

Discrimination in Health Care and the Structure of Medical Knowledge

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How does one understand discrimination in medicine from the point of view of the structure of knowledge?

It is easy to understand discrimination in medicine from the point of view of gender, sexual minority, caste, social category or economically disadvantaged groups. Such forms of discrimination are based on socially exclusionary practices of individual practitioners who fall back on age old prejudices in treating (or not) their patients. However there are discriminations that emerge from the very structure of our medical knowledge. These arise from an insufficient understanding of the disease in the local setting, due to the lack of access to an expensively designed treatment, or due to a treatment inappropriate to the patient profile. This article attempts to explore how developments in our knowledge have led to such structured discriminations in provision of health care in India.

Historical Approach to the Structure of Medical Knowledge

Knowledge is the way we know and understand ourselves. And Western medical knowledge is the way medical people see the patient and understand disease. When we refer to “Western medicine”, we mean modern medicine that was born in Europe and strengthened in Europe and America. It is the mainstream medicine that has been dominant in the West, and now across the world, born of European and Western science in general, its epistemological base, technology, administrative system and overall form.

It is easy to see the evolution of Western medical knowledge, in a progressive manner towards a perfect knowledge or a perfect treatment. However we know that Western medicine or clinico-pathological medicine in the 19th century had its birth within certain historical circumstances in Europe, linked to the development of modern Government . These historical circumstances have shaped the nature of medicine. Studies of the sociology of medical knowledge suggest that specific medical and administrative conditions, constraints and facilitations of research, treatment and policy led to the structure of nineteenth century medicine. These are studies that show how broader social and cultural factors of that time shape our present knowledge of medicine.

Immediately after the World war II, the Labour Government in England established the National Health system and within a decade all the other European Government s followed suit. The right

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to health and health care became a commitment that no Western Government could refuse. The substantial state funding of health care in US, UK and Europe led to hitherto unimaginable therapeutic advances and resulted in what is today tertiary care or specialty medicine. A large number of specialties came into being with different diagnostic and invasive treatment technologies: cardiology is associated with the development of angiography in the 1950s, pulmonology with pulmonary function tests and bronchoscopies and gastroenterology with endoscopy in the 1960s, nephrology with dialysis in the 1970s, haematology with bone marrow transplantation in the 1980's, and so on. These treatments were designed for the health system in the West, for their patients and at a cost that they could afford. However they became the world standard scientific practice. (However, today these treatments are becoming too expensive even in the countries within which they were designed).

Allopathic doctors in India today are trained in a form of medicine that arose in another culture and context [the West]. The model of medicine that doctors are trained in encompasses both technical knowledge (knowledge of physiology, biochemistry, clinical signs, etc.) and social knowledge. It assumes a social context and a health care context of the West. When these practices were transferred to contexts such as India, they carried with them problems of both cost and appropriateness¹. So the question is, which bits of Western medicine are generalisable and which not? How much of that is relevant to a local culture and context? So there is a problem of translation - translation of a Western medical knowledge to another social context.

Development of Specialty Medicine in India and the Profile of Medical Practitioners

From the 1950's onward in India, we have witnessed the development of medical superspecialisation originating from and mirroring similar trends that occurred in US and Europe. During the period 1950-70, the specializations of Cardiology, Cardiothoracic surgery, Neurosurgery, Urology and Nephrology, Gastroenterology became established in medical colleges, with their associated training programmes. In the 1980s and 90s, Haematology, Hepatology, Endocrinology, Medical Oncology, Medical Genetics, Pulmonology and Rheumatology became separate disciplines. Doctors who were trained in Western settings, came back to develop these specialties in premier teaching institutions in Government al and nonGovernment al sector such as Christian Medical College, Vellore and All India Institute of Medical Sciences, New Delhi.^{2,3} Today, there are 33 medical and 12 surgical superspecialty training programmes - the most prominent of which are Cardiology, Neurology, Gastroenterology, Nephrology, Neurosurgery, Urology, Plastic surgery, Cardiothoracic surgery and Paediatric surgery. The growth of the academic specialization has been important for training sufficient specialists in India. However the development of these specialties in India has duplicated Western origin specialties without being fully cognizant of the realities of the local context and local problems (as we will argue in a later section of this article, "The development of specialty medicine and inappropriate treatments: example of cardiovascular medicine"). The

development of these specialties however has provided a large number of specialists to allow for growth of multi-specialty private hospitals.

The development of corporate sector hospitals in the 1980s gave fillip to this specialist orientation, with the development of multi-specialty private hospitals. Till the 1970s, the majority of hospital beds were in Government hospitals. Middle and upper class patients would access hospital treatment in Government hospitals. The scene changed in the next decade, with the arrival of corporate hospitals. The impetus for this seems to be related to the growing number of Indian doctors practising and doing well in the US and the West in general, developing the economic resources, the desire for business and the technical competence to invest in the newly emerging medical industry in India. The neoliberal policies of the Government which provided loans, land, tax rebates, and other subsidies encouraged the development of multi-specialty and corporate hospitals. Starting with Apollo in Chennai, corporate hospitals have grown in leaps and bounds accounting for 70% of the urban health care market with an estimated financial turnover of \$ 20 billion industry in 2010.^{4,5} The growth of specialty medicine has been primarily in the private sector which has 75% of specialists and 85% of technology in their facilities.⁶ At this time of the beginnings of privatization of the hospital based sector, there appears to be a shift in ethical framework of Medicine from a service orientation to provide medicine to common people, to that of a market orientation for accumulating profit through the provision of health care. In the last 30 years, the Government has shifted from being the main provider of hospital based care, to providing “basic treatment” for those who cannot afford private hospital treatment. And modern medicine in India has become synonymous with specialty medicine and superspecialty hospitals, for those who can afford private health care.

There are two parallel movements here. One, specialist medicine in India becomes *sine qua non* to good medicine. The second, market forces in India take rein of specialty medicine to expand it into a business mode. As a consequence of specialty medicine in India over the last 50 years, our cities are over populated by super specialists. And the desired aim of young medical graduates today is to become superspecialists.

Lack of Emergence of Family Medicine and General Practice

Simultaneous to and in contradistinction with the evolution of specialty medicine in India, has been the sheer underdevelopment of “primary care” or “family medicine”. In most countries of the world there have been significant attempts to develop a large corps of multi-competent primary care physicians known as “family physicians” or “family practitioners”. In a move away from the specialist orientation of tertiary care, family medicine in most countries has developed as an important specialty. Underlying this move has been the acknowledgement that primary care requires a different kind of expertise from tertiary care – one that is as specialized in handling a range of clinical problems, with understanding of the patient and the context.

In the UK, the first country to provide universal health care, the National Health System was based on the concept of the Family Physician who provides primary care to the entire population. The specialty of family medicine in this country was developed to train sufficient and appropriately trained Family Physicians for the health service. In all 50% of the students in the medical schools become Family Physicians for the health service. Family medicine consultants have equal status and remuneration as any other consultant. Even as specialty medicine developed in this country, the health system has been able to provide universal health care through the family medicine model.

In India, the discipline of “Social and Preventive Medicine” was renamed “Community Medicine” in the early 1970s. In some medical colleges, community medicine departments had their own service areas, where they delivered primary and secondary health care and performed developmental health activities. However in most medical colleges the community medicine departments had only nominal links with urban and rural health centres and faculty and PGs had little involvement in clinical care. The average MD Community Medicine postgraduate today has little clinical competence and could scarcely be called a Family Physician. However the proponents of the discipline of Community Medicine continue to maintain that Community Medicine encompasses Family Medicine.

Family medicine or the discipline of primary care is yet to develop as a discipline in India with its own training programmes and career opportunities in the health system as the box on the following page explains. The point being made is that Medical Council of India, the Ministry of Health and the health universities have expanded the disciplines of specialty medicine without planning the development of the discipline of primary care. The health system within the country has not developed a good model of primary care, with sufficient career opportunities for trained primary care physicians. Both these together have led to the underdevelopment of primary care in our country. [*References for box section below.*^{7,8,9]}

What is the need for Family Physicians in India?

It is estimated that there are 250,000 doctors who are in general practice either in the Government or private sector, though they have received no specific training in this discipline.

There is a critical lacuna in the specialist availability at the district and sub-district hospitals as well as CHC and PHCs. The current position of specialists manpower at CHCs reveal that out of the sanctioned posts, about 51.9% of Surgeons, 43.6% of Obstetricians & Gynaecologists, 56.6% of Physicians and about 56% of Paediatricians are vacant. Overall about 49.9% of the sanctioned posts of specialists at CHCs were vacant and there is a shortfall of 6110 specialists at this level. It is arguably true that a well trained MD Family Medicine postgraduate will be able to function in the place of these 4 specialists at the CHC level.

Based on the number of community health centres (3222) in the country, we estimate that the total number of Family Physicians to man all the CHCs should be approximately 3000. In addition there should be one Family physician for every district hospital, which would require an additional 640 MD Family Medicine graduates. Since the size of the private sector is 4 times that of the public sector, we estimate the private sector would require 3-4 times the number in the public sector (approximately 10,000) family physicians. In total we estimate that the total requirement of trained MD family physicians should be 14,000.

Today, there is only one medical college in the country which offers two seats for MD postgraduate degree in Family Medicine. The Diplomate of the National Board offers a 3 year postgraduate course in the specialty with 108 seats. The institutions running DNB in Family Medicine are non-teaching hospitals in the private sector. Currently there are about 400 DNB postgraduates who are in the pipeline. This contrasts to a total of 18,414 MD/MS seats, 3935 Diploma seats and 1852 DM/MCh seats.

How does Lack of Development of Primary Care Constitute an Active Discrimination?

Today there are 49,919 MBBS seats and 24,201 PG seats in 381 medical colleges. Today there are 633,000 medical doctors who are registered with the state medical councils. The doctor to population ratio in India is skewed towards urban locations and against rural, tribal and hilly areas and better performing states have thrice the number of doctors compared to poorly performing ones.¹⁰

There is a lacunae of doctors working at the primary and secondary level (in primary health centres, 6.5% of doctor's posts are vacant and in secondary health centres, 49.9% of specialist posts are vacant).¹¹ In a health system, 95% of illnesses should be taken care of by a primary care

physician who would form the majority of the doctors. Patients should be referred to specialists where the primary care physician cannot take care of the problem. The lack of doctors in rural areas and at the primary and secondary level is resulting in lack of access to and poor provision of health care.

Two examples of discriminatory effect of specialization on health care in rural areas are related to blood transfusions and ultrasound examination.

With the HIV epidemic and legislation to regulate blood banks, transfusion therapy requires registered blood banks and qualified clinical pathologists. In small rural hospitals without blood banks, women are dying of antepartum haemorrhage, as the hospitals are not able to cross match and transfuse without an authorized blood bank. The regulation has simply made this vital life support in distant locations scarce.^{12,13}

Ultrasound has become a vital and inexpensive tool particularly in obstetric care. With laws on sex selection, a trained sonologist is required perform ultrasound examinations.^{14,15} Radiology is the most lucrative specialty and it is hardly likely that a radiologist would want to work in a rural hospital. The world over ultrasound machines are being seen as an extension of the examination hand, and will become an essential tool for every practicing physician. The inability to perform ultrasound examinations in rural hospitals can affect critical decision making in obstetric care.

Both these examples, which are doubtless standardization measures, make it impossible for a doctor to function without a level of sophisticated support found only in specialty hospitals. Overall, these steps worsen the lack of a functioning health system and result in poor patients accessing tertiary care in private hospitals leading in substantial indebtedness (12 million or approximately 1% of India's population falls below the poverty line as a result of catastrophic health expenditure). Hence this is not simply isn't a passive matter of doctors not willing to go to rural area or 'inequity' or inability to pay, but of a conscious and active development of the field of medicine in India in a way that creates more specialists and less generalists. It also results in health set ups in rural areas with work conditions that are less than conducive. In the end, it makes for a health care that is inaccessible to the poor. This is a problem not of Western medicine per se, but the problem of transfer of specialty medicine into India, without proper translation.

Development of Specialty Medicine and Inappropriate Treatments: Example of Cardiovascular Medicine

India is in the midst of a twin cardiovascular epidemic, one epidemic among the rich reflecting the epidemic in the West, and another among poor. The epidemic among the poor is actually larger than among the rich, reflecting increase in slum population, high rates of hypertension, smoking, poor diet and high stress. Today cardiovascular deaths are the most important killer in the adult population.¹⁶

Substantial treatment research in the Western countries over the last 40 years has led to development of effective treatment for coronary artery disease. These include drug treatments,

coronary artery bypass grafting (CABG), stenting and thrombolysis. The treatment of coronary artery disease is premised on the availability of cardiologists, cardiac surgeons, coronary angiography facilities and a health system that can purchase drugs for treatment of coronary artery disease.

When Western guidelines are translated into the Indian setting they result in the problem of lack of access and inappropriate care. Today there over 500 cardiac catheterization labs in nearly every metropolitan city predominantly in the private sector, performing more than 70,000 cardiac procedures every year.¹⁷ Very few Government medical colleges have these facilities. To provide personnel to these centres medical colleges admit 265 DM students in Cardiology every year, the largest superspecialty training programme in India. In contrast, there are negligible number of cardiologists in rural locations as evidenced by a study of 8 middle size districts across the country.¹⁸ The management of patients with drugs, bypass surgery and stenting is extremely expensive. Hence this Western form of treatment for coronary artery disease is unavailable for the vast majority of patients with coronary artery disease in this country. When poor patients land up in private hospitals, debt due to the high cost treatment can lead to immiseration of families. In some states in a bid to provide universal access health care, state insurance is paying private hospitals for stenting and CABG.

The development of the knowledge of cardiovascular medicine in India has not occurred in a manner that takes account of the epidemic in India. The unreflective transfer of knowledge developed in a Western population and for the Western health systems to the Indian setting has led to a mismatch between the structure of the health problem and that of the knowledge that is being used to address it. These have led to lack of access and inappropriate care of coronary artery disease. In effect, the lack of access and inappropriateness are discriminatory because the profit orientation of super-specialty cardiovascular medicine that does not consider the accessibility and affordability of this treatment for those falling prey to the epidemic of cardiovascular disease among the poor.

Let us contrast this to Rheumatic heart disease (RHD) which is the other main cardiovascular disease in India. Rheumatic heart disease declined in Western countries even before Cardiology became a specialty. Hence the Western discipline of Cardiology has not focused equal attention on Rheumatic fever and Rheumatic heart disease as it has on coronary artery disease. Today we should be in a situation where our wards and OPDs should be free of chronic rheumatic heart disease. It is true that Rheumatic fever is declining and that improved treatments are available for mitral stenosis in the form of Balloon mitral valvotomy.¹⁹ However cardiac surgery centres are still full of cases of RHD requiring valve replacement and RHD is still the cardiovascular case for the final MBBS examination reflecting its clinical importance. It is our argument that a more sustained academic focus on prevention and treatment of Rheumatic fever, could have led to a virtual eradication of the Rheumatic heart disease today in India. The absence of focus on RHD is a clear indication of the discriminatory structure of medical knowledge and education in India

that do not consider it necessary to develop treatments for diseases that have not yet been eradicated in our population.

Lack of Development of Knowledge or Specialization for Significant Public Health Problems: Examples of Poisoning and Snakebite

Today suicide by poisoning is a major and recent public health problem in young adults.^{20,21} The main causes of death in such instances are organophosphate poisoning and aluminium phosphide poisoning. We know that the rates of serious psychopathology such as depression or psychoses underlying deliberate self-harm are low.²² There is an epidemic of suicide among farmers due to risky agriculture, with high cost of seeds and fertilizer requiring loans, and as a result of debt due to crop failure. There are also large numbers of young people who are attempting suicide due to acute stress, or acute stress on the background of chronic stress, such as love failure, in-law problems, failure in examinations, parents scolding their children -- typically impulsive suicidal behavior. The suicide/parasuicide epidemic in India has to be understood as a developmental disease, a stressed society in the throes of rapid social change.²³

What are the treatments that are available for poisonings in India? The only known effective treatment in OP is atropine, respiratory support and ICU care. The only effective treatments for Oleander poisoning are charcoal, FAB antibodies treatment and transvenous cardiac pacing which are expensive. Endosulphan and aluminium phosphide poisoning which are causes of large scale death have no effective treatment.

Snake bite on the other hand is an ancient problem. The million death study has shown that about 50,000 deaths occur due to snake bite every year, three fourths of them before patients reach the hospital.²⁴ Today we do not have a single laboratory test to identify the species of snake that has bitten the patient. While we know that the big four (Indian Cobra, Common Krait, Russell's Viper and Saw Scale Viper) are the main cause of venomous bite, there are snakes outside the big four that cause venomous bites in different regions (for example the Pit Viper of Malabar),²⁵ that are not covered by the polyvalent anti-venom (ASV). The technology of anti-venom production in India is about 100 years old and outdated when compared to other antibody treatments such as Rabies or Tetanus immunoglobulin.²⁶ Each of the 8 RCTs conducted on antivenom therapy for snake bite in India have their limitations. It is unclear what the appropriate dose of ASV should be for an individual patient, as proper dose findings studies are yet to be conducted in the Indian setting. The rates of allergy with ASV are the highest known for any drug in the Western pharmacopeia. The treatment of snake bite is literally from a century ago and does not qualify as a modern treatment.

In the last 10 years there have been only 14 RCTs for OP poisoning, 2 for Oleander poisoning, 8 for snake envenomations and 4 for scorpion envenomation in the region of the Indian

subcontinent. Endosulphan poisoning and Aluminium phosphide poisoning have not had a single trial.²⁷ The body of research on poisonings in India has been miniscule, specially when contrasted to high profile areas such as cardiovascular disease.

All these are indicative of the orphan nature of the problems of suicide, poisonings and snake bite in India. Medical doctors treat them, the media reports them, patients live and die of them. But these diseases do not have respectability for the scientific community, they do not have the moral or cultural force, that demands that a treatment be found. These are clear cases of discrimination against important bodies of knowledge of medicine in India needed to treat a large number of people who suffer and die each year.

The discipline of medical toxicology developed in Western countries around drug overdoses and poisons for the Western setting. However the toxicology of the developing world is one of mega dose pesticide ingestion, plant poisoning with high lethality and snake envenomation.^{28,29} If the problem of poisonings that we are seeing is a developmental problem, then we have to develop a science/discipline of toxicology and toxinology appropriate to the problems that we are seeing, and accountable to the people whom we service. This requires the development of evidence base, the rewriting of textbooks and the development of appropriate training. To do this we have to focus our efforts in directing the development of this discipline in a manner that is able to address our local issues in a contextual manner.

Decline of TB, Leprosy, Tropical Diseases as Specialisations and Rise of Super-Specialty Clinical Infectious Diseases and Travel Medicine

Parallel to the ascent of modern specializations, has been the decline of certain India specific specializations: TB, Leprosy and Tropical Medicine.

TB MEDICINE

During the period 1950-80, TB developed as a specialty area in chest and TB hospitals with the postgraduate training programme of Diploma in TB and Chest Diseases. The National Institute of Tuberculosis was created to develop the National TB control programme and the academic discipline of tuberculosis in India. A body of research was developed around TB epidemiology, laboratory diagnosis, treatment and prevention. The Tambaram study in the 1950s which showed the equal efficacy of domiciliary treatment to sanatorium treatment led to the world wide closing down of TB sanatoria and shift to the outpatient TB treatment programmes. The Chinglepet BCG vaccination trial, is still the basis of world-wide BCG vaccination of children.

The WHO struck the note of alarm regarding the resurgence of TB across the world and advocated DOTS as the universal TB control strategy advocating it in every member country. India too took on the DOTS strategy with the conversion of its home grown National TB control programme to the Revised National TB control programme (RNTCP) in the 1990s. The RNTCP

enabled country wide coverage with programme data showing 83% rates of sputum conversion and cure. However independent scientific evaluation of the efficacy of RNTCP is not available. There are serious concerns about the RNTCP regimens such as lack of rationale for category 3 regimens and increased rates of relapse and drug resistance with intermittent chemotherapy.³⁰ Because of these concerns, WHO has recommended daily TB treatment regimens particularly in HIV positive individuals. However the RNTCP guidelines continue to use intermittent treatment regimens. There is no evidence to show that RNTCP has led to a decline in TB incidence in India. We are now faced with the increasing problem of MDR-TB, XDR-TB and that of TB among health workers.^{31,32}

With the promotion of universal DOTS strategy, there appears to have been a decline of TB research in our country. Two recent papers have emphasised the significance of undernutrition as a risk factor for the development of TB and for increased TB mortality and the potential benefit of nutritional therapy in TB treatment.^{33,34} Nutritional therapy was an important part of sanatorium treatment, and became obsolete in modern evidence based treatment guidelines due to the lack of RCT evidence. There has been no well designed RCT on nutritional therapy in TB.³⁵ This lacuna in TB research is indicative of our inability to pursue medical research in a manner appropriate to our context.

LEPROSY

Research centres for Leprosy established the discipline of Leprosy in India. For instance the Schieffelin Leprosy Research & Training Centre, Karigiri in Vellore District ran training programmes for doctors, ophthalmologists and orthotists in Leprosy.³⁶ This was the centre where reconstructive surgery in Leprosy was started, the team approach to Leprosy treatment and early trials of Multi-drug treatment (MDT) for Leprosy. With the dismantling of the Leprosy control programme and the disappearance of Leprosy cases from Government statistics, academic and research capacity in Leprosy have also declined. The Karigiri hospital has become a general hospital while retaining its focus on Leprosy to ensure future sustainability.³⁷ While Leprosy has declined, there is still ongoing transmission and significant number of clinical cases are being reported with delayed diagnosis.^{38,39} There is little emphasis on Leprosy in the current MBBS curriculum. Students do not see this as an important disease and do not have the requisite skills to diagnose and treat it.

TROPICAL MEDICINE AND KALAAZAR/VISCERAL LEISHMANIASIS

The Kolkata School of Tropical Medicine was established in 1914 to study and treat tropical disease⁴⁰ and is known for several pioneering discoveries such as the laboratory cultivation of *Leishmania donovani* by Rogers and the synthesis and use of urea stibamine for treatment of Leishmaniasis by Brahmachari.⁴¹ The Tropical Institute is the only centre offering the MD and Diploma in Tropical Medicine within the whole country. In the post-independence period this

institute has not been able to develop and popularize the discipline to address the specific health problems of the Indian setting.

An example of this inability of premier health institutes to deal with local tropical health problems is that of visceral Leishmaniasis or Kalaazar—which is still a public health problem in Bihar, Jharkhand, West Bengal and parts of Uttar Pradesh. With increasing antimonial resistance, parenteral amphotericin therapy, which is expensive and toxic, is the treatment of choice. Liposomal amphotericin which is the standard of care in Western countries is unaffordable by common people and the health system. This is despite extensive laboratory research, clinical trials and development of cheaper version of liposomal amphotericin in India!⁴² It is a tragic irony that the Government does not have an effective prevention strategy for Kalaazar. Although it is a public health problem, Kalaazar is not a “must know” topic in the MBBS curriculum and the majority of students would not have seen or taken care of a case with this condition.

Re-emergence of the Discipline of Infectious Disease in the Tertiary Care Mode

Infectious diseases are the most important cause of morbidity in adults and children in India. However Infectious disease has not developed as a specialty in an India specific manner. Clinical Infectious Disease developed as a specialty in Western Countries around HIV Medicine, Transplant medicine, Oncology, cancer chemotherapy and Hospital acquired infections in the setting of large hospitals. Indian doctors trained in Clinical Infectious Disease in Western countries are returning to develop this specialty in India.⁴³ They have formed the Clinical Infectious Disease Society and a DM programme is due to begin soon.⁴⁴ The primary concerns of this new specialty are on the infectious problems of large specialty hospitals and secondarily on the common infectious diseases at the primary and secondary level.

While there is need for competence in handling specialty infectious disease problems in large hospitals, a crying need is development of competence in management of common infectious disease problems at the primary and secondary level.

Conclusion

It is the argument of this paper that modern medicine in India has not been creative enough to tackle the health problems that it confronts. The blind transfer of the technical knowledge of medicine with a Western epistemological framework to a non-Western setting has led to problems of translation, resulting in high costs of care, lack of access and inappropriate care. There has been transfer of high profiles specializations from the Western countries such as Cardiology, Cardiothoracic surgery, Neurosurgery, Gastroenterology without sufficient re-

reading and re-interpretation for the Indian setting. The market through private hospital chains such as Apollo and neoliberal policies of the Government have played a key role in the development of these specializations in a private mode, and in shifting the ethical stance of medicine from a commitment to serve common people to that of “for profit business orientation”. Even as Western oriented specialties have found root and a nurturing environment, the development of disciplines which are required to handle priority health problems in India has not taken place. Most importantly the discipline of primary care, and that of Family Medicine, has not developed as has happened in the UK. Disciplines which are required to handle priority health problems such as Infectious disease, Toxicology, Snake envenomation are yet to receive attention. In fact disciplines that were previously initiated to deal with local problems such as Tuberculosis, Leprosy and Tropical Diseases are now becoming extinct.

Discrimination is not only about how we perceive other people due to past prejudices. The argument of this paper considers discrimination as an active process that arises from the structure and emphases of medical knowledge originating from the West and mismatches between a universal Western knowledge and the local setting. When this medical knowledge originating from the West, loses focus on specific diseases and morbidities of the local setting, those trained in medicine in India lose the interest and ability to treat those diseases or morbidities. This effectively results in improperly understood, inappropriate and therefore discriminatory treatment against those who suffer from diseases that fall out of medical fashion. When such forms of exclusion affect large populations in our country, the great extent of structural discrimination becomes apparent. On the other hand, the positive stress on specific specializations also mesh with preferences for urban clinical locations where the wealthy reside, thus resulting in the absence of medical care for those who need it most in rural areas, and in addition cannot afford it. This is another aspect of structural discrimination that is as invisible as it is pervasive. The crisis of medical care today arises in the manner in which marketized medicine, in the name of liberalization and corporate medicine’s ability to develop advanced medical care, actually reshapes medicine in India in a way that is inaccessible to, and therefore discriminatory against, the poor. If this crisis is an active process that arises from our inability to translate Western medical knowledge to our social context, then it our responsibility as academics, teachers and producers of this knowledge in our country to address this structural problem.

Appendix

A Future Knowledge of Medicine in India: A Way Forward

This paper is not trying to make an anti-specialization argument. From a historical view point, specializations in the mid and late 19th century in French medicine were crucial to the birth of clinico-pathological medicine. We recognize the importance of research and specialization in the

development of academic medicine. The argument rather is that the forces of knowledge formation, large hospitals, Government funding, pharmaceutical industry, private health care, insurance, academic bodies, professional societies, evidence based medicine are creating knowledge objects, disciplinary bodies of knowledge that are quickly universalized, without grappling with the local contexts within which they are applied.

In developing our knowledge disciplines we need to ask ourselves, what are our health problems, who are the people we want to service, what is culture of medicine that we want to practice? We need an active struggle and negotiation of academic disciplines with the problems of health of the local setting. An active counter force which works against the grain of the universal assumption of Western knowledge to assert the “local” as frame against which an academic discipline should develop. As an activist counter force it may need to take on the forces that are asserting the universal, funding agencies, international bodies, pharmaceutical, business and evidence based medicine.

Such is the task of development of medicine for India. This medicine cannot be a specialization for the tertiary. Rather it is a *specialization* with a small ‘s’, to provide an appropriate medicine for the common problems. It should not be a primary medicine against the binary of tertiary medicine, against which it will always be compared as third rate. But rather it should be a critical, responsible and thinking medicine. This argument could apply to Cardiology or Nephrology or General Surgery or Family Medicine. A specialization of context, a specialization for and of the subject, a specialization of practice.

This article makes two propositions towards developing a critical practice of medicine in India. The first is pedagogical task and second is the task of research agenda setting.

Teaching a Contextual Knowledge of Medicine

In pedagogy, the teacher’s role is not just to transmit a body of knowledge related to a medical subject but provide a critical view of the subject. In teaching a topic of medicine it would be useful for a teacher to consider what may be a contextual knowledge, a contextual syllabus and contextual curriculum⁴⁵:

Contextual Knowledge, Syllabus and Curriculum

Foregrounding Questions: What are the mismatches between universal or standard knowledge and cases that present to the local setting and why do these differences take place?

How is the disease and practice of medicine different in the local context?

Disease definition: What are the difficulties of the disease definition in the local setting?

Epidemiology: How is the local epidemiology different?

Causation: Are there local differences in causative factors and pathogenesis?

Clinical features: What are the differences between local presentations and the textbook descriptions?

Lab diagnosis: What are the locally appropriate tests? How should tests be used in the local setting?

Treatment: What is the evidence for applicability of standard treatments in the local setting; what are the problems in using standard treatments in the local setting?

Prevention: What are issues of prevention in the local setting?

Contextual issues: Cost issues, patient perceptions, access issues, health seeking behavior, guidelines for care at different levels, health system issues

As the diagram below highlights, this critical perspective of knowledge will influence the syllabus, the sites of teaching, the cases that are chosen, who should be teachers, the teaching methods and assessment. (See Diagram 1 below)

Research Agenda Setting for Local Health Problems

The following is a mapping approach that we undertook towards developing a research agenda setting in toxicology and toxinology for the South Asian setting. We did a mapping exercise as a collaboration between the Department of Medicine at Christian Medical College and the South Asia Cochrane Centre and Network using the following approach (See diagram 2 below).

A. Knowledge mapping exercise and defining research priorities

1. Which are the priority health problems in this field?
2. What are the management strategies that are recommended for each of these conditions?
3. What is the evidence to support each of these management strategies?

We did this by preparing systematic reviews compiling and summarizing evidence in relation to each these questions.

- Which are the problems for which we have good treatments?
- Which are the interventions for which more research needs to be done?
- Mapping the areas where there is no good treatment or inadequate treatment. What are potential treatments that may be of benefit?

4. Based on this what are the research priorities?

B. Consultation of experts:

Following this mapping exercise we held a consultation of experts from an interdisciplinary background to discuss the evidence summaries and define research priorities, collaborations and research advocacy.

Such an approach could be taken in relation to research agenda setting for other priority health problems,

Workshop documents and recommendations available at: <http://cochrane-sacn.org/toxicology/index.html>

Diagram 1: Designing a contextual curriculum (from Curriculum Design in Context in Oxford Textbook of Medicine 2013, Janet Grant, Anand Zachariah and Mohammed YH Abdelrahman)

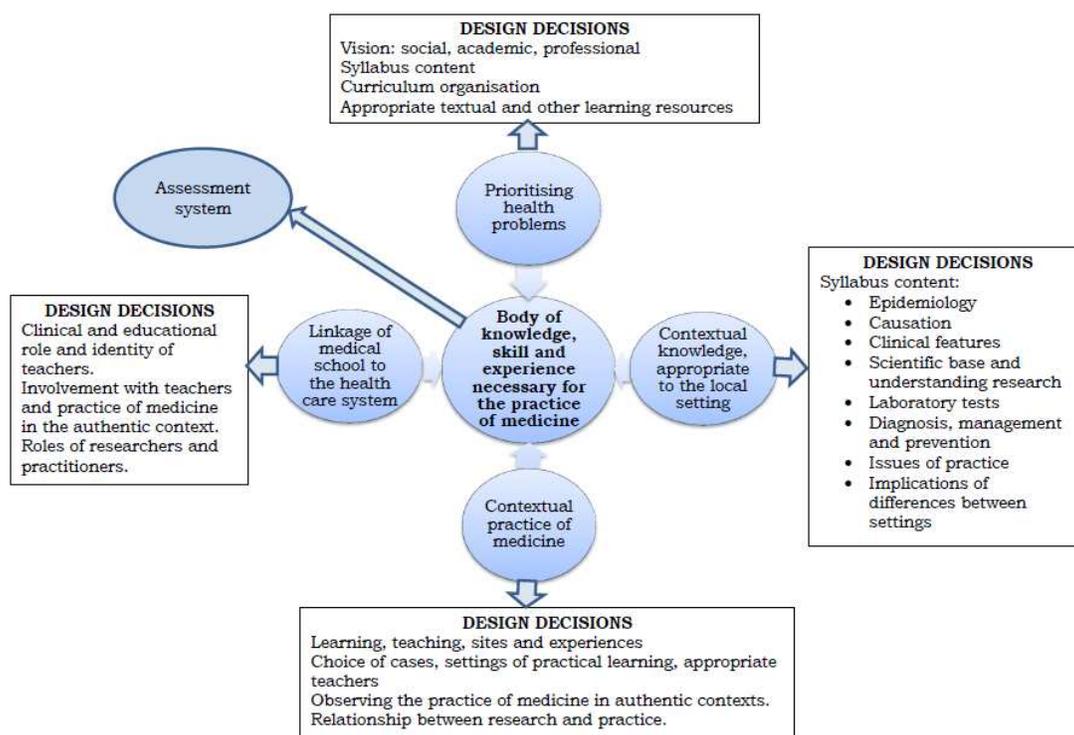


Diagram 2**Endnotes:**

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