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**Strengthening the Drug Regulatory Mechanism in India**

*(Draft Note for the Working Group on Drugs and Food Regulation for giving inputs for the 12th FYP, July 2011)*

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We put forth herein some suggestions about strengthening the drug regulatory mechanism in India keeping in view the Terms of Reference of the Working Group for giving inputs for the 12th FYP. These Terms of Reference for the WG-DFR are –

1. To review the drug and food regulatory mechanism in the country to ensure providing essential quality, safe drugs at affordable prices to all citizens and to provide wholesome food to all citizens in the country.
2. To review the incidences of antibiotic/anti-microbial resistance and suggest measures for rational prescription of drugs especially antibiotics.
3. To review and suggest measures for promotion of generic drugs.
4. To review the progress of pharmaco-vigilance programmes and suggest measures to strengthen the same.
9. To suggest modifications in policies, priorities under the drug and food regulatory framework during the 12th Five Year Plan.
11. To deliberate and give recommendations on any other matter relating to the topic

As a background, it may be noted that the Mashelkar Committee in its report in 2003 had taken a review of the action taken to fill the gaps which were identified by the earlier Pharma Research and Development Committee (PRDC) in 1999. The Mashelkar Committee had noted the following gaps in the implementation of the PRDC recommendations -

"The major gap areas were identified as:
- Inadequacy of trained and skilled personnel and infrastructural support at Central as well as State levels commensurate with their respective specialized roles and responsibilities and emerging challenges;
- Non-uniformity in implementation of existing regulatory requirements and policies;
- Variation in the quality of enforcement;
- Inadequate and disjointed drug testing laboratories scenario;
- Lack of performance management of systems;
- Inadequate administrative, professional and financial support, which hindered the opportunity of availing

expertise from outside specialists, particularly in the field of new regulatory areas;

- Lack of data base of drug products licensed by various State authorities in the country."

The Mashelkar committee had further noted that "in spite of the fact that three years had lapsed from the acceptance of the PRDC report by the Government, no infrastructural improvement whatsoever in respect of personnel has occurred in CDSCO."

During the 12th Five Year Plan all aspects of the Drug Regulatory mechanism in India should be strengthened substantially by implementing the unimplemented part of the recommendations of the Mashelkar committee. We are however certainly not in favour of the recommendation of death penalty to the offenders.

The strengthening of the drug regulatory mechanism would encompass regulation of

1. Clinical trials and approval of new medicines, enabling the use of TRIPS flexibilities
2. Periodic review to eliminate unsafe and obsolete medicines;
3. Quality of medicines
4. Promotion of medicines amongst health professionals and lay people
5. Prescription practices and use of medicines by health professionals (to be done by the regulatory bodies for the health professionals like the Medical Council of India)

To regulate all these aspects of the pharma industry, the Central Drug Safety Control Orgnaization (CDSCO) would need considerable strengthening. [i]

It may be noted that Mashelkar Committee, in its report had said: –

"The Committee concluded that the existing infrastructure at the Centre and States was not adequate to perform the assigned functions efficiently and speedily. The Committee felt that creating another authority will not solve the problem at hand. It was essential to strengthen the existing organisations to enable them to undertake all the functions envisaged for NDA. A strong, well equipped and professionally managed CDSCO, which could be given the status pf Central Drug Administration (CDA) was the most appropriate solution. A detailed proposal to create such a structure and strengthen the State level regulatory apparatus with complementary roles of the Centre and the States, while at the same time ensuring uniform and effective implementation, has been considered and recommended by the Committee."

We feel these detailed recommendations should be implemented in their entirety.

## 1. STRENGTHENING THE REGULATION OF CLINICAL TRIALS, OF APPROVAL OF NEW MEDICINES INCLUDING VACCINES

## A. Clinical Trials, Approval of New Medicines

**A1. Review and Strengthening of Schedule Y:** It is in this background, Schedule Y of the Drugs and Cosmetics Act dealing with approval of new drugs and clinical trials needs to be reviewed and strengthened in the light of recent experiences. Several provisions of Schedule Y may need to be harmonized with other codes of ethics. Specifically, giving legal "teeth" to the ICMR guidelines for research by merging it into Schedule Y need to be examined. IPR issues of data need to be examined consistent with India's obligations under TRIPs and not 'TRIPS Plus'.

**A2. Law for Regulation of CROs:** Also of essence is a proper law regulating the functioning of CROs that takes on board the above concerns. These can be in addition to the rules of the Drugs and Cosmetics Act. Hence the current draft on regulation of CROs would need some additions.[ii]

**A3. Increase in Human Resources:** The CDSCO also has very little technical staff to cope with challenging tasks of reviewing the increasingly mounds of data that are submitted for clinical trials and drug approval. Ongoing surveillance and safety studies require even more qualified human resources. The staff at CDSCO and at State level Drug Commissionerates needs to be increased many fold. Decision making needs to be transparent and as much of all data and decisions should be available for review in the public domain. Till such time when India has its own resources to generate clinical and review data, our pharmacological decisions necessarily need to be guided by the decisions of well-regulated countries like the USFDA, MHRA UK and similar bodies of Sweden, Australia and Germany (to cite a few). This must be seen as an exercise of the precautionary principle in the interests of the citizens of India.

## B. Regulation, Manufacture of Vaccines

**B1.** India needs a ***well-debated, evidence-based national vaccine policy*** that clearly delineates kinds of vaccines to be introduced and sustained in India in the National Health Programme.[iii] To fufill this objective, the ***CDSCO will have to be considerably strengthened*** to harness expertise to be able to take decisions about the safety and efficacy of vaccines to be introduced in India.[iv]

**B2. Strengthening the Role of the Public Sector Units in Vaccine Manufacturing**

The need to revive and reinforce the Vaccine PSUs with the goal of retaining vaccine manufacturing self-sufficiency in the hands of the Government, and in the interest of national

health security, cannot be overstated. The 12th Plan Goal would be to attain GMP standards in all PSU vaccine manufacture and complete self-sufficiency in all vaccines in the UIP.[v]

## 2. PERIODIC REVIEW TO ELIMINATE UNSAFE AND OBSOLETE MEDICINES

### 2.1 A Special Commission to eliminate irrational drugs and irrational Fixed Dose Combinations

During the 12th FYP a capable, adequate mechanism needs to be developed to periodically, routinely, review the rationality and safety of the medicines marketed in India and to eliminate ***irrational drugs and irrational Fixed Dose Combinations.*** This review is needed if the objective of promotion of ***generic medicines is to be achieved.***

A special commission working in the in mission mode should be set up during the 12th FYP to clear the backlog of eliminating thousands of irrational medicines/irrational drug combinations.[vi]

A related aspect is the examination of legal aspects of weeding out such medicines. Even though it is done on purely scientific and therapeutic considerations, stay orders are brought in and all good efforts come to a naught. This should be prevented by overcoming any legal lacuna that may be present currently.

**2.2 Enhanced Pharmacovigilance:** Periodic review of medicines market in India would require good ***pharmaco vigilance***. The existing mechanism will have to be considerably strengthened to have a nationally connected computerized system of relevant data collection and vigilance.[vii]

**2.3:** ***An independent agency*** (independent of the CDSCO/DCGI, the apex licensing body) ***like the National Institute of Clinical Excellence (NICE) in UK*** needs to be set up in India to create a scientific basis for the decisions of the CDSCO/DCGI. [viii]

**2.4: Convergence of NLEM and National Formulary and Drugs in the Market and those Prescribed in State and Central Govt Institutions:** A new National List of Essential Medicines (2011) and a new National Formulary have been released. These are welcome steps in the right direction. For these to have meaning, by and large primarily medicines in the NLEM and formulations in the National Formulary should be licensed for marketing and manufacture and only such formulations be made available in the country. To accommodate the need for medicines that are needed for rarer conditions, a separate list may be drawn up. Medicines approved for import and marketing in India should be guided by these considerations.

## 3. QUALITY OF MEDICINES

### 3.1 Time bound plan for implementation of the relevant recommendations of Mashelkar Committee

There has to be a time bound plan for implementation of the relevant recommendations of the Mashelkar Committee, except the recommendation of death penalty. At the State level, several new food and drug laboratories need to be set up with continuous training and upgradation of staff. At least one major laboratory per State would be required and in the States where pharma industry is predominantly located, the appropriate number may be decided after finding the current and potential workload.

The Mashelkar committee had recommended that there should be "1 inspector for 50 manufacturing units and 1 inspector for 200 sales units". This should be implemented during the 12th FYP by enhancing adequately the training facilities and the budget for appointment of these many drug inspectors.

### 3.2 Financial help for upgradation of WHO GMP/Schedule M:

During the 12th FYP, based on clear guidelines, financial and technical should be available to SSIs for upgrading their facilities to WHO GMP/Sched M standards. WHO GMP/Sched M standards should be part of the 5-year national goal

## 4. PROMOTION OF MEDICINES AMONGST HEALTH PROFESSIONALS AND OTC PRODUCTS

During the 12th FYP, there should be considerable ***strengthening of the process of eliminating misleading unethical promotion of drugs*** by pharma companies to health professionals and of OTC products.

A mandatory Code on the lines of the code available internationally prepared by the Health Action International (HAI) should be in place which would cover promotion of medicines both to the medical professionals and the lay-people.

We attach a draft code worked (not attached in this issue of the bulletin - editor) out in consultation with various civil society groups like the All India Drug Action Network, Medico Friend Circle, LOCOST, Federation of Medical Representatives Association of India, the Lawyers Collective, etc. Such groups may be involved in the process of consultation in the drafting of a regulatory framework.

During the 12th FYP, CDSCO the mechanism for redressal against misleading advertisements should be professionalized and should be made widely, easily accessible. This should be widely, consistently advertised across all media so that consumers can participate in the process of enforcement.[ix]

## 5. PRESCRIPTION PRACTICES AND USE OF MEDICINES BY HEALTH PROFESSIONALS

During the 12th FYP, following measures will have to be taken in this connection –

- Introduction of a national antibiotic policy that covers usage and treatment guidelines of antibiotics for humans and animals
- Antibiotic usage review audits in public and private hospitals
- A policy that all antibiotics to be sold only by generic names;
- Medical/nursing/pharmacy colleges, professional medical, pharmacy and nursing networks/associations, schools and consumer groups need to be involved in finalizing the details;
- Study and adoption of replicable aspects of successful attempts by countries like Sweden, Australia for recovery of older antibiotics.
- The resistance in case of TB and AIDS needs to be tackled on a separate war footing.

DCGI's reported resolve to insert a new Schedule called HX under the Drugs and Cosmetics Act with a view to preventing the misuse of antibiotics is to be welcomed. Representatives of doctors, chemists and civil society organizations should be consulted in finalising the details.[x]

## 6. MODIFICATIONS IN RELATED POLICIES AND PRIORITIES

**TOR 9 and 11 of this working group is:** *To suggest modifications in policies, priorities under the drug and food regulatory framework during the 12th Five Year Plan. To deliberate and give recommendations on any other matter relating to the topic.*

In this connection, the following is suggested -

- A national policy for research priorities for drugs that need to be discovered considering mortality and morbidity patterns of India and how such research will be seeded and funded in the country.

- All drug related matters should be under one ministry and not be divided between MOHFW and MOCF.
- ***Price Regulation of all Medicines and not only essential medicines*** so that there is no incentive to market, costly, 'me too' medicines (see below)
- ***Provision of free drugs for all in the Government health systems all over India*** (The calculation of estimate follows this article – editor, *mfc bulletin*). .
- Retention of regulatory/licensing for marketing and manufacture of biotech drugs under the DCGI/MOHFW.
- Regulatory aspects on approval of biosimilars need to be clarified..
- Patent matters need to be firmly delinked from the drug licensing process for manufacture and marketing.
- Ensure India uses TRIPS flexibilities like CLs to the optimum (including CL for government use) and not be a signatory to any agreement that is TRIPS Plus.
- Conflict of interest declaration (especially with respect to the medicine/medical device industry) be made mandatory for all individuals, official and non-official, involved in policy making and those who are part of committees related to policies and laws.
- A commission to institute reforms and restructure CDSCO in the light of new challenges may be considered.
- Transparency in all matters related to regulatory decision making and the basis of decisions

Of these measures we comment on pricing as it has a direct and immediate health and socio-economic impact on ordinary end-users.

**Price regulation** of some kind is essential. This is now accepted in much of literature. Most advanced 'free market' economies have some form of price regulation/subsidy/reimbursement schemes.[xi] Indian pharma formulations industry is characterized by wide ranging prices for the same product and high profits, apart from marketing unnecessary combinations and selling them. There are also other tragic consequences of the ignorance of susceptible users making decisions in distress, 'advice' of prescribers, and 'marketing' efforts of companies – all illustrations of the inherent asymmetries of health markets: the costlier versions of the same drugs are bought more, and irrational combinations sell more because the doctor says buy them. Several government bodies have recommended some form of price regulation even as every so-called developed country has some form of price regulation/profit cap/reimbursement scheme etc.

*Annexure 1*

**Note on Regulation of Drug Trials in India for the Working Group towards 12th Five Year Plan**

*Sama – Resource Group for Women and Health, June 15, 2011*

As the medical research world becomes increasingly globalized, there is a need to make research both methodologically and culturally valid. An increasing number of pharmaceutical companies have started outsourcing drug trials to Contract Research Organizations (CROs) in developing countries; these now make up a specialized global industry focusing on the recruitment of and research on human participants. In October2008, the Drugs Controller General India (DCGI) stated that there were 582(registered) clinical trials being conducted in India, of which 72% were carried out by the pharmaceutical industry. Shifts in the very science of drug development have influenced the decision to increase participant recruitment, with India becoming an attractive destination for international, outsourced clinical trials. The weak Indian disease surveillance system provides little empirical evidence to establish the relevance of a particular study to the country's health needs. Drugs or other interventions developed through research may be expensive and therefore unavailable to the public. Indian sites for the research are without any independent institutions for monitoring and auditing of drug trials. In the absence of such a mechanism, it is difficult to ensure that scientific standards are upheld, and that good research practices and required trial protocols are fulfilled. Eventually, the quality, practice, ethics and effectiveness of science itself may be compromised.

There are many examples of drug trials that have taken place without proper protocols of consent. Without adequate and effective regulatory jurisdiction and systematic oversight, the reliability and validity of such research is jeopardized. Considerations of transparency along with protection of participant rights have to be made priority for policies that truly engage and respect the public. This is particularly critical in the context of drug and vaccine trials, placebo-based and comparator trials and genetic studies that are often in violation of both the Declaration of Helsinki as well as the guiding principles laid down in the Indian Council of Medical Research's (ICMR) ethical guidelines for biomedical research. India requires more substantial regulation, and effective implementation, that can institutionalize the highest standards of independent inquiry, good clinical practice, protocols, monitoring, and follow up, so that a strong and science-friendly policy framework can be put in place, to enable and empower

medical research. In this context, regulation of these trials seems to be on shifting sands. Norms seem to be set to suit business interests rather than for the protection of the rights of research participants. Public health and medical priorities of the country are not considered. Some of the areas of concern in this respect are enumerated below.

**Issues in the regulation of Contract Research Organizations (CROs)**

- Clinical trials are con-ducted by contract research organizations (CROs) which are developing the infra-structure For trials by making inroads into small towns, identifying trial sites in small private hospitals and developing databases of potential trial participants. Medical professionals are given substantial incentives to recruit their own patients into clinical trials. This situation creates a major conflict of interest that threatens the well-being of patients.

- Unlike the United States, where Contract Research Organizations (CROs) are codified in a Federal Register notification, in India Schedule Y of the Drugs and Cosmetics Act (the only present legislation for the regulation of clinical trials) does not make any mention of them, let alone lay out clauses for their regulation.

**Ambiguous Clauses, Ambitious (Profitable) Amendments**

- The Schedule Y amended in 2005, gives the DCGI arbitrary powers to waive off the need for trials in several cases. This combined with vague formulation of clauses has led to an ineffective law.

- The recent amendment, allows for concurrent trials, doing away with the prescribed phase lag for trials for drugs developed outside India. However, these trials are not properly defined with the usage of extremely vague and ambiguous terms such as “adequate”, “necessary” etc. without any specifications clearly spelled out.

- At present, the Drugs and Cosmetics Act does not allow the conduct of Phase I trials for drugs developed outside the country until at least one phase I trial has been completed elsewhere in the world. There is an additional waiver (based on discretionary powers of the DCGI) for trials on drugs indicated in life threatening/serious diseases or diseases of special relevance to the Indian health scenario. However, there is an increased push to

allow concurrent phase I trials in India (as is now permitted in the case of Phase II and Phase III trials).

- The issue of allowing Phase I trials need to be also explored in the context of structural issues, including
    - Absence to public health makes people vulnerable
    - Regulatory gap
    - Ethics gap
    - Capacity gap – Huge lag between the number of trials and the development of capacities to actually carry out these trials in an ethically sound manner.

- The earlier minimum requirement of number of subjects for phase III trials to be conducted for drugs approved in other countries was removed and made discretionary.

- There are no specific, listed requirements for sites where clinical trials can take place such as availability of expertise and infrastructure to deal with unexpected adverse drug reactions, ICUs etc.

- A major lacuna in the DCA is the lack of any mention of penalties or application of liabilities for those who violate the Act. Similarly, the Act does not lay down the technical details of the specific requirements at trial sites, membership and location of ECs.

- Clinical trial data exclusivity that is being sought by foreign companies is another area of concern as it can delay the introduction of generics and increase the cost of medicines. Moreover, claims that clinical trial protocols and data are protected pose a serious threat to the tenets of transparency and hence accountability in clinical trials in India.

- The content of Schedule Y of the DCA needs to be revised so that the stronger requirements and larger concerns of the ICMR guidelines and that of the Helsinki Declaration are reflected explicitly, forcing trial protocol documents in India to meet these requirements.

**Accountability of Ethics Committees**

- Since vulnerable participants are involved in clinical research, ethics committees must be independent and able to provide adequate oversight. However, many ethics committees are controlled by the institution and cannot act independently. Most of these members are untrained and may not be competent to assess ethical and scientific issues. There is also no clarity about the extent of their responsibility and their accountability. Can they be taken to court for failure to perform their fiduciary duty? There is no regulation of the ethics committees themselves.

- Similarly, the lack of co-ordination between the various ethics committees in a multi-centric trial raise serious concerns of an absence of rigorous approval processes.

- The current law in no way addresses the issue of the conflicts of interest amongst members of ethics committees and other aspects of drug trials

**Assessment of Adverse Events, their management and compensation for injuries in clinical trials**

- Reporting of adverse drug reactions and adverse events is dismally low in the open market post licensure

- Over all needs in this regard –
  i. Clarity in law and guidelines
  ii. Awareness for all stakeholders & training
  iii. Advocacy to participants' rights
  iv. Categorization of injuries
  v. The death issue
  vi. Integration of various fields – medical, legal, financial etc
  vii. Urgency
- Several complexities related to compensations and insurance. Who takes the insurance? Which companies provide? If the insurance was to be taken for each participant individually, companies would charge higher premium, thus creating a 'hurdle' for research companies. These costs also need to be factored in to understand why India is becoming a hub.
- The issue of follow up and compensation is also linked to the ambiguity on the legal provisions of establishing causality.

**Phase IV Trials**

- The DCGI has since June 15th, 2009 made it mandatory for any researcher who plans to conduct a trial involving human participants, of any intervention such as drugs, surgical procedures, preventive measures, lifestyle modifications, devices, educational or behavioural treatment, rehabilitation strategies as well as trials being conducted in the purview of the Department of AYUSH to register the trial in the CTRI before enrolment of the first participant. However several other research studies continue to go unregistered as 'observation studies', 'operations research', 'demonstration projects', etc

- There is an urgent need for clarity on the distinction between phase IV clinical trials and other oft used terms such as post marketing surveillance, demonstration projects, observation studies and so on, that are not spelt out in the law at the moment.

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[ii] ***The rationale for these measures is -*** The pharma sector has increased in a galloping fashion during last 20-30 years whereas the drug regulatory mechanisms have been woefully inadequate. The manufacture and export of medicines has increased to over Rs one trillion during the last decade. The number of clinical trials has increased to 900 as of June 2010 and the clinical trial industry revenues are expected to grow at a rate of 65 % per year. New drug approvals (223 in 2010) and the number of biotechs and biosimilars are also increasing in number. There are more than 50,000 drug formulations in the market, majority of these are irrational medicines or irrational Fixed Dose Combinations. It has been repeatedly pointed out that drug promotion in India to the health professionals and to the lay people has to conform to standards and the prescription practices and use also needs auditing.

[ii] ***The rationale for these measures is -*** Clinical trials are the fountain of drug development. But there are safety issues especially when many trial participants are poor and illiterate and/or are not in a position to assert their rights and entitlements. There is need for balancing clinical excellence, ethical requirements and rights of clinical trial participants. Ways of legally regulating clinical trials and CROs (contract research organisations) must be strengthened even as we develop laws on liability to trial participants and of those in charge (including ethics committees). Ethical standards in India where a trial is being conducted should not be any less stringent than in the country where the drug has been discovered. [See also Annexure 1: *Note on Regulation of Drug Trials in India for the Working Group towards 12th Five Year Plan*, from SAMA.]

[iii] Y.Madhavi, et al (2010): "Evidence-based National Vaccine Policy", *Indian J Med Res*, May, 131: 617-628.

[iv]**The rationale for this measure:** Vaccines are to be given to healthy, susceptible individuals and they are given to millions of people in India. The safety and efficacy of vaccines has to be far more strictly, scientifically assessed compared to other medicines. Recent experience of the debate around introducing new vaccines in India has shown that the matter is exceedingly complex and the technical capacity of the CDSCO will have to be considerably enhanced to be able to handle this responsibility.

[v] ***The rationale for this measure*** **-** A strong Public Sector Vaccine Manufacturing capacity will also play an important role in regulating the vaccine manufacturing in the private sector. If the private sector refuses to or is unable to meet the national requirements in emergency situation or in other times, strong public sector vaccine manufacturing capacity would be an option to the meet the national needs and also induce/compel the private sector to fall in line.

[vi] ***The background and rationale of this measure is*** **-** A very large number of medicines in India do not have any generic name; they are available only as brand names. Many of these brands are irrational Fixed Dose Combinations, and top-selling, and are not recommended by standard medical textbooks/authorities and hence have no generic name. Unlike rational FDCs like oral contraceptive pills or co-trimexazole or Oral Rehydration Salts, these irrational FDCs have only brand-names. Hence 'promotion of generic drugs' implies elimination of these irrational FDCs.

A survey of the 300 top-selling brands (as per the ORG/IMS list) with sales of $3.75 billion, revealed that they included medicines of uncertain efficacy, safety, such as ginseng, liver extract, Vitamin E, and nimesulide; irrational combinations of antibiotics, which lack therapeutic justification; and expensive congeners. (A study by LOCOST/JSS says 60 % of the top-selling 300 medicines are not in the National List of Essential Medicines, 2003.) Today in India there is no mechanism to review periodically and routinely the rationality and safety of the medicines marketed in India. Hence to clear the backlog, the task of going drug by drug would become too huge, to assess each of such medicines separately and it will decades to finish this work. Hence it is necessary to draw up broad criteria of drugs that can be weeded out and these may be applied retrospectively and prospectively, so that the country can start on a clean slate once again. Indeed this task needs to be taken by a special commission in mission mode.

[vii] Much pharmaco vigilance in India falls by the way side because of lack of adequately generated data. Hence to start with, specific programs on drugs that are suspect in creating renal, respiratory, cardiovascular complications, drug-drug interactions, etc. will have to be taken up. Simultaneously a program of 'medical transcription' – putting prescription and diagnostic related data on computer amenable to generating useful information thereafter – will have to be taken in the public and private health facilities of major cities (as they are the 'magnet' for complicated cases) as well as from primary to tertiary in certain districts and certain states. The will have to be used to generate data on antibiotic resistance and on long-term surveillance.

[8] This organisation would

- undertake independent appraisal/comparator studies, and make recommendations, on new and existing medicines, treatments and procedures
- undertake independent studies, including meta reviews, for treating and caring for people with specific diseases and conditions
- make recommendations to the Government of India, local authorities and other organisations in the public, private, voluntary and community sectors on how to improve people's health and prevent illness and disease.
- suggest cost cutting measures through studies on medicines, vaccines, medical equipment, and technologies
- carry out impact studies of health policy measures and health impact of intersectoral policies.
- formulate indicators of quality health care from GP level to tertiary levels. make recommendations on the content of advertisements and marketing literature of drug and equipment manufacturers

[ix] **The background and rationale of this measure is -** There is a great deal of misleading and unethical promotion of medicines in India. Doctors are misled about the indications, therapeutic benefits, side-effects and contraindications. Doctors and their organizations are indirectly bribed in various ways to make them party to irrational, excessive use of costly medicines Though the Medical Council has now put stricter restrictions on doctors about accepting gifts and favours from the pharma companies, MCI has no mandate over hospitals. Hence curbs are required on pharma companies also to prevent misleading, unethical promotion.

Lay persons are given a hugely exacerbated idea about the benefits of OTC (Over the Counter) medicines, with no idea about the contraindications and side effects.This misleading promotion also needs to be strictly restricted. (The definition of "OTC medicines" needs to be clarified to the public so that there is no room for doubt.)

The voluntary codes by the pharmaceutical industry have been in existence for decades. However there has not been even one complaint or action taken recorded on the website of the association of pharmaceutical companies so far. Given the fact that many issues have surfaced over the years in the media, this indicates a discrepancy pointing to the need to safeguard the interests of the consumers in a more effective manner. The world over, many countries like the USA after long periods of trials with voluntary codes have moved to legally enforceable regulation of promotional practices as voluntary codes have failed abysmally.

[x] **The background and rationale of this measure is -** Rational Use of medicines, especially of antibiotics is essential to prevent antibiotic resistance as a public health problem. Regulation of prescription practices and use of medicines by health professionals is to be done by the regulatory bodies for the health professionals like the Medical Council of India. However, other measures are also required.

[xi] For Medicine price mechanisms in other countries, see Chapter III of the *Report of the Drug Price Control Review Committee*, Dept of Chemicals and Petrochemicals, New Delhi, October 1999. For a more recent review of these see: Amit Sengupta, Reji K. Joseph, Shilpa Modi and Nirmalya Syam. "Economic Constraints to Access to Essential Medicines in India." Centre for Technology and Development and Society for Economic and Social Studies in collaboration with WHO SEARO, 2008. A more recent news item at "Germany caps drug prices", Volume 29, Number 2, February 2011, *Nature Biotechnology*.

For other views, see: Nigel Gregson, Keiron Sparrowhawk, Josephine Mauskopf & John Paul¨ "A Guide to Drug Discovery: Pricing medicines: theory and practice, challenges and opportunities." *Nature Reviews Drug Discovery*.4, 121-130 (February 2005). For a review of the use of evidence in the market approval process, reimbursement, and price control mechanisms for medicines and medical devices in Thailand, South Korea, and Taiwan, see: Thidaporn Jirawattanapisal, Pritaporn Kingkaew, Tae-Jin Lee, Ming-Chin Yang. "Evidence-Based Decision-Making in Asia-Pacific with Rapidly Changing Health-Care Systems: Thailand, South Korea, and Taiwan." *Value in Health*, 2009, Vol. 12, SUP3, [Note(s): S4-S11].