

Is there need for a transformational change to overcome the current problems with postgraduate medical education in India?

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ABSTRACT

In spite of the existence of a dual system of postgraduation, one under the Medical Council of India (MCI) and the other on a parallel track under the National Board of Examinations, postgraduate medical education in India is beset with several problems. For example, the curriculum has not been revised comprehensively for several decades. The diploma course under the MCI has become unpopular and is largely a temporary refuge for those who do not get admission to degree courses. The level of skills of the outgoing graduate is falling and the increase in the number of seats is taking place in a haphazard manner, without reference to the needs. In spite of increase in seats, there is a shortage of specialists at the secondary and tertiary care levels, especially in medical colleges, to share teaching responsibilities. Further, the distribution of specialists is skewed, with some states having far more than others.

To remedy these ills and fulfil the requirements of the country over the next two decades, a working group appointed by the erstwhile governors of the MCI was asked to suggest suitable modifications to the existing postgraduate system. After an extensive review of the lacunae in the present system, the needs at various levels and the pattern of postgraduate education in other countries, it was felt that a competency-based model of a 2-year postgraduate course across all specialties, the use of off-site facilities for training and a criterion-based evaluation system entailing continuous monitoring would go a long way to correct some of the deficiencies of the existing system.

The details of the proposal and its merits are outlined for wider discussion and to serve as a feedback to the regulatory agencies engaged in the task of improving the medical education system in India. We feel that the adoption of the proposed system would go a long way in improving career options, increasing the availability of teachers and dissemination of specialists to the

secondary and primary levels, and improving the quality of outgoing postgraduates.

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INTRODUCTION

In India, the system of postgraduate (PG) medical education has suffered due to long-term neglect. While a major revision of the undergraduate curriculum by the Medical Council of India (MCI) took place in 1997, a comprehensive review of the curriculum of PG courses has not taken place for several decades. Whatever changes have been made are marginal and have had little overall impact. The difficulties are compounded by the existence of a twin system of PG medical education, both systems being under the control of the government.

CURRENT PATTERN OF PG MEDICAL EDUCATION

At present, there are about 25 000 PG seats in India at the level of the broad specialties and over 3000 at the superspecialty level.^{1–3} The MCI regulates the formal system which is in place in medical colleges. There are two sub-systems in place, viz. a 2-year diploma course in selected subjects and a 3-year degree course in all subjects (2 years for those who have a diploma in the same subject). Students are eligible for both courses if they have passed the MBBS examination through an entrance examination conducted by the Central government, the states, universities or private institutions. The National Board of Examinations (NBE) has its own parallel system of postgraduation which operates largely, but not entirely, in private institutions. Admissions to the NBE courses are made on the basis of an entrance examination through a process of counselling. All the NBE courses in broad specialties run for 3 years. Both the MCI and NBE also run 3-year superspecialty courses for students who have a basic degree in a broad specialty.

In addition to these, there are a number of fellowships and certificate courses in various topics. Some of these may be taken after completing the MBBS course, some (which are of 1 or 2 years' duration) after obtaining a degree in a broad specialty, and some (again of 1 or 2 years' duration) after obtaining a degree in a superspecialty. These are generally under the purview of states, universities or in some cases individual institutions. They are not regulated by the MCI or even the NBE in many instances and often are not recognized nationwide.

In spite of the existence of so many systems, there is a gross shortage of specialists at the secondary and primary levels.⁴ It has been mentioned that while the expected outcome after medical graduation would be that 70% would be in primary care, 20% in broad specialties and 10% in superspecialties, in reality, only 10% are in primary care and 90% move towards specialization and subspecialization.⁴ There is also a rural–urban mismatch, which largely deprives the rural masses of specialists' care. The number of allopathic doctors per 10 000 population in the rural areas has been stated to be 3.28, as opposed to 13.34 in the urban areas, a

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ratio of more than 4:1.⁵ An enormous shortage of medical teachers has also been mentioned and the shortage is expected to increase in the future in view of the rise in the number of medical colleges.⁶ Poor training in research methodology is a hallmark of the current PG system, although PGs spend a considerable part of their time preparing a research dissertation as per the requirements. The level of skills is also unsatisfactory since the curriculum does not lay much emphasis on the development of skills, being primarily oriented to the acquisition of knowledge.

ATTEMPT AT REFORMATION OF THE PG CURRICULUM

It is in this background that the newly appointed governors of the MCI set up a 10-member working group on PG medical education in 2010. The group consisted of six members belonging to broad specialties and four to superspecialties. Some of the members were also experts in curricular development.

GOALS

The process was called 'Vision 2015' since 2015 was the targeted date for full implementation of the group's proposals. The terms of reference for the committee were to find means of increasing the pool of competent and skilled specialists and subspecialists to take care of the healthcare needs of the urban and rural population, without compromising quality, and to find an India-specific solution that takes care of both insufficiency and maldistribution of specialists. The mission goals were to study and correct lacunae in the present system of PG medical education, suggest measures to generate a large number of specialists, increase the availability of family physicians and teachers, promote research in medical colleges, provide PGs with multiple career options and increase the availability of superspecialists to provide high-quality tertiary care. The committee was aware that India has a number of off-site healthcare facilities, such as district hospitals, *taluk* hospitals and private hospitals, which are not used by the NBE; there are also several laboratories, family physicians and facilities in the medical industry which are not used for PG training. One of the goals was to see whether these could be integrated into the system of PG training.

The specific objectives included reviewing the current system, bringing about uniformity in PG courses, facilitating the dissemination of specialists to smaller centres and removing some of the ills of the present system of PG medical education, such as poor development of skills.

The group decided to back a unitary PG system and give a major thrust to increasing the number of available PG seats. It felt that increased output would have a trickle-down effect, helping in the dispersion of specialists to the community in smaller towns, and would thus improve the healthcare available to the community at the secondary and primary levels. Increasing numbers would also increase the availability of medical teachers and compensate for the migration of medical graduates to foreign countries, which is a major issue. The adverse consequences of the high rate of migration of doctors from the developing countries in our region have been pointed out earlier.⁷

PROBLEMS BEFORE THE GROUP

The problems confronting PG medical education are many and are discussed below.

1. *Rationale of the existing formal courses:* There are two formal PG courses in broad specialties under the MCI—the diploma and the degree courses. The diploma course was started to train specialists to look after the needs of the

community at the secondary and primary levels, while the degree courses were meant for the academic stream and tertiary care. The planning, however, was faulty. The diploma courses were started only in selected subjects. The subjects selected for the diploma courses and the corresponding number of seats had no bearing on the requirements of the community or the nature of the subject. For instance, diploma courses were started in paediatrics and orthopaedics, but medicine and surgery were considered too complex and unsuitable for this purpose. There is a diploma course in clinical pathology but no corresponding course in microbiology. The diploma course is of 2 years, but the syllabus is essentially the same as that of the degree course, except that a dissertation is not necessary. The evaluation pattern is also more or less the same and is equally demanding. In fact, earlier in some universities, such as Madras University, candidates admitted to the degree course were allowed to appear for the diploma examination also as an extra 'qualification'. There are instances in which the candidate had passed the degree examination but failed the diploma examination held 2 weeks later!

2. *Problems with the diploma course:* There are several problems with the diploma course that have become apparent with the passage of time. Apart from being available only in a few subjects, it is not held in very high esteem among the public since it is called a 'diploma'. Hence, only those who do not get into the degree stream take diploma courses as a stepping stone to a future degree. As soon as they pass the diploma course, and sometimes even before passing, they attempt to get into any degree course, quite often unrelated to the parent subject. For instance, a diploma in paediatrics might be followed by a master's in orthopaedics. There are no lists of competencies, the syllabus is essentially the same as that of the 3-year course, the training and evaluation are mainly knowledge-based, there is no research training, future career options are limited and these students are not eligible to become medical college teachers. Any change in the PG system would have to deal with these issues.
3. *Problems of the courses run by the NBE:* The number of outgoing PGs from this stream is lower than that of candidates graduating from the MCI stream. At present, there are only about 3500 seats in the broad specialties in the NBE system, as opposed to nearly 19 000 under the MCI.¹⁻³ This stream was meant for those students who were unable to enter the formal MCI stream and the outgoing PGs were meant largely to serve as specialists in the community, without being eligible for teaching appointments. However, due to a wide variation in the quality of the institutions approved for this purpose, the abilities of the graduating candidates vary widely, as reflected in the low percentage of pass in the final examination. A large number of outgoing students were dissatisfied with the fact that they were not eligible for teaching posts. Recently, however, an amendment was passed equating them with the MCI degree-holders, subject to rigorous conditions.⁸
4. *Non-use of off-site facilities:* There are a host of facilities outside the medical colleges and the NBE institutions which have sufficient teaching material but which are not a part of the system. For example, facilities in drug industries could be used to partly train students in pharmacology, large private laboratories could be used to train students in the laboratory disciplines, general practitioners of repute could be used

after accreditation to train family physicians, and district and sub-district hospitals could be utilized to train clinical PGs. At present, none of these options is being utilized for training purposes.

5. *Iniquitous distribution*: There is gross inequity in the distribution of specialists between the urban and rural areas, with clustering of specialists in the urban areas.⁵ The government is trying to solve this problem by introducing yet another cadre of allopathic physicians through the Bachelor in Rural Health Care (BRHC). This course would be of 3.5 years' duration. The problems likely to occur with this approach have been discussed earlier.⁹ The lack of equity in the country-wide distribution of specialists is compounded by the fact that nearly two-thirds of medical colleges in India are in the southern states.¹⁰ Because of reservation for local candidates, selection is largely regional. Candidates, therefore, end up serving the same region where they have done their postgraduation. Areas such as the northeastern states have very few medical colleges,¹⁰ and, therefore, remain underserved by specialists. According to the HRH Technical Report on Health Force published in 2008, the density of allopathic physicians was 3–4/10 000 in the northeastern states, in comparison to 6–8 in Maharashtra, 4–6 in Tamil Nadu and Kerala, and 8–23 in Punjab.⁵ The density of doctors was higher in states with more medical colleges (and, therefore, more PGs), such as Maharashtra, Karnataka, Andhra Pradesh and Tamil Nadu, than in those with fewer colleges, such as Bihar, Jharkhand, Rajasthan, Orissa, Chhattisgarh and the northeastern states.⁵

Attempts have been made in the past to correct the urban–rural divide by offering incentives, such as seats in the PG courses for those who have done rural service, and disincentives in the form of bonds with penalty clauses for not serving in villages for a specified period of time after postgraduation. These have never produced satisfactory results.

6. *Lack of specialists in family medicine*: Family medicine, which is probably the specialty that the country requires the most, finds no place in the MCI system. The NBE system has only 837 seats for it, out of approximately 25 000 PG seats,³ whereas the number should have been closer to 5000 or more.
7. *Lack of reliable data*: There is a scarcity of data on the existing number of specialists, their distribution across the country and the required number, discipline-wise, over the next 2–3 decades.
8. *Inadequate number of seats*: Although the number of medical colleges has sky-rocketed, the number of PG seats is nowhere near meeting the needs of the country. This can be attributed both to a shortage of teachers and the time gap dictated by the MCI between starting of an undergraduate course and starting of PG courses.¹¹ At present, there are less than 25 000 seats in PG courses, compared to nearly 40 000 undergraduate seats (Table I).
9. *Shortage of medical college teachers*: It has been estimated that there is a 30% shortage in the current requirement for teachers in medical colleges.⁶ This is likely to increase considerably, keeping in mind the rate at which new medical colleges are being started.

TABLE I. Current distribution of postgraduate seats in India

Subject	Broad specialties			Subject	Superspecialties	
	MCI		NBE		MCI	NBE
	Diploma	Degree				
Anaesthesiology	623	711	301	Urology	215	73
Child health	506	999	287	Surgical oncology	49	54
Pathology	288	958	87	Vascular surgery	14	10
Microbiology	5	616	2	Cardiothoracic and vascular surgery	197	81
Forensic medicine	24	236	8	Thoracic surgery	32	—
Obstetrics and gynaecology	609	1254	280	Neurosurgery	156	54
ENT	220	533	86	Paediatric surgery	134	19
Radiodiagnosis	253	537	210	Plastic surgery	168	26
Ophthalmology	331	687	267	Surgical gastroenterology	25	46
Orthopaedics	295	790	254	Hepato-pancreatico-biliary	2	—
Public health	153	601	12	Endocrine surgery	6	—
Tuberculosis and chest diseases	93	221	68	Clinical pharmacology	18	2
Dermatology, venereology and leprology	134	400	45	Clinical haematology	13	2
Radiotherapy	18	129	50	Pulmonary medicine	8	—
Miscellaneous	101	61	71	Neuroradiology	2	—
Anatomy	—	583	11	Nephrology	122	55
Physiology	—	577	8	Neonatology	46	30
Biochemistry	—	419	3	Oncology	67	26
Pharmacology	—	553	—	Gastroenterology	130	53
Blood transfusion	—	31	—	Cardiology	374	154
Medicine	—	2048	343	Neurology	180	48
Surgery	—	1914	271	Rheumatology	16	8
Geriatrics	—	5	—	Endocrinology	57	16
Physical medicine and rehabilitation	—	27	13	Clinical immunology	4	—
Emergency medicine	—	9	—	Cardiac anaesthesia	10	—
Family medicine	—	—	837	Haematopathology	1	—
				Medical genetics	2	—
				Hepatology	3	—
Total	3778	15 223	3574	Total	2051	989

MCI Medical Council of India NBE National Board of Examinations

10. *Special problems of the basic sciences:* There is a deficiency of teachers for the basic sciences. This is compounded by the fact that the same faculty has to teach dental, nursing and other paramedical courses. The number of PG seats for some basic science subjects is not adequate (e.g. forensic medicine); there are enough seats for some other subjects, but these remain unfilled due to lack of popularity. Private institutions are reluctant to start courses in basic sciences since the possibility of collecting high fees for these is remote.
11. *Iniquitous distribution of PG seats between various subjects:* Table I shows that the number of seats in a few specialties is extremely low considering the need as determined by perceived morbidity.
12. Inadequacy of seats at the superspecialty level (Table I).

GROUP OBJECTIVES

In the light of the problems described above, the tasks of the group were to:

1. Suggest measures to increase the number of PG seats without affecting quality
2. Increase the availability of specialists to take care of the country's health needs
3. Correct the existing deficiency in the number of teachers
4. Increase the availability of teachers to take care of future needs
5. Suggest measures to correct the urban-rural divide
6. Promote an increase in the number of seats for underserved disciplines, such as family medicine and superspecialties
7. Make seats in basic sciences attractive and increase their availability
8. Ensure the quality of outgoing PGs in terms of knowledge, skills and attitudes
9. Make internship a period of skill development so that candidates are better prepared when they enter postgraduation.

PROJECTED NEEDS

The information on the exact number and distribution of specialists

across the country, the exact number needed over the next 2–3 decades, and the projected requirements of teachers in medical colleges is scanty and unreliable. We based our recommendations on figures collected by the World Bank (Tables II–IV).^{12–16}

In view of the failure of incentives and disincentives to make doctors take up practice in rural areas, we decided that the problem had to be solved by increasing the availability of PG seats. In this manner, the market would be flooded, and as a consequence of market circumstances and the trickle-down effect, specialists would be compelled to migrate to the districts, *taluks* and other rural areas.

RESTORING IMPORTANCE OF INTERNSHIP

One of the main reasons for the poor quality of PGs is that the period of internship is a total waste and thus, those entering the system of postgraduation are undertrained undergraduates. The period of internship is used largely as an unofficial holiday to prepare for the PG entrance examination. There is a high level of competition in these examinations and prospective candidates have to prepare for all the medical subjects they have been taught right from the first year. Due to the innumerable number of such examinations for various colleges in different states, students often have to appear for 8–10 or more entrance examinations of varying types. In order to restore the period of internship to its rightful place as a period of skill development, it is, therefore, necessary first and foremost to address this problem.

Two models were considered for this purpose (Fig. 1). In the first model, there would be three examinations of the multiple-choice question (MCQ) type, conducted by a national agency. These would be held immediately after the first, second and final professional examinations, respectively, and would cover the subjects for which the students have just appeared in the university examinations. Hence, no additional preparations would be required. The cumulative score from the three examinations would be used to draw up a national rank list that would be used for the allotment of seats at the end of internship. However, for this model to be

TABLE II. Projected need for specialists (clinical specialties)

Specialty	Norms for distribution	2010: Total required 842 598	2010: Number existing					2020: Total required 1 380 214*		2030: Total required 2 319 237*	
			Subject-wise total	MCI	NBE	Total	Needed	Gap	Subject-wise total	Per year seats	Subject-wise total
General surgery	8	60 590	1900	300	2200	2020	+180	110 417	4039	185 539	8079
General medicine	16	121 180	2050	350	2400	4039	1639	220 834	8079	371 078	16 157
Obstetrics and gynaecology	9	68 164	1900	300	2200	2272	72	124 219	4544	208 731	9089
Orthopaedics	5	37 869	1100	250	1350	1262	88	69 011	2525	115 962	5049
Paediatrics	8	60 590	1500	300	1800	2020	220	110 417	4039	185 539	8079
ENT	5	37 869	750	100	850	1262	412	69 011	2525	115 962	5049
Ophthalmology	4	30 295	1000	270	1270	1010	+260	55 209	2020	92 769	4039
Chest medicine	4	30 295	310	70	380	1010	630	55 209	2020	92 769	4039
Psychiatry	2	15 148	450	60	510	505	+5	27 604	1010	46 385	2020
Dermatology	4	30 295	530	50	580	1010	430	55 209	2020	92 769	4039
Anaesthesia	–	DNA	1350	300	1650	4000	2350		8000		16 000
Radiology	–	DNA	800	210	1010	2000	890		1800		3600
Radiotherapy	–	DNA	150	50	200	400	200		430		860
Transfusion medicine	–	DNA	30	0	30	30	0		48		96
Family medicine	–	DNA	–	840	840	5000	4169		10 000		15 000
Nuclear medicine	–	DNA	1	10	11	20	9		40		80
Others	–	DNA	–	15	15	30	15		60		100

MCI Medical Council of India NBE National Board of Examinations DNA data not available * Approximately double by 2020, four times by 2030 (estimated medical colleges in 2020: 400; in 2030: 500)

TABLE III. Projected need for superspecialists

Specialty	Norms for distribution (%)	Required-subject-wise	2010			2020		2030	
			Existing seats per year			Total required	Need for seats per year	Total required	Need for seats per year
			MCI	NBE	Total				
Neurosurgery		DNA	156	54	210	—	300	—	600
Cardiothoracic and vascular surgery	4	30 295	197	81	278	55 209	300	92 769	600
Cardiology	6	45 443	374	154	528	82 813	400	139 154	800
Urology	4	30 295	215	73	288	55 209	300	92 769	600
Neurology	5	7869	180	48	228	69 011	250	115 962	500
Gastroenterology	4	30 295	130	53	183	55 209	200	92 769	400
Surgical gastroenterology	1	7574	25	46	71	13 802	100	23 192	300
Plastic surgery	1	7574	168	26	194	13 802	250	23 192	500
Endocrinology	1	7574	57	16	73	13 802	100	23 192	200
Nephrology	3	22 721	122	55	467	41 406	200	69 577	400
Haematology	1	7574	13	2	15	13 802	50	23 192	100
Paediatric surgery	—	DNA	134	19	153	—	200	—	400
Oncology	—	22 721	67	26	93	41 406	100	69 577	200
Geriatrics	3	7574	—	0	0	13 802	—	23 192	—
Immunology	1	DNA	10	2	12	—	25	—	50
Surgical oncology	—	DNA	49	54	103	—	80	—	160
Clinical pharmacology	—	DNA	18	2	20	—	25	—	50
Neonatology	—	DNA	46	30	76	—	50	—	100
Cardiac anaesthesia	—	DNA	8	—	8	—	25	—	50

MCI Medical Council of India NBE National Board of Examinations DNA data not available

TABLE IV. Projected needs for basic science subjects

Specialty	Number of seats available per year (approximate)	Need for teachers		
		2010	2020	2030
Pathology	1000	6000	8000	10 000
Anatomy	600	3600	4800	6000
Biochemistry	450	3600	4800	6000
Microbiology	600	4200	5600	7200
Forensic medicine	250	2400	3200	4000
Physiology	600	3600	4800	6000
Pharmacology	550	3600	4800	6000
Community medicine	600	6000	8000	10 000

- The calculation of the various specialists required is based on projections drawn from the following data:
 - Ministry of Health
 - Medical Council of India
 - Outpatient department (OPD) data obtained through Dr Shyama Nagarajan (Health Specialist, World Bank). However, this does not include those specialties that are non-OPD-based, such as Pathology, Anaesthesia and Radiology. The calculation for these specialties is based on perceived needs, taking into consideration the healthcare needs of the community, including outside of teaching institutes.
- The principle followed took cognizance of the following.
 - The available number taken for calculation includes those qualifying from institutes recognized by the MCI and NBE.
 - The projected number makes allowance for the 30% deficiency that exists now.
- The rates of passing are up to 70% in Medical Council of India (MCI) courses and 50% in National Board of Examination (NBE) courses. Hence, the number of doctors available is up to 70%–80% of the available seats every year. (Approximately 20%–30% are lost due to failure, death and migration.) Basic specialties such as anatomy have enough seats per year, but many seats are vacant and hence, the shortage of teachers persists.
- For basic and paraclinical sciences, an assessment of the needs has been made on the basis of the number of teachers required in medical colleges. The numbers have been doubled to account for other healthcare facilities and dental/nursing colleges, as well as the current shortage, which is about 30%.

successful, professional examinations should be held more or less at the same time across the country. There was a suggestion that a 5% weightage be given for satisfactory completion of internship and also, that another 5% be given for rural service to encourage candidates to take up rural service before postgraduation.

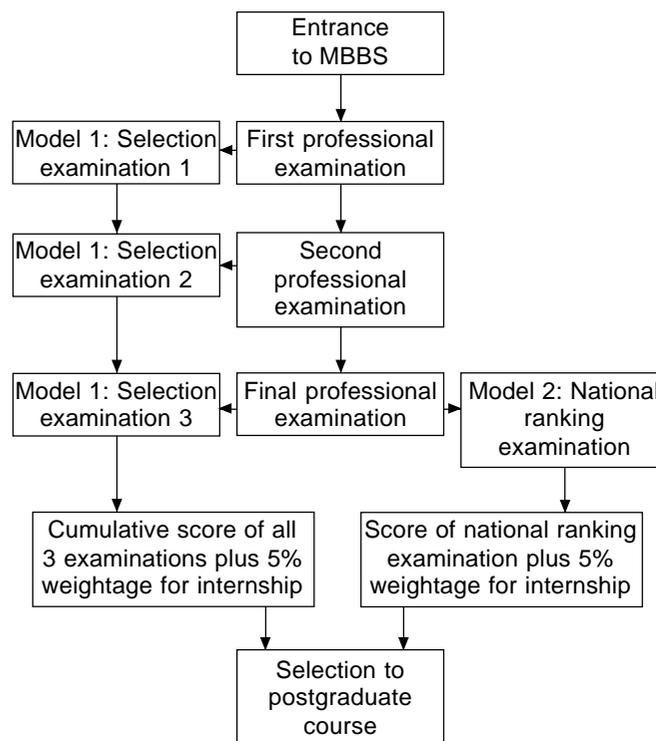


FIG 1. Models for postgraduate selections

The second model advocates a single national ranking examination which would be held within a month of the final year examination and would cover all the subjects of the MBBS course. The allotment of PG subjects would be through counselling and would be based on the rank obtained in this examination, in addition to a weightage for internship. The disadvantage of this model is that the candidates would have to prepare for all the subjects of the undergraduate medical course in the interval

between the final examination and the national ranking examination. However, the candidates would face less difficulty if the questions in the basic sciences and paraclinical disciplines were all of the applied type.

The group was in favour of the first model. In the case of both models, since the ranking examination would be held prior to the commencement of internship, the candidates would be free to devote their attention to the development of skills during internship.

The internship period should be strictly monitored with a logbook prescribing the skills to be acquired. There should be a provision for continuous monitoring. If internship is given weightage in PG selection, it would ensure that attention is paid to satisfactory completion of internship.

PROBLEMS WITH THE CURRENT PG SYSTEM

The dual system under the MCI and the separate system under the NBE have already been mentioned. The broad specialty PG degree course is theoretically of 3 years' duration. However, in practice, due to poor monitoring by the regulatory agency, the admissions are prolonged over several months in many private institutions, with the course actually running for only a little over two-and-a-half years. Another 2 months or so from this period are used as preparatory holidays for the final examinations. The curriculum is subject-based, internal assessment is given no weightage and there is no formal prescribed list of skills. The mandatory dissertations are of very poor quality and generally a repeat of past work. Little or no value is given to the quality of the dissertations in the final evaluation and by and large, students rarely have to defend their work during viva voce. If one deducts the time spent on dissertations, the actual time spent on the course is only about 2 years. The group felt that instead of having a twin system of a diploma and a degree, it would be more useful, and also more conducive to quality, to have a 2-year basic PG course which is tightly structured, competency-based and continuously monitored. A 2-year course was preferred since it would generate a larger number of specialists in a shorter time, *provided that it could be achieved without compromising quality and it accounted*

for the need to produce specialists who could take care of the bulk of common ailments in the community that require specialist care. Earlier data has shown that specialists are more likely to migrate to the rural areas after the 2-year diploma course than after the 3-year degree course. The figures published by the HRH Technical Report on Health Workforce indicate that of the specialists working in the urban areas, 52% hold PG degrees and 21% hold diplomas, whereas in the rural areas, only 16% are degree-holders and 21% are diploma-holders.⁵

A 2-year PG degree course is not new and was in existence in many premier institutions, such as the All India Institute of Medical Sciences (AIIMS) and Post-graduate Institute of Medical Education and Research (PGIMER) in the 1970s. Introducing such a course would have the added advantage of increasing the availability of specialists since three batches would qualify every 6 years rather than two batches. In effect, there would be a 50% increase in seats without having to make massive investments in starting new colleges or stepping up facilities in the existing colleges to accommodate more PG seats.

SUGGESTED PATTERN OF PG MEDICAL EDUCATION

The proposed algorithm of postgraduation for the broad specialties is shown in Fig. 2. The basic PG degree would be a master's degree in medicine (MMed). It would apply to all subjects, unlike the earlier diploma course, which applied only to selected subjects. It would be of 2 years' duration.

Prerequisites for 2-year postgraduation

The essential prerequisites for the 2-year course would be:

1. better undergraduate training through early clinical exposure during the undergraduate course
2. restoration of internship as a period of acquisition of skills
3. strict enforcement of the 24-month duration of the course
4. a competency-based curriculum
5. continuous monitoring and feedback
6. no dissertation

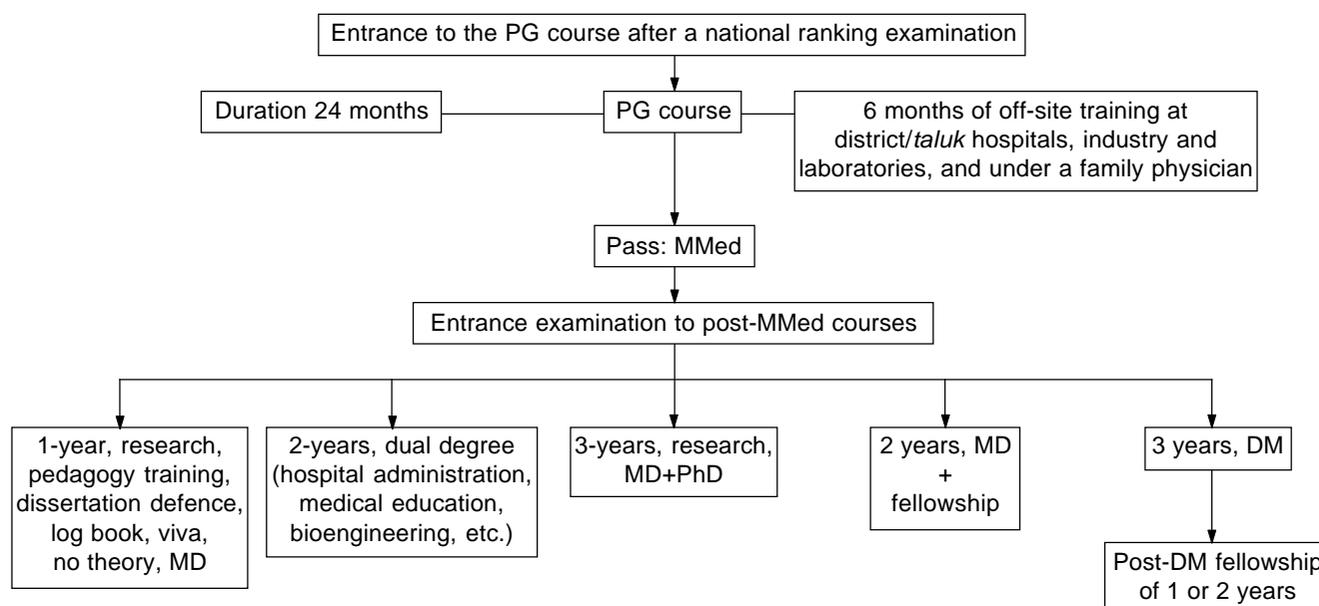


FIG 2. Suggested pattern of postgraduate (PG) education

7. a compulsory module for mandatory training in research methodology
8. the use of off-site facilities for training.

All these would more than compensate for the reduction in the duration of the course from 3 to 2 years and the outgoing PG would, in fact, be better trained than those completing the current 3-year course since the curriculum would be competency-based and the evaluation criterion-referenced. The duration of off-site training would be a maximum of 6 months. For clinical subjects, off-site training would be in district and subdistrict hospitals. For the family medicine course, students would be attached to private practitioners, while they would be attached to public and private laboratories in the case of the paraclinical sciences and to industry for subjects such as pharmacology. Training at these sites would be supervised by accredited trainers and would add to the hands-on experience of the students. The competency-based curriculum would identify the core competencies for each subject, state clear learning objectives, fix acceptable levels of performance, focus on learning, provide for continuous feedback and monitoring through the use of a carefully constructed subject-specific logbook, and put in place a criterion-referenced evaluation system. The MMed graduate would be qualified to be recruited as a teacher at the level of lecturer and assistant professor for undergraduate teaching. Table V makes a comparison between the existing diploma courses and the MMed.

ACADEMIC STREAM: THE MD COURSE

The MD course would be the prerequisite for higher academic teaching posts. MMed graduates aspiring to be PG teachers in medical colleges at the higher levels would be eligible for the course. The course would be of one year's duration and would be run only in approved institutions with a demonstrated capacity for research. The candidate would continue to be trained in the parent subject. In addition, candidates would get hands-on exposure to research by being required to either prepare a dissertation or produce a publishable paper certified by peer evaluation at the end of the year. Training in pedagogy would be compulsory, as would the need to be actively involved in teaching undergraduates. The curriculum would be competency-based and the maintenance of a logbook essential. At the end of the year, there would be no formal theory examination but there would be a viva voce and a logbook examination, and candidates would be required to defend their dissertations or papers. A clinical skill evaluation could be added, if considered necessary.

ELIGIBILITY FOR TEACHING POSTS, CAREER PROSPECTS AND FURTHERING OF PG CAREER

The algorithm suggested for fitting the MMed and the MD PGs into the teaching cadre is shown in Fig. 3. Since the MMed PGs would be eligible for teaching appointments, more teachers would be immediately available at the lower level of the faculty. The remaining MMed graduates would disperse to the secondary or primary care levels or take up practice. It was proposed that the number of PG seats should be reassessed in the light of reliable morbidity data and the number of seats in needy specialties should be doubled after 10 years. Since a large proportion of the PGs (at least 25%–33%) would belong to the specialty of family medicine, this process would qualitatively improve the healthcare of the community across the country.

Future career options after the MMed course are shown in Fig. 2. Those MMed candidates who wish to pursue a career in

academics would have to pursue the 1-year MD course in selected institutions which would prepare them for higher academic teaching posts. Those who wish to specialize in allied fields such as hospital administration, medical education, healthcare management and biomedical engineering can opt for a further 2-year

TABLE V. Comparison of MMed and diploma courses

Factor	Diploma	MMed
Duration	Two years	Two years
Availability	Only selected subjects	All pre-, para- and clinical subjects
Public esteem	Low compared to an MD	Should be higher since it is a master's degree
Popularity among profession	Not high as it is used mainly as a stepping stone to a degree	Should be higher since it has the prestige of a master's degree
Curriculum	Subject-based	Competency-based
Off-site training	Not available	Will be available to enhance acquisition of skills
Syllabus	Essentially same as that for a degree, except there is no dissertation	Will be specifically drawn up for the course on the competency model
List of competencies	Not available	Will be available for every subject
Subject-specific logbook	Not available	Will be available
Continuous evaluation	Does not exist	Is an important feature of the course and will be its strength
Summative evaluation	Largely knowledge-based, very little observation of skills	Competency-based and criterion-referenced, will focus on acquisition of skills
Future career options	Limited to getting a seat in the MD degree	Multiple
Eligibility to be a teacher	Not eligible, can work only as tutors	Will be eligible to work up to the level of assistant professor as undergraduate teachers

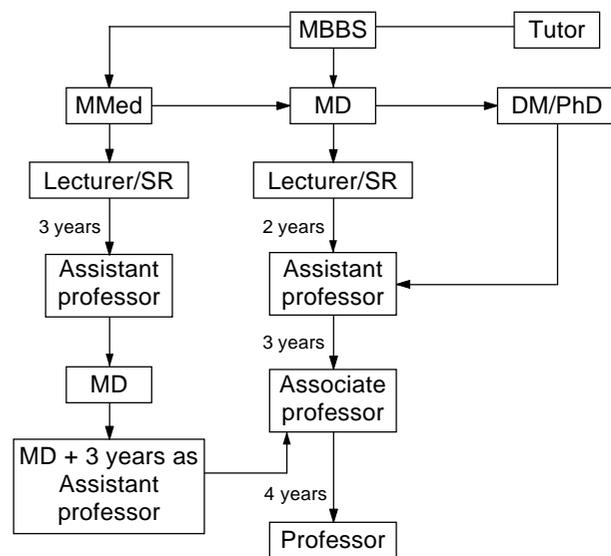


FIG 3. Suggested algorithm for teaching cadre. SR Senior resident

programme and obtain a dual degree. Others who wish to pursue research can join a PhD programme. The other options include 2-year fellowships in areas such as minimally invasive surgery for surgical graduates, and neuroradiology or cardiac radiology for radiologists. Yet others can enrol in a formal post-doctoral programme for the DM degree. Unlike the current plethora of degrees, there would be a simple nomenclature in place—MBBS for undergraduates, MMed for postgraduates, MD for the academic stream and DM for superspecialists. The system would be opened and provide for multiple career options instead of leading to a blind alley.

STANDARDIZATION

Accreditation would be compulsory for all institutes running PG courses. Every PG qualification in the country should be recognized by the MCI for the benefit of the candidate. This should be so even if the qualification is given by states, universities or other institutions. The 1-year course after MBBS should be designated a certificate course, the 2-year post-MMed courses should be designated fellowships and in addition, there may be post-DM fellowships of one or two years in specified areas.

CONCLUSION

These suggestions have been thrown open for discussion in view of the plethora of problems assailing the current PG medical educational system. It is necessary that their merits and demerits are extensively debated by all stakeholders. A wide debate on this issue may elicit a solution or solutions which are better than the current one. If the suggestions are approved, the curricula have to be reshaped so that they are competency-based, the evaluation system has to be changed, greater weightage has to be given to continuous assessment, subject-specific logbooks have to be prepared and extensive faculty training must be carried out. Previous changes to the PG system have been minor, incremental, cosmetic or insignificant. It is important to realize that the current system requires drastic revision if the ills plaguing medical education in India are to be cured. In view of the likely merger of the NBE and the MCI systems under the envisaged National Council for Human Resources in Health in the near future, we considered it unnecessary to deal separately with the NBE process. The principles would remain the same. Since the change being proposed is a transformational one, it may be judicious to first implement it in selected institutions on a trial basis before extending it nationwide.

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Change Management Support in Postgraduate Medical Education: A Change for the Better. By Lindsay Bank, Marië«lle Jippes, Albert J.J.A. Scherpbier and Fedde Scheele. Submitted: April 24th 2017Reviewed: October 31st 2017Published: December 20th 2017.Â

Curriculum change is inevitably a part of postgraduate medical education (PGME) due to a necessity to rapidly adapt to changes in societal needs, educational philosophy and technological advances. Initiating, adopting as well as sustaining successful change can be very challenging especially in complex and time-constrained environments such as healthcare and PGME.Â As a result, new methods of teaching and learning are introduced or current methods are adapted [5, 6, 7, 8]. Postgraduate medical education and training needs improving. What you think. We talk to a dean of medicine, professors, a government peer and sector experts to find out how medical education and training needs to adapt. Facebook. Twitter.Â Our systems must change to be more responsive to patient need, but no one should be seduced into thinking that doctors involvement in assisting suicide will help; it detracts from care. â€œThere are fantastic bright motivated applicants to study medicine.Â â€œMedical research and undergraduate education in the UK is among the best in the world but our postgraduate medical education and training lags behind. Unlike undergraduate medical education, responsibility for postgraduate medical education and training lies solely in the NHS.