

REPORT OF THE WORKING GROUP ON MEDICAL EDUCATION

Background

The **National Knowledge Commission (NKC)** was established by the Prime Minister of India in 2005 to recommend and undertake reforms in order to make India a knowledge-based economy and society. An important constituent of the NKC's functions is professional education, particularly education in the field of medical sciences. In light of its significance, the NKC has decided to form a working group on education in the field of medical sciences in the country.¹

Terms of Reference for Working Group on Medical Education

1. Identify constraints, problems and challenges relating to curriculum, teaching, infrastructure, administration and access.
2. Recommend changes and reforms to address the problems and challenges relating to curriculum, teaching, infrastructure, administration, and access.
3. Suggest means of expanding educational opportunities in medical sciences in the country.
4. Consider mechanisms for raising average standards and creating centres of excellence.
5. Explore methods of attracting and retaining talented faculty members.
6. Suggest measures to promote and sustain the research tradition in medical colleges and teaching hospitals.
7. Examine ways and means for the development of education relating to alternative systems of medicine.
8. Recommend means of strengthening professional education in para-medical disciplines.
9. Explore means of creating synergies between medical education, public health and delivery systems.
10. Examine any other issue that may be relevant in this context.

¹ Composition of Members of the Working Group and List of Consultations is given at the end of the Report.



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The **National Knowledge Commission** is a high-level advisory body to the Prime Minister of India, with the objective of transforming India into a knowledge society. It covers sectors ranging from education to e-governance in the *five focus areas* of the knowledge paradigm:

access *easy access to knowledge*

concepts *all levels & forms of education*

creation *effective creation of knowledge*

applications *of knowledge systems*

services *like e-governance*

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Meeting with Himachal Pradesh Government

21 November 2007, Himachal Pradesh Secretariat, Shimla

National Knowledge Commission presentation to Chief Minister and Chief Secretary of Jharkhand.

12-13 November 2007, Government of Jharkhand, Ranchi

NKC team visit to Guwahati to meet Chief Secretary of the Government of Assam

29 October 2007, Secretariat, Government of Assam

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Report of the Working Group on Open and Distance Education, as submitted to the National Knowledge Commission...

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Report of the Working Group on Plant Based Medicine, as submitted to the National Knowledge Commission.

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National Knowledge Commission Report on Innovation



Libraries-Gateways to Knowledge

National Knowledge Commission Libraries Brochure



Report of the Working Group on Legal Education

Report of the Working Group on Legal Education, as submitted to the National Knowledge Commission.



Report of the Working Group on Management Education

Report of the Working Group on Management Education, as submitted to the National Knowledge Commission



Report of the Working Group on Undergraduate Education

Report of the Working Group on Undergraduate Education, as submitted to the National Knowledge Commission



Report of the Working Group on Medical Education

Report of the Working Group on Medical Education, as submitted to the National Knowledge Commission.



NKC Library Outreach Presentation

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The Preamble

Medical education is a part of the whole system of education which is in crisis mode today and we are paying a very heavy price for inadequately investing in balanced growth for the social sector, i.e. Health and Education, and in permitting moral degradation to set into these areas while building an industrial and technological capacity.

This situation is reflected in the schools still in tents and without dedicated teachers and Primary Health Centres in crumbling buildings without competent health care providers. In this general dismal scenario, reforms in medical education need to be wide based across many sectors aiming at convergence to deliver healthcare to the common man, urban or rural, who can contribute to economic growth and quality of life for the nation, which is the ultimate goal of education.

Health Oriented Education across the board in the country is directionless, unregulated and non-standardized, apart from a few institutions. The quality, quantity and distribution of the health oriented human resources being produced leaves much to be desired. With reference to the quality, there is no accountability, effective monitoring or implementation of laid down standards, by any regulatory body or well-designed need oriented educational programmes. The curricula have not been updated for years and there has been no attempt to emphasize non-medical public health strategies or to infuse the curricula with cutting edge science technology of the unprecedented knowledge explosion, to excite the young mind.

With reference to quantity and skill mix that is required, it is not based on any disease surveillance data or any objective study of the human resource requirements for making available trained health professionals as teachers, researchers and for serving the healthcare needs of the community by competent physicians nurses or paramedical professionals.

With reference to distribution, a large urban rural divide is present in terms of location of health care facilities and their quality and is increasing with decreasing access and equity of services for the rural areas and urban slums and over-investigation and over medicalisation, and technology driven strategies for the urban rich in tertiary care hospitals.

In spite of all the above lacunae, the Infant Mortality Rate has been brought down from 120 to 70 and Maternal Mortality from 840 to 407 in the last 60 years. However these statistics hide the good work done in some states, like in Kerala and Tamil Nadu with an Infant Mortality Rate of 17, while in U.P. and Bihar it lingers around 100 (See Back Tables 4 & 5). It appears that this is the result of individuals and communities in individual states contributing, not that of the system functioning; otherwise such wide variations would not occur. It is a systems failure, which needs to be recognised and addressed.

Following the recommendations of the Bhore Committee report in 1946, the Government of India, after independence, adopted the 3-tier system of healthcare: primary, secondary and tertiary. We needed appropriately trained human power to man these 3 levels of care. Somewhere over the years we lost this objective and our goals. Health oriented training became more and more urbanized, doctor centred, technology driven, rather than care driven, rural and poor oriented and equity conscious for the common man.

The 262 medical colleges that we have established are all located in urban areas where only 25 - 30 % of the population lives. We train 28,349 doctors annually and only 20,000 nurses, while we have no data on the paramedical training facilities and resources available. The systems of a 3-tier graded health care service have been lost.

The medical graduates are urban oriented and their mindset and training prepares them for service in urban areas or equips them for further training in their chosen fields of specialization.

The training of nurses lacks planning both in quantity and quality with a doctor to nurse ratio of 1:1.35 where as in the developed world it is 1:3. The doctor population ratio is 1:1722. In this scenario the vast majority of the population living in rural areas and urban slums get no organized healthcare primary secondary or tertiary and have to depend on the many voluntary agencies or committed NGO's that work in the field and render valuable services. However their numbers are few and far between for the millions who require primary care. Therefore, quacks have dominated the healthcare scene. The population have no choice but to seek their help because they are locally available, whether urban or rural, although the care they render is suspect and far from satisfactory with long term disastrous effects.

The constitution of India charges the state with the responsibility of providing healthcare to the population and removing ill health. Thus, our foremost challenge is to provide a Public Health System and Primary Healthcare Services to the vast rural majority and urban slums. At the same time, there is a need to update and improve the quality of training being imparted in our medical colleges, in order to make the environment of medical education nationally sensitive and globally competitive.

Both aspects are *equally* important and have to be simultaneously addressed. For the purpose of our report, we have conceptually presented it in 2 parts but would like to emphasize that functionally they are a continuum and both need to be addressed to achieve the goal of a healthy nation. Too much focus on medical education of physicians has only strengthened, and will continue to strengthen, the medicalised unbalanced health human power situation. Unless the health system is seen as part of a composite community health oriented strategy, there is the danger that market forces will prevail entirely over real and unmet needs of the majority living in the country..

Part – I

To become and remain globally competitive, we have critically reviewed the educational programmes and current scenario at the Undergraduate, Postgraduate and Ph.D levels as it exists today and offered recommendations. This has been done addressing all the stakeholders (the principal target audience of these recommendations concerned with the medical profession) under the following headings: -

1. Regulatory authority & Central Government
2. Medical institutions / Colleges
3. Faculty
4. Students

Part – II

It is entirely devoted to the community, the Primary health Care and Public Health Services that should be available to them. To be nationally sensitive, we have to improve our healthcare delivery, which will increase our labour productivity and further help economic growth. This has to be addressed and available to the community at their doorstep. The recommendations have addressed the fundamental obstacles to effectively deal and overcome

these. New policy thrusts, radical changes in attitude, system change and innovative tracks of education have been recommended for decreasing the exposure of the community to disease by preventive strategies and enhancing appropriate care and harnessing the power of distance learning for Continuous Medical Education. The experiences of grass-root NGOs and voluntary agencies, their successes and failures have been considered and recommendations incorporated to improve our persistently dismal record of health indicators and the human development index through appropriate changes in the educational training strategies.

Editorial Note: The report is presented in point form and arranged such that any paragraphs with a single decimal point are descriptive of current scenario or *baseline* and the challenges faced. All paragraphs marked with double decimal numbering are the points for action and implementation – i.e. the *recommendations*. When there is a baseline that is specific only to the recommendation point, it is made along with the recommendation itself.

Overview of the current scenario: Distortions in the system²

- Currently, there are 262 (2006) medical colleges that admit 28,349 students to the 1st Year MBBS course. In ten years, the increase has been significant. In 1994-5, there were 152 medical colleges admitting 12,249 students. Twenty years previously, there were 106 medical colleges admitting 11,561 students.
- The increase in private medical colleges has been primarily responsible for the change. In 1995 there were 47 in number where as by 2006, there were 131 private medical colleges. In the same period, government run medical colleges have increased from 109 to 131. The private colleges have had an urban bias and an orientation towards specialty training and not towards public health. According to latest available information from Health Information of India (2005-6), in 2001 post-graduate degrees were awarded to 3,181 doctors in a single year but out of these only 58 were in Community Medicine.
- While the aggregate number of doctors (0.7 million doctors) is not very low for a developing country, only 28% of them are located in the rural areas.
- With 83% of the total health expenditure being in the private sector, the dominant influence in the health system has been the private sector. The private sector, driven more by the impulse to maximize profit, has further skewed a system already dominated by curative initiatives, increasingly dependent on high cost and high-tech diagnostic support. Out of a total sanctioned strength of 4,712 in the Central Health service (CHS), only 78 (1.6%) posts exist in the Public Health Sub-cadre. The rest are General Duty Medical Officers (GDMOs) or clinical or teaching Specialists. The situation in the state public health cadres is even worse. This distortion is also reflected in the limited number of post-graduate seats in Community Health/Public Health/Preventive and Social Medicine in the country at present – only 163 degree seats and 106 diploma seats.
- Moreover, a very large number of medical colleges are concentrated in six states (Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu , Kerala and Gujarat). These states cover about 63% of the total number of medical colleges and 67% of the number of seats.

² See Back Tables at the end of the report.

In contrast to this, a disproportionately small number of colleges/seats are located in the Empowered Action Group states— 20% of the aggregate number of colleges and 18% of the seats in the case of the EAG states; and 3% of the aggregate number of colleges and 3% of the seats in the North Eastern/Hilly states. This uneven regional distribution of medical colleges is a further distortion in the system.

At least some of these distortions in the system have been known for sometime. Towards this end, a committee headed by Prof. J.S. Bajaj prepared a draft National Education Policy in Health Sciences and which noted at the start that it:

- (1) sets out the changes required to be brought in the curricular contents and training programmes of medical and health personnel, at various levels of functioning;
- (2) takes into account the need for establishing essential inter-relations between functionaries of various grades;
- (3) provides guidelines for the production of health personnel on the basis of realistically assessed manpower requirements
- (4) seeks to resolve the existing sharp regional imbalances in their availability; and
- (5) ensures that personnel at all level are socially motivated towards the rendering of community health services.

The National Education Policy in Health Sciences, however, remained a draft. It is, therefore, not the intention of this report to address the problems without taking into consideration previous committees that have attempted to address these very distortions in the system. And there have been many such committees that produced good reports. With reference to medical education and its aims, the Bhole Committee (1946) and Mudaliar Committee (1961) spoke of a “social physician”, Patel report (1971) spoke of a “basic doctor”, Srivastava Report (1975) spoke about the “family and community oriented practitioner” with social responsibility and, finally, the Bajaj report (1989) spoke of the “Community Physician”. Whenever feasible relevant quotes from earlier expert groups have been included.

Rather, this report shall highlight the urgent need for the recommendations contained here *to be implemented* in the face of an immediate crisis in the current provision of manpower to address the health needs of the country.

PART - I

SECTION A

Regulatory Authority

- 1.1 Our system of medical education has not kept pace and therefore not geared to handle the rapid advances in biomedical sciences, the phenomenal development of newer more sophisticated and reliable diagnostic and therapeutic techniques and technologies, coupled with changing socio-economic, demographic and epidemiological profile of the country.
- 1.1.1 An increasingly globalising world demands a dynamic, responsive to change and well-informed, **autonomous regulatory body** to meet the emerging challenges for initiating, promoting, monitoring and enforcing standards of medical education at all levels across the country.
- 1.1.2 This body should be charged with the responsibility of directing, accrediting, standardizing, regulating and assessing medical/health oriented education and the manpower needs of all strata of the healthcare system. Such a body should have genuine autonomy provided with adequate authority and managed by highly qualified medical educationists with a record of integrity & proven credentials.
- 1.1.3 It should function as a truly autonomous statutory body and not simply as a recommendatory body to the Central Government as is the present Medical Council of India. This has been emphasized earlier (See boxes).

1975: Medical and Health Education Committee

We recommend that immediate steps should be taken to set up, by an Act of Parliament, a Medical and Health Education Commission, for coordination and maintenance of standards in health and medical education. It should be broadly patterned after the UGC with a whole – time Chairman who should be a non – official and a leading personality in the field of health services and education. The total membership should be between 9 and 15, one third representing the Central and State Governments and the Universities, one-third representing the various national councils and one third consisting of leading persons in the field of health and medical education and services. Its role should be promotive and supportive and it should be responsible for planning and implementing the reforms needed in health and medical education. It should have the necessary administrative machinery and steps should also be taken to place substantial resources at its disposal in the Fifth Five Year Plan so that it can start vigorously and become effective.

Source: Srivastava Report, 1975

1989: Education Commission in Health Sciences

There is a need for a central organization in relation to professional education in health related fields. As recommended by the Medical Education Review Committee, and accepted by the Government in principle, a Medical and Health Education Commission, on the pattern of University Grants Commission, needs to be urgently established. It shall be general duty of such an Education Commission in Health Sciences to take, in consultation with the universities and professional councils concerned, all such steps as it may deem appropriate for the promotion and coordination of education in health sciences. The Commission would deal with all branches of health sciences, including medical sciences at all levels as also nursing, pharmaceutical and dental sciences and other categories of health care providers.

The broad objectives for the Commission would include:

1. Continuing review of national health man power requirements in the context of evolving socio-epidemiological needs and demographic requirements.
2. Ensuring the creation of education institutional and facilities or strengthening of such facilities in already existing educational institutions, that would facilitate the production of projected health manpower, and to consider the establishment of one or more Universities of Health Sciences.

Source: Bajaj Report, 1989

1.2 The Medical Council of India (MCI) was established in 1933 and as per Indian Medical Council Act 1933 (amended in 1956, 1964, 1993 & 2001) is the statutory recommending body responsible for the above functions, but it is far from autonomous or dynamic. Over the years it has failed to serve the purpose and led to a progressive decline in medical education.

The Indian Medical Council Act 1956 (as operational today) charges the Medical Council of India with following responsibilities and objectives :

- a) To coordinate and determine standards of medical education in India at all levels;
- b) To regulate the practice of medicine in India, by persons possessing recognized medical qualifications;
- c) To maintain the Indian Medical Register;
- d) To advise the Central Government in matters relating to the requirements of manpower in the field of medicine;
- e) To improve the standards of medical education at all levels and to undertake review of such standards; and
- f) To advise the Central Government and the State Government on matters pertaining to financial needs of medical colleges

The above are all essential and laudable objectives but with no powers, limited expertise and mechanisms to discharge them. Progressive erosion of its limited autonomy over the years has led to the deplorable situation in which we are today.

It is pertinent to point out that under Section 32(1) of the Act, the Central Government may, by notification in the official Gazette *make rules* to carry out the purposes of this Act. However Section 33 authorizes the Council to "*make regulations*" generally to carry out the purposes of this Act, *with the previous sanction of the Central Government*, thereby limiting its autonomy and therefore accountability.

- 1.2.1 The Regulatory Body should be independent of Government control and provided teeth to discharge the responsibilities that it is charged with. The functions of this body should drive the structure it develops and not the reverse as has been the experience with other Central authoritative bodies in the country.
- 1.3 It will be observed that the objectives of the Medical Council of India are broad based enough to meet the emerging needs of medical education in a rapidly changing milieu. However, in practice, it being only a recommendatory body, without genuine autonomy or authority, it is unable to fully discharge the present responsibility, leave aside plan for the future needs enshrined in its charter. Its current composition, manner of its constitution and their inability to lay down standards and enforce the same owing to lack of genuine authority and expertise are impediments in discharging the responsibilities expected from any such regulatory body. It is worth noting that the oldest such regulatory body in the world – the General Medical Council of Great Britain, faced with the changing environment, progress in science and public opinion, have recently redefined its objectives and implementation strategies. The need for such a change in the Medical Council of India (MCI) is urgent. This has been articulated by a number of high power committees like the Joint Committee on Indian Medical Council (Amendment) Bill 1987, the Central Council of Health and Family Welfare 2003, Estimates Committee of the Parliament (2004-2005), and generally felt by the medical profession itself. In contrast, the Ministry of Health and Family Welfare (MOH&FW), the nodal ministry, in-charge of Medical Council of India, has recently drafted an amendment bill (2005). Unfortunately, besides increasing its own powers the Ministry has failed to formulate progressive, forward looking changes necessary to meet the present emerging challenges. It is, therefore, not surprising that the Standing Parliamentary Committee on Health and Family Welfare in its report on the Indian Medical Council (Amendment) Bill 2005 has found many flaws in this Bill & sent it back.

In light of past experience, this Working Group further recommends the following:

- 1.3.1 The Regulatory Body for Medical Education should have a full time Chairman, supported by well qualified staff and acknowledged leaders in medical education along with representatives from the social sciences, including educational pedagogy, scientists, experts in information technology, leaders of public opinion and the community.
- 1.3.2 It was felt that instead of creating a new structure, it may be desirable to revamp, strengthen, enlarge the scope and empower with well-defined accountability the existing Medical Council of India to discharge these responsibilities with suitable amendments in the Act.
- 1.3.3 A three member Search Committee may be formed headed by the Vice President of India & including a scientist/educationist and Lok Sabha Speaker, to select the chairman, who will be a professional. The process of selection of the Chairman of the body must be given significant importance. It should not be decided through election, or through nomination.
- 1.3.4 The chairman will be accountable to the overarching Regulatory Body for higher education (IRAHE) as has been proposed by the National Knowledge Commission, to its own committee members and to the community.
- 1.3.5 The Composition of this Regulatory Body is proposed as the following:
 - a) 1 Chairman
 - b) 5 members from recognized universities anywhere in the country representing academia, with good track records.
 - c) 2 Practicing Physicians representing the profession.
 - d) 2 Members from Civil Society representing the people / social sciences / Public opinion leaders.
 - e) 1 Director from autonomous institution representing educators.
 - f) 2 Medical students representing future academicians and leaders.
 - g) Director general of Health services representing govt. (Non voting).

Terms of appointment for the Chairman may be 5 years and 3 years for the members, $\frac{1}{2}$ of the members to be changed every 3 years. Members need to be appointed by the Chairman and a selection committee.

- 1.3.6 Notwithstanding the current limitations faced by the Council, it would be possible to initiate upgrading its functioning immediately. This would require the chairman and a small group of experts to review its current status and adopt ways and means to enable it to respond to the existing and emerging challenges for ensuring the establishment of a well designed world class medical education system in the country, which we can do, and is possible. Robust linkages with the MOH&FW and the health care delivery system must be ensured.
- 1.3.7 This would require formulation of a perspective plan and blue print for Medical Education and Research taking into account the regional and national needs, and also provide an estimate of the resources and time frame needed for the same recognizing that planning and forecasting are a continuous processes with special expertise. Inputs of the changing demography, epidemiology and disease surveillance data are essential.

1.4 **Functions:**

- 1.4.1 Besides the overarching structure mentioned above, in order for this body to be enabled to function, there have to be specific standing committees as the following :
- I. Committee on Curriculum planning, monitoring and overseeing implementation for undergraduates and postgraduates. It should provide flexibility for locale specific modules. The central authority proposed provides guidelines only (as currently done by the MCI).
 - II. Committee for establishment of Specialty boards for post-graduate education.
 - III. Administrative and academic staff to lay down standards of education and ensure their compliance.
 - IV. Committee to address medical ethics and their violations.

- V. Adhoc teams of evaluators to conduct "on site survey" who are a mix of basic scientists and clinical educators and who serve as voluntary evaluators to be appointed.
 - VI. An independent National Assessment Body to be established for all undergraduate and postgraduate entrance & exist exams. The role of the National Board of Examination can be redefined and its structure and functions expanded & made explicit to carry out these responsibilities.
 - VII. The proposed body must have collaboration and linkages with the Ministry of Health, state medical councils, state universities and other health oriented councils like Nursing Council of India, Dental Council of India, Pharmacy Council of India & establish a Paramedical Council which is non-existent as of today. Currently there is no formal interaction between the MCI and the state councils.
- 1.4.2 It must be the only body as the final certifying agency before one can enter PG courses or clinical practice after qualifying in a national assessment exam.
 - 1.4.3 It must benchmark for quality and organizational structures that ensures a sufficiently rich environment that fosters broad academic purposes and a spirit of enquiry and continuously evaluate programmes.
 - 1.4.4 It must monitor on a regular annual bases and take appropriate steps to maintain quality education or de recognize those that do not do so using regular annual survey and self analysis of written reports on all 262 accredited Medical Colleges using modern communication technology. It will review survey data and make site visits whenever necessary to at least 25 % - 30 % of them annually.
 - 1.4.5 It should be the only body to recognize degrees granted by the universities before the states can permit granting a license to enter practice.
 - 1.4.6 It must hold 2-day meetings every quarter in November, February, May and August routinely for stock taking. It may convene extra meetings for special issues.
 - 1.4.7 The proposed Regulatory Body should have the responsibility of registration and licensing doctors to practice general medicine and the specialties.
 - 1.4.8 It will ensure a system of CME to be done regularly and re-certification and revalidation of registration every 5 years to protect public interest and to promote and maintain the health and safety of the public.

- 1.4.9 It must significantly be charged with the responsibility to regulate the numbers and skill mix of manpower required for the educational institutions and the health care delivery systems. This should be undertaken on the basis of information provided by an independent Manpower Forecasting and Planning Body in consonance with the prevalent disease pattern, the changing pattern and the emerging diseases (as is assessed by a body like the Central Bureau of Health Intelligence on whose expertise one can rely to provide accurate reliable credible data using all the information and communication technology available today).
- 1.4.10 There must be a strong social and community representation in the perspective setting and decision making bodies of the council so that the people, the community and the social aspects are given importance and not made subservient to professional or commercial interests. Social scientists and people of social standing from other professions, voluntary agencies and consumer groups could be included in the governing bodies. A mechanism for nomination and or co-option of such representatives should be considered.

Recommendations 1.1.1 to 1.4.9

If-not Scenario

If a regulatory authority is not put in place, medical education will be like a ship sailing in troubled water without navigational tools. To ensure there is effective use of linkages that the recommendations in this report envisage in the entire health system (including better use of public-private partnerships), there is an urgent need for a monitoring agency that ensures accountability in the system. In the continued absence of such a body, coordination between the different components of the health system will remain limited even when such linkage does exist at all. Such a body would function as the linchpin to an integrated health system.

SECTION B

Medical Institutions / Colleges

- 2.1 On the priority list of the proposed Regulatory Authority will be overseeing and accrediting the function, structure and composition of the 262 medical colleges existing at present. Evaluation of their state of compliance of the standards laid down and approving the physical infrastructure, clinical training sites and more importantly their educational programmes and the policies to execute and deliver the desired education.

In order to comply with the above, the medical institutions must have the following systems in place :-

1. Transparent admission and selection policies.
2. Physical structures and academic leadership
3. Laid down mission, goals and objectives of the institution
4. Faculty with education, experience and expertise
5. Curriculum committees.
6. Plans on teaching methodologies
7. Methods of assessment known to students.
8. A transparent system of programme evaluation
9. Linkages with regional health care & delivery systems.
10. Linkages with the universities & science bodies like ICMR, DST & DBT
11. Library and information resources.
12. Financial resources

All the above are deficient to varying extent in all institutions across the country and need to be addressed.

- 2.1.1 The accreditation principles may be as follows :

- I. Provisional Accreditation
- II. Full Accreditation
- III. On probation Accreditation
- IV. De-recognition

- 2.1.2 A time frame for all institutions to acquire full accreditation and maintain it, may be fixed and non-compliant institutions improve or face closure.
 - 2.1.3 The Regulatory Authority must ensure that every medical college cannot be a stand-alone body; it must be part of a University, which takes on the responsibility of providing a scholarly environment with access to all the basic sciences, social sciences, cultural activities and humanities.
 - 2.1.4 The institutions must ensure that the environment be sufficiently rich that fosters broad academic purposes, a spirit of enquiry and moral values appropriate to a community of scholars and continuous evaluation of approved programmes by the institutions themselves.
 - 2.1.5 Linkages with other medical colleges and scientific bodies, ICMR, DST, DBT must be in place to sustain a scientific environment and promote research.
- 2.2 In 1905 the clinician and teacher William Osler suggested: "To cover the vast field of medicine in 4 years is an impossible task. We can only instill principles, put the student on the right path, give methods, teach how to study and to discern early between essentials and nonessentials." Today with knowledge explosion in diverse fields related to medicine also vying for attention, these words resonate louder, in reforms we are ultimately interested in the impact of change on the clinical competence and patient outcome that today's education can achieve.
- 2.2.1 The medical college must define its mission and objectives and make them known. They must describe the educational process resulting in a medical doctor competent at the basic level with an appropriate foundation for further training in any branch of medicine of his/her choice and in keeping with the role of doctors in the health care system.
 - 2.2.2 The curricular structure and composition must describe the content, extent and sequencing of courses including the balance between the core and optional contents

Recommendations 2.1.1 to 2.2.2

If-not Scenario

If the vision and mission of the teaching institutions does not ensure a sufficiently rich academic environment to promote a community of scholars, the type of students and faculty that they will attract will not be able to do justice to the art and science of medicine as a profession but will see it as a business of prestige and financial power – is this what we want? The Flexner Report, noted later (p.21), is an exemplar – a ‘wake up’ call and a shake up strategy.

Admission Policies

There are 262 approved medical colleges in the country with an admission capacity of 28,349, (MCI). 131 are in the public sector and 131 in the private sector.

2.3 The Public Medical Colleges –

2.3(a) In the current scenario, admission policies and the process of selection are transparent.

At present 85 % of the seats are filled on the basis of a state conducted admission test and 15 % by an “all India” Test results. *The states are unlikely to accept any change in the scenario even if it were desirable.*

2.3.1 These policies need to be reviewed periodically to comply with social responsibility and health needs of the community and society.

2.3.2 The relationship between selection, the educational programme and desired qualities and skills of the graduates should be stated in their prospectus.

2.3.3 The size of student intake must be related to the capacity of the medical college at all stages of education and training.

2.3.4 Since medical education is a state subject, each state must identify at least one institution that can serve as a centre of excellence and role model for all the other institutions in the state. It should not be starved for funds. The infrastructure, faculty strength, research labs, teacher training facilities, libraries & state of the art patient care facilities are sadly lacking in most institutions and must be provided as essential resources in these institutions, till the other institutions in the state can set up their

own appropriate facilities. Students and teachers can be rotated through these centres and educational credits for knowledge and skill development be given.

2.3(b) The Public Medical Colleges not only lack infrastructure but also academic environment. Faculties blatantly have a private practice in addition to a full-time teacher's salary from the Government exchequer; therefore they contribute little to the teaching and educational responsibilities.

2.3.5 The state government and the institutions should have clearly delineated policies that deal with circumstances in which the private interests of faculty members or staff may be in conflict with their official duties and responsibilities. Each state has its own rules on whether or not private practice can be allowed or not, but most do practice. These institutions must be assessed and their teachers and educational programmes reviewed, evaluated and necessary steps taken in the light of laid down standard policies or put on probation/provisional accreditation or else be derecognized. Faculty members not contributing to the educational process should be retired of this responsibility because they set wrong examples.

Recommendation 2.3.5

If-not Scenario

The Public Medical Colleges must produce the "Basic doctor". If the family physician concept is not inculcated, then the friend and guide on medical matters is lost in the system to instead encourage medical shopping and the public seeking specialist care when general care would be adequate. This pushes up the cost of health care.

2.4 The Private Medical Colleges:

2.4(a) These have rapidly increased from 60 in 2000 to 131 in 2006. This calls for an urgent need to regulate their growth and admission policies, which are not transparent and locally conducted. Their fee structures, faculty, infrastructure and location need attention. Those not complying with laid down standards by the proposed Regulatory Body should be derecognized. They have become a source of political and financial power.

- 2.4(b) In spite of several orders of the Honorable Supreme Court of India, from the Unnikrishnan Judgment in 1993 onwards, admissions to the vast majority of self financing Private Medical Colleges in India are still based on the collection of large sums of money, usually in cash, as capitation fees, in addition to the sizable tuition and other fees charged. A Common Entrance Test conducted by associations of such colleges to determine the merit has not changed the situation at all. There are a number of ways in which the merit list is manipulated to ensure that the candidates who have effected payment are appropriately graded.

This Working Group suggests the following procedure to address the situation:

- 2.4.1 There should only be one All India Common Entrance Test for all students who would like to get admission to Self Financing Medical Colleges. Since the CBSE conducted examination for the 15 % All India quota in Government Medical Colleges is taken by a very large number of students, this would appear to be the ideal examination whose ambit can be expanded.
- 2.4.2 All Self-financing Colleges should be allotted an ID number and students who appear for the All India Entrance test should in their application indicate the ID Numbers of the Institutions they would be applying to. Since the CBSE conducted examination is scheduled fairly early, each student should have to enter their CBSE hall ticket number on his or her application to the Self-financing College(s) concerned.
- 2.4.3 All self-financing Medical Colleges should announce their fees in their prospectus so that students can see the amount and make their choice for admission. The colleges should also send the list of Hall tickets and names of students who have applied to them to the CBSE for cross verification.
- 2.4.4 At the end of the CBSE entrance examination, they would prepare an All India rank and merit list, as well as each self-financing College based merit list. The colleges would call candidates for admission based on the merit list prepared by the CBSE in strict order and give the student adequate time for payment of fees and registration.
- 2.4.5 The All India rank list and the rank list for each college should be on a public access web site. As the Self-financing Colleges call students for admission, the

list of students called should be also on their web site as well as the web site of which the rank list is published.

However such colleges in general also charge substantial other fees prior to admission, which have to be paid in cash. If the above scheme were uniformly applied each student would be in a position to know his merit rank for the colleges of his choice. Posting the lists on the web site would ensure that it is brought to light if a student has not been intimated admission even though a lower ranked student is admitted. Consequently, it would be possible for this action to be immediately challenged and necessary corrective procedures enforced.

- 2.4.6 This method is possible, harnessing the power of modern IT. *It is likely to be totally resisted by the concerned colleges but the Regulatory Authority must have the teeth and empowered by law to take suitable action.* Since many of these colleges were started without any infrastructure, the education imparted is sub-standard. Those colleges not having the scientific and ethical infrastructure and expertise do not deserve to exist. Poor quality commercial training shops producing poor quality manpower cannot be left loose on a hapless trusting public.

THE FLEXNER REPORT

In 1909, AMA created a council for Medical Education to promote the restructuring US medical education. The council requested the Carnegie Foundation to lead the undertaking. Carnegie appointed a school master and educationist Abraham Flexner, to lead the survey. In 1910, Flexner submitted his report after site visits studying and assessing all the 150 medical schools present at that point of time. Implementation of his report reduced 150 schools to 31 based on the infrastructure necessary to impart scientific education to address the health needs of the community. He said: "Medicine is a science and only on its strong foundations can the art of the practice of medicine be built." American Medical Education was transformed and has never looked back again. A century later our 262 Medical colleges need such a shakeup.

2.5 **The Physical structure and Academic Leadership of all Institutions**

- 2.5.1 Institutions must be dynamic structures and initiate procedures for regularly reviewing and updating of their structure and functioning and must rectify documented deficiencies. Its planning process must set the direction for the institution and results in measurable outcomes.
- 2.5.2 All institutions must identify a Dean – the academic head of the institution, who is qualified by education and experience to provide leadership (with a minimum 3 years before retirement and a proven academic track record), and have an organizational structure which reflects representation from the academic staff, administration staff, management staff, students and other stakeholders. The responsibility of the academic leadership must be clearly stated and it should be evaluated at defined intervals with respect to achievements of the mission and objectives of the institutions and the educational programmes.
- 2.5.3 Institutions must be accredited for Undergraduate, Undergraduate + Postgraduate, Undergraduate + Postgraduate + Ph.D. programmes. They must define the competencies that students should exhibit on graduation in relation to their subsequent training and future roles in the health care system. Undergraduates and postgraduates competencies should be specified and sufficient clinical knowledge and skills be acquired to assure clinical responsibility or evidence of research attainment.
- 2.5.4 Entrance to a Ph.D. programme can be at 2 points – after under graduation and opting for a research career or after post graduation opting for clinical teaching and research career. Integrated MD-PhD programme may specifically be designed for graduates having clinical experience & aptitude for research.
- 2.5.5 Professional opportunities must be created for such scientist, such as a “specific research cadre” in the postgraduate medical faculty. Such faculty will be expected to create research opportunities through attracting research grants and may be paid through research grants. University research professors will be needed to teach at such integrated programmes. A program can be started on an experimental basis in Post Graduate Institutes of excellence.

2.6 Recommendations for Research and Laboratories for Medicine Education

2.6.1 There is a need for strengthening the “Kishore Vaigyanik Protsahan Yojana”, which is an ongoing programme started by DST and ICMR Summer School Program.

2.6.2 To start a ***Mentored Medical Student Research Program*** with following features :

1. Mentored Medical Student Research Program should be related to priority area of human research development.
2. A Mentored Medical Student Research Program (six months to one year) at MBBS & MD level may serve as a catalyst for introducing medical students to a potential career in patient oriented/community oriented research. A patient related or community oriented research is an important step towards translating basic research into medical practices.
3. Institutional Research Centres for imparting training on research are prerequisite or any Medical Student Research Program.
4. The Institutional research centres will focus on exposing medical students to design, methodology and analysis of research studies including clinical trials and community studies.
5. During the program period, medical student (3rd year and 4th year MBBS student) will be engaged in various clinical activities. These activities may include supervised participation in clinical trials, acquisition of laboratory skills required for undertaking community based or clinical research orientation in public health and community research. The program may also demonstrate to the medical student the research and communication skills required for undertaking interdisciplinary research. A suitable course (hands on training) on research methodology for designing of the project, communication or results, etc. may be incorporated.
6. There will be no examination for this program but a certificate may be given to the student.

2.6.3 *Who can apply?*

1. The lead mentor may submit application on behalf of the student who opts for this program.
2. The medical student is eligible to participate in the Mentored Medical Student Research Program if he/she is currently enrolled in medical education courses at an MCI approved medical college.
3. The grant will be awarded to mentor and include fellowship to student and a personal grant to mentor.
4. Each institute may submit a maximum of three applications.
5. Period of grant would depend on the project and the trends that emerge for short term or long-term grants.

2.6.3 Library Networking needs to be established.

2.6.4 Imparting Training to medical students in instrumentation and techniques in Biochemistry, Microbiology, Biotechnology, etc. Strengthening of laboratories in ICUs and Emergencies should be done. Orientation programs for medical students in specialized laboratories including cardiac, renal, neurochemistry, radiological techniques are required.

2.6.4a: Short training programmes should be organized for medical students in qualitative and quantitative research to prepare them for both clinical and community studies.

2.6.5 Laboratory setups at primary centres and district level need to be strengthened and the medical students should have orientation programs in these laboratories.

2.6.6 **Funding:** Ministry of Health and Family Welfare may provide the funding for these activities. Medical research funding agencies like ICMR, DBT, DST should fund the Mentored Medical Student Research Program.

The MAMB (See Box below) is another model for research initiation and enrichment of the Undergraduate/Postgraduate programmes.

Moving Academy of Medicine and Biomedicine (MAMB)

The principle underlying the methodology of Moving Academy of Medicine and Biomedicine (MAMB) is that educational programs containing new knowledge and technology can be accessed by the student through non-formal education. This can be done by increasing proximity and access to the educational program.

Host institutions or centers conduct workshops on an identified area and students can volunteer to participate in these workshops. The training imparted in these workshops is to supplement the educational program that the student is already undertaking. Teaching in these workshops is done through new and innovative methods and at minimal cost to the students. It is also cost-effective to the organizers.

The salient features of these training programs are the following :

- Non formal supplementary education packages for students from medical colleges on new information / knowledge.
- Teacher training / update programs on new developments in medical research and education.
- These are held in host institutions or centers where the students from the neighboring medical colleges can congregate and learn.
- These programmes are not part of the examination curricula and are entirely voluntary

The success of the mobile education program is demonstrated by the positive student feedback and improved performance measured after he/she has participated in the program. For example, after the SP College Technology workshop in Pune, the percentage of students passing increased from 55.2 % before the workshop to 81.1 % after the workshop. The student performance pre and post workshop were 47.1 % and 74 % respectively in the LTM Medical College in Mumbai.

The research strategy of MAMB is to create research laboratories in rural area to study certain diseases and screening for these diseases. This can be done by creating primary centers to use field based technology, secondary research centers at the college level for characterization of the disease and tertiary centers for cross-checking results. The best colleges (centers of excellence) can be used as national reference labs. This helps in taking creating research hubs in rural areas and involving local initiative in research work. The Academy has already created a eukaryote biotechnology training laboratory in Pune.

Another dimension of the MAMB education program is the following :

It conducts research on specific diseases (for example – Thalassemia and the Down syndrome) to study its prevalence and symptoms.

It imparts training to community itself for disease screening and its prevention.

Hence, the scope of the education is broadened to include education imparted to the community on disease screening and prevention.

2.7 Teacher Training Centres

Building on the National Teacher Training Centre experience

JIPMER – Pondicherry

The Ministry of Health, Government of India and WHO-SEARO had jointly collaborated to set up the National Teachers Training Centre in JIPMER, Pondicherry in the 1970s. This centre trained small groups of faculty in many medical colleges in the country through short courses in pedagogical methods including examination innovation. These small groups were helped to start Medical Education Cells in colleges to train new faculty. The NTTC also provided professional advice to various colleges to improve medical education pedagogy. Similar centers were started at AIIMS and other centers in the country. The faculty development process in the country should build on these experiences.

- 2.7.1 Five regional centres (North, South, East, West and Central) for teacher training should be set up. Teachers from the nearby medical colleges can be sent to these centres periodically for upgradation of teaching skills. The regional centres in turn must be in contact with four National Centers that should be responsible for training of trainers. Ultimately all institutions must have a teachers training and education department.
- 2.7.2 All institutions should ensure a critical mass of teaching faculty conversant with subject expertise and expertise in test development, validation, organization of administration of computer based written exams, essays - long and short, right/wrong etc. with the ability to objectively test clinical skills and competences on real or simulated patients. Hands on clinical skills and competencies of the students must be assessed as a continuous process.
- 2.7.3 To ensure the critical mass of teaching faculty, teacher training centers should be mandatory in every medical school and faculty must have access to educationist and the changing teaching methods in the 1st year of appointment. To start with regional and National centers can liaison and teachers rotate through them till they develop centers in their institutions & expose teachers to training as a continuous process.
- 2.7.4 Teaching methodologies need to be changed from chalk and talk to include computer assisted learning, AV facilities as basic requirements to inculcate habits of life long learning and use of communication technology, to access information, methods of teaching / learning must be compatible with educational objectives and must promote learning. The number and nature of internal assessment examinations may be adjusted

by integrating assessments of various curriculum elements to encourage integrated learning & formative as well as summative assessment.

2.8 **Curriculum Committees :**

Several studies have identified shortcomings in the curriculum. A WHO-SEARO study, 'Inquiry-driven strategies for innovation in medical education in India – Curriculum Reforms, 1995' noted a disconnect between the focus in the syllabus by way of teaching/examinations and the actual morbidity pattern observed at the ambulatory level.

- 2.8.1 All institutions must constitute curriculum committees who plan the curriculum models and instructional methods that ensure that besides theoretical knowledge, students have responsibility for their learning process and should prepare them for life-long self-directed learning: The principles of scientific methods, evidence based medicine, problem solving, analytic and critical scientific thinking must be ensured.
- 2.8.2 The present curriculum being followed needs to be revamped. The new one must ensure beside the above that the contributions of Basic Biomedical sciences that create an understanding of the scientific knowledge, concepts and methods fundamental to acquiring and applying these to clinical sciences with the requisite skills for optimal application of that knowledge in clinical and community settings be incorporated in an integrated manner. Besides the strong foundations of basic and clinical sciences the following essentials need to be incorporated or strengthened:

Skills

- 1. Communication skills
- 2. Management skills
- 3. Analytical skills and clinical decision making skills
- 4. Research methodology – qualitative and quantitative

Disciplines

- 1. Social sciences (including behavioural)

2. Medical Ethics and Human Rights
3. Health Economics

New areas / frontier areas

1. Bioinformatics
2. Genetics & Genomics
3. Molecular biology

- 2.8.3 These inclusions are to ensure that the new and relevant knowledge, concepts and methods when included, the outdated ones are discarded and the dead wood removed to prevent curriculum overload.
- 2.8.4 Curriculum needs to be developed in areas belonging to the affective domain. Exemplary role models and reinforcement of positive professional development must be outlined in the sequence of observation, internalization and value complex formation.
- 2.8.5 The curriculum should expose the student to traditional health and medical systems with interfaces with alternative practices, but these may be optional and not part of the assessment system though certificates of their attendance & completion may be issued in their degree certificates. Attendance should be entirely voluntary and the course may be structured under the rubric 'history of medicine'. The detail pattern and content of lectures should be decided by the proposed curriculum committee with inputs from practitioners of these systems.
- 2.8.6 The curriculum committees should be provided with resources for planning and for implementation to secure the objectives. There should be representation of students, staff and other stakeholders and programme modifications should be based on feedback from students and faculty every 5 years as mandatory.
- 2.8.7 Integration of ICT in the learning process is essential and the students must demonstrate basic computing skills of data organization. Computer based presentations must be encouraged and facilities provided for the same. There is a need to develop the libraries in medical institutions and make them equipped with computer

based library technology to make them efficient and user friendly. Literature searches as on Pubmed must become a part of the undergraduate curriculum. Computer aided and web based learning must be available in medical libraries.

2.9 **Programme Evaluation**

Currently, in a few institutions evaluations of the educational programmes is being done, but in the majority of institutions there is no such practice.

2.9.1 This must involve the administration and governance of the college, the academic staff and students. There needs to be mechanisms that monitor the curriculum, student progress and ensure that concerns are identified and addressed to achieve desired outcomes. Both teacher & student feedback/evaluation must be systematically sought, analyzed and responded to. They should be actively involved in planning programme evaluation and using the results for programme development.

2.9.2 All institutions must have a constructive interaction with other medical colleges and formalized linkages for transfer of educational credits when necessary. Regional and international exchange of academic staff and students should be facilitated by the provision of appropriate resources to continuously improve on the programmes.

3.0 **Student Assessment Policies – Formative and Summative**

At present there is no standardization of the assessment & examination process across the country. The Universities conduct exit examination for Undergraduates and Postgraduates they train, and they also assess students at exit levels with varying standards and expertise. An MBBS or MD from CMC Vellore and Darbhanga are accorded the same level in the eyes of Government for jobs.

3.0(a) **Training Formative Assessment**

3.0.1 At the end of 4½ years, the need for an independent National Exit Examination is urgent, essential for standardization and is long overdue. Besides theoretical assessment at the

end of a professional period, students assessment of skills & clinical competence should be a continuous process throughout the educational programmes by regular weighted objective sessional examinations

- 3.0.2 The grades or credits obtained in these must count towards the results of the university final examination at the end of the professional period, with 50% marks for internal assessment and 50% on the year-end external exam. Student feedback must also be taken regarding any improvements in the teaching learning activities.

3.0(b) **The final National Exit Exam and its process**

- 3.0.3 Students should take the National Exit Exam immediately after the University exam and be assessed nationally for knowledge and skills. The results of this pre-internship exam may also serve as a Postgraduate entrance exam so that the students are not burdened with another Postgraduate entrance and lose the opportunity of acquiring clinical skills during the internship year because they are concentrating on studying for Postgraduate entrance. For this to happen the role of the National Board of Examination can be redefined, its structure expanded and function made explicit as the single National Exit Examination assessment body. All these examinations and their assessments must be objective. Regular updating of the question banks must be done by using item analyses. The test construction must be based on a balance between difficulty and discriminatory index.

3.0(c) **The Internship Year**

The internship is a very important part of the educational training of a medical student but it has deteriorated over time and it has reduced its relevance and value to the students. The internship, *currently un-assessed*, does not serve the purpose of giving hands on experience because the intern's focus and target is the postgraduate entrance examination and developing skills is far from their minds. It has become a preparatory time for Postgraduate entrance exam with students staying at home and studying for Postgraduate entrance and not acquiring clinical skills.

- 3.0.4 The internship year must be assessed and the current practice of students to keep studying in the internship year without going to the clinics needs to be *changed immediately as a top priority*.

- 3.0.5 The internship must be a period of acquiring and enhancing skill development and application of the knowledge acquired, in community as well as hospital settings, under supervision.
- 3.0.6 The skill development must ensure competence in delivering life saving measures and provided opportunities for handling multidisciplinary contact areas as is common in injuries and emergency medicine in keeping with the larger aim of providing primary care physicians at the MBBS level. There must be compulsory rotation from the teaching hospital to the community and district hospital. The duration in the district hospital should be 6 months, in the CHC 3 months and in the tertiary care hospital the remainder 3 months. The Postgraduate entrance would be a summation of the pre & post internship examinations.

The Internship Skills – Log book

The Rajiv Gandhi University of Health Sciences Karnataka, and some other institutions have introduced an Internship Logbook that lists out all the skills that the young graduate should try to pick up during his/her postings in different departments during the internship. This Log book is carried by the young doctor in training and every time a skill is attempted under supervision it is recorded and the supervisor also makes a note. This ensures a strong skill oriented internship which prepares the young doctor for future practice. Such innovations should be extended to all the medical colleges.

- 3.0.7 At the end of the Internship year, there must be an assessment of skill development by objective structured clinical exam that shall contribute to the overall grade of the medical student in hospital and community settings. Each intern should be assigned a “mentor” at the district hospital and the assessment should be credits given by the mentor. A possible method to do this is to maintain a logbook for skill assessment on predetermined criteria. This assessment would be added to the credits of the National Exit Exam for purposes of Postgraduate Admission. The pre and post internship exams should be 1 year apart. The mentors may be paid a teaching allowance and given a teaching designation and opportunity to upgrade their knowledge and skills in the teaching hospitals from where the students come strengthening the linkages between the teaching hospitals and district hospitals.

LIST OF SOME OF THE INNOVATIVE UNDER GRADUATE PROGRAMMES AT CMC – VELLORE

1. Integrated learning programmes

The integrated learning programmes are short units of two weeks in the I and II MBBS which promote:

a. Integrated teaching; b. problem based learning; c. early clinical exposure in pre-clinical year and teaching of para-clinical subjects along with clinical subjects in II MBBS.

They are short units to promote vertical and horizontal integration within a conventional curriculum.

2. Secondary hospital programme

CMC has 3 weeks in its undergraduate curriculum where students are exposed to secondary level care in mission and voluntary sector at hospitals which located at rural and remote locations across the country. The postings occur in II (1 week) and III MBBS (2 weeks). The postings consist of careful selection of hospitals, two way faculty exchange, a planned clinical posting and project work on a local health problem.

3. Community orientation and community health programme

The current Vellore model is in 4 phases

Phase I – Community orientation program

This program familiarizes the 1st year students of MBBS, physiotherapy, occupational therapy, biostatistics and chaplaincy with the life of India's rural folk. It lasts for 3 weeks and is preceded by preparatory classes in sociology and statistics. The surveys in the village are preceded by 3 days of orientation in the college campus. The various studies done expose the student not only to the socio-demographic structure of the village but also to the socio-cultural context in which they live and work. The students work in 30 batches of about 3 students. Each batch is allotted a maximum of 13 houses. Various methods of sampling are used to obtain an appropriate sample. Social research methods like focus groups, in-depth interviews are also used for information gathering. In addition to the survey various guest lectures are arranged during the afternoons. Simulation games and reflection sessions enable the learner to tie up loose ends. The data gathered is discussed in detail at presentations in the college campus.

Phase II – Community Health Program I

This program which takes place for 2 weeks in the 1st clinical year is primarily focused in the principles of epidemiology, health administration and planning and includes classroom exercises, lectures and field exercises. During this the students work in batches of 2-3 and do a cross-sectional study on the morbidity and mortality and utilization of health services including cost. The students also study the working of various types of health services right from the village up to the district hospital. The students carry out a surveys of morbidity profile, time motion study and the level of facilities at various centres. A health planning exercise is also carried out in groups of 8-10 students.

Phase III- Community Health program II

This program occurs during the second clinical year and lasts for 2 to 3 weeks. It provides the students with an opportunity to apply in practice the knowledge and skills acquired during the previous 2 postings. The students in groups of 8-10 evaluate the health status and plan, carry out and assess the program. During this program the pace and schedule of the work is entirely dictated to by the students, with the staff serving as resource persons.

Phase IV -Internship

3 months of 12 month long internship is spent in community health and aims to prepare a basic doctor. This equips the student with the basic knowledge of community health and primary care. As an integral part of the team, the student participates in the organization and delivery of health care. He diagnoses and treats common ailments and performs minor surgical procedures under supervision. This phase focuses on developing skills in organizing preventive services for vulnerable groups, conducting surveys, health

education, family planning.

4. Clerkship programme

The clerkship programme consists of a sub-internship in medicine and surgery where students take partial patient care responsibility under supervision. They are posted for 4 weeks to Medicine and Surgery each, join the clinical team, participate in OP, IP and emergency care as well as performance of basic procedures.

5. Family medicine posting

Students are posted to settings of secondary level care in Vellore town and surrounding community hospitals to observe a family physician at work, learn the common problems that they see, how differently they are handled from tertiary care. The posting occurs for 2 weeks in the II MBBS.

Source: Dr. A. Zachariah

Recommendations 2.5.1 to 3.0.7

If-not Scenario

If the physical structure, teacher training centres, responsibility of the academic leadership for curriculum planning, programme evaluation, student training and methods of assessment as well as better utilization of the internship not addressed urgently and upfront, then we are running cheap training shops. Moreover, we are producing poor quality professionals, who should not be permitted to be let loose on a trusting hapless public. It is the duty of the state to protect its citizenry and act as early as possible.

3.1 Issues specific to postgraduate training

Issues specific to Postgraduate education that need attention besides the general education principles applicable to undergraduates, as outlined above, are addressed in this section. There are approximately 12,000 postgraduate training seats in the country across all disciplines – these numbers have no relationship to the number of graduates, the specialty proportions, skill mix, manpower required to meet our healthcare and teaching, the disease profile, the emerging disease pattern, epidemiologic changes, life style changes with economic development or locale specific manpower and research requirements.

Suffice it to say 16,000 graduates are getting into the healthcare system without the skills assessments made by a supervised internship year and preparation suitable for further training in areas of their choice.

This situation has resulted in unidirectional and imbalanced growth with a disconnect or mismatch between our needs and the manpower being developed. This requires urgent attention.

Unmet needs of 16,000 graduates passing out and aspiring to get admission into PG courses have to be attended to. There were more than 75000 eligible applicants appearing for the 10000 seats available for all India Postgraduate entrance this session.

- 3.1.1 Admission to Postgraduate courses must be done based on credits received in the results of National Exit Exam from graduate course in combination with results of the pre & post internship clinically oriented exam and certification from the internship mentors.
 - 3.1.2 Training courses assessment policies must ensure a strong emphasis on formative assessment. Summative assessment again should be done in a uniform pattern by the National agency assigned this purpose. The candidate must be declared eligible to appear in the National Board Exam after their assessments in the training programme by the training institutions.
 - 3.1.3 The necessity of creating specific specialty boards with responsibility of subject specific curriculum and training with the aim of a national assessment at the end of 3/5 years of training, assessing skills development, research aptitude and ensuring an enquiring mind willing to push the frontiers of knowledge forward with a hunger for lifelong learning is strongly felt.
- 3.1(a) **New courses needed**

Any successful development process must have a pyramidal structure with a strong horizontal base. In terms of the medical education it has to be a strong base of basic scientists and clinical generalists/family medicine specialists, who are the backbone and stability of the system. This is to be followed up at higher levels by core specialists and lastly sub-specialists. There is no such pyramidal structure in fact the pyramid rests on a wobbly base of generalists and increasing trends for sub-specialties. Again, core specialists are fast dwindling with many faculty posts lying vacant throughout the country because of sub-specialisation trends accounting for the wobbly pyramid.

- 3.1.4 The family physicians of yesteryears are no longer widely available. This needs to be urgently addressed. Fifty percent of Postgraduate seats should be for them to form the base, protect the public and provide appropriate care to the community/masses at primary and family levels, as envisaged in the National Health Policy (2002).
- 3.1.5 There is a need to introduce new courses in disciplines such as family medicine, geriatrics, specific branches of public health, emergency medicine, sports medicine, critical care, trauma care etc. Curriculum subcommittees need to review and develop the curriculum of the new courses to be introduced.
- 3.1.6 The *thesis*, which is a prerequisite for taking the final MD exam, needs to be continued in order that research methodologies, statistics and subject knowledge is ensured. Intention for publication of the thesis work in indexed journals should be a compulsory prerequisite – evidence of its submission & acceptance should be available though publication may be done later on and not insisted upon itself as a prerequisite.

The thesis project inputs, the process and the outcomes should be of international standards with national sensitivities and the ability to apply their knowledge & function in the national environment using the available low and high technologies to address and solve national problems with research and scientific methods.

Recommendations 3.1.1 to 3.1.6

If-not Scenario

Post graduates and Specialists:

If the broad base of primary health care providers is not expanded, strengthened and a filtering system provided to the population, the very purpose of post-graduate education and specialists cadres is being defeated with specialists doing the work of the generalists for which they are neither trained nor have the aptitude. However, the cost of health care to the nation goes up and specialist institutes are charged with a mass of humanity who could be provided care nearer their homes. The public does not gain and the profession suffers because specialists' skills are not provided the opportunities or the patient load to hone their skills. The exemplar is AIIMS with its 7000 daily patients with no process of filtration and the state radiologists being posted at a PHC and contributing to the transfer industry.

3.2 **Issues Specific to CME**

Undergraduate, Postgraduate and Continuing Medical Education are a continuum, which are essential parts of the career growth of academics as well as service personnel.

Opportunities for regular CME and updating of skills and knowledge is vital for the effective functioning and sustaining of any health care system whether primary, secondary, tertiary, rural or urban.

3.2.1 With reference to academics, the teachers training centres must ensure this process at predetermined intervals in their career growth.

3.2.2 For in service personnel, distance learning systems must be fully explored. Currently the work of IGNOU for distance learning requires an urgent independent evaluation for its potential strengths and to identify where the weaknesses in its model exist. There has never been an independent evaluation and yearly reports only highlight inputs and not outcomes.

3.2.3 All professional should be submitted to a 5-year re-certification process and evaluated by credits earned through CME.

IN THEORY

Distance Learning – Continuing Medical Education (CME)

Besides the Continuing Medical Education for in service medical personnel we need to install capacity for para meds and nurses (CME) in a relatively short period of time. This current situation needs to change radically with a much larger base of GPs, nurses & para meds and a greater number of specialists undergoing CME courses. The ANMs & other allied health professionals also need CME. Conventional teaching methods are both insufficient and incapable of carrying out this CME task. Hence, the use of ICT in teaching becomes vital.

Open and distance learning has to be considered not only in continuing medical education or upgradation of skills but also for the normal teaching learning process.

The steps under the normal teaching-learning process in medical education are the following :

- Text learning
- Demonstration with discussion
- Practice under supervision
- Practice for self confidence.

This very process can be carried out by distance learning in the following way :

- Text learning can be done through self-instruction material.
- Demonstration with discussion can be done at the tertiary set up which is the district hospital.
- Practice under supervision can be done at the secondary health setup or the district hospital.
- Practice for confidence can be tried out at the place of work.

The utility of distance teaching in multi-skilling of the existing practitioners is immense. A strict monitoring system needs to be in place for regulating this process & using the current institutional health setup in the country.

The obvious advantages of distance learning in continuing medical education are the following:

- Negligible Displacement from Work Place
- Standardized package
- Objective Teaching Process.
- Transparent Evaluation Process
- Replicable Training
- Access to Best Trainers
- Affordable Cost
- Learn at own pace

Distance learning also helps in better networking among institutions and is also cost-effective for the government.

A proposal for CME based on IGNOU Experience

A) Infrastructure

All the health infrastructure of the country should be utilized for CME. They could be integrated in the following way.

- **Centre for Continuing Medical Education (CME)**

- A nodal structure with provision of staff and functional autonomy be set up & the possibility IGNOU being the moving force and node (pending the independent evaluation of IGNOU recommended above in 3.2.2).
- It should be responsible for developing CME packages and making implementation design
- It must coordinate with different agencies (infrastructure, Professional bodies, CME wing of Govt. and Private organizations etc.) for implementing the CME Package

- **A Distance Learning CME Wing should be attached to the Dean's Office in Every Medical College**

It should be responsible for student registration, ensuring skill practice and contact sessions in respective departments including evaluation.

- **A CME Cell attached to Health Directorate in Every State**

Responsible for identifying doctors to undergo CME, relieving from Duty if required, coordinate with state health infrastructure to impart CME activity continuously, official orders be issued as and when necessary by a set training calender.

- **Large Service Hospitals will also have a CME wing**

Responsible for making provision for CME facility, ensure CME of doctors attached to the hospital

B) Implementation Frame Work

- i) **CME package :**

There could be three types of CME packages

- a) Certificate/degree/Diploma programmes

Existing training packages of IGNOU and other agencies / universities could be evaluated & recognized as CME. All these packages should have provision of continuous and term-end assessments and have at least 50 % weightage for skill training

- b) Short CME packages having significant hands-on-skill components on credit point basis.

The modality of implementation will be in the line of three tier training (medical college, district and large hospitals and work place of trainee) and three tier monitoring system (Central, state and peripheral level) that is being followed by IGNOU along with a provision of evaluation and certification process as seems to be appropriate for respective packages.

- c) Knowledge update

Different agencies and professional bodies could develop these updates in form of lecture sessions / video or multiple media package / articles, etc. These could be transmitted by appropriate strategy (satellite transmission / telemedicine network / pre conference workshops etc.).

On line packages and live transmission of procedures and patient management through telemedicine link could also be integrated to above three modalities

ii) Finance

One time expenditure for establishing the CME Cell and the creation of wings in Medical College / State Directorate. The recurring expenses could be met from the fee structure of different CME that the participants have to bear themselves. Government doctors could get official leave for the duration of absence from work place and get TA/DA for travel related to the CME. The fee structure for different CME will be on no loss, no profit basis.

Outcomes need to be assessed by a pilot project.

There has to be a government directive to all central and state agencies making periodical CME (periodicity to be defined) compulsory re-determined levels in their career.

Recommendations 3.2.3 to 3.3.0

If-not Scenario

CME – distance learning

No system, medical or non-medical can be a dynamic system if CME is not ensured and provided. Technology today permits distance learning for CME without disturbing work schedules and can be provided at the convenience of the learner and teacher. CME should become part of the career growth and re-certification of professionals necessary for every higher step, or else a dynamic system cannot deliver and will further atrophy than it currently already has.

3.3 Future Growth of Medical Colleges & Health Oriented Institutions

3.3.1 A time-period of 2 years can be set for the first results of the work to be undertaken by the think-tank/body in-charge of studying & forecasting the health manpower needs of the country and disease surveillance data. Once these needs are known and reliable data clearly available, till then a moratorium on the future growth of medical college be placed.

3.3.2 With reference to the other health oriented institutions and educational programmes, they have been addressed at length in Part – II of this report, but the gap between supply and demand is so great that expansion can be undertaken straight away.

Recommendations 3.3.1 to 3.3.2

If-not Scenario

The opinion of 72 experts in the country over 40 years (A. Sawhney, *Health Administrator*, Vol. XVII, Number 1) reveals there is no need to increase the medical manpower of doctors but only to improve its quality and orientation towards better meeting the health needs of the majority. However, a dire need exists to focus on increasing nursing and paramedical manpower. Health care as a composite whole can only be developed if the nursing and paramedical human power is created. If not, the health care system will remain wobbly, ineffective, inefficient and highly costly.

SECTION C

Faculty

4.1 Responsibilities and Privileges

4.1.1 Selection Policy :

The selection of teachers and researchers must be strictly on merit with no extra academic or political interference by a Selection Committee appointed by a Governing Body or a University.

4.1.2 Staff Development Policy

The medical colleges must have a staff developmental policy and opportunities must be provided to enhance faculty members' skill and leadership abilities in education. It must also address a balance of capacity for teaching, research and service functions and make good the deficiencies where required.

4.1.3 Teachers training should be mandatory in the first year of appointment. At entry level, teachers should undergo a course in pedagogy. Models are available at CMC Vellore, JIPMER & AIIMS & more can be established to provide all teachers this opportunity as a continuous process throughout their careers.

4.1.3(a) Social / Community orientation of staff

All teachers should be encouraged to take part in camps and other clinical and field activities in the rural and urban field practice areas of the medical colleges and any programme links it establishes with the regional and district level health services – so that all teachers of all departments are more oriented to the primary health care and community challenges which the students will face as basic doctors.

4.1.4 Access to educational experts and evidence demonstrated of the use of such expertise for staff development and for research in the discipline of medical education should be encouraged. Meritorious academic activities with emphasis on teaching qualifications to be recognized.

4.1.5 Teacher appraisals from colleagues, peers and students by a feedback system should be in place and programme evaluation used to modify methods of teaching and subject

content. Teachers to receive regular feedback on their academic performance and their progress.

How to Retain Faculty:

- 4.1.6 Availability of state of the art infrastructure in laboratories and hospitals with seed money for initiation into research must be ensured (this has been addressed in 2.6 above) and an incentive for promoting and pursuing research must be in place. Other incentives may include fast-track promotions, some share of research grants brought by the faculty members, share in patents generated out of research if any.
- 4.1.7 Good pertinent research should be suitably rewarded judged by objective criterion of "science citation index".
- 4.1.8 Faculty should be permitted to invite guest faculty and also serve as guest faculty at other institutions. This process would be conducive for collaborations in research and improved quality of educational programs.
- 4.1.9 Faculty should be able to attend conferences nationally and internationally regularly based on research output. Presently, a few colleges provide a small sum and matching grants have to be secured from other funding agencies. The process should be institutionalized.
- 4.1.10 Faculties should be able to avail of sabbatical leave to update themselves at periodic intervals for 1 year after a 5-year interval and housing facility retained by them for that period.
- 4.1.11 Dual appointments as honorary teachers, consultants in industry and adjunct faculty in other scientific institutions should be permitted. Guidelines for all such procedures must be set in advance and be unambiguously explicit.
- 4.1.12 A mechanism for 'Adjunct faculty' needs to be put in place. 'Adjunct Faculty' should only be considered on an ongoing project that should be research based. In the modern system, there is an increasing need for 'Adjunct Faculty' opportunities. If research faculty are given adjunct distinction, it gives them their due and a further incentive for collaborative research.

- 4.1.13 IPR culture should be encouraged when a patent is licensed. Scientists should be permitted in setting up the industry as consultants while lien in the faculty appointments is retained.
- 4.1.14 A security policy e.g. - cheap housing loans and tax incentives should be available.
- 4.1.15 Faculty pay scales should be disconnected from bureaucratic scales because of their long training period and triple functions of teaching, research and patient care. Their cadres may be revised and current time bound promotions, as recommended by the Dhar Committee, should be discontinued. However, fast track promotions for the achievers must be available.
- 4.1.16 An exclusive Research Cadre with career growth should be considered in institutions that can support such cadres. Currently, most of the institutions do not have such an exclusive research cadre and in-built career growth.
- 4.1.17 The Javed Chaudhary Committee report (2005) has addressed the actual situation as it prevails and contains salary and tax recommendations. These must be followed up for further discussions for implementation.

Recommendations 4.1.1 to 4.1.17

If-not Scenario

Faculty:

If those opting for a career in teaching, academics and research are not provided the environment or the encouragement to give their best, we are likely to lose them to greener pastures, corporates or industry where they may be misfits; thus, the country loses on all accounts. If we remove the obstacles, offer level playing fields, we can reap the benefits of a knowledge based society and perpetuate the 'guru shishya' tradition.

SECTION D

Students

The mission, goal and objectives of medical education are to put medical students and the community at the centre of the medical education system and assess outcomes on the healthcare of the nation. In order to achieve this goal the regulatory authorities, as already discussed, must accredit the institutions and educational programmes. Consequently it should be possible for students to be aware of the status of the institution that they care to join in the prospectus.

5.1 Issues specific to students are as follows:

- 5.1.1 Admission and selection policies should be transparent and the same in the public or private institutions.
- 5.1.2 Students should be part of the Curriculum Committees and actively involved for the feedback systems on the quality of education being imparted by the teachers. Standards of conduct of teacher learner relationship must be defined and violations addressed.
- 5.1.3 A programme of day-to-day student progress monitoring should be done and 50% marks from these assessments used for evaluation in the final year-end exam. Students must be aware of this procedure and procedures for National Exit Exam.
- 5.1.4 Scholarships/grants must be available to disadvantaged meritorious students irrespective of any reservation policies. A National Fund with contributions from Government, foundation trusts, philanthropies and private sector are needed and would be possible if a proper and transparent structure is created.
- 5.1.5 A formal course of research methodologies should be introduced and students can avail of this by elective postings. Short-term fellowships exist with ICMR and should be increased and made more widely known. Initiation into research could inculcate the habit of framing a question, drawing up a methodology and reaching a conclusion. However additional opportunities for those who wish to choose a career path in research must be available. Some of the ways to do this are as follows :

1. Those promising in research be given a mechanism to work with scientists and specialist elsewhere.
2. Optimal time out during rotation postings to work with a mentor.
3. At a national or regional level these should be creation of "a group" through e-mail and internet as a forum of discussion can be encouraged. (CMC Vellore has made a start in this direction already but the network needs to be nationwide.)
4. Adequate residential and study space with messing facilities and lounge areas must be provided.
5. Counselling must be available not only for academic purposes but also for personal problems and for adjustments to the physical and emotional demands of medical colleges.
6. A system of appeal must be in place to address problems that may arise from assessments both internal and external.
7. Students should be advised on a health insurance cover. A guideline to institutions on the necessary immunization shots for the health and safety of students must be in place.
8. A health care facility must be available and institution should have policies addressing student exposure to infections and environmental hazards.

PART - II

SECTION E

Education for Community Health

Not only medical education of physicians, described in the earlier section, but all Health Human Power Education in India is at the cross roads. On the one hand we have large areas of the country served by poorly supported primary health care systems, while on the other hand, we have urban areas that are often over-served by poorly regulated and commercialized health care services including secondary and tertiary care. Making this paradox even more complicated is the fact that there has been a phenomenal growth of medical education in the private, commercial sector with a fall in standards due to the regulatory councils not being able to maintain standards and an overall lack of creativity and growth in the planning - quantitatively and qualitatively - of other members of the health team especially the nurses, para-medicals and auxillaries.

The human power development for health must have a broad lens covering medical education, nursing education, pharmacy, dental, other systems of medicine as well as training of auxiliary nurse midwives, anganwadi workers and community health workers and other para-medical staff.

Community health orientation of health human power is not a new imperative. All expert committees have suggested health human power to support the doctor. The Srivastava report (1975) mentioned a health team "consisting of nurses and para-professional and semi-professional health workers" - who would work as an integrated team responding to the primary health care needs of the country. Fifteen years later, the Bajaj report reiterated the same and some new policy directions including:

- Innovative linkages between health care delivery and education in health sciences;
- Optimal utilization of practitioners of Indian System of Medicine and Homeopathy;

The scenario in 2007 is complex and any human power development initiative in health must also recognize some the following factors:

1. A need to recognize large-scale market failure in health professional education during the last two decades. Private capital has almost entirely catered to the 'highest' end of the market (producing doctors based on capitation fees), while neglecting all the rest - including nurses, paramedics and public health professionals. There is, therefore, a need for comprehensive regulation of private medical education and we should recognize as a corrective to market failure the need for definitive state intervention in health professional education, with community orientation and accountability to people. The earlier section has strongly identified this problem and made important recommendations.
2. There is a need to recognize that the convergence of class, caste and gender hierarchies entrenched in Indian society are reflected in the field of health professionals. This creates an iniquitous 'hierarchy' with the specialist doctor on top and the *dai* at the bottom. To counter this will require a strong, conscious strategy to raise the social and professional profile of neglected levels, including nurses, paramedics and public health professionals.

Health human power professional education reforms cannot, therefore, take place in a vacuum.

They would only succeed if they tackle the above challenges. This would require among others

- Major expansion and strengthening of the public health system;
- comprehensive regulation of private medical sector and private medical education
- community orientation of the entire health system
- making public sector health services attractive to both doctors and patients by means of improved resources and career options.

A special group³ constituted for the purpose of exploring the challenges for education in community health reviewed all the existing initiatives and innovations in the country. The recommendations suggested by this group are contained in this second part of the Report.

1. The Government has recently taken two major steps in the field of Community Health:
 - a) Setting up the National Rural Health Mission (NRHM) – Government led
 - b) Strengthening public health capacity in the country including the formation of the Public Health Foundation of India (PHFI) – Government supported

³ Composition of this group is given at the end of the Report.

This indicates that the Government is cognizant of the lacunae in primary health care and public health in the country and is actively considering efforts to strengthen them. The group supports these efforts as being in the right direction.

2. The group suggests that the medical education recommendations of the previous section be complimented by a process of health human power development that includes primary health care providers and public health practitioners that strengthen organized public health / primary health care systems of government. In addition to increasing the training of existing cadres, some new cadres have also been suggested based on both micro (NGO) and state level (government system) experiments with such cadres in some parts of the country. This includes ASHAs at the lowest level, complemented by ANMs and Anganwadi workers and multi-skilled para-medics as well as nurse practitioners. In addition, the public health component of the health system should be strengthened by a range of new public health providers.

The Group feels that at the village level, the health services should be rooted in the community. In the NRHM, it is the female ASHA.

- **The aim of the recommendations is to locate the ASHA in a new system with career opportunities and with the sensitization of Panchayati Raj institutions (PRI) and Community Based Organizations (CBOs) to support the ASHA.**
- **Additionally, establishing other cadres of health workers (with emphasis on nursing, public health and paramedical) to provide the support system to the ASHA.**
- **All these cadres are mentioned in this section and would facilitate an alternative model.**

6.1 The ASHA in the system

Currently:

- 2,28,939 ASHAs selected (NRHM, Dec 2006)
- 1,17,884 ASHAs in position after orientation training (NRHM, Dec 2006); In the recent budget speech, over 2 lakh ASHAs are supposed to have been trained.
- 54,248 ASHAs provided with drug kits.

The NRHM, launched on 12 April 2005, provides an opportunity to redefine the public sector health care system by introducing at the village level a new worker, the ASHA. The focus, however, must not be – as it is currently - exclusively on the ASHA, with the motivation being to reach a target number of health workers labeled as ASHA in the system. It is important to place the ASHA in the context of the other health and medical manpower existing, or visualized, in the system that the ASHA operates in. It is therefore first necessary to define the role that each component in the system has to play – training and planning should follow and be congruent with the role each component is expected to fulfill.

Problems with the ASHA scheme:

- It has enormous potential but the lessons are not learnt from similar previous unsuccessful schemes; the planning and the training are very inadequate.
- There is still much to be desired in the selection process of the ASHA
- Right now she essentially becomes a sales agent for the health system. Moreover, the remuneration is more oriented to the role of mobilizer (maximum focus is on Janani Suraksha Yojana) than a health provider. Should this be the primary concern, because IMR has come down even with domiciliary deliveries and without institutional ones being in place? The problem right now is that this might be the wrong focus.

Nevertheless, in spite of all its imperfections, the NRHM is an opportunity to build quality-based skills for the community health provider. There is a need to develop a more detailed blueprint of an ASHA and utilize the potential. The need is, therefore, to understand her job description correctly and accordingly do the right kind of recruitment, equip her with training and evolve monitoring schedules. The roles and function of the ASHA should drive the educational structure and training.

- 6.1.1 The Group strongly endorses the view that she must be viewed as an *accessible and effective health provider* and not as a mere facilitator to make health packets for the system. It strongly recommends that both her role in the health system and the method in which she is trained is reviewed sensitively and modified at the earliest.

- 6.1.2 Currently NRHM is going through a gradual transition – here a group should be tasked with studying the preparatory arrangement required, both in resources and infrastructure, for an extended job description of the ASHA. The group should be tasked with making a list of health problems the ASHA can manage, and in the process, recommend training done on a phased manner for her to carry out more tasks.
- 6.1.3 The training of the ASHA, currently of 23 days, is too short. At present, the ASHA is being utilized as primarily a mobilizer – taking the patient from one place to another etc. – and for this purpose only not much training is indeed needed. What training that does exist is conducted in an unprepared manner and there is currently no evaluation or accountability. The training of trainers is done in 3 days. In this regard, it may be noted that the training of the barefoot doctors of China was a rigorous 18 month training.
- 6.1.4 There is a need to earmark sufficient resources to not only train them but also to ensure constant mechanism to guide them.
- 6.1.5 The payment structure needs to be changed to ensure performance on each of the factors of her job description.
- 6.1.6 To develop a support structure to ASHA in terms of involvement of Social Development agencies.
- 6.1.7 She should be distinct from Anganwadi structure as the anganwadi structure is more focused in performance on balwadi and supplementary nutrition. Anganwadi worker therefore becomes more anganwadi centre based than doorstep extension health worker, as the ASHA is visualized to be.
- 6.1.8 There is need to have career path to ASHA. She should have the option to study further through open school i.e. 10th pass and then proceed for ANM training.
- 6.1.9 The confidence levels of these workers can be extremely low and that needs to be built up very sensitively by actually inducting confidence generation within the training

programme itself. Besides the ASHA training curriculum being too short, the entire confidence build-up of a semi-literate women in a marginalized homely area has not been appreciated by the training or given sufficient thought in the making of the ASHA training modules. This point would equally apply to the training of nurses and paramedical workers addressed later in the report.

Primary Health Care Providers

The problem:

One of the fundamental problems of the public health system is the inability of the system to find doctors to work in rural areas. The problem is also there in terms of finding nurses or even ANMs to work in such areas.

The determinants:

Part of the reasons relate to governance issues and poor workforce management— stupidly low salaries, lack of incentives for more difficult areas, discriminatory transfer policies, failure to implement promotion policy, complete absence of a career development plan, lack of support, archaic recruitment approaches and so on. All of these no doubt need to be addressed. But we need to note that even despite addressing these issues the problem of lack of doctors/ skilled human resource for rural areas is so acute that it would not go away.

The attempted solutions:

We note that the mainstream approach to solving this problem of scarcity of human power in rural areas is twofold:

- a) Increasing medical colleges and nursing colleges and allied profession courses.
- b) Use of compulsion – pre-postgraduate admission compulsion for MBBS doctors, post post-graduation rural service bonds for specialists, and after graduation service bonds for other professionals.

Both of these strategies have limitations.

The Limitations of the “expanding professional education” strategy:

We know from the Andhra situation that such expansion of medical and allied professional education in the private sector has not helped. The vacancy position remains grim despite a massive expansion- of ANM, nursing and medical education. It only adds problems of loss of quality and of overcrowding and commercial pressures leading to a loss of ethics in the urban

context. In Tamil Nadu the expansion of medical education on the other hand has been in the public sector. We need to study whether it has made a difference to outcomes. The problem of medical and allied vacancies seems to be less – though exact details are still needed. However the problems of Andhra Pradesh are still there. These are broad sweeping perceptions (perceptions gained during developing strategy for these states) and needs substantiation from more structured studies.

The Limitations of the “compulsion strategy”

Compulsion fills up vacancies – much more at the apparent level than at the real level. It also provides a poor quality person for these jobs, and with very short term commitments to working there. After all, one can force a horse to the water, but one cannot make it drink. Adding on accountability compulsions through empowering panchayats can get some results but that too falls short. The core of the doctor- patient relationship is about trust, which requires a willing and caring health care provider, not a coerced one.

Also as a principle, a long term solution that is looking at a forced arrangement is poor planning. It is a paradox that while we insist on rural health provisioning by the government as a measure of making it more democratic and people friendly, the best solution we can come up with it is to use ‘force’ to get professionals to go to work in such areas. Force used by such a state would always lead to serious problems of governance (note for example what is known as the transfer industry).

What needs to be ensured for the medical dimensions of community health is that care at the doorstep is required, which a caring profession or highly motivated NGOs can only deliver. The proposal for creating a 3-year short term course to provide a Community Health Practitioner was discussed, but in light of previous experience with such an experiment, it was felt that it may not be the ideal solution for forming another cadre of health care providers. Instead, the Group felt that the thrust should be on:

- a) better using the potential of nurses and paramedical workers in the health system including the ASHAs, Anganwadi workers (AWW)ANMs, Nurses and Nurse practitioners ;**
- b) along with better linkages with an expanded cadre of non-medical ‘public health’ providers and with practitioners of Alternative Systems of Medicine.**

Why is rural service so poor in job satisfaction to the medical professional?

One problem in getting the right type of students to join is that given the fact that the medical profession is a position of privilege and authority and job security, there is a pressure from all sections of society to be able to access this. As a result most medical students tend to come from more privileged sections of society. Contesting this, to the weaker sections it becomes a question of equality of opportunity to enter the portals of privilege. There has always a sneaking suspicion that 'merit' is a reason conjured up to maintain the privileges within an upper crust of society. (Historically this is true and indeed it is curious that entrance examinations for entry into medical colleges arose in a particular phase of post French revolution France in the 1890s precisely in this context. The aristocracy of merit has been discussed at length in some historical texts – like Birth of the Clinic by Foucault).

Whatever the reason, one thing is clear that those who do get selected by the current selection process would not like to work in these rural areas due to their backgrounds and aspirations and those who would be happy to work in such areas cannot get selected. A small section of the latter does enter the professional course with such a motivation, but then the nature of professional education is such that at the end of five years this motivation has been replaced by the usual drive to urban and disease centred perception of professional goals. This occurs because of the way knowledge in this domain has been shaped.

The nature for insisting on a high measure of "merit" to get selected is not clear. If medicine is a science- and not like music or painting an individualized skill/ talent- then we have to agree that though the time taken to master it is variable – potentially everyone who can pass school can also learn the practice of medicine. If on the other hand we insist that the practice of medicine is a special talent or art– then even more the entrance examination is irrelevant. Even aptitude for the course is not objectively measurable.

As we go down the privilege gradient this phenomena of "wanting to enter into this profession but work only in urban areas" becomes less for nurses, the pharmacists and then laboratory technicians and then ANMs and male paramedicals – but it never quite disappears.

An approach to creating Health Human resources for health care provision in rural areas:

Starting from the bottom of the pyramid, the Group suggests ways of creating the human resource needed on a sufficiently massive scale to meet the needs of the public health system. Amongst female workers it is ASHA, ANM, nurses, and nurse practitioners. Amongst other paramedicals (male and female) it includes a number of different job descriptions which are discussed in some details below. Furthermore, linkages with a much expanded cadre of 'public health' providers and with Alternative Systems of Medicine are also addressed below.

7.1 Cadre of Nurses for Community Health

Currently, most nurses in service are diploma holders and 4 states (Karnataka, Tamil Nadu, Maharashtra and Kerala) have a disproportionate share of nurses. It is imperative to recognize the contribution nurses can make in the public sector health programme by upgrading their skills and providing expansion of the nurse training programs to include Clinical nurses, Nurse practitioners and Nurse anesthetists.

The all India data on staff nurses working in rural areas (Govt.) as on 31-03-2001 is as follows: -

Required	Sanctioned	In Position	Vacant	Shortfall
44,143	32,723	27,336	5,495	20,824

Source: PHS Section, Ministry of Health and Family Welfare, 2002.

Countries like USA, Australia, New Zealand and the UK have training programmes which prepare the nurses for community level care-managers, independent practitioners, Nurse practitioners and Nurse Consultants successfully. These countries have used them to provide services of health promotion, therapeutic intervention and rehabilitation, providing pain relief, counseling and primary medical care, midwifery and assessment of vital signs. Similarly, training and delegation of functions after due training is required to be done by us to meet the gap, bridge the urban-rural divide and widen access to care. The best possible option for us is upgradation of nurse professionals to undertake a set of primary health care tasks, which are at present entirely the domain of doctors who are not available in the Primary Health Centre.

The training of nurses is a strategic advantage as they are already in the allopathic stream and also have gained sufficient patient management skills at the end of the nursing course. Nurses are allowed to treat minor ailments and to handle the drugs given under the National Health and Family Welfare Programmes. Recently the Drug Controller General has further approved ANM's, LHV's & Nurses to use selected life saving drugs in obstetric emergencies.

Then next question is which cadre of nurses do we select for training? Graduate nurses, like graduate doctors, are urban centred, have aspirations of migration to greener pastures – therefore these factors need to be considered.

7.1.1 There is a need to create trained health practitioners for every level of the health care system. The health cadre proposed should have:

- i. *Community Health Worker (currently, the ASHA)*: At the lowest level there is the training for the Community Health Worker. A certification from the National Open Schools along with a 8th class or 10th class degree is possible. Such certification is possible and necessary. Approximately there should be one such certified person in every single habitation – i.e. approximately 10 lakh such people would be required. They would assist in health education, health promotion and what is known as first contact curative care. These would all be persons resident in the area and paid for by local mechanisms.
- ii. *ANM: Vocational Stream of Schooling*: At the next level those with tenth class pass certificate could get their 12th class certification in a vocational stream that leads to an auxiliary nurse midwife course. This would be the two year course.
- iii. *Nurse Diploma and Graduate Nurse*: The ANM, in turn, could go for a further skill upgradation for one year to a nurse diploma or a three year programme which would make them a graduate nurse. Both of these would be available as distance education modules for those who are in-service. A further two years could offer them an option -- either a nurse practitioner degree or a post-graduation in nursing. The Nurse Diploma candidate should be trained for being a rural health care provider at the PHC level.

7.1.2 *Establishing Nursing Schools:*

It is important that all these schools should be located only in remote areas – based on existing poor health status, high current vacancies and even amongst those existing employees who want to stay on and work there. It is recommended that, over time, every district hospital have a nursing school attached to it. Also largely it is in the nature of in-service training or pre-service(committed) public health service cadre; though such human resource, once created, could also set up private units with contractual arrangements or work in the private sector in such areas. These candidates are sponsored by the community of these remote areas based on criteria of who are likely to come back and work in their respective areas, and/or on the basis of work performance to date.

7.1.3 *Finding the tutors:*

The tutors for these districts need to be created. For the teachers in the open school (high school and higher secondary), special orientation and teacher training programmes would need to be organized.

In addition since practical training would have to be in the district hospital a number of nurse tutors would be required for both the community health worker, the nurse midwife, the diploma nurse courses and, for these, nurse tutors could be trained in the state academy of nursing. For the graduate nurse courses and for the nurse practitioner courses, a few nationally accredited institutions should be funded to conduct M.Sc. nursing courses. The weaker states would send in graduate nurses to get trained in these centres.

The State Academy of Nursing should undertake nurse training, support training centers to achieve quality of training and should otherwise lead human resource development for the nursing sector.

7.1.4 *Qualifiers to this alternative proposal:*

We note that though there are reasons why one may want to make “a globally competitive nurse” given the huge international market for nurses, this proposal is really looking at addressing the age-old problem of lack of nursing and medical skills for rural areas. This proposal for orienting nursing education to meet rural health care needs therefore needs a set of minimum qualifiers to prevent its goal from becoming the

production of “expanding nursing education for producing a globally competitive nurse” which otherwise left to market forces is precisely what would happen. These qualifiers are;

- a) Medium of education should be the state language - not English.
- b) Course should be open to only those resident in the underserved blocks and sponsored by the community there.
- c) Nursing training centres should be opened in blocks and districts where the need is most.
- d) The production is largely geared to the public health sector and serving public health goals – with some flexibility in the understanding of what public health sector is. This could also allow for contractual arrangements between paramedical complexes or maternity huts or other forms of rural practice by such nurses where the health department reimburses costs of the poor, or even service in private hospitals in such areas etc. In some sense the government is committed to either absorbing all the nursing human resource created under such a plan or into helping them get established and contribute to rural service delivery.
- e) Simultaneous planning for getting adequate nurse tutors and for oversight on quality issues must be put in place.

7.1.5 The diploma nurses, therefore, can be considered best for further upgradation to take care of rural health care needs. Today, 40,000 Diploma Nurses are trained every year. This recommendation is made in the current backdrop of the NCI having taken a decision in 2001 to upgrade all diploma schools of nursing to graduate colleges, and to discontinue the diploma course from the year 2010. This step should be postponed and diplomas continued after pilot studies and through discussion with NCI.

7.1.6 While making these recommendations it is necessary to note that the Indian Nursing Council Act has to be amended so that these courses can be offered by state council hospitals and special educational institutions in the NGO, CBO and mission hospitals and they can be registered in the state councils and allowed to practice. The programs offered should be strictly monitored and regulated by the Nursing Council of India.

7.2 *Tackling the nursing crisis in secondary and tertiary care*

One of the major health human power development challenges in India currently is the acute shortage of nurses with an over production of doctors. While all the recommendations above have focused on the nursing education response to primary health care challenges, this overall shortage must be addressed quantitatively without reducing qualitative and clinical standards of nursing education. There is reason to believe that rapid privatization of nursing education affecting standards and reducing quality – the same as experience as in medical education is taking place. Some of the recommendations made in Part – I of this Report on private medical colleges may also apply to the nursing colleges.

7.2.1 *Towards Clinical Nurses:*

The state should open nursing schools in the public or regulated private sector in the larger cities for graduate nurses where English medium is also offered. These would serve the unmet need in the country. There would also be the requirement for specialist nurses – pediatrics nursing, cardiology, emergency care or intensive care nursing, etc who would emerge from special courses in the graduate stream.

The voluntary sector and the Christian Medical Association of India have been running a nurse anaesthetist course for 3 decades for diploma nurses. However, despite high demand and a desperate need for these, the course had to be discontinued because of the recognition and legal problems posed by NCI and Courts. The CMC Vellore, Nursing College has started a pilot project of the Family Nurse Practitioner for B.Sc. nurses. Such innovative initiative should be encouraged and obstacles posed by the Nursing Council and Courts removed to meet the needs of the country.

7.2.2 With reference to graduate nurses, not only specialized nursing courses be provided, but nursing research in the leading nursing colleges should be encouraged. In line with the ICMR, a council for Nursing Research, should be formulated and designated funds made available to improve the body of research and knowledge among nursing personnel. This Research Council could also study the effectivity of different cadres and levels of nursing to meet public health and primary health care goals.

Recommendations 7.1.1 to 7.2.2

If-not Scenario

If we do not do this or learn from other countries and mission hospitals in our country, then the primary health care scenario will never change. We should seize the opportunity of medical graduates not providing rural care to upgrade the nurses, expand the access to healthcare, provide employment for a noble cause, elevate their status and prestige and diminish the gender bias in Indian Society.

8. Cadre of Paramedical workers

8.1 Peripheral – Outreach and Facility level Paramedicals.

There are paramedicals other than nurses that are needed for effective health care provision.

These include extension health workers for health education and community level health services. Typically, this is referring to the male multipurpose worker.

Then there is support staff - other than nurses - to the curative health care provider in the peripheral health facility. At the periphery, there is a cadre of dresser, one of compounder, one of pharmacist and one of laboratory technician. At the CHC, there is the X ray technician. There may also be an ophthalmic assistant. Also available in the periphery of the public health system are a number of supervisors who are available for provision of such services (one female supervisor per six sub-centers is adequate whereas in many areas we may have one male and one female supervisor per 3 to 4 sub-centres). Given the limited attendance expected at a peripheral primary health care centre, it is unlikely to provide work for an 8-hour day for all these staff. The PHC thus loses economic viability and there is a serious underutilization of staff even where there is a constant refrain of high vacancies as the cause of poor service delivery.

- 8.1.1 There is urgent for recreating the Multi-skilled Health worker who can provide all these above services – but also continue to manage some of the public health functions,

the earlier male worker used to perform. The Multi-skilled health worker would have the following skills:

- Health education/ communication
- Giving Immunisation.
- First aid/Dressing of wounds and injuries and first contact care of ANM level
- Laboratory assistant skills of basic (side – lab) level.
- Compounding and drug dispensing skills,
- Eye testing for refractory errors.
- Xray machine operation.
- ECG machine assistance.

These could be done through two year 12th class equivalent vocational stream and then a one year diploma or a post school three year graduate course. The three year course to produce an alternative doctor will be resisted by the Indian Medical Association and Medical Council. The fear that they would only over crowd the already over crowded urban private health sector without increasing access to the poor are probably justified. On the other hand such a multi-skilled paramedical health worker would be essential in public health system and in every private nursing home. We note that this is what all private nursing homes have anyway – though trained on the job. In the public health system their skills – if taken along with the nursing skills- would be adequate to provide all services that the primary health centers are today providing and therefore the PHC becomes viable for service provision even in the absence of a doctor.

8.1.2 This too could be, for remote areas, offered as a two year vocational stream at the plus 2 stage and/or distance education programme for the diploma and degree stage with enough practical training in the district hospital. All the government cadre currently in these posts would also have or get re-skilled accordingly. The current MPW course is in most states a dying cadre with inadequate and non functional schools and these can be fully replaced with the multi-skilled paramedical worker programme. The general principles of organizing these courses and ensuring that they meet the needs of underserved areas is identical with what has been articulated earlier for the nursing profession.

8.1.3 This Multi-skilled worker is different from the public health manager at the block level that is also being considered at policy levels. This public health manager would need to

be a post-graduate, if not a medical officer with public health training. This is being mentioned only because a number of states are agreeing to the three year B.Sc. health worker keeping the multi-skilled worker in mind while at the policy level it is being confused with the block public health manager.

8.2 Hospital Paramedicals:

Another category of para-medicals are needed for hospitals.

These are Radiology technicians, Laboratory technicians who need to go much beyond what the peripheral laboratory provides, ECG technicians, assistants in microbiology and pathology departments.

- 8.2.1 The existing paramedical institutions should be strengthened to provide these courses with a much higher level of content and outcomes. This course could also be an upgradation post graduate diploma or degree for those in the public health sector who have the basic three year paramedical degree and some years of service - for such posts would be needed only in district hospitals and tertiary health care systems.
- 8.2.2 Many States have enacted paramedical council acts which provides a legal basis for these courses. These would need to be examined and a standard policy on paramedical courses would be required.
- 8.2.3 One area of neglect within paramedical planning is constant quality checks and a policy for creating adequate quality tutors for the course.

8.3 Allied Specialties: Allied Specialties as different from para-medicals and nursing are – Physiotherapy and Dental Professions. These need to be studied and discussed separately.

8.4 Specific Technical Areas: Other specific areas that need to be addressed are courses like medical entomologists, psychiatry social workers, health and sexual health counselors, opticians, audiologists, speech therapists, artificial limbs technicians, bio statisticians, demographers etc. There are both national and international needs for such human resource. Again national planning needs to be supplemented by state planning to ensure that all states have requisite skilled professionals in such areas.

8.5 National recognition and regulation of paramedical workers

- 8.5.1 A Paramedical Council of India needs to be created to give an overarching structure for the recommendations proposed above.

9. **Community Based Organizations (CBO) & Panchayati Raj Institutions (PRI)**

Whilst the ASHA might need referral support from the system, her accountability to the community needs to be strengthened through sensitization of the community as a whole because if partial privileges are given to certain segments of the community – be it a woman or be it a man at any level – it will create again another exploitative cadre within the peripheral community itself. So it is necessary that while specialized training is given to the community health worker, the community too must play a role and be sensitized as a whole. For this reason, the Group suggests that a whole course for the sensitization of CBOs and Panchayati Raj Institutions is *as important as* the raising of technical or health provider cadres. The health sensitizing content also needs to be developed and widely disseminated.

- 9.1.1 Training for both the above institutions is mandatory, because of the vital role that they can play in their facilitation, watch & governance roles. The mode of education must be in the adult learning mode, which will be best facilitated by lateral linkages.
- 9.1.2 A cadre of trainers will be needed. Experience has shown that medical personnel are not the best trainers at this level. The course content of this training however can be similar to the diploma in public health discussed earlier. The overall aim of such a training course is to achieve a convergence with the non-medical aspects that are more crucial for public health than curative medical care and for the local community to have a more cogent say in issues related to their health.
- 9.1.3 PRIs also need appropriate training otherwise they follow or copy what the MLAs or MPs do. Development means construction, hand pumps and employment; health is not their priority. Suitably trained they will be more productive and ensure administrative and peoples participation and can do lobbying and advocacy with policy makers.

Recommendations 6.1.1 to 9.1.3

If-not Scenario

If the selection process of the nurses and parameds is not rooted in the community, then retaining them in the rural areas will be difficult. Their training should be alternated at specific intervals with service in the community, as done in the Philippines model. Otherwise, we would be training more than can be absorbed in the system.

LINKAGES

10.1 With Alternative Systems of Medicine

In historical context

In 1956, government appointed the “Dave Committee” which recommended a 5½ year graduate course of integrated medicine, but instead government in its wisdom created the Central Council for Indian Medicine (CCIM) in the same year, which was supposed to regulate various indigenous disciplines of medicine. We now had 2 separate councils – the Medical Council of India (MCI 1933, amended 1956) for regulating modern systems of medicine and Central Council for Indian Medicine (CCIM 1956) for regulating various Indian systems of medicine, this sowed the seeds for misuse and abuse of both systems of healthcare with total disregard to the needs of the people. Twin Curative Towers had been created.

Recommendations for integration received a quiet burial without trial, and no subsequent committee talked about integration or considered it. This ended the Bhore Committee, Chopra Committee and Dave Committee recommendations. The real casualty in this situation, not considered or understood either by the curative towers or the government, were the preventive public health services and the preventive strategies present in the colonial era as a specific sub-set and conceptually different from the curative medical services, were forgotten, disbanded and merged with the medical services, which progressively got deteriorated, because resources were diverted to the Curative Towers.

There are two opposing views on these systems – on whether to integrate with modern systems or not. One view is that basic principles of the two are entirely different and combining the them will work against the fundamentals of each system as is happening

today. What is needed is strengthening the Indian systems of medicine at graduate, postgraduate and in service training with research avenues to preserve and advance our heritage.

On the one hand, comparative clinical validations in conjunction with cost effective analysis and translatory mechanism based research, which is entirely possible today with modern bioscience tools should be the key areas of research in integrated medicine. Prototypes that reflect the above need to be designed. Such research will feed into a dynamic, evolving system as well as add on newer paradigms of knowledge for both the ancient and the modern systems to continue evolving. The confidence reposed by the community in these systems should provide them the choice of highly trained practitioners in these systems.

The other view is to integrate the 2 systems at the primary care level because practitioners of the ISM systems are already practicing in rural areas and small towns and so are readily available there. They should be given a short certificate course in allopathic medicine to enable them to function more effectively and efficiently. Under the NRHM, if the “ASHA” can prescribe 4 drugs and village health worker can provide more than 20 drugs, why can a qualified practitioner of ISM, who has gone through basic studies of anatomy and physiology, not prescribe allopathic medicine for minor ailments and Primary Healthcare? Their training should lay emphasis on the limitation of either system at the village level and the need for referral to a higher level at the appropriate time.

- 10.1.1 At the clinical level, integration would be a short-term solution, but at the knowledge level, there is a need for a joint effort between reputed practitioners of the modern and traditional systems to evolve a translatable integration spanning philosophy, concepts, hypothesis, procedures and treatment in the different streams. A convergence of thought is specifically needed on the mechanisms of intervention in the different systems. This is not going to be an easy task given the defensive attitudes such an exercise is likely to engender.
- 10.1.2 However difficult, a concerted effort should be initiated to define how integrated medicine will be practiced – e.g. as an outcome of patient choice in a joint consultation as done in China or as an integrated therapeutic tool. The safety aspects of integrated

medicine will need to be considered, a key area here is that of drug interactions within and across multiple health streams.

The Kottayam Experiment (1972-76)

The Kottayam experiment was the forerunner of the integrated teaching approach whereby a student has a holistic view of medicine, with clear goals of community medicine as well. In this experiment, the curriculum content and the process evolved from classroom interaction between the teachers and students based on feedback from community experience, beginning from the first semester itself. A small multidisciplinary core team functioned as both instructors in all the subjects, and supervisors of all the learning experiences. This experiment was directed towards integration and community orientation at all levels.

Not surprisingly, the established medical education system did not take this experiment seriously. However the government of three southern states adopted the course outline and elements of the experimental course for B.Sc. Public Health Nursing (Kerala), Health Assistants (Tamil Nadu), and B.Sc. Health Sciences (Andhra Pradesh).

Source: G. Dutta and R. Narayan (2004)

LINKAGES

11. With 'Public Health' Providers

We know today that the system of medical education has not prepared medical graduates to go to serve in rural areas and urban slums where the majority of the population lives. The question that arises is: do we need highly trained medical graduates to tackle common and minor ailments? The global experience of developed and developing countries show that properly trained public health and health care providers can do this job effectively, efficiently and safely. Why, then, not in our country where there is no shortage of human power, where it has only to be provided the opportunity to develop skills suitable for the services required? Public Health and Primary Health Care training courses need to be developed nationally delivered decentralized near work places and assessments to be done locally & used for further training.

Community Health has two dimensions – medical and non medical. The non-medical dimensions that impinge heavily on public health such as education, housing, water, sanitation, environment, law and finance, need human power specifically trained for these skills and not medical graduates. Today we have no such training programs or cadres. The Public Health component in the curriculum of the undergraduates is inadequate and needs

to be strengthened and spread over the entire period of their training – i.e. 1st Year to Final Year (*Linked with recommendations in 2.8 above, specifically 2.8.2*). The medical colleges award MD degrees in Community health/Public Health and the training seats available are only 269 across the country for medical graduates only.

Public Health Capacity Building

- 11.1.1 A massive expansion of the Public Health Training facilities is required to include 3 levels of Public Health workers to work in the community, at the Primary Health Centres, Community Health Centres and district hospitals as follows: -
1. Diploma Course – 1 year
 2. B.Sc. Course – 3 years for lateral entry and 2 years for Diplomates
 3. Masters in Public Health 3 years for B.Sc. & 5 years for 10+2 students
- 11.1.2 Graded responsibility with emphasis on practical “hands on training” is essential. The diploma and B.Sc. should be open to all students of 10+2. They can be attached to departments of Community Medicine in all medical colleges, can be run by all Universities, all district hospitals and Public Health Foundation of India.
- 11.1.3 The Non-Government Organizations (NGOs) & Community Based Organizations (CBOs) working in the field should be inducted as trainers to provide expertise and training to all levels of students for the public health cadres. These courses offered should have a strong practical orientation and include project work in appropriate field settings.
- 11.1.4 The curriculum should include principles of public health, introduction to biology of health and disease, nutrition, survey methodology, surveillance systems, behavior changes, communication skills, health systems in India, national health programmes, basic lab methods relevant to public health, food and water safety, air quality testing, environmental sanitation, emergency medical care, disaster response, occupational health and introduction to health management.

- 11.1.5 The masters programme must provide structured learning in public health related principles. They should integrate the disciplines of epidemiology, biostatistics, demography health economics, behavioral and social sciences, health communications, ethics human rights, health management and planning, environmental and occupational health which equip the students with the knowledge and skills to enable them to contribute to strengthening of health services health policy and research. These should be open to physicians, non-physicians and B.Sc. graduates. They can be run by all medical colleges and Universities.

11.1.6 *Community Medicine / Public Health Specialists*

While the above 3 levels of public health professionals will help strengthen the public health system in the country – the existing MD course in Preventive and Social Medicine and Community Medicine will continue to provide higher level specialists who will support the planning, higher level programme management, higher level administration of the public health system and national health programmes and the training and research efforts at State and Central level.

Public Health System Building

- 11.2.1 A specific public health cadre needs to be established in the state and central Ministry of Health to provide career growth for these personnel upto the level of the Director General of Health Services. Their emoluments should be in line with the state medical cadres with an added hardship allowance to make it more attractive, acceptable and prestigious. The postings will start from the PHC level and proceed upwards to include municipalities, industrial settings and Government cadres.

In future, a Public Health Council is needed to be set up by the government in collaboration with the key institutions and associations of public health professionals in the country to accredit these courses, monitor and evaluate standards and evolve methods of registration and continuing education to strengthen public health capacity building. A statutory health council should be charged to monitor the functioning of these Public Health providers at all levels. National course

modules should be prepared for decentralized delivery and assessments made both formative and summative at completion of the course and used for preparing a cadre merit wise.

In Conclusion

1. Urgent need for strengthening public health / primary health care

In a study conducted in rural UP in 1995, only 3 % of the medical practitioners were MBBS graduates or allopathic practitioners while 68 % had no training in any form of medicine. If one is to learn from these experiences and correct them, then Public Health & Nursing Courses are a "must" to provide appropriate and safe health human power for the masses rural or urban. In all professions, different grades of service require different levels of skills. An average engineering diploma does not possess the same level skills as the average degree holder but each is vital to any project for their specific skills, similarly at every level of health care specific skills are required and Public Health workers can acquire them, medical graduates are not required to deliver these services.

2. Dialogue and partnership with the community health network in the country

Finally, a strong countervailing health oriented movement has been initiated by health and development groups, consumers and people's organizations, civil societies, that will enhance the role of the community, patients, consumers and the parties in the entire debate on reform in the health and medical sector. Change has been directed and controlled for too long by professional needs, rather than people's health needs. This movement is bringing health care and *community oriented medical education* with its orientation to people's needs rather than the medical market. Future initiatives should be taken by the Health Ministry, Planning Commission and other Councils - who will take up the responsibility to implement the above recommendations to continue such dialogue and partnerships.