Game change in Indian Health Care System through reforms in medical education curriculum focusing on primary care- Recommendations of a joint working group

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ABSTRACT

Despite the stated aim of Medical Council of India (body regulating medical education in India) to produce an Indian Medical Graduate with requisite knowledge, skills, attitudes, values and responsiveness, so that he or she may function appropriately and effectively as a doctor of first contact of the community while being globally relevant, it appears that we failed. The joint working group extensively consisting of medical teachers have come up with suggestions which may work as the game changer in Indian Health care system. The key is to dedicate medical education towards primary care.

Keywords: Game change, Indian health care system, Joint Working Group, medical education, primary care, reforms

Background

The Medical Council of India (MCI) regulates graduate and postgraduate medical education in India. The primary aim of graduate medical education in India is to produce an Indian Medical Graduate (IMG) with specific qualities. A review of the extract from the revised Regulations on Graduate Medical Education, 2012 states that the undergraduate medical education program is designed with a goal to create an “IMG possessing requisite knowledge, skills, attitudes, values and responsiveness, so that he or she may function appropriately and effectively as a doctor of first contact of the community while being globally relevant.”

But have we been able to live up to this standard of IMG? If we look at a report published by Reuters, the answer is a definite No. “The market has been flooded with doctors so poorly trained they are little better than quacks,” Sujatha Rao, India’s health secretary from 2009 to 2010, told Reuters. It appears to be a story of slow downwards drift in the quality of MBBS over past 50 years.

Medical Education in India

Graduation courses

Entry criteria

The students intending to be receive qualification of Bachelor of Medicine and Surgery (MBBS) degree (an undergraduate
course) in India must have completed a minimum of secondary school certificate (10 + 2) with the Science stream, including the subjects Biology, Chemistry and Physics which is not the same as in other countries like the USA or China for example. With the start of National Entrance Cum Eligibility Test (NEET) admission criteria have become uniform across the country.\(^3\)

The basic idea behind NEET was to reduce stress of multiple examinations and ensuring corruption free admission process in medical education across the country.

NEET examinations act as a single window for entry into a medical college (except a few institutions like AIIMS, JIPMER etc.).

Apart from Indian students, wards of nonresident Indian and person of Indian origin are also eligible for admission in medical colleges across the country.

Course description
The MBBS course in India is broadly divided into four parts; 1\(^{st}\) professional, 2\(^{nd}\) professional, final professional part 1 and part 2.\(^3\) The course involves two phases. First phase is the phase of didactic lectures exclusively and the second phase involves clinical clerkship in addition to didactic lectures. The course starts with the basic preclinical subjects such as biochemistry, physiology, and anatomy. This is followed by para-clinical and clinical courses with students simultaneously obtaining hands-on training in the wards and outpatient departments, where they interact with real patients with the aim to learn standard protocols of history taking, examination, differential diagnosis, and patient management.

Purpose of curriculum
The graduate medical curriculum in India is primarily oriented towards training students to undertake the responsibilities of a physician of first contact who is capable of looking after the preventive, promotive, curative, and rehabilitative aspect of medicine.\(^3\) The medical curriculum, though broad based and flexible aims to provide an educational experience of the essentials required for health care in our country. The program envisages that the graduate shall endeavor to have acquired basic training in different aspects of medical care.

Internship
The four and half years of graduate course is followed by a 12-month long internship, in which the students are rotated across various specialties.\(^3\) The focus of training, like the focus in graduation course is at tertiary care center (medical colleges).

Training in community medicine (considered equivalent to public health in India), a 2 months posting, is aimed at making the undergraduate medical student aware of health-care delivery at primary care level. This is important as the student otherwise suffers from lack of utilizing the services of general practitioners/family physicians.

Situation Analysis (Graduation Course)
Although the importance of the community aspects of health care and of rural health care is being recognized, the importance of community medicine has not been appreciated. The concept of general practice, so integral to the healthcare of the community, has not been integrated with the traditional medical mainstream education system in India. The IMGs are expected to become physicians of first contact with job functions largely structured around general practice/family care without being formally introduced to the concept. The training of medical graduates suffers from lack of utilizing the services of general practitioners/family physicians.

Primary care
For delivery of primary care, a concept of primary care physician (PCP) was developed in the west and the term continues to be in use in the USA.\(^3\) By design PCP are supposed to provide both the first contact for a person with an undiagnosed health concern as well as continuing care of varied medical conditions, not limited by cause, organ system, or diagnosis. In the United Kingdom (and in many other English-speaking countries), the equivalent of PCP is the general practitioner.\(^3\)

History of primary care and evolution of family medicine globally
Historically doctors used to be general practitioners. During the past 50 years, technological and scientific advances
have brought exciting prospects in medicine. Along with these exciting times, the fragmentation of medicine into subspecialties/superspecialties has seen a decline in the fortunes of a general practitioner. The development of these sub/superspecialties with expertise in single organs, systems or diseases, in the performance of specific procedures or in the use of expensive and advanced equipment made general practice look less exciting than it used to be earlier. The sub/superspecialties largely remain concentrated to the hospital settings thereby sparking a need of a community care physician, who is easily accessible, available, affordable and with a broader understanding of healthcare concerns of general public. This led to the emergence of family practice as the natural inheritor of the ancient traditions of general medicine.

In USA, the American Academy of General Practice was established in 1947 to lend voice to the decreasing number of generalists. A series of events after that paved the way for family medicine to become an accredited, board-certified, professional specialty. In 1966, three landmark reports were released by commissions that had been appointed to study the problem of declining generalists. These include:

1. The Folsom Report concluded that “every American should have a personal physician to ensure the integration and continuity of all medical services.” It also stressed the importance of preventive medicine, the use of community resources and the importance of caring for the patient as a whole.
2. The Millis Report focused on graduate medical education and determined that family medicine needed to be a board-certified specialty.
3. The Willard Report recommended residency training programs for family medicine and specified the establishment of a board to oversee certification. The American Board of Family Practice was established 3 years later in 1969.

In 1952, the British College of General Practitioners was formed. Then in 1958, The Royal Australian College of General Practitioners was established.

Largely, three alternatives to the term “general practitioner” have been proposed (a) Personal physician (b) Primary physician and (c) family physician. The term “Primary Physician” was used in the report of the Citizen’s Commission on Graduate Medical Education (1966) chaired by Dr. John Millis. The adoption of the term ‘family physician,’ by the American Academy and the Canadian College, promoted the universal use of this term to describe the new specialist.

The family medicine counterculture was particularly strong in America and the general practitioner community worked towards a new general practice and even changed the name of the discipline from “general practice” to “family medicine” to reflect a renaissance in its culture. Since then the counterculture movement has become worldwide.

**Family medicine in India**

The concept of PCP in the form of family physician stayed in India for a decade or so postindepedence and has been in oblivion since then. Family medicine despite being accepted as an area of priority in India has not caught up well at graduate and postgraduate level in India. Currently, only a few medical colleges are offering MD in family medicine. However, many of the teaching hospitals offer DNB in Family Medicine. One of the mains reasons for Family medicine not picking up a subject of interest among medical graduates is the nonexistence of independent departments of general practice/family medicine in all medical colleges in India as also the nonintroduction of this concept during MBBS course. Although whole purpose of IMG, as stated, is to prepare PCPs, words general practitioners/family physicians/PCP do not appear in the MBBS curriculum prescribed by MCI.

Family medicine was only recognized as a specialty in 1983 through an amendment in MCI Act. Since 2005 The NBE promoted family medicine as a special human resource need for National Rural Health Mission (NRHM).

As per NBE, after qualifying the final examinations the candidate should be able to function as a junior consultant (specialist) in family medicine. He/she should be able to render health services to the community by providing health care to all members irrespective of age, sex, culture and socioeconomic background. He/she should be able to decide for appropriate referral to provide secondary/tertiary health services when necessary. He/she should be clinically competent and should be able to take personal responsibility for rendering comprehensive and continuing care of his patients in their own family settings.

Various policy deliberation and discussions have supported the concept of family medicine in India. These include (a) Bhore committee report (b) Bajaj Commission (c) Reorientation of Medical Education (d) Mehta Committee Report (e) Prime Minister’s National Knowledge commission (f) National Health Policy 2002 (g) Task force for development of human resource for NRHM (h) Planning Commission’s Steering Committee on Health in 12th Plan (i) Pradhan Mantri Swastha Surakhas Yojana by establishing Department of Community and Family Medicine at new AIIMS like institutions (j) MCI’s Vision 2015 and (k) National Health Policy 2017.

**Role of Primary Health Care in Health Care System**

Theoretically, all medical practitioners contacted by a patient for the first time are PCPs. The reasons for approaching them could be ease of communication (local language), accessible location (near their home), familiarity (having treated someone in the family), and cost (relatively) etc., In countries like Norway for example, residents are registered as patients of a doctor (in their locality). The patients there (Norway) must contact that
The health policies of several developing countries including that of India are profoundly influenced by World Health Organization’s (WHO) concept of primary health care (Health For All–HFA) movement for basic and minimal healthcare services for every citizen. The WHO has listed worsening trends in access to primary care, some of which are as follows:[16]

1. The quality of doctors and the density of their distribution have been shown to correlate with positive outcomes in cardiovascular diseases
2. In health systems, (primary care) workers function as gatekeepers and navigators for the effective, or wasteful, application of all other resources such as drugs, vaccines and supplies
3. There are currently 57 countries with critical shortages equivalent to a global deficit of 2.4 million doctors, nurses and midwives
4. In many countries, the skills of limited yet expensive professionals are not well matched to the local profile of health needs
5. All countries suffer from maldistribution characterized by urban concentration and rural deficits.

Area of Concern

Undergraduate training

The primary purpose of graduate training in India is in channeling medical professionals to cater to primary healthcare. However the outcome is contrary. With reforms specifically directed at postgraduate training, the primary care focus has been lost over last few decades. Added to this is a paucity of curricular reforms suited to primary care. Therefore the need of a medical professional competent in delivery of primary healthcare, evidence based practice, interdisciplinary team work and professional and ethical behavior in practice to improve and sustain the health of population is being felt more than ever before. Development and imparting of skills related to cost-benefit and cost-effectiveness analysis of basic medical and public health interventions is probably the key to achieve long term goal of health for all.

The learning objectives for graduate medical education though well defined have failed to yield desired results due to fault lines in “syllabus” and methods. It appears that there has been overemphasis on subjects and topics like systemic pathology, systemic microbiology, biochemistry, surgery, pharmacology etc., and under emphasis on others like communication, basic surgical skills, emergency medicine, Dermatology, psychiatry and family medicine etc., during the course of undergraduate training. The subject of Community Medicine considered closest to primary care has suffered because of lack a standardized clinical approach across the country and through consistent devolution of training duration in it over a period of time. Community medicine, has failed to fill the existing gaps of a family practitioner.

Summary

The authors identified three key issues regarding the current scenario of medical education in India. These are (i) Overarching doctor first and the referral thereafter is arranged by this doctor only. The idea is to make them act as “Sentinels” to reduce both cost of treatment and avoidable burden on specialist services. In an ideal case health scenario, the PCP should acts in management of the disease of the patient and if he is unable to manage it further or feels otherwise, should collaborate with referral specialists for management. The referred specialist should back refer him to the PCP to coordinate the care given or execute rehabilitation. The PCP will thereby act as a comprehensive repository for the patient’s records, and provide long-term management of health conditions. Probably, the most important component in this referral cycle is the continuous care needed by patients with medical conditions requiring prolonged treatment and monitoring, such as diabetes and its complications.

The component of generalist medical care is being globally strengthened specially in the most developed nations. Importantly studies on the delivery of quality of care in preventive health care find the contrary results: PCP perform best. A study analyzing the data on elderly patients revealed that patients seeing generalists, as compared to patients seeing specialists, were more likely to receive influenza vaccination.[13]

Furthermore in educational counseling on health promotion counseling, studies of self-reported behavior have revealed that generalists were more likely than internal medicine specialists to counsel patients. The results were similar in educational counseling to screen for breast cancer.[14] Then there are diseases that are so common that the quality of care given by the PCP is equivalent to quality of care but at lower costs than orthopedic specialists for example the low back ache. Out of the major factors, two factors found to influence quality of care by PCP are (1) Experience of managing a specific disease (2) affiliation with networks of multiple groups of physicians.

Role of Primary Health Care in Indian Health Care System

In India, the current health system though based on the western model could not allow the PCP to prosper. The concept of family doctor (closest to PCP in India) went out of fashion within two decades of our independence largely due to noninclusion in the curriculum of medical education and lack of any academic departments. Today, the first contact physician in India could range from an MBBS graduate to MD/Magister Chirurgiae (MCh.). The reasons deciding this do not factor in our healthcare policy. One of the important reasons could be the difference in the skill levels of MBBS graduates in comparison to postgraduates (MS/MD) or (DM/MCH).

Studies show that health systems that adhere to the principles of primary health care produce greater efficiency and better health outcomes in terms of both individual and public health.[15] The health policies of several developing countries including that of India are profoundly influenced by World Health Organization’s (WHO) concept of primary health care system of care (Health For All–HFA) movement for basic and minimal healthcare services for every citizen. The WHO has listed worsening trends in access to primary care, some of which are as follows:[16]
focus of medical education on development of specialists through reforms in postgraduation programs (ii) Ambiguity about the roles, functions, training and skills of MBBS doctors (iii) Nonuniform quality of teaching and training in undergraduates/postgraduates courses (iv) Too much reliance on teaching at graduate level through text books which remain same for MBBS and MD/Ms (v) Nonavailability of essential learning skill sets for teaching at graduate level to differentiate from teaching at postgraduate.

The Joint working group (JWG) feels that there is an urgent need of a medical professional competent in delivery of evidence based primary health care, affordable accessible and readily available working on the larger premise of interdisciplinary team work and professional behavior to improve and sustain the health of population. The current medical education system in India is seen to wanting in delivering this. The situation has been aggravated by the lack of recognition to the family medicine as a broader academic specialty at graduate and postgraduate level across medical colleges in current mainstream medical education system. Probably there is also a lack of understanding regarding integrating medical education and medical practice so that patient care is universally equitable.

**Recommendations of joint working group for restructuring of graduate medical curriculum**

The JWG is of the opinion that game changing educational reforms campaign is needed to be launched. The campaign should focus on explaining the nature and cause of the failure of primary care; to provide well-documented information on the benefits of primary care, explain the potential for a strong primary care–based system to control health expenditures; and to offer concrete proposals for reforming both primary care at the micro system level and the long term benefits at the macro system level.

1. **Graduate curriculum:**
   - First year – Clinical Anatomy, Clinical Physiology and Laboratory medicine (which will include clinical biochemistry, clinical pathology and clinical microbiology). The focus of posting in Clinical Anatomy and Clinical Physiology will be in developing understanding of clinically relevant Anatomy and Physiology as applicable to health and disease.
   - Second year – Communication skills with observer ships at academic general practice units, Forensic medicine and medico legal aspects of health care, Eye, ENT and Dermatology
   - Third year – Orthopedics, Gynecology and Obstetrics, Psychiatry, Clinical Anesthesia and Clinical Radiology. Again the emphasis will be on locally relevant health care concerns. Clinical Anesthesia and Clinical Radiology will be used to develop an understanding regarding management of acute and critical care.
   - 4th and ½ of 5th year – Medicine and medicinal pharmacology, Pediatrics and Pediatric pharmacology, Community Medicine/Public Health, Family Medicine/General Practice/Primary Care, Basics in surgery, Emergency Medicine. The posting in Community Medicine/Public Health, Family Medicine/General Practice/Primary Care can be externship based equally distributed across primary care settings and academic general practice units

2. Internship training – The internship program needs to be restructured with six months dedicated to posting in primary care. For this the current clinical posting in Medicine, Pediatrics, Surgery and Gynecology Obstetrics to be divided into halves. One half at CHC and other half at Tertiary care centre. A minimum of two weeks attachment with academic general practice unit/family practice unit should be included. The academic general practice units will be based in facilities offering MBBS graduates with adequate hands on training and opportunity to perform supervised clinical skills. Mandatory training in medico legal aspects including postmortem and basic life support and advanced cardiac life support

3. Primary care to be included as a discipline at graduate level and postgraduate level both – The subject at the undergraduate level will include development of essential skill sets and the use of these skill sets at primary health care level. The clinical posting in primary care will entirely be carried out at Primary health Care Centre level to be conducted under the supervision of a faculty from Primary Care. CHC attached to medical college should fulfill the norms of a teaching CHC. On similar lines academic general practice units should be accredited for clinical training of MBBS graduates

4. Community Medicine/Public health – A restructuring of teaching curriculum in community medicine at graduate level is needed. At the graduate level, understanding the implementation of national health programs should be the key

5. Module based teaching instead of text book based teaching at graduate level – Instead of using text books as reference for teaching at graduate level, medical education material can be developed in the form of modules. The modules can be similar to the ones currently being used by National Institute of Health and Family welfare for training of medical officers in India

6. Faculty for Primary Care – To overcome the nonexistence of primary care teaching departments in medical colleges, the currently functioning departments of Community Medicine can teach primary care curriculum. Local family physicians and general practitioners with relevant experience should be attached as adjunct faculty

7. Converting maternity posting into maternity and child care posting – To improve learning in mother and child care, maternity posting in obstetrics and gynecological can be converted into maternity and child health care posting of 1 month duration MBBS course

8. The interim arrangement – As an interim arrangement Graduates opting to work in rural areas or graduates posted to rural areas under Compulsory rural posting can be allowed to opt for MD in primary with additional component of thesis and 1 year training at a teaching hospital.
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Conflicts of interest
There are no conflicts of interest.

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