

Has National Medical Commission Short-Changed the Subject of Community Medicine in Its Latest Minimum Requirements for Indian Medical Graduates? A Systems Review

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Abstract

System analysis is examination of various elements of a system with a view to ascertain whether the proposed solution to a problem will fit the system and in turn effect an overall improvement in the system. The National Medical Commission (NMC) which was constituted by the act of the Parliament, has brought out minimum requirements for annual MBBS admissions regulations, 2020, which replace minimum requirements published by erstwhile Medical Council of India. The NMC also published new competency-based medical education syllabus for MBBS students with an aim to focus on practical skills. This study brings out the scope of the community medicine (CM) in the present context and as envisaged by the NMC. It also analyzes the infrastructure and workforce required in the department of CM and gives recommendations to improve the system.

Keywords: Community medicine, competency-based medical education, Indian medical graduates, National Medical Commission

INTRODUCTION

The Health Survey and Development (Bhore) Committee Report of 1946 laid the foundation for community medicine by advocating 3-month training in preventive and social medicine for physicians as part of the medical education system so that they can act as social physicians.^[1] They were changes in the medical education system such as Reorientation of Medical Education scheme in the year 1977, aiming at involving medical colleges directly in the health-care delivery system. The scheme failed to get momentum in most colleges, though it was an effective practical approach for teaching public health principles and practice to undergraduate and postgraduate students.^[2]

Conventionally, community medicine (CM) departments in medical colleges have partnerships with communities as a part of field activities at the rural health training center (RHTC)/urban health training center (UHTC). They may engage with non-governmental organizations and the health system to deliver interventions, along with development partners and other academic institutions (local, national, and international) for academics and research.^[3] Many medical

colleges in India still lack the required infrastructure to have good community-oriented, field-based programs for demonstration and participatory education of undergraduates.^[4]

Lately, the National Medical Commission (NMC) was constituted by an act of Parliament known as National Medical Commission Act, 2019, which came into force by a gazette notification dated September 24, 2020. The NMC has also placed “Minimum requirements for annual MBBS admissions regulations, 2020,” in public domain on October 28, 2020.^[5] The core aim of the NMC is to improve access to quality and affordable medical care; ensure availability of adequate and high-quality medical professionals in all parts of the

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country; and promote equitable and universal health care that encourages community health perspective.

CM is a complex subject which requires abstract thinking, theory, and practical experience in the community. Community health, being part of the core aims of NMC, it needs no emphasis that the subject of CM, make the foundation and its training is the first goal of clinical specialties such as obstetrics and gynecology, medicine, pediatrics, surgery, and ophthalmology, i.e., if possible, prevent.

The public health in our country and in most of South and South-East Asia can be conceptualized as an open-ended system [Figure 1], where on the one hand the subsystems are in continuous interaction among each other and on the other hand these subsystems separately and the system as a whole are constantly influenced by the external environment. System analysis is examination of various elements of a system with a view to ascertain whether the proposed solution to a problem will fit the system and in turn effect an overall improvement in the system.^[6]

The aim of this paper is to put forward viewpoints whether the minimum requirements as suggested by the NMC are adequate for competency-based training program of the CM through system analysis. These minimum requirements are also compared with the minimum requirements of MBBS, published by erstwhile Medical Council of India (MCI)^[7] under the topics of instructors and qualifications, support staff, and facilities.

Instructors

A pedagogic shift from traditional teaching to a student-centered approach requires a change in the role of the educator. It is paramount that the teachers are equipped to train students using a variety of pedagogic skills and communication methods with hands-on teaching.^[8]

The documents of UG curriculum have laid down five goals, at the end of undergraduate program. All the five goals are inextricably linked with CM.^[9] The NMC has assigned twenty topics to the subject. There are a total of 187 competency-based medical education (CBMEs), which

include 36 Show How (SH) and Perform (P) for the department of CM. In general, for competency-based education and the corresponding assessment, there should be increase in the number of instructors. However, MD (CM) qualified instructors have been reduced from the previous minimum strength of 13 to 11 in the NMC document for an intake of 150 medical undergraduates. With CM now introduced from second term onward, the CM department will be training four batches simultaneously. Hence, there is a minimum requirement of 13 MD (CM) qualified instructors, if not more. Similar concern has been raised by professional bodies such as the Indian Association of Preventive and Social Medicine.^[10]

Also, as in other specialties, there is a definitive requirement of subspecialty-trained MD (CM) specialists. To train the faculty, training in short courses of 6 months should be seriously explored. Need of a particular subspecialty can be further divided based on the number of CBME topics, into must have, should have, and desirable to have. At least two faculty must be trained in the subspecialty of epidemiology and one each in entomology and nutrition at every CM department of a medical college. The subspecialty topics along with their justification as per the CBME curriculum released by the NMC are detailed in Table 1.

Support staff

Interestingly, the staff reduction has been done to the tune of 33.3% (from 18 to 12) in the department, 38.5% (from 13 to 9) in the RHTC, and 37.5% (from 16 to 11) in the UHTC. Among staff, the major reduction has been in the support staff including medico-social worker, technical assistants, computer operators, and record keepers, who play a critical role in the day-to-day running of the department. These staff are the backbone of community work. In competency-based curriculum, it is more important for UG students to practically perform in the community, based on their acquired knowledge in theory class. With such a reduction, purposeful community exposure and practical's are difficult to be undertaken. Hence, over and above recommended by the NMC, following are necessary for competent running and meaningful training of the IMGs in the community (i.e., in RHTC and UHTC) [Table 2].

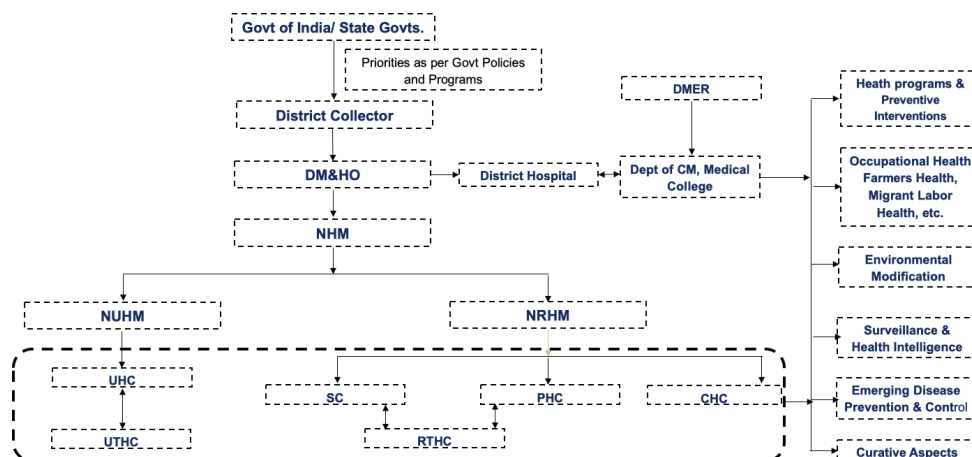


Figure 1: Public health system in India

Table 1: Subspecialty topic in community medicine

| Subspecialty | CBMEs' justifying the requirement | Topic |
|--|---|---|
| MD CM, further trained in | | |
| Entomologist | CM 3.6, 3.7, 3.8 | Environmental health problem |
| Nutritionist | CM 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8 | Nutrition |
| Epidemiologist | CM 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, 7.8, 7.9 | Epidemiology |
| Communicable disease epidemiologist | | Epidemiology of communicable and noncommunicable diseases |
| Noncommunicable disease epidemiologist | CM 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.7 | |
| Disease and outbreak modeling specialist (for training in emerging and re-emerging diseases) | | |
| Preventive MCH specialist | CM 10.1, 10.2, 10.3, 10.4, 10.5, 10.6, 10.7, 10.8, 10.9 | Reproductive MCH |
| Occupational health specialist | CM 11.1, 11.2, 11.3, 11.4, 11.5 | Occupational health |
| Preventive geriatric specialist | CM 12.1, 12.2, 12.3, 12.4 | Geriatric services |
| Preventive psychiatry specialist | CM 15.1, 15.2, 15.3 | Mental health |
| From nonhealth background | | |
| Biostatistician | CM 6.1, 6.2, 6.3, 6.4 | Basic statistic and its application |
| Behavioral sciences scientist | CM 1.6 | Relationship of social and behavior to health and disease |
| | CM 2.1, 2.2, 2.3, 2.4, 2.5 | |
| Public health chemistry scientist (for public health laboratory) | CM 3.2 | Environmental health problems |

CM: Community medicine, CBME: Competency-based medical education, MCH: Maternal and child health

Table 2: Additional staff for department, rural training health center, and urban training health center

| Appointment | n | Comments | Justification for the additional staff |
|---------------------------------|----|---|---|
| Medical social worker | 2 | For the department | Medico-social interventions for MCH, geriatrics, psychiatric patients, etc., liasoning with the community and NGOs working in the community. For day-to-day functioning of RHTC and UHTC, their presence is essential |
| Technical assistant/technicians | 3 | For the department | One each at |
| Entomology wing | | | Entomology wing |
| Public health lab | | | Public health lab |
| Museum curator | | | Museum curator |
| Computer operator | 3 | 01 for the department 1 for the RHTC 1 For the UTHC | For data collation at three places and smooth operations of patient management systems at OPD receptions of RHTC and UTHC |
| Storekeeper cum record clerk | 2 | 1 for the department 1 for the UTHC | For maintenance of equipment and record keeping |
| Van driver | 2 | 1 for the RHTC 1 for the UTHC | Transport of trainers, UGs, and equipment |
| Sweeper | 5 | 1 for the department 2 for the RHTC 2 for the UTHC | Maintenance and upkeep of the health facility so as to provide hygienic and clean facility to patients |
| Total | 17 | | |

RHTC: Rural health training center, UHTC: Urban health training center, NGOs: Non-governmental organizations, OPD: Outpatient department, MCH: Maternal and child health, UGs: Undergraduates

Facilities

Entomology wing

Public health entomology focuses on the population biology of vector-borne infections, seek to understand how such pathogens perpetuate over time and attempt to devise methods for reducing the burden that they impose on human health.^[11] CBMEs CM 3.6, 3.7, and 3.8 state that IMGs, should be in know, know how, and SH of the role of vectors in the causation of disease and identify and describe the identifying features and life cycles of vectors of public health importance, mode of action, and the application cycle of commonly used insecticides and rodenticides.

No mention of establishing or requirement of an entomology wing has been made in the NMC document. Unless this facility is made mandatory *ab initio*, upcoming medical colleges will never develop it for imparting training on this particularly important aspect of CM, of which our country has a major disease burden. Vector lab wherein the nuances of spraying are taught to the students by demonstration may also be added.

Public health laboratory

CBME CM 3.2 brings out the topic of water purification processes, portable water quality standards, etc., which needs to be shown to IMGs hands-on. In addition, the techniques of

identification of impurities in the water, chlorination of water, and water poisoning detection facilities should be available in a medical college, as it is the tertiary care center of a certain geographical area.

In most of the CM departments, public health laboratories are just white elephants with their only motto being getting through the MCI inspection. It seldom comes on the priority list of the government and college administration and is in rudimentary operational state.^[12] Establishing it has been completely done away with, in the NMC document. This will be a huge loss to the demonstration and practical's of the water purification and also reduced capacity of the department for disease surveillance and water monitoring.

Disease registry

Disease registries are an essential tool to improve knowledge and monitor interventions for those diseases. If designed appropriately, patient- and disease-related information captured within them can become the cornerstone for effective diagnosis and new therapies.^[13] CBME CM 8.6 also mandates IMG to show and SH, disease surveillance, control, and treatment. It also sensitizes young graduates into the skills of data collection and collation and translates it into the formulation of public health policies and programs. Hence, it is recommended that each medical college should have at least one disease registry, owing to in-built expertise in the department of CM. However, disease registry finds no mention in the NMC document.

Statistical software

Using software and sensitizing IMGs at undergraduate level to these software will instill in their a sense of confidence in research, early in their medical career. As with the MCI, the NMC has completely missed the genuine requirement of sanctioning statistical software to the department of CM in medical colleges. It is recommended that software like IBM SPSS Statistics, RStudio, Minitab 18, Stata, and nQuery should be recommended as a minimum requirement for annual MBBS admission regulations.

Museum

One museum has been recommended by the NMC document, that must be shared between pharmacology, microbiology, and CM. Microbiology should share the museum with other laboratory sciences, namely pathology and biochemistry. It is proposed that there should be an independent museum for the department of CM.

Newer technologies have come in vogue, changing the concept of museum from repository of relics of the past, to digitally enacting information in flow from distant past to foreseeable future, making the perplexing concepts of public health easily comprehensible. The museum with modern teaching technologies would also enable students to learn as per their convenient time, thus enhancing self-directed learning. A well-trained museum curator should be a welcome addition, which will help in explaining models and digital props in an interesting and thought-provoking manner and also, upkeep of the place.

Bio-medical waste management

Lack of adequate knowledge regarding bio-medical waste (BMW) management leads to health risks and environmental degradation and pollution. Proper handling and disposal of BMW is therefore particularly important.^[14] The NMC document does not specify under whose responsibility the BMW management facilities should operate. CBMEs CM 14.1, 14.2, and 14.3 have squarely tasked training of IMGs in BMW management, to the department of CM.

In continuation of the same, BMW management of the medical college should be under the department of CM. It will facilitate in hands-on training of IMGs on this important topic and at the same time will ensure proper disposal of BMW as per the GoI BMW Management Act, 2016.

Medical research unit and medical journal

The NMC document released has not stated a medical research unit (MRU) and a medical journal of a college as a mandatory requirement. Research should go in a complementary way, with the practice of medicine, so that emerging and re-emerging diseases are better responded to. Furthermore, treatment to the existing diseases becomes more evidence based.

It is at the inception stage of NMC that an MRU and a medical journal of a medical college should be made part of minimum requirements for annual MBBS admission regulations of any medical college. Epidemiology, biostatistics, demography, and vital statistics being among the core competencies of the subject, both MRU and medical journal should be placed with the department of CM with sanctioning of additional workforce including one additional faculty for each. This will increase the number of faculty for an intake of 150 medical undergraduates from 13 to 15. Preferably, the faculty looking after the MRU within the department should be trained in bio-medical research/epidemiology.

Health intelligence and infection prevention strategies

As the current pandemic of COVID-19 unfolds, CM specialty is playing a key role in infection prevention strategies such as disinfection and surveillance. As the disease rampaged through the masses in all the major Western countries, causing unprecedented mortality and morbidity, it was halted in its tracks by effective contact tracing, by CM specialists and their teams across the country in India. A special emphasis should be given to nurture and preserve this skill, with training in this subspecialty and statutory backing by the NMC.

CM as a specialty is majorly practiced by graduates who have just qualified MBBS course. Hence, any compromise on exhaustive training due to lack of adequate instructors, workforce, or commensurate infrastructure and facilities, jeopardizes the vision of NMC for a IMG. The NMC gazette has limited the role and functions of the department of CM to RHTC and UHTC. Other responsibilities and activities of the department find no mention, facilities required to train IMGs as per stated CBMEs of NMC are completely omitted, and workforce is truncated. Linking theories to practical's is

essential for IMGs to understand the subjects and practice it especially as an independent medical officer posted at PHC, where most of the work would be related to public health. The goal and vision of an IMG can only be fulfilled if he/she translates all the knowledge of the CM into practice, imparting of which requires augmentation of facilities and workforce.

CONCLUSION

NMC document's "Minimum requirements for annual MBBS admissions regulations, 2020, and Amendments to establishments of Medical College Regulations," though right in its intent, do not reflect the true scope with respect to the subject of CM, as has been brought out by the systems analysis in this article. In the document, the role and functioning of the department of CM has been primarily limited to RTHC and UTHC, which cannot be further from the truth. With the comments elaborated above, the document needs to be majorly revised to meet the own goal as set up by the NMC and conform to the standards expected from an IMG in particular and the specialty of CM in general.

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Conflicts of interest

There are no conflicts of interest.

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