellowship Database®; and AAMC's Residency Explorer). GME Track data is widely used by policy analysts to make informed decisions and conduct research studies and outcomes evaluations.

United Kingdom

1.14 Medical Education in the United Kingdom (UK) is a 4-year to 5-year course. The General Medical Council (GMC) established under the Medical Council Act of 1983 comprising 11 members (appointed following an independent appointment process) is primarily responsible for deciding which doctors are qualified to work in the UK, overseeing UK medical education and training, setting the standards doctors need to follow throughout their careers and take action, where necessary, to prevent a doctor from putting the safety of patients, or the public's confidence in doctors, at risk. As a governing authority, they also play a key role in quality assurance, registration, licensing, and setting up the professional standards of medical practitioners in the country. Admission to medical colleges is based on the results of two types of standardised tests: the British Medical Admission Test (BMAT) and the UK Clinical Aptitude Test (UCAT); tests need to be taken depending on the university preferred by the students. There are 38 medical schools (excluding 9 medical colleges that are currently under review by the General Medical Council) for the UK population of around 67 million. According to the General Medical Council Report titled 'The State of Medical Education and Practice in the UK: Workforce Report 2023' since 2019, the number of doctors joining the workforce each year has been more than double the number who leave, and that this growth is strongly driven by international medical graduates (IMGs) joining the UK medical profession. According to an article in the journal of the Royal College of Surgeons, the UK has 2.8 doctors per 1,000 people which it states as being comparatively lower than the average of 3.4 per 1,000 persons.*

*Source: Website of General Medical Council of UK

China

1.15 According to an article in the Lancet Journal*, China has multiple, distinct medical education pathways that can last from 3 to 8 years. China had merely 22 medical colleges in 1949 and by 2020 more than 200 medical colleges were in existence. Also, China enrolls approximately 8,00,000 lakh students every year. This has helped China achieve a ratio of 2.2 doctors per thousand population (*Source: World Bank 2019*). According to an article in the Journal of the Association of American Medical Colleges, China has complex levels of programs designed to train doctors which include a 3-year junior college medical program, 5-year medical bachelor's degree program, "5 + 3" medical master's degree program, and 8-year medical doctoral degree program. The article also states that at present postgraduate education in China includes standardized residency, general practitioner training, and specialist training.

1.16 The Committee has observed that countries across the world have adopted the Flexner Model changing it suitably whenever required. The Committee, on scrutiny of various governing authorities for medical education across the countries mentioned above, has observed that the National Medical Commission of India meets international professional standards in medical education. The Committee has further observed that barring a few countries at the global level, the shortage of doctors at present or for the future seems to be an all-pervading problem. The developed countries are able to meet this shortfall by serving as attractive destinations for medical graduates from developing countries and by easing the process for the practice of medicine by the International Medical Graduates. In the context of the standardised tests for medical education, the Committee has taken note of the fact that behavioural and social sciences are also becoming part of the testing process of various countries to assess the ethics, integrity, etc. of the medical aspirants.

1.17 The Committee recommends National Medical Commission undertake a comparative study of best practices of its parallel organisation in various

**China's Bewildering Medical Education Pathways*, Dan Shan, The Lancet, Volume 401, Issue 10381, P999-1000, March 25 2023.

countries. The Committee feels that this measure can help NMC to usher in best practices followed around the world and help in making NMC an institution par excellence.

1.18 As regards the maintenance of a national database of resident doctors, the Committee recommends that NMC maintain a real-time national database akin to the GME Track of the USA. This national database can allow access to multiple stakeholders viz, Ministry, States, Medical Colleges, and other concerned parties. This database can also serve as a tool to decimate the limitation of resources in the newly opened institutions and operate as a platform for experience and knowledge sharing among the resident doctors. Against this background, the Committee would also like to highlight the issue of dual registration of doctors with the respective State Medical Council where they practice and any other place where they may relocate subsequently. This gives rise to multiple registrations of doctors with various State Medical Councils, making tracking difficult. The Committee would like to recommend the generation of a ‘unique registration number’ for the doctors at the NMC level. This move can also leverage the national database and usher in uniformity in the registration of practicing doctors.

1.19 The modern allopathic medical education is primarily governed by the National Medical Commission. NMC was constituted by an act of Parliament known as the National Medical Commission Act, 2019, which came into force on 25.9.2020. It constitutes four autonomous boards (Figure:1.2) which work under the overall supervision of NMC.

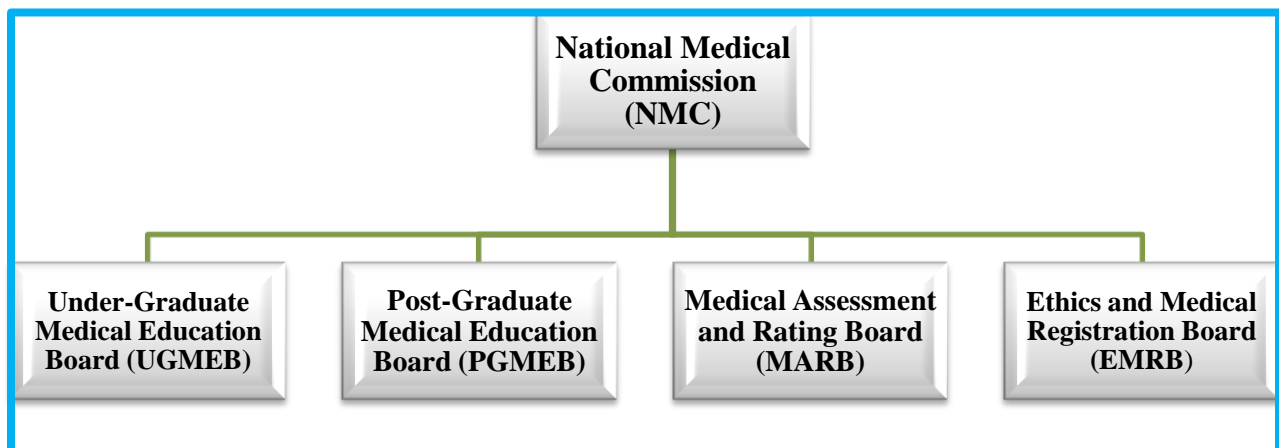


Figure 1.4: Structure of NMC

1.20 The Commission consists of 33 appointees, including one Chairperson. The primary objectives of the NMC encompass several critical facets of the medical education system. These goals are designed to create a system that enhances access to quality and affordable medical education while ensuring the presence of sufficient high-quality medical professionals throughout the nation. In addition, the NMC aims to promote healthcare characterized by equity and universality, emphasizing a community health perspective that makes medical services accessible to all citizens, regardless of their backgrounds or geographical locations. Aligned with national health objectives, the NMC encourages medical professionals to integrate the latest medical research into their practice and actively contribute to ongoing research efforts, ensuring that healthcare practices remain up-to-date and effective. To uphold these standards, the NMC emphasizes the need for periodic and transparent assessments of medical institutions and facilitates the maintenance of a comprehensive medical register for India. Furthermore, it enforces rigorous ethical standards across all aspects of medical services. The aim is to design a flexible medical education system adaptable to changing needs, incorporating an effective grievance redressal mechanism.

1.21 The Committee notes that the National Medical Commission (NMC) has an excellent opportunity to improve the quality of medical education in India. However, it must address various issues related to modernising medical education and introduce reforms to bring remarkable improvements in the overall healthcare system in the country. The NMC can take several essential and immediate steps to strengthen medical education in India, including setting and enforcing high standards for medical education, promoting research in medical education, supporting faculty development, and making medical education more accessible. The Committee believes that by taking these steps, the NMC can help to produce a new generation of highly qualified and competent medical graduates.

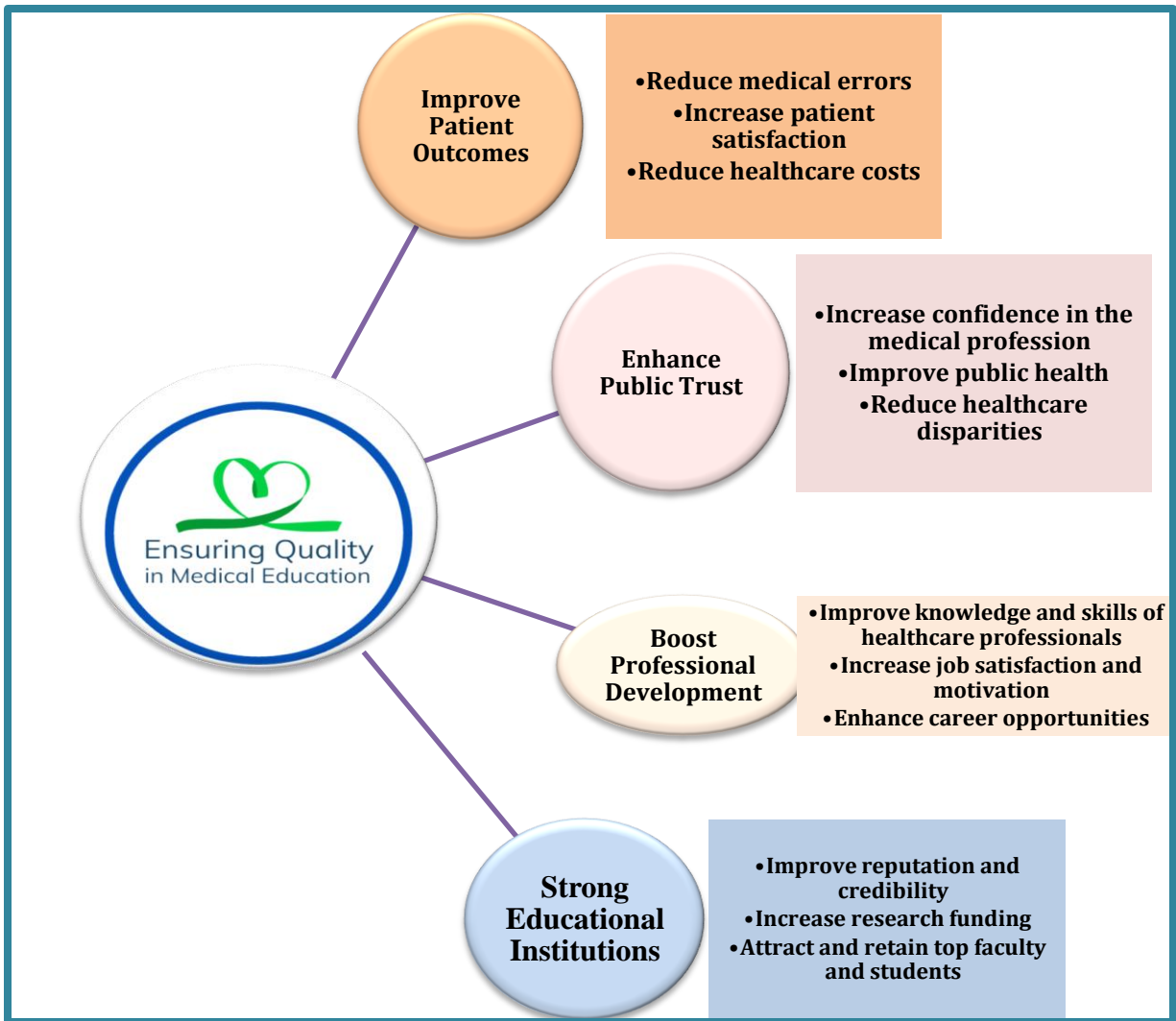


Figure-1.5: Benefits of Ensuring Quality in Medical Education

1.22 The Committee notes that the importance of quality in medical education must be considered when considering its direct impact on the quality of healthcare services. High-quality medical education is the foundation upon which competent and compassionate healthcare professionals are built. It equips them with the necessary knowledge, skills, and ethical principles essential for providing safe and effective care to patients. The Committee recommends the Ministry develop a robust medical education system and emphasise evidence-based practices, critical thinking, and continuous learning, ensuring that healthcare practitioners stay up to date with medical advancements. In this way, quality medical education would

not only secure the present generation's healthcare needs but also be an investment in the future of healthcare.

Chapter-II

Infrastructure for Medical Education

Medical Colleges and Seats in India

2.1 The Secretary, Ministry of Health and Family Welfare, in his deposition before the Committee, apprised that there are 702 medical colleges in the country in 2023-24, up by 81% from 387 in 2013-14. Similarly, the number of seats for an undergraduate course (MBBS) increased by almost 110% from 51348 in 2013-14 to 1,08,990 in 2023-24, whereas the number of postgraduate seats increased by almost 118% from 31185 to 68073 from 2013-14 to 2023-24.

2.2 As per the latest data by the National Testing Agency, 20,87,462 candidates registered for the exam this year, out of which 20,38,596 candidates appeared in the examination and 11,45,976 candidates finally managed to clear the NEET UG examination.

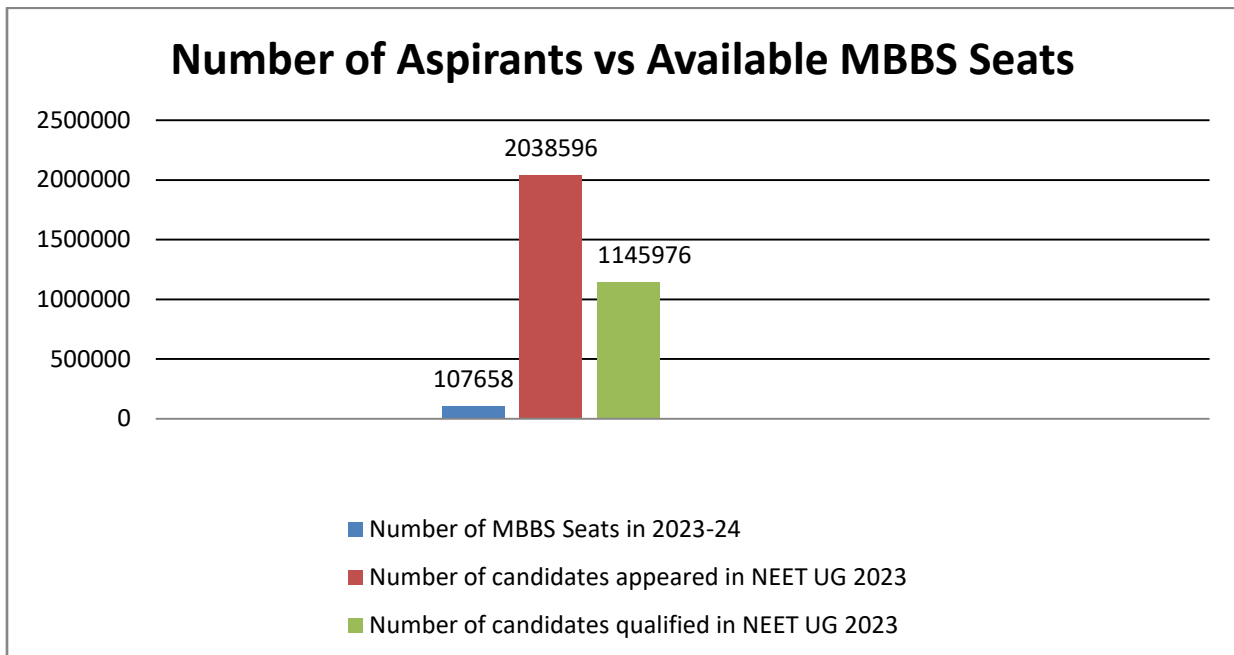


Figure 2.1: Number of Aspirants vs Available MBBS Seats

2.3 As per the National Board of Examinations (NBE) a total of 2,08,898 candidates appeared for the NEET PG 2023. According to the data furnished by the Ministry of Health and Family Welfare, there are 68073 postgraduate seats in the country.

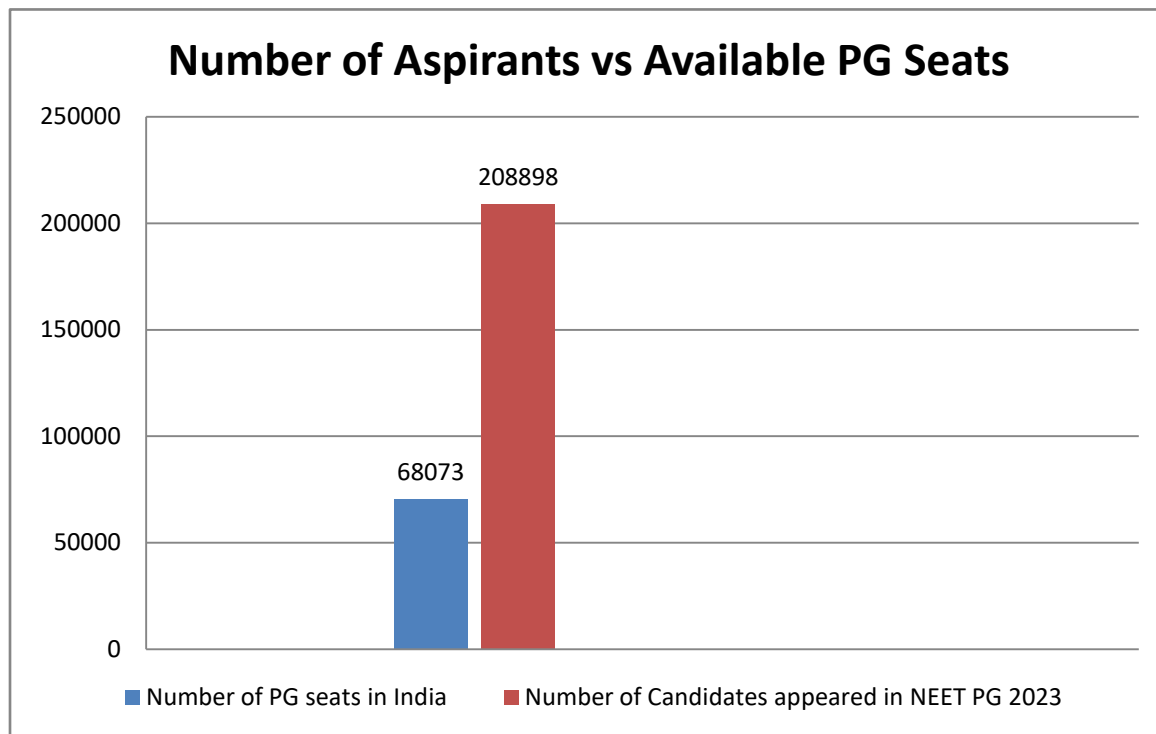


Figure 2.2 Number of Aspirants vs Available PG Seats

2.4 The Committee notes that the current situation regarding medical seats both in UG and PG in our country is a critical issue that warrants immediate attention. With an annual influx of approximately 2 million aspiring medical students at UG and only 1/20 times available seats, the demand far exceeds the availability of seats, similarly, the number of available seats at PG level is far less than the demand. The Committee acknowledges the urgency of addressing this challenge while maintaining the quality of medical education at its highest standard. To address this issue effectively, several measures can be taken. First and foremost, there is a need to significantly increase medical seats in both undergraduate and postgraduate courses. The government's existing scheme, which focuses on the establishment of new medical colleges attached to district or referral hospitals, can be instrumental in achieving this goal. By

expanding this initiative, the Government can create more opportunities for aspiring medical students.

2.5 The Committee further recommends that it is essential to make optimal use of the existing infrastructure. Ensuring that all available resources and facilities are utilized efficiently can help accommodate a larger number of students without compromising the quality of education. Additionally, streamlining the admission process by implementing a standardized national entrance examination can improve fairness and transparency in seat allocation.

2.6 Encouraging private investment in medical education is another avenue to explore. Providing incentives and regulatory support to private institutions willing to establish medical colleges can not only increase seat availability but also introduce healthy competition and innovation in medical education. The Committee also recommends the Ministry leverage technology for distance learning and organise virtual classrooms that can be a supplementary solution to address the shortage of seats, allowing a more significant number of students to access medical education without overburdening physical infrastructure.

Imbalance in Distribution of Medical Colleges

2.7 The States with larger populations should have more medical colleges as it aligns with the principle of ensuring that healthcare and medical education resources are proportionate to the population's needs. States with higher populations often face increased healthcare demands, and having more medical colleges can help address these needs, providing access to medical care and educational opportunities for a more significant number of residents. Other factors, such as the distribution of healthcare facilities, the prevalence of diseases, and the socio-economic conditions of the population, must also be considered to ensure equitable healthcare access and medical education opportunities for all citizens. *(Refer Tables A & B at Annexure)*

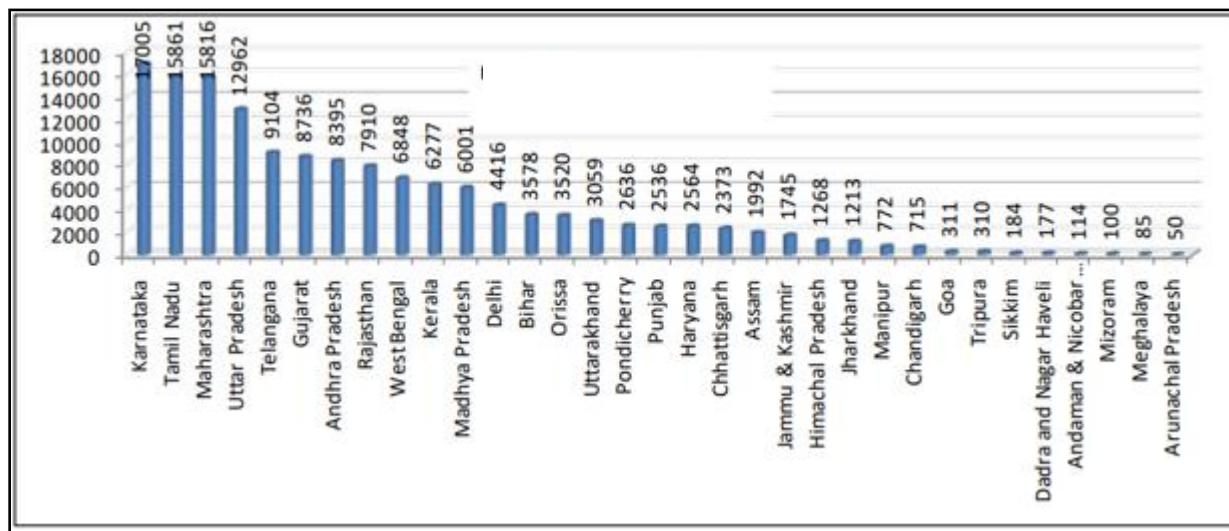


Figure 2.3: State-wise total Medical Seats

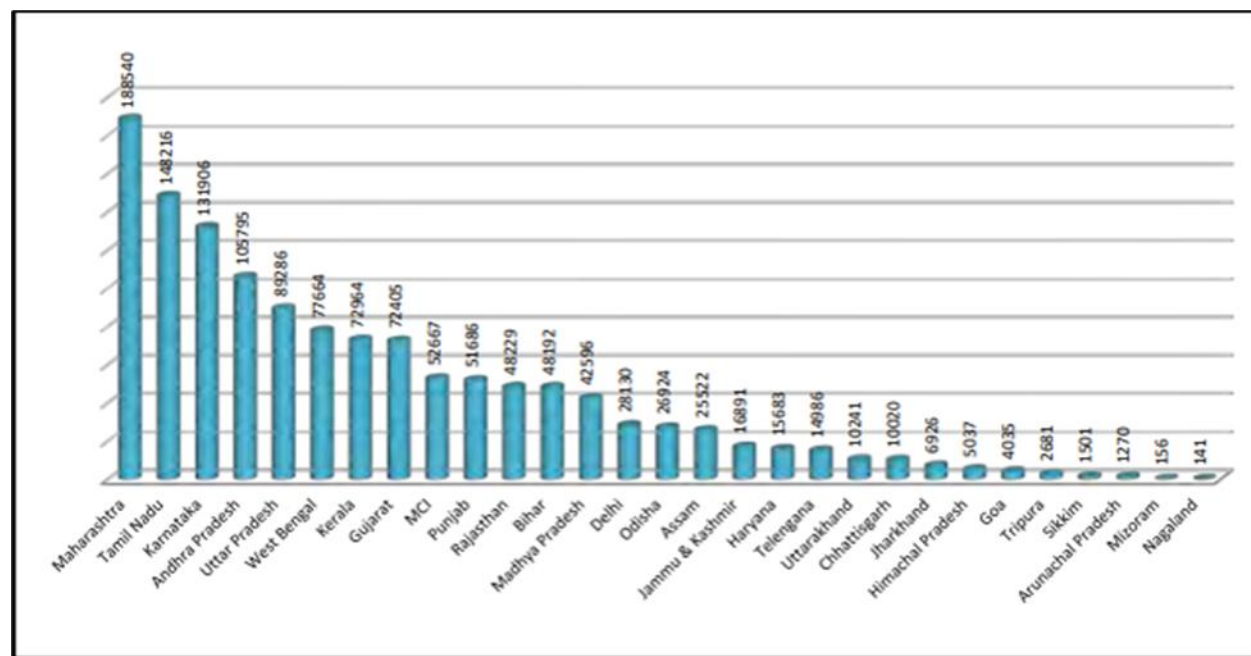


Figure 2.4: State-wise number of registered doctors practicing in India.

2.8 Below is the data representation of the five most populous States and the number of medical colleges functioning in these States.

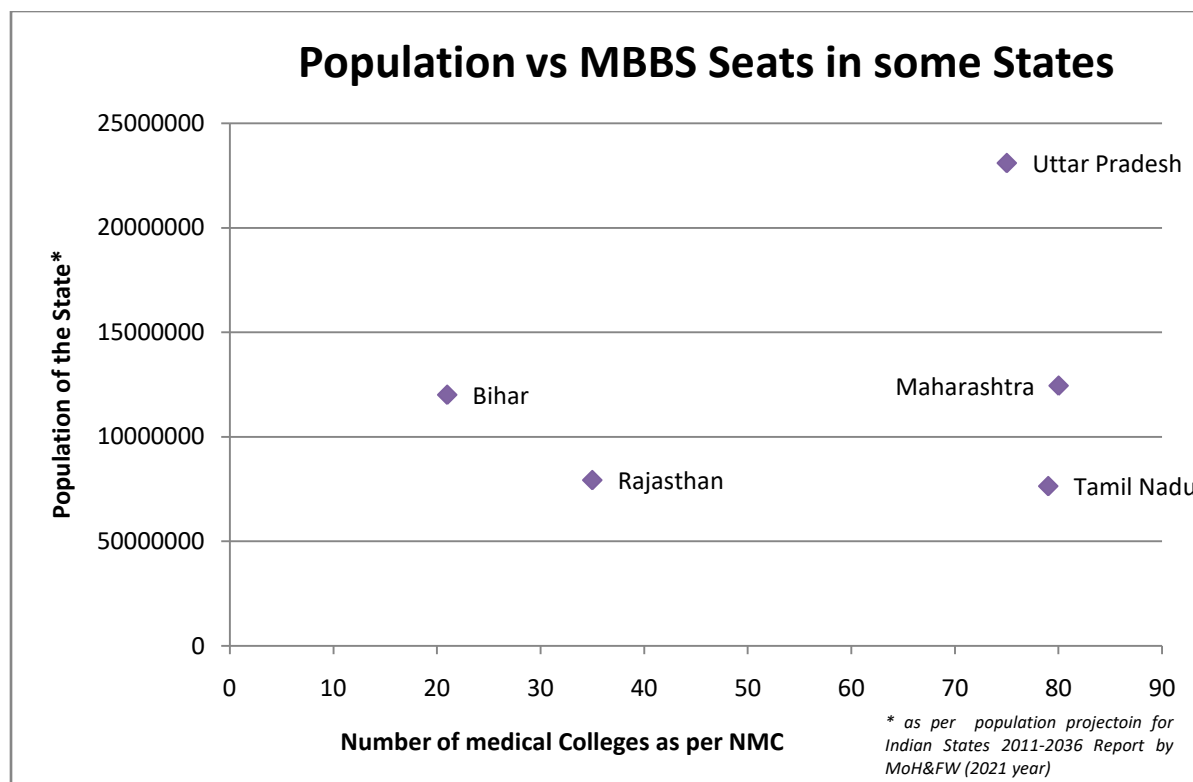


Figure 2.5 Imbalance in the distribution of medical colleges: Population vs MBBS Seats in some States

2.9 According to the NMC Notification dated 16 August 2023 on "*Guidelines for Undergraduate Courses under the Establishment of New Medical Institutions, Starting of New Medical Courses, Increase of Seats for Existing Courses & Assessment and Rating Regulations, 2023*", medical colleges shall follow the ratio of 100 MBBS seats for every 10-lakh population in that State or Union Territory (UT).

2.10 The Guideline reads- "After AY 2023-24, the Letter of Permission (LOP) for starting new medical colleges shall be issued only for an annual intake capacity of 50/100/150 seats".

2.11 The Committee has taken note of the detailed Minimum Standards Regulations (UG-MSR) notified on 16th August 2023. While examining the subject, the Committee came across several concerns over some of the guidelines for opening of a new Medical College and also regarding permission to increase the number of undergraduate seats. The permission for

an increase in MBBS seats will be granted for 50, 100 and 150 seats from the academic year 2024-25. The Committee notes that based on the guidelines for 200 and 250 seats at various places have provisions for infrastructure and faculty positions. The Committee further notes that many medical colleges have 200 and 250 seats. The Committee was apprised that the ideal batch size for a faculty to impart teaching is 150. The Committee, however, believes that as per the guidelines, given the infrastructure and faculty position required in place, a college, whether old or new, may be considered for granting permission to increase, in phases, the undergraduate seats up to a maximum of 250.

2.12 The WHO norms recommend a doctor-population ratio of 1:1000, and as per the NMC, the country has already achieved a ratio of 1:856. However, the concern area associated with opening a new medical college is the number of prescribed department-wise and total patient Bed capacity, read along with the requirement of their 80 per cent average occupancy in the attached hospital. The Committee would recommend the Government that such one-size-fits-all criterion prescribed in the UG-MSR may be revisited to take into account the geographic imbalances, if any, and formulate region-specific guidelines/ norms.

2.13 The Committee also recommends the Government to chalk out a comprehensive India-specific approach that considers the nation's healthcare needs in the next 20-25 years, identifies the categories of doctors, viz. pediatricians, ophthalmologists, neurosurgeons, critical care specialists, infectious disease specialists that the country would need rather than just randomly increasing general surgery, pharma, and anatomy seats. The Committee believes that such a concerted effort to produce need-based specialists/ doctors commensurate with disease-burden specialists will secure India's healthcare needs in the future. The Committee recommends that in the case of the current scenario modalities for a fair distribution of doctors' workforce across the country especially in underprivileged areas can be worked out by the NMC by offering incentives, monetary or otherwise.

2.14 The Committee notes that a travel time of 30 minutes between the college campus and the attached hospital has been prescribed in the

guidelines. The Committee while taking cognisance of the rationale behind this travel time criteria fails to understand the logic behind keeping separate distance criteria of 30 kilometres (Tier-I cities) and 50 kilometres (for other cities) between RHTC/UHTC/CHC and the medical college. The Committee recommends the National Medical Commission review this criterion and consider incorporating suitable travel time instead of distance.

Evaluation of the existing curriculum and its relevance to healthcare needs, the need for transformation

2.15 The earlier medical education system focused on specific subjects and a fixed timetable. The new undergraduate (UG) curriculum, however, has a different goal: it emphasizes all three aspects of learning - cognitive (knowledge), affective (attitudes), and psychomotor (skills), rather than concentrating solely on knowledge as the previous curriculum did. In the past, evaluations mainly focused on end-of-term assessments and provided little room for feedback. Teaching and assessment prioritized knowledge over skills and attitudes. As a result, graduates lacked certain essential clinical and soft skills like effective communication, building doctor-patient relationships, professionalism, and ethics despite having solid theoretical knowledge. To solve these issues, the Undergraduate Medical Education Board (UGMEB) of the NMC published the final Competency-Based Medical Education (CBME) Regulations, 2023, on 01 August 2023. CBME defines competency as the observable ability of a healthcare professional that integrates knowledge, skills, values, and abilities, ensuring that graduates meet the demands of patient care in society.

2.16 The Committee notes that the NMC guidelines on Competency-Based Medical Education (CBME) Regulations, 2023, are comprehensive and comparable to best global practices and thus a welcome step in upgrading the curriculum of medical education in India. The Committee, however, believes there are some areas where the guidelines could be improved to make them more feasible and effective in the Indian context. The current policies need to be more transparent in implementing CBME in practice. Implementing CBME can be challenging for medical colleges, especially those with limited resources. Specific guidance to develop the CBME curricula, assessments, and teaching methods would prove to be useful in reaping early benefits.

Furthermore, the Committee feels that the transition to CBME will require significant changes to medical education programs; therefore, medical colleges will need support, including augmenting faculty training and access to resources from the NMC and other stakeholders in making this transition. The Committee also notes that medical colleges in India vary widely regarding resources, faculty expertise, and student demographics. The CBME guidelines should consider this diversity and be flexible enough to be implemented in different settings. To maintain the true spirit of CBME, the Committee feels that there should be a regular periodic review and monitoring of the medical curriculum.

2.17 The new UG curriculum aims to help students transition from acquiring knowledge to acquiring practical skills. Achieving this shift depends on aligning and integrating various disciplines. Key elements of the revised curriculum include foundational courses (FC), early exposure to clinical practice (ECE), training in attitudes, ethics, and communication (AETCOM), elective opportunities, and alignment and integration of different areas of study. Additionally, the curriculum promotes electives, self-directed learning, problem-based learning, structured feedback, and maintaining a logbook.

2.18 The Committee acknowledges the critical elements introduced in the new curriculum to help students acquire practical skills. The Committee strongly recommends the rigorous and comprehensive implementation of the AETCOM module within the MBBS curriculum. This module is paramount as it is pivotal in cultivating the right attitude, ethics, and communication skills among medical students. Patient care is not solely about clinical knowledge and technical skills; it hinges on empathy, compassion, and effective communication. By instilling these qualities in future healthcare professionals, we can significantly enhance the overall quality of patient care. Therefore, the Committee recommends the Government ensure that the AETCOM module is enforced consistently and effectively to empower medical students with the essential attributes needed to provide holistic and patient-centered healthcare. In addition to the implementation of AETCOM, the Committee recommends the incorporation of these criteria in NEET so that the aptitude of aspiring medical students can be assessed. Such aptitude tests at

the entrance level go beyond mere knowledge assessment of aspirants, often obtained through rote learning and mastering MCQ-based exams, and evaluate the genuine interest and passion of the candidate for the field of medicine. It will enable the system to identify candidates who have a sincere calling for the profession and distinguish them from those who may be under external pressure or legacy expectations. By doing so, we can ensure that medical work continues to attract individuals who are genuinely committed to delivering high-quality healthcare.

2.19 In a general context, the Committee has observed that there is a frequent change in the regulations notified by the National Medical Commission. The Committee would recommend that before notification of any regulation, a robust and thorough study involving the opinions/ viewpoints of various stakeholders should be undertaken.

2.20 The Committee was apprised of the fact that some private medical colleges seemingly fail medical graduates deliberately during mid-semester exams which results in repetition of the semester, and charging additional fees for repeating the semester or exam. This practice causes stress on the medical students, financial and otherwise. The Committee therefore recommends that UGMEB may develop appropriate feasible modalities for monitoring assessment, revaluation, etc. without charging any additional fee.

Research Support and facilities

2.21 One of the objectives of NMC is to encourage medical professionals to adopt the latest medical research in their work and to contribute to research. Medical colleges serve as vital hubs for medical research worldwide. In India, there are over 700 such institutions that produce more than 1,00,000 medical graduates annually. Among these graduates, more than 70,000 pursue various postgraduate degrees, diplomas, or fellowships. Furthermore, several corporate hospitals also offer postgraduate medical programs. However, despite this substantial pool of medical professionals, the medical research output still needs to improve. Moreover, most of the research work at the college level is limited to a few top colleges in the country.

2.22 Medical education involves "Trinity Mission", the first component is patient care; the second is teaching and learning, and the third aspect is research. Quality research has major implications for enhancing the quality of patient care. Therefore, research plays a crucial role in medical education, and it must be given due attention as part of the Trinity Mission".

2.23 The Committee observes that in recent years, ICMR and DHR have started giving small funds for dissertations. They have also set up a network of laboratories inside many medical colleges. However, overall budgetary allocation in India is still substantially low. As informed by the Department of Health Research (DHR), the statement indicating allocation at the BE stage during the last three years and actual expenditure *w.r.t* percentage of GDP of India (previous five years) is as follows: -

(Rs. in crores)

Year	BE Allocation	BE allocation as percentage of Total Health Budget	Actual Expenditure	Actual health research expenditure as percentage of GDP	Health research expenditure as percentage of GDP for US, UK and China
2021-22	2663.00	3.60 %	2690.60	0.02 %	As per the World Bank data, current health expenditure 2017 (from internet) health research expenditure in US and UK as a percentage of GDP is 0.65 % and 0.44 % respectively.
2022-23	3200.65	3.71 %	2332.62 (upto 31.01.2023)	0.02 %	
2023-24	2980.00	3.34 %	-	0.02 %	

Source: Department of Health Research (DHR)

2.24 The Committee notes that research is an integral part of medical education and thus has to be sufficiently supported by both the Government and medical colleges. The Committee further notes that the actual health research expenditure as a percentage of GDP has constantly remained at 0.02 since 2021-22. The Committee feels that medical research and innovation

needs further impetus and there is an urgent need to substantially increase the Government expenditure on health research infrastructure or provide incentives/ ecosystem for collaboration with leading private research firms.

2.25 The Committee recommends the NMC encourage the medical colleges to develop a tradition of research in the college so that upcoming MBBS students and later MD / MS students gain sufficient exposure in the research ambience of the institute. Furthermore, colleges should incentivize quality research both at the student and faculty level.

2.26 To have result-oriented and gainful research, the Committee also recommends the Government form guidelines to decide on ‘priority research fields’ based on disease burden and focus areas of the country. For this, colleges can form a collegium of senior faculties and decide on the research priority; funds for such research should be partly provided by the institute and partly by Government agencies like ICMR.

Affordability of Medical Education

2.27 The average MBBS course fees across Government colleges in India (both centrally funded, and State Government funded) can reach Rs. 50,000 per annum. However, such subsidized medical education can only be availed by a select few who perform exceedingly well in the NEET UG exam. As per the information furnished by the Ministry of Health and Family Welfare, there are only 56,193 Government seats in MBBS and as per NTA, more than 11 lakh candidates qualified for the NEET UG exam in 2023. Therefore, more than 10 lakh MBBS aspirants are left either to opt for MBBS seats in private medical colleges where the course fees can range up to 1.5 crores or to pursue their dream in countries like China, Ukraine, and Russia, where the cost is lower in comparison to private colleges in India.

Name of College	Annual Tuition Fees in 2023 for MBBS
AIIMS, New Delhi (Central Institution)	Rs.1,350

KG MU, Lucknow (State Institution)	Rs. 24,000
Dr. DY Patil Vidyapeeth, Pune (Private Institution)	Rs. 26,50,000

2.28 According to a LANCET study in 2018, the cost of medical education of doctors in India doubled from USD 35,000 in 2008 to USD 70,000 (around 60 lakhs in INR). In contrast, the expenditure per student in 2018 was USD 41,000 in China.

2.29 The Committee was apprised that there is significant variation among the States/UTs in the amount of fee charged; the cost of medical education ranges between a whopping 60 lakh and one crore rupees, or more. In order to alleviate the financial stress on the students, the Committee recommends that the Ministry, in collaboration with States, consider need-based scholarships to deserving students. Other suggestive options that can be explored are – running the medical college and hospital on a PPP model, giving tax benefits to the company/group, etc. The Committee, however, further recommends prescribing minimum marks in the NEET-UG exam for each category of students seeking admission.

2.30 The Committee further recommends the Ministry formulate a comprehensive framework to address bureaucratic hurdles and effectively implement the partnership of private medical colleges with the district hospitals. The Committee believes that this initiative will not only provide sufficient clinical material to the MBBS students but also decrease the setting up and functioning cost of private colleges, thereby rationalizing the costs of medical education. Additionally, as another measure to reduce the cost of medical education in private colleges, the Committee recommends the Government subsidize the necessary equipment/ machines for the setting up of “Skill Labs” in private colleges as they are sophisticated and costly and are often imported. In addition, the Government should create need-based scholarship programs to assist economically disadvantaged students in

covering their tuition fees. These scholarships could be funded through government and private sector contributions, creating an accessible path to medical education for all.

Chapter-III

Faculty Issues in Medical Education

Faculty Shortage and the Issue of Ghost Faculty

3.1 Faculty is central to quality in medical education. Experienced, knowledgeable, and qualified teachers play a crucial role in providing quality medical education. The importance of such faculty cannot be overstated, as they contribute significantly to the development of competent and ethical healthcare professionals. However, due to Government's recent efforts to increase the number of Medical Colleges and the number of Undergraduate and Post Graduate seats have resulted in an alarming shortage of faculty members in Indian medical colleges. Director Professor, Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi apprised the Committee that there is a severe shortage of faculty positions in various Medical Colleges spread all over India.

3.2 According to the reply of the Union Health Minister in Rajya Sabha in August 2023, about 5,527 faculty positions in all AIIMS have been sanctioned, of which, 2,161 are vacant currently. AIIMS, New Delhi which is a premier institute also faces severe faculty crunch with almost 347 faculty positions lying vacant and this accounts for almost 28% of the total sanctioned strength.

3.3 A recent assessment of 246 medical colleges in 2022-23 by the Undergraduate Medical Education Board (UGMEB) under the National Medical Commission (NMC) revealed that no medical college had adequate faculty members or senior residents, and all failed to meet the 50% attendance requirement. The assessment brought to light that most of the colleges had either ghost faculty or senior residents or had yet to employ the required faculty at all. While none of the institutes met the minimum 50% attendance requirement, zero attendance of faculty was common in most of the medical colleges.

3.4 According to NITI Aayog's "Barriers to Recruitment, Onboarding, and Retention of Faculty in Government Medical Colleges of India" report, the primary reasons for the severe shortage of faculty in medical colleges are as follows: -

- a) There are significant delays in the recruitment process, often extending from the approval stage to the actual job advertisements, lasting as long as 2 to 4 years.
- b) Well-compensated positions in the private sector are attracting professionals in the fields of surgery and super-specialties.
- c) The preference for job postings in major urban centers or near one's hometown is a prevailing trend.
- d) The alteration in NMC guidelines in 2019 has led to a restriction on recruiting faculty members with postgraduate qualifications in basic sciences, permitting only MBBS graduates to fill positions. This change has resulted in a need for more flexibility in staffing pre- and para-clinical specialties, limiting them to medical graduates only.

3.5 The Committee feels that establishing additional medical colleges is undoubtedly a positive stride in addressing the chronic shortage of healthcare professionals. However, in this effort, it is crucial to ensure the production of genuinely qualified doctors which is incumbent upon the presence of well-qualified and experienced faculty members. Teachers in medical colleges are the cornerstone of a robust medical education system, shaping not only the knowledge and skills but also the ethical foundations of future medical practitioners. The Committee believes that whether it is the expansion of medical colleges or the implementation of progressive initiatives like NMC's Competency-Based Medical Education (CBME) module, the efficacy of these reforms hinges on the availability of a dedicated, skilled teaching force. The shortage of qualified teachers is a common thread in both scenarios and addressing this issue is paramount. In this regard, the Committee has taken note of the findings of NMC for 246 medical colleges. The Committee views that NMC's efforts, like AEBAAS-based attendance CCTVs in colleges, have yet to deliver much as issues like ghost faculty and zero faculty attendance have only escalated as per the NMC's assessment. Therefore, the Committee is of the consensus that the faculty shortage issue in India is twofold: first, there is a genuine shortage of qualified faculty members, and second, even the available faculty often lacks

the inclination to teach at the college level. To address the issue of ghost faculty and ensure that the available faculty comes to the college to teach, the Committee recommends the Government to strictly enforce the regulations already in place to curb the problem of ghost faculty and zero attendance. NMC should conduct regular inspections of medical colleges and take action against colleges that are found to be violating the regulations.

3.6 Additionally, streamlining the recruitment process is imperative. The significant delays in the recruitment process must be reduced through the simplification of bureaucratic procedures and the incorporation of technology for quicker application processing and interview scheduling. An efficient recruitment process is necessary to expedite faculty appointments and fill vacant positions without unnecessary delays. NMC should make it easier for students and parents to report ghost faculty and zero attendance. Furthermore, the Committee feels that the Government should undertake some essential steps for retaining faculty viz. improved working conditions for faculty members, transparent career progression paths, etc. Clear criteria and milestones for promotions by recognising and rewarding excellence in teaching, research, and clinical work need to be chalked out. Regular performance evaluations are crucial in identifying and addressing concerns promptly.

Faculty Qualifications and Competence

3.7 In 2022, the National Medical Commission (NMC) implemented fresh guidelines about the eligibility criteria for faculty members in medical institutions. These regulations, known as the "Teacher's Eligibility Qualifications in Medical Institutions Regulations, 2022," have been put in place with the overarching goal of elevating the standards of medical education and healthcare across the nation. The new regulations require all medical teachers to have a postgraduate degree or equivalent qualification in the subject they are teaching. Furthermore, these regulations require all medical teachers to complete basic training in medical education technology and biomedical research. The new rules have more rigorous criteria for promotions of medical teachers.

3.8 The Committee notes that the NMC's "Teacher's Eligibility Qualifications in Medical Institutions Regulations, 2022", are a significant step forward in improving the quality of medical education in India. By requiring higher qualifications for teachers, mandating training in medical education technology and biomedical research, and having more rigorous promotion criteria, the new regulations will help to ensure that medical teachers in India are highly skilled and qualified. The Committee, however, opines that along with the rigorous promotion criteria, NMC should focus more on Teacher-Learning Programmes than on manpower and infrastructure. The Commission should also formulate norms to incentivize and encourage faculty to take up training for skills improvement and devise policies creating an ambience to kindle interest in research in the faculties. Furthermore, the Committee recommends the NMC design and strictly implement exhaustive training programs for faculties to enhance their understanding of the principles, functioning, and practices of CBME.

3.9 To reform the quality of medical education and effectively implement the CBME module, NMC, as per its Notification dated 16 August 2023, limited the appointment of non-medical teachers in the Department of Anatomy, Physiology, and Biochemistry to the extent of 15% of the total number of posts and zero percent in microbiology and pharmacology subject to non-availability of medical teachers. However, the Medical Council of India (which was replaced by the NMC in 2019), as per its 1998 regulation, allowed up to 30% appointment of non-medical faculty in these courses. Medical MSc degree is included in the first schedule of the Indian Medical Council Act, 1956. Medical MSc courses were opened for non-doctors in the 1960s to counter faculty shortage.

3.10 The Committee recognizes the regulator's aspiration to introduce competency-based learning for MBBS students and foster clinical exposure from the early stages of their education. This direction is indeed in line with international trends in medical education. However, the sudden cessation of non-MBBS candidates teaching non & non-para-clinical subjects, such as anatomy, pharmacology, and microbiology, presents a complex situation. While upholding high educational standards is paramount, there is a need for a balanced and gradual approach that accommodates the interests and expertise of non-MBBS candidates. The Committee recommends a thoughtful

and phased strategy to address this issue. It is advisable to introduce a transitional period that allows non-MBBS faculty members to continue teaching these subjects until enough MBBS-qualified educators become available. This gradual shift will ensure that students continue to receive a comprehensive education as the transition toward competency-based learning takes place. Furthermore, it is crucial to emphasize faculty development for non-MBBS educators, offering them opportunities to enhance their teaching skills and align their curriculum with evolving standards in medical education. This will help them remain effective contributors to medical education. Non-MBBS educators often bring unique perspectives and expertise to the field. Rather than limiting their involvement, their expertise can be integrated into the education system through collaborative efforts, interdisciplinary research, and innovative teaching methodologies.

Faculty Development Programs

3.11 Medical education constantly evolves with the emergence of new technologies and teaching methods. The quality of medical education plays a crucial role in maintaining overall societal health. One practical approach to ensuring high-quality education is the implementation of Faculty Development Programs (FDPs). The erstwhile Medical Council of India made it mandatory for all medical colleges to establish Medical Education Units (MEUs) or departments to enable faculty members to avail modern education technology for teaching. To boost this activity, MCI used Faculty Development Programmes through selected Regional Centres since July 2009. However, the new regulator, the National Medical Commission, is revising the guidelines on the "Faculty Development Programme". In the meantime, the NMC continues to offer them through its regional centers.

3.12 WHO's "Transforming and Scaling up Health Professionals' Education and Training" guidelines 2023 State that the "selection and recruitment of qualified educators and trainers is a crucial part of the scaling up and transformation of the education of health professionals. Recruited staff should have adequate clinical and scientific competencies. Still, they rarely have the pedagogical preparation (communication, adult learning principles, use of new information technology, etc.) required to function in the transformed environment. Faculty development is,

therefore, important to ensure that teachers and trainers are well prepared to assume their responsibilities as educators".

3.13 Director, Lady Hardinge Medical College, New Delhi, in his deposition to the Committee, stated, "Though NMC had implemented CBME in 2019, our faculty is tuned to the previous system, they still have some inhibitions. Therefore, faculty development programmes shall be enforced with a certain number of programmes that one should attend in a year so that they can adapt to the newer system".

3.14 The Committee notes that faculty development is vital for ensuring that faculty members have the skills and knowledge they need to teach and train students effectively. The Committee understands that in our country, elementary, primary, and secondary school teachers must undergo training in formal schools or colleges of education to be eligible for appointments and promotion. Still, there is no such requirement for selecting teachers in medical colleges in India. Therefore, the Committee recommends the NMC to release the guidelines on the "Faculty Development Programme" without any delay. The policies should be formulated to support the achievement of the goal to enhance the quality and relevance of education for future healthcare professionals. These guidelines should encompass critical areas such as clinical instruction, small group facilitation, large group presentations, feedback and assessment, personal and organizational growth, leadership, and scholarly activities. The strategies and formats for faculty development should exhibit flexibility, ensuring they are tailored to the specific healthcare requirements of our nation, institution, and learners. Faculty development programs (FDPs) can encompass a range of activities, including continuing education, on-the-job training, traditional classroom settings, in-person, online, or via tele/videoconferences, self-paced learning, mentorship, involvement in communities of practice, or a combination of these approaches.

3.15 Furthermore, the Committee notes that conducting faculty training through regional bodies and nodal centers has limited availability and capacity. Therefore, the Committee recommends establishing a National Institute for Training of Medical Teachers. A dedicated institute would

provide year-round access to training for medical college faculty, effectively expanding the capacity for teacher development and establishing standardized quality benchmarks. This may also lead to the institutionalization of training procedures and best practices.

Chapter-IV

Quality Control of Medical Education

Rating and Accreditation of Medical Colleges

4.1 With India having the largest number of medical colleges in the world and a record number of medical graduates passing out from these colleges every year, quality assurance of medical education becomes a vital aspect. The NMC, since its inception, has played a crucial role in quality assurance by setting standards for medical education and practice, accrediting medical colleges, conducting inspections of medical colleges, and taking corrective action against medical colleges that do not meet the standards.

4.2 In 2023, the National Medical Commission has been granted World Federation for Medical Education (WFME) Recognition Status for tenure of 10 years. The recognition will further enhance the quality and standards of medical education in India by aligning them with global best practices and benchmarks. Therecognition and reputation of Indian medical schools and professionals will gain further impetus. Facilitation of academic collaborations and exchanges, continuous improvement and innovation in medical education, and fostering a culture of quality assurance among medical educators and institutions are added advantages of WFME Recognition Status.

4.3 Secretary, Ministry of Health and Family Welfare, in his oral evidence, apprised the Committee that "the Quality Council of India and the NMC's Medical Assessment and Rating Board have signed an MoU for assessment of rating the medical colleges wherein QCI will provide third party assessment of both private and government medical colleges". According to the MoU, from the next academic session, all medical colleges in the country, both private and public, will mandatorily be rated and ranked. At present, the Union Ministry of Education mandates the participation of Government medical colleges in the National Institutional Ranking Framework (NIRF), whereas private medical colleges have the option to partake voluntarily. Most private colleges in India are yet to be ranked, and only institutions possessing robust academic records choose to volunteer for NIRF. It poses a challenge for students seeking admission to MBBS

or PG-medicine programs. It hinders their ability to make well-informed decisions regarding the medical institutions they intend to enroll in.

4.4 The Committee commends NMC on receiving World Federation for Medical Education (WFME) Recognition. The Committee notes that though this recognition would enable Indian medical graduates to pursue PG training and practice in countries such as Australia, USA, Canada, and New Zealand, it may also lead to the country's top talent leaving India for better opportunities abroad. Therefore, the Committee recommends the Government not only take appropriate steps to limit the exodus of medical professionals but at the same time take proactive measures to make India an attractive destination for international students and healthcare professionals.

4.5 Furthermore, the Committee recommends the NMC develop global standards criteria along with QCI (Quality Council of India) to rate medical colleges, both private and government, based on the parameters that are specific to medical education.

Foreign Medical Graduates

4.6 In 2021, NMC brought the Foreign Medical Graduate Licentiate Regulations 2021 (FMGL Regulations, 2021) that govern the licensing of foreign medical graduates (FMGs) to practice medicine in India. The regulations were introduced in November 2021 and came into effect on December 1, 2021. The FMGL Regulations 2021 ensure that FMGs have the same skills and knowledge as Indian medical graduates before they are allowed to practice medicine in India. The regulations are also designed to protect the public from unqualified medical practitioners. According to the rules, only a foreign medical graduate shall practice medicine in India if granted permanent registration from the respective State Medical Council(s).

Below are some of the significant regulations of the Foreign Medical Graduate Licentiate Regulations, 2021: -

1. FMGs must have a foreign medical degree from a country that the NMC recognizes.

2. FMGs must have completed a one-year internship in the same foreign medical institution where they obtained their degree.
3. FMGs must complete a one-year internship in India before obtaining permanent registration. The training must be completed at an accredited medical institution in India.
4. FMGs who have obtained their medical degree from a country the NMC does not recognize must pass the Foreign Medical Graduate Exam (FMGE) to get provisional registration in India.
5. FMGs who have obtained permanent registration under the FMGL Regulations, 2021 must practice in rural areas for one year.
6. FMGs must clear the National Exit Test (NExT) to obtain permanent registration in India. The NExT is a single national examination to be conducted for both Indian and foreign medical graduates.

4.7 The Committee believes that the FMG Regulations 2021 are a pivotal framework to maintain and uphold the quality of medical professionals in India. However, these regulations must adopt a facilitative role rather than imposing unwarranted obstacles in the registration and internship process for foreign medical graduates. The NMC should address the inconsistencies in granting permanent registration to foreign medical graduates across various States. The Committee recommends the NMC strike a balance between quality assurance and inclusivity, ensuring that bureaucratic or procedural impediments do not unduly burden foreign medical graduates who meet the necessary standards. By acting as facilitators, regulatory authorities can streamline the registration and internship procedures, enhancing the integration of foreign medical graduates into the Indian healthcare system.

4.8 Alternatively, the Committee has also taken note of the fact that with the expansion of the number of medical colleges in India, the reliance on Foreign Medical Graduates to maintain the doctor to population ratio may dwindle in the near future. Moreover, the Committee has also come across the fact that given the high standards of medical education in India, several FMGs are unable to clear the examination process despite several attempts.

Given the future scenario, the Committee recommends that the Government take a serious view on this issue and come up with some advisories to dissuade students from pursuing medical education abroad.

Graduate Outcome Assessment & NMC EXIT Test

4.9 Presently, in India, medical colleges conduct final-year MBBS examinations. At the same time, the responsibility for NEET PG and FMGE falls under the purview of the National Board of Examinations (NBE), overseen by the Director-General of Health Services within the Ministry. The NMC Act (Section 57) provides for National Exit Test (NExT) to enhance the competence of graduating MBBS students who obtain licenses to practice annually. This initiative addresses the current emphasis on clearing the NEET-PG, which is predominantly theoretical and necessitates rote memorization.

4.10 In June 2023, the National Medical Commission developed the NMC Exit Test Regulations 2023 (NExT Regulations, 2023). The test was to replace the final MBBS examination, act as a licentiate exam for grant of registration to practice medicine, and provide a basis for entry to postgraduate courses instead of NEET-PG. The NExT would be a medical licensing exam that is designed to assess the competency of medical graduates. However, in July 2023, NMC has *videnotice* stated that "the National Exit Test (NExT) examination is deferred on the advice of the Ministry till further directions".

4.11 The Committee acknowledges that the NMC intends to introduce a standardized assessment of medical graduates through the National Exit Test (NExT). The Committee notes that standardized assessment of medical graduates would ensure that all medical graduates have a uniform level of knowledge and skills, regardless of where they studied. This improves the quality of medical education and training in India and makes the process of licensure and postgraduate admissions more transparent and fairer. The Act provides for three years for unrolling of NExT, the Committee has taken note that NExT is yet to be implemented.

4.12 Given the pivotal role the NExT exam is poised to play in medical education, the Committee recommends the Government exhaustively examine the implications of implementation. The Committee advocates for meticulous

due diligence in addressing the concerns of all relevant stakeholders. Furthermore, the Committee recommends that the Government allocate ample time for thorough preparation and provide an early release of the exam schedule, along with other relevant details regarding the examination. This will enable the first batch of candidates to prepare adequately and smoothly transition to the new examination format. Additionally, considering the diverse background of medical colleges from which the first batch of NExT aspirants would come, the Committee suggests that the evaluation criteria should be moderate. It is imperative to ensure that no group of graduates faces an undue advantage or disadvantage in the examination. Striking a fair and equitable balance in the evaluation process will be pivotal in ensuring the success and fairness of the NExT exam.

4.13 Moreover, the Committee believes in addition to standardised final assessment of graduates, there is an urgent need to universalize or standardise undergraduate and postgraduate education. Reputed institutes like AIIMS impart different quality of medical education while newly opened medical institutes need such quality. Keeping this in view, the Committee recommends the Government to divide India into zones, and in each zone reputed institutes like AIIMS can function as mentor institutes for all the other medical colleges in that zone. Mentor institutes shall play a significant role in monitoring the standard of education and the classes in the newly set medical colleges or private medical colleges.

Other Key Areas

4.14 Improving the quality of medical education in India is crucial for producing well-trained healthcare professionals who can provide high-quality patient care. To achieve this goal, the Committee feels that a holistic approach to enhance the quality of medical education has to be taken for India to achieve its targets concerning the 3A's of healthcare - affordability, accessibility, and availability. In this regard, the Committee would like to mention other key aspects that need to be addressed to enhance medical education in India, as listed hereunder:

1. Curriculum Revision:

- Update the medical curriculum to align with international standards to include the latest advancements in medical science.
- Emphasize the importance of practical skills and clinical exposure.

2. Faculty Development:

- Invest in training and development for medical faculty to ensure they are up to date with current medical practices and teaching methods.
- Encourage medical faculty to engage in research and publications.

3. Assessment and Evaluation:

- Implement regular and rigorous assessment mechanisms, including practical exams and clinical evaluations, to ensure students have the necessary skills and knowledge.

4. Infrastructure and Resources:

- Provide state-of-the-art infrastructure and resources, including well-equipped laboratories, libraries, and technology, to support teaching and research activities.

5. Clinical Exposure:

- Ensure medical students have ample opportunities for hands-on clinical experience through partnerships with public and private hospitals. This can include clerkships, internships, and rotations in various specialties.

6. Ethics and Communication Skills:

- Integrate courses on medical ethics, communication skills, and cultural competence to ensure that future healthcare professionals not only possess clinical knowledge but also the ability to interact with patients effectively and ethically.

7. Interdisciplinary Learning:

- Promote interdisciplinary education to foster collaboration between healthcare professionals, including doctors, nurses, and allied health professionals.

8. Research and Innovation:

- Encourage medical students to engage in research and innovation from an early stage. This can help generate new knowledge and foster critical thinking.

9. Regulatory Reform:

- Streamline and strengthen regulatory bodies to ensure strict adherence to quality standards in medical education.

10. Use of Technology:

- Leverage technology for teaching and learning. Virtual reality, online resources, and telemedicine can enhance educational experience.
- Design diagnostic protocols to be followed by doctors when treating patients virtually.

11. Continuous Assessment and Feedback:

- Establish mechanisms for constant feedback from students, faculty, and healthcare facilities to identify improvement areas and make necessary adjustments.

12. Public-Private Partnerships:

- Collaborate with private institutions to expand access to quality medical education. Public-private partnerships can help in sharing resources and expertise.

13. Financial Support:

- Offer scholarships and financial incentives to attract the best and brightest students to pursue a medical career. This can help address the shortage of qualified medical professionals.

14. Accreditation:

- Encourage medical colleges to seek accreditation from reputable bodies to ensure they meet quality standards.

15. Community Engagement:

- Involve medical students in community health programs and outreach to instill a sense of social responsibility and practical experience in addressing healthcare challenges at the grassroots level.

16. Global Collaboration:

- Foster international collaborations and partnerships with renowned medical institutions to bring global best practices to Indian medical education.

17. Designing of Local Language Learning Modules for effective communication between the doctor and patient

- Given the fact that most students pursue their medical education in States in which they are not domiciled, the Committee feels that UGMEB can design local language learning modules for medical graduates evincing interest in learning the local language. Such a move would go a long way in paving the way for establishing effective communication between the doctor and the patient.

18. Review of retirement age of doctors

- The Committee, while examining the subject has felt doctors gain more experience with the advancement in age, hence it feels that there is a need to reconsider/ review the age of retirement of doctors.

19. Issue of Pharmaceutical Companies sponsoring medical professionals:

- In view of the accrual of benefits to the medical fraternity at large, pharmaceutical companies can be allowed to sponsor medical conferences with adequate social/ transparent auditing of such contributions.

4.15 Continuing Medical Education (CME): The Committee feels that there is a need to introduce regulatory provisions for CME covering the Teachers,

practicing Doctors and students pursuing higher medical education. The Committee is of the view that CME enables healthcare professionals to maintain, enhance, and update their knowledge, skills, and competencies throughout their careers. It is a very crucial aspect of professional development in the medical field which ensures that doctors are aware of the latest advancements in medicine, technology, and healthcare practices. This ultimately results in achieving better patient outcomes. The Committee, therefore, recommends that UGMEB and PGMEB explore the possibility of including components such as attending workshops, conferences, seminars, publishing papers in medical journals, etc. for medical students, and as an incentive measure such students/faculty/medical professionals can earn extra credits for partaking in them. The Committee hopes that the CME being a dynamic and evolving process would enable medical practitioners to provide high-quality care while staying current in the ever-evolving healthcare landscape.

4.16 The Committee is of the view that improving the quality of medical education is a long-term endeavor that requires the commitment of governments, educational institutions, healthcare providers, and regulatory bodies. India is on the right track to enhance the quality of its medical education system; and by addressing the critical aspects highlighted in this Report, the country can achieve the desired outcome of producing highly skilled healthcare professionals.

RECOMMENDATIONS/OBSERVATIONS — AT A GLANCE

Quality of Medical Education: Global Perspectives

The Committee has observed that countries across the world have adopted the Flexner Model changing it suitably whenever required. The Committee, on scrutiny of various governing authorities for medical education across the countries mentioned above, has observed that the National Medical Commission of India meets international professional standards in medical education. The Committee has further observed that barring a few countries at the global level, the shortage of doctors at present or for the future seems to be an all-pervading problem. The developed countries are able to meet this shortfall by serving as attractive destinations for medical graduates from developing countries and by easing the process for the practice of medicine by the International Medical Graduates. In the context of the standardised tests for medical education, the Committee has taken note of the fact that behavioural and social sciences are also becoming part of the testing process of various countries to assess the ethics, integrity, etc. of the medical aspirants.

(Para 1.16)

The Committee recommends National Medical Commission undertake a comparative study of best practices of its parallel organisation in various countries. The Committee feels that this measure can help NMC to usher in best practices followed around the world and help in making NMC an institution par excellence.

(Para 1.17)

As regards the maintenance of a national database of resident doctors, the Committee recommends that NMC maintain a real-time national database akin to the GME Track of the USA. This national database can allow access to multiple stakeholders viz, Ministry, States, Medical Colleges, and other concerned parties. This database can also serve as a tool to decimate the

limitation of resources in the newly opened institutions and operate as a platform for experience and knowledge sharing among the resident doctors. Against this background, the Committee would also like to highlight the issue of dual registration of doctors with the respective State Medical Council where they practice and any other place where they may relocate subsequently. This gives rise to multiple registrations of doctors with various State Medical Councils, making tracking difficult. The Committee would like to recommend the generation of a ‘unique registration number’ for the doctors at the NMC level. This move can also leverage the national database and usher in uniformity in the registration of practicing doctors.

(Para 1.18)

The Committee notes that the National Medical Commission (NMC) has an excellent opportunity to improve the quality of medical education in India. However, it must address various issues related to modernising medical education and introduce reforms to bring remarkable improvements in the overall healthcare system in the country. The NMC can take several essential and immediate steps to strengthen medical education in India, including setting and enforcing high standards for medical education, promoting research in medical education, supporting faculty development, and making medical education more accessible. The Committee believes that by taking these steps, the NMC can help to produce a new generation of highly qualified and competent medical graduates.

(Para 1.21)

The Committee notes that the importance of quality in medical education must be considered when considering its direct impact on the quality of healthcare services. High-quality medical education is the foundation upon which competent and compassionate healthcare professionals are built. It equips them with the necessary knowledge, skills, and ethical principles essential for providing safe and effective care to patients. The Committee recommends the Ministry develop a robust medical education system and emphasise evidence-based practices, critical thinking,

and continuous learning, ensuring that healthcare practitioners stay up to date with medical advancements. In this way, quality medical education would not only secure the present generation's healthcare needs but also be an investment in the future of healthcare.

(Para 1.22)

Medical Colleges and Seats in India

The Committee notes that the current situation regarding medical seats both in UG and PG in our country is a critical issue that warrants immediate attention. With an annual influx of approximately 2 million aspiring medical students at UG and only 1/20times available seats, the demand far exceeds the supply, similarly, the number of available seats at PG level is far less than the demand. The Committee acknowledges the urgency of addressing this challenge while maintaining the quality of medical education at its highest standard. To address this issue effectively, several measures can be taken. First and foremost, there is a need to significantly increase medical seats in both undergraduate and postgraduate courses. The government's existing scheme, which focuses on the establishment of new medical colleges attached to district or referral hospitals, can be instrumental in achieving this goal. By expanding this initiative, the Government can create more opportunities for aspiring medical students.

(Para 2.4)

The Committee further recommends that it is essential to make optimal use of the existing infrastructure. Ensuring that all available resources and facilities are utilized efficiently can help accommodate a larger number of students without compromising the quality of education. Additionally, streamlining the admission process by implementing a standardized national entrance examination can improve fairness and transparency in seat allocation.

(Para 2.5)

Encouraging private investment in medical education is another avenue to explore. Providing incentives and regulatory support to private institutions willing to establish medical colleges can not only increase seat availability but also introduce healthy competition and innovation in medical education. The Committee also recommends the Ministry leverage technology for distance learning and organise virtual classrooms that can be a supplementary solution to address the shortage of seats, allowing a more significant number of students to access medical education without overburdening physical infrastructure.

(Para 2.6)

Imbalance in Distribution of Medical Colleges

The Committee has taken note of the detailed Minimum Standards Regulations (UG-MSR) notified on 16th August 2023. While examining the subject, the Committee came across several concerns over some of the guidelines for opening of a new Medical College and also regarding permission to increase the number of undergraduate seats. The permission for an increase in MBBS seats will be granted for 50, 100 and 150 seats from the academic year 2024-25. The Committee notes that based on the guidelines for 200 and 250 seats at various places have provisions for infrastructure and faculty positions. The Committee further notes that many medical colleges have 200 and 250 seats. The Committee was apprised that the ideal batch size for a faculty to impart teaching is 150. The Committee, however, believes that as per the guidelines, given the infrastructure and faculty position required in place, a college, whether old or new, may be considered for granting permission to increase, in phases, the undergraduate seats up to a maximum of 250.

(Para 2.11)

The WHO norms recommend a doctor-population ratio of 1:1000, and as per the NMC, the country has already achieved a ratio of 1:856. However,

the concern area associated with opening a new medical college is the number of prescribed department-wise and total patient Bed capacity, read along with the requirement of their 80 per cent average occupancy in the attached hospital. The Committee would recommend the Government that such one-size-fits-all criterion prescribed in the UG-MSR may be revisited to take into account the geographic imbalances, if any, and formulate region-specific guidelines/ norms.

(Para 2.12)

The Committee also recommends the Government to chalk out a comprehensive India-specific approach that considers the nation's healthcare needs in the next 20-25 years, identifies the categories of doctors, viz. pediatricians, ophthalmologists, neurosurgeons, critical care specialists, infectious disease specialists that the country would need rather than just randomly increasing general surgery, pharma, and anatomy seats. The Committee believes that such a concerted effort to produce need-based specialists/ doctors commensurate with disease-burden specialists will secure India's healthcare needs in the future. The Committee recommends that in the case of the current scenario modalities for a fair distribution of doctors' workforce across the country especially in underprivileged areas can be worked out by the NMC by offering incentives, monetary or otherwise.

(Para 2.13)

The Committee notes that a travel time of 30 minutes between the college campus and the attached hospital has been prescribed in the guidelines. The Committee while taking cognisance of the rationale behind this travel time criteria fails to understand the logic behind keeping separate distance criteria of 30 kilometres (Tier-I cities) and 50 kilometres (for other cities) between RHTC/UHTC/CHC and the medical college. The Committee recommends the National Medical Commission review this criterion and consider incorporating suitable travel time instead of distance.

(Para 2.14)

Evaluation of the existing curriculum and its relevance to healthcare needs, the need for transformation

The Committee notes that the NMC guidelines on Competency-Based Medical Education (CBME) Regulations, 2023, are comprehensive and comparable to best global practices and thus a welcome step in upgrading the curriculum of medical education in India. The Committee, however, believes there are some areas where the guidelines could be improved to make them more feasible and effective in the Indian context. The current policies need to be more transparent in implementing CBME in practice. Implementing CBME can be challenging for medical colleges, especially those with limited resources. Specific guidance to develop the CBME curricula, assessments, and teaching methods would prove to be useful in reaping early benefits. Furthermore, the Committee feels that the transition to CBME will require significant changes to medical education programs; therefore, medical colleges will need support, including augmenting faculty training and access to resources from the NMC and other stakeholders in making this transition. The Committee also notes that medical colleges in India vary widely regarding resources, faculty expertise, and student demographics. The CBME guidelines should consider this diversity and be flexible enough to be implemented in different settings. The CBME guidelines should consider this diversity and be flexible enough to be implemented in different settings. To maintain the true spirit of CBME, the Committee feels that there should be a regular periodic review and monitoring of the medical curriculum.

(Para 2.16)

The Committee acknowledges the critical elements introduced in the new curriculum to help students acquire practical skills. The Committee strongly recommends the rigorous and comprehensive implementation of the AETCOM module within the MBBS curriculum. This module is paramount as it is pivotal in cultivating the right attitude, ethics, and communication skills among medical students. Patient care is not solely about clinical

knowledge and technical skills; it hinges on empathy, compassion, and effective communication. By instilling these qualities in future healthcare professionals, we can significantly enhance the overall quality of patient care. Therefore, the Committee recommends the Government ensure that the AETCOM module is enforced consistently and effectively to empower medical students with the essential attributes needed to provide holistic and patient-centered healthcare. In addition to the implementation of AETCOM, the Committee recommends the incorporation of these criteria in NEET so that the aptitude of aspiring medical students can be assessed. Such aptitude tests at the entrance level go beyond mere knowledge assessment of aspirants, often obtained through rote learning and mastering MCQ-based exams, and evaluate the genuine interest and passion of the candidate for the field of medicine. It will enable the system to identify candidates who have a sincere calling for the profession and distinguish them from those who may be under external pressure or legacy expectations. By doing so, we can ensure that medical work continues to attract individuals who are genuinely committed to delivering high-quality healthcare.

(Para 2.18)

In a general context, the Committee has observed that there is a frequent change in the regulations notified by the National Medical Commission. The Committee would recommend that before notification of any regulation, a robust and thorough study involving the opinions/viewpoints of various stakeholders should be undertaken.

(Para 2.19)

The Committee was apprised of the fact that some private medical colleges seemingly fail medical graduates deliberately during mid-semester exams which results in repetition of the semester, and charging additional fees for repeating the semester or exam. This practice causes stress on the medical students, financial and otherwise. The Committee therefore recommends that UGMEB may develop appropriate feasible modalities for monitoring assessment, reevaluation, etc. without charging any additional fee

(Para 2.20)

Research Support and facilities

The Committee notes that research is an integral part of medical education and thus has to be sufficiently supported by both the Government and medical colleges. The Committee further notes that the actual health research expenditure as a percentage of GDP has constantly remained at 0.02 since 2021-22. The Committee feels that medical research and innovation needs further impetus and there is an urgent need to substantially increase the Government expenditure on health research infrastructure or provide incentives/ ecosystem for collaboration with leading private research firms.

(Para 2.24)

The Committee recommends the NMC encourage the medical colleges to develop a tradition of research in the college so that upcoming MBBS students and later MD / MS students gain sufficient exposure in the research ambience of the institute. Furthermore, colleges should incentivize quality research both at the student and faculty level.

(Para 2.25)

To have result-oriented and gainful research, the Committee also recommends the Government form guidelines to decide on ‘priority research fields’ based on disease burden and focus areas of the country. For this, colleges can form a collegium of senior faculties and decide on the research priority; funds for such research should be partly provided by the institute and partly by Government agencies like ICMR.

(Para 2.26)

Affordability of Medical Education

The Committee was apprised that there is significant variation among the States/UTs in the amount of fee charged; the cost of medical education ranges between a whopping 60 lakh and one crore rupees, or more. In order to alleviate the financial stress on the students, the Committee recommends

that the Ministry, in collaboration with States, consider need-based scholarships to deserving students. Other suggestive options that can be explored are – running the medical college and hospital on a PPP model, giving tax benefits to the company/group, etc. The Committee, however, further recommends prescribing minimum marks in the NEET-UG exam for each category of students seeking admission.

(Para 2.29)

The Committee further recommends the Ministry formulate a comprehensive framework to address bureaucratic hurdles and effectively implement the partnership of private medical colleges with the district hospitals. The Committee believes that this initiative will not only provide sufficient clinical material to the MBBS students but also decrease the setting up and functioning cost of private colleges, thereby rationalizing the costs of medical education. Additionally, as another measure to reduce the cost of medical education in private colleges, the Committee recommends the Government subsidize the necessary equipment/ machines for the setting up of “Skill Labs” in private colleges as they are sophisticated and costly and are often imported. In addition, the Government should create need-based scholarship programs to assist economically disadvantaged students in covering their tuition fees. These scholarships could be funded through government and private sector contributions, creating an accessible path to medical education for all.

(Para 2.30)

Faculty Shortage and the Issue of Ghost Faculty

The Committee feels that establishing additional medical colleges is undoubtedly a positive stride in addressing the chronic shortage of healthcare professionals. However, in this effort, it is crucial to ensure the production of genuinely qualified doctors which is incumbent upon the presence of well-qualified and experienced faculty members. Teachers in medical colleges are the cornerstone of a robust medical education system,

shaping not only the knowledge and skills but also the ethical foundations of future medical practitioners. The Committee believes that whether it is the expansion of medical colleges or the implementation of progressive initiatives like NMC's Competency-Based Medical Education (CBME) module, the efficacy of these reforms hinges on the availability of a dedicated, skilled teaching force. The shortage of qualified teachers is a common thread in both scenarios and addressing this issue is paramount. In this regard, the Committee has taken note of the findings of NMC for 246 medical colleges. The Committee views that NMC's efforts, like AEBAS-based attendance CCTVs in colleges, have yet to deliver much as issues like ghost faculty and zero faculty attendance have only escalated as per the NMC's assessment. Therefore, the Committee is of the consensus that the faculty shortage issue in India is twofold: first, there is a genuine shortage of qualified faculty members, and second, even the available faculty often lacks the inclination to teach at the college level. To address the issue of ghost faculty and ensure that the available faculty comes to the college to teach, the Committee recommends the Government to strictly enforce the regulations already in place to curb the problem of ghost faculty and zero attendance. NMC should conduct regular inspections of medical colleges and take action against colleges that are found to be violating the regulations.

(Para 3.5)

Additionally, streamlining the recruitment process is imperative. The significant delays in the recruitment process must be reduced through the simplification of bureaucratic procedures and the incorporation of technology for quicker application processing and interview scheduling. An efficient recruitment process is necessary to expedite faculty appointments and fill vacant positions without unnecessary delays. NMC should make it easier for students and parents to report ghost faculty and zero attendance. Furthermore, the Committee feels that the Government should undertake some essential steps for retaining faculty viz. improved working conditions for faculty members, transparent career progression paths, etc. Clear criteria and milestones for promotions by recognising and rewarding

excellence in teaching, research, and clinical work need to be chalked out. Regular performance evaluations are crucial in identifying and addressing concerns promptly.

(Para 3.6)

Faculty Qualifications and Competence

The Committee notes that the NMC's "Teacher's Eligibility Qualifications in Medical Institutions Regulations, 2022", are a significant step forward in improving the quality of medical education in India. By requiring higher qualifications for teachers, mandating training in medical education technology and biomedical research, and having more rigorous promotion criteria, the new regulations will help to ensure that medical teachers in India are highly skilled and qualified. The Committee, however, opines that along with the rigorous promotion criteria, NMC should focus more on Teacher-Learning Programmes than on manpower and infrastructure. The Commission should also formulate norms to incentivize and encourage faculty to take up training for skills improvement and devise policies creating an ambience to kindle interest in research in the faculties. Furthermore, the Committee recommends the NMC design and strictly implement exhaustive training programs for faculties to enhance their understanding of the principles, functioning, and practices of CBME.

(Para 3.8)

The Committee recognizes the regulator's aspiration to introduce competency-based learning for MBBS students and foster clinical exposure from the early stages of their education. This direction is indeed in line with international trends in medical education. However, the sudden cessation of non-MBBS candidates teaching non & non-para-clinical subjects, such as anatomy, pharmacology, and microbiology, presents a complex situation. While upholding high educational standards is paramount, there is a need for a balanced and gradual approach that accommodates the interests and expertise of non-MBBS candidates. The Committee recommends a thoughtful and phased strategy to address this issue. It is advisable to introduce a

transitional period that allows non-MBBS faculty members to continue teaching these subjects until enough MBBS-qualified educators become available. This gradual shift will ensure that students continue to receive a comprehensive education as the transition toward competency-based learning takes place. Furthermore, it is crucial to emphasize faculty development for non-MBBS educators, offering them opportunities to enhance their teaching skills and align their curriculum with evolving standards in medical education. This will help them remain effective contributors to medical education. Non-MBBS educators often bring unique perspectives and expertise to the field. Rather than limiting their involvement, their expertise can be integrated into the education system through collaborative efforts, interdisciplinary research, and innovative teaching methodologies.

(Para 3.10)

Faculty Development Programs

The Committee notes that faculty development is vital for ensuring that faculty members have the skills and knowledge they need to teach and train students effectively. The Committee understands that in our country, elementary, primary, and secondary school teachers must undergo training in formal schools or colleges of education to be eligible for appointments and promotion. Still, there is no such requirement for selecting teachers in medical colleges in India. Therefore, the Committee recommends the NMC to release the guidelines on the "Faculty Development Programme" without any delay. The policies should be formulated to support the achievement of the goal to enhance the quality and relevance of education for future healthcare professionals. These guidelines should encompass critical areas such as clinical instruction, small group facilitation, large group presentations, feedback and assessment, personal and organizational growth, leadership, and scholarly activities. The strategies and formats for faculty development should exhibit flexibility, ensuring they are tailored to the specific healthcare requirements of our nation, institution, and learners. Faculty development programs (FDPs) can encompass a range of activities, including continuing education, on-the-job training, traditional classroom settings, in-person, online, or via tele/videoconferences, self-paced learning, mentorship,

involvement in communities of practice, or a combination of these approaches.

(Para 3.14)

Furthermore, the Committee notes that conducting faculty training through regional bodies and nodal centers has limited availability and capacity. Therefore, the Committee recommends establishing a National Institute for Training of Medical Teachers. A dedicated institute would provide year-round access to training for medical college faculty, effectively expanding the capacity for teacher development and establishing standardized quality benchmarks. This may also lead to the institutionalization of training procedures and best practices.

(Para 3.15)

Rating and Accreditation of Medical Colleges

The Committee commends NMC on receiving World Federation for Medical Education (WFME) Recognition. The Committee notes that though this recognition would enable Indian medical graduates to pursue PG training and practice in countries such as Australia, USA, Canada, and New Zealand, it may also lead to the country's top talent leaving India for better opportunities abroad. Therefore, the Committee recommends the Government not only take appropriate steps to limit the exodus of medical professionals but at the same time take proactive measures to make India an attractive destination for international students and healthcare professionals.

(Para 4.4)

Furthermore, the Committee recommends the NMC develop global standards criteria along with QCI (Quality Council of India) to rate medical colleges, both private and government, based on the parameters that are specific to medical education.

(Para 4.5)

Foreign Medical Graduates

The Committee believes that the FMG Regulations 2021 are a pivotal framework to maintain and uphold the quality of medical professionals in India. However, these regulations must adopt a facilitative role rather than imposing unwarranted obstacles in the registration and internship process for foreign medical graduates. The NMC should address the inconsistencies in granting permanent registration to foreign medical graduates across various States. The Committee recommends the NMC strike a balance between quality assurance and inclusivity, ensuring that bureaucratic or procedural impediments do not unduly burden foreign medical graduates who meet the necessary standards. By acting as facilitators, regulatory authorities can streamline the registration and internship procedures, enhancing the integration of foreign medical graduates into the Indian healthcare system.

(Para 4.7)

Alternatively, the Committee has also taken note of the fact that with the expansion of the number of medical colleges in India, the reliance on Foreign Medical Graduates to maintain the doctor to population ratio may dwindle in the near future. Moreover, the Committee has also come across the fact that given the high standards of medical education in India, several FMGs are unable to clear the examination process despite several attempts. Given the future scenario, the Committee recommends that the Government take a serious view on this issue and come up with some advisories to dissuade students from pursuing medical education abroad.

(Para 4.8)

Graduate Outcome Assessment & NMC EXIT Test

The Committee acknowledges that the NMC intends to introduce a standardized assessment of medical graduates through the National Exit Test (NExT). The Committee notes that standardized assessment of medical graduates would ensure that all medical graduates have a uniform level of knowledge and skills, regardless of where they studied. This improves the

quality of medical education and training in India and makes the process of licensure and postgraduate admissions more transparent and fairer. The Act provides for three years for unrolling of NExT, the Committee has taken note that NExT is yet to be implemented.

(Para 4.11)

Given the pivotal role the NExT exam is poised to play in medical education, the Committee recommends the Government exhaustively examine the implications of implementation. The Committee advocates for meticulous due diligence in addressing the concerns of all relevant stakeholders. Furthermore, the Committee recommends that the Government allocate ample time for thorough preparation and provide an early release of the exam schedule, along with other relevant details regarding the examination. This will enable the first batch of candidates to prepare adequately and smoothly transition to the new examination format. Additionally, considering the diverse background of medical colleges from which the first batch of NExT aspirants would come, the Committee suggests that the evaluation criteria should be moderate. It is imperative to ensure that no group of graduates faces an undue advantage or disadvantage in the examination. Striking a fair and equitable balance in the evaluation process will be pivotal in ensuring the success and fairness of the NExT exam.

(Para 4.12)

Moreover, the Committee believes in addition to standardised final assessment of graduates, there is an urgent need to universalize or standardise undergraduate and postgraduate education. Reputed institutes like AIIMS impart different quality of medical education while newly opened medical institutes need such quality. Keeping this in view, the Committee recommends the Government to divide India into zones, and in each zone reputed institutes like AIIMS can function as mentor institutes for all the other medical colleges in that zone. Mentor institutes shall play a significant role in monitoring the standard of education and the classes in the newly set medical colleges or private medical colleges.

(Para 4.13)

Other Key Areas

Continuing Medical Education (CME): The Committee feels that there is a need to introduce regulatory provisions for CME covering the Teachers, practicing Doctors and students pursuing higher medical education. The Committee is of the view that CME enables healthcare professionals to maintain, enhance, and update their knowledge, skills, and competencies throughout their careers. It is a very crucial aspect of professional development in the medical field which ensures that doctors are aware of the latest advancements in medicine, technology, and healthcare practices. This ultimately results in achieving better patient outcomes. The Committee, therefore, recommends that UGMEB and PGMEB explore the possibility of including components such as attending workshops, conferences, seminars, publishing papers in medical journals, etc. for medical students, and as an incentive measure such students/faculty/medical professionals can earn extra credits for partaking in them. The Committee hopes that the CME being a dynamic and evolving process would enable medical practitioners to provide high-quality care while staying current in the ever-evolving healthcare landscape.

(Para 4.15)

Table-A
Registered Medical Practitioners in India: State-wise

S. No.	State/UT	Upto 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total up to 2020
1	Andhra Pradesh	66109	4370	4498	5737	5415	4973	2654	3075	3757	3246	1961	105795
2	Arunachal Pradesh	334	80	12	55	29	108	145	116	193	99	99	1270
3	Assam	19147	561	487	529	611	564	661	590	752	743	877	25522
4	Bihar	37368	969	464	429	1282	970	575	1253	1348	1843	1691	48192
5	Chhattisgarh	3224	882	595	556	812	542	653	733	774	784	465	10020
6	Delhi	6748	1006	946	1073	1713	2179	2549	2379	2802	3608	3127	28130
7	Goa	2828	119	136	132	126	150	109	47	193	50	145	4035
8	Gujarat	47231	1795	2197	2153	2188	2427	2455	2890	3608	3860	1601	72405
9	Haryana	5356	361	751	494	500	1112	1355	1452	1458	1680	1164	15683
10	Himachal Pradesh	913	310	459	296	276	363	437	132	351	964	536	5037
11	Jammu & Kashmir	11360	635	471	473	618	495	484	430	624	521	780	16891
12	Jharkhand	3245	490	355	283	285	314	310	320	402	529	393	6926
13	Karnataka	87734	3727	4207	4772	833	4251	4434	5002	5301	6306	5339	131906
14	Madhya Pradesh	26669	947	1507	1298	1409	1417	1585	1792	1552	1989	2431	42596
15	Maharashtra	138303	3157	3433	3682	4938	5485	5271	5755	6320	7499	4697	188540
16	MCI	37300	3730	4864	5603	1169	NR	NR	NR	1	@	*	52667
17	Mizoram	NR	NR	0	0	5	15	23	15	16	23	59	156
18	Nagaland	0	0	0	0	0	20	50	21	25	18	7	141
19	Odisha	16786	460	380	719	2402	934	840	879	910	1380	1234	26924
20	Punjab	39291	1128	1083	1234	1270	1418	840	1392	1544	1458	1028	51686
21	Rajasthan	28797	1146	1442	1468	1963	2040	1821	2186	2524	2865	1977	48229

S. No.	State/UT	Upto 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Total up to 2020
22	Sikkim	608	69	74	73	109	91	138	115	128	9	87	1501
23	Tamil Nadu	86822	3476	4182	9218	5064	5088	7997	6960	7167	8763	3479	148216
24	Kerala	40007	2008	3451	1482	2500	3352	4567	1695	4295	4659	4948	72964
25	Uttar Pradesh	58168	2081	2247	2253	2855	2914	3025	3549	3669	3799	4726	89286
26	Uttarakhand	3394	307	527	549	660	748	743	833	928	659	893	10241
27	West Bengal	59264	1230	1217	1419	1647	1722	1766	2337	2544	2771	1747	77664
28	Tripura	NR	NR	227	644	391	236	235	212	241	254	241	2681
29	Telengana	0	0	0	0	0	1	2354	2587	2990	3430	3624	14986
	Total	827006	35044	40212	46624	41070	43929	48076	48747	56417	63809	49356	1300290

Source: Medical Council of India

Note:

@ MCI has stopped the registration since 2015

* State Medical Council did not exist during the period

Table B
State-wise distribution of medical seats(course-wise)

5.1.6 (b): State/ UT wise No. of seats as per medical courses (MBBS; Post Graduate Diploma/ MD/MS Courses and Super- speciality) available as on September, 2022

S. No.	States/UT	Courses								Total Seats State Wise
		M.B.B.S.	MD/MS	DM	M.Ch	Diploma	PDF	Ph.D	M. Phil	
1	Andaman & Nicobar Islands	114	0	0	0	0	0	0	0	114
2	Andhra Pradesh	5585	2636	75	73	26	0	0	0	8395
3	Arunachal Pradesh	50	0	0	0	0	0	0	0	50
4	Assam	1250	683	28	27	4	0	0	0	1992
5	Bihar	2415	1079	19	41	24	0	0	0	3578
6	Chandigarh	150	460	53	52	0	0	0	0	715
7	Chhattisgarh	1815	521	16	21	0	0	0	0	2373
8	Dadra and Nagar Haveli	177	0	0	0	0	0	0	0	177
9	Delhi	1497	2099	472	231	117	0	0	0	4416
10	Goa	180	117	7	7	0	0	0	0	311
11	Gujarat	6300	2271	67	67	31	0	0	0	8736
12	Haryana	1835	706	9	14	0	0	0	0	2564
13	Himachal Pradesh	920	328	4	3	13	0	0	0	1268
14	Jammu & Kashmir	1147	544	20	20	14	0	0	0	1745
15	Jharkhand	930	252	4	7	20	0	0	0	1213
16	Karnataka	10945	5479	250	211	42	60	9	9	17005
17	Kerala	4405	1585	149	115	23	0	0	0	6277
18	Madhya Pradesh	4080	1834	36	43	8	0	0	0	6001
19	Maharashtra	10045	5326	199	180	66	0	0	0	15816
20	Manipur	525	236	2	3	6	0	0	0	772
21	Meghalaya	50	33	2	0	0	0	0	0	85
22	Mizoram	100	0	0	0	0	0	0	0	100
23	Orissa	2325	1053	82	57	3	0	0	0	3520
24	Pondicherry	1630	869	33	25	19	40	20	0	2636
25	Punjab	1750	728	23	13	22	0	0	0	2536
26	Rajasthan	5075	2505	178	152	0	0	0	0	7910
27	Sikkim	150	34	0	0	0	0	0	0	184
28	Tamil Nadu	10875	4133	362	309	182	0	0	0	15861
29	Telangana	6440	2469	91	83	21	0	0	0	9104
30	Tripura	225	85	0	0	0	0	0	0	310
31	Uttar Pradesh	9153	3469	141	122	77	0	0	0	12962
32	Uttarakhand	1150	1230	288	293	98	0	0	0	3059
33	West Bengal	4725	1807	123	87	106	0	0	0	6848
Total Seats Courses Wise		98013	44571	2733	2256	922	100	29	9	148633

Source: National Medical Council Website