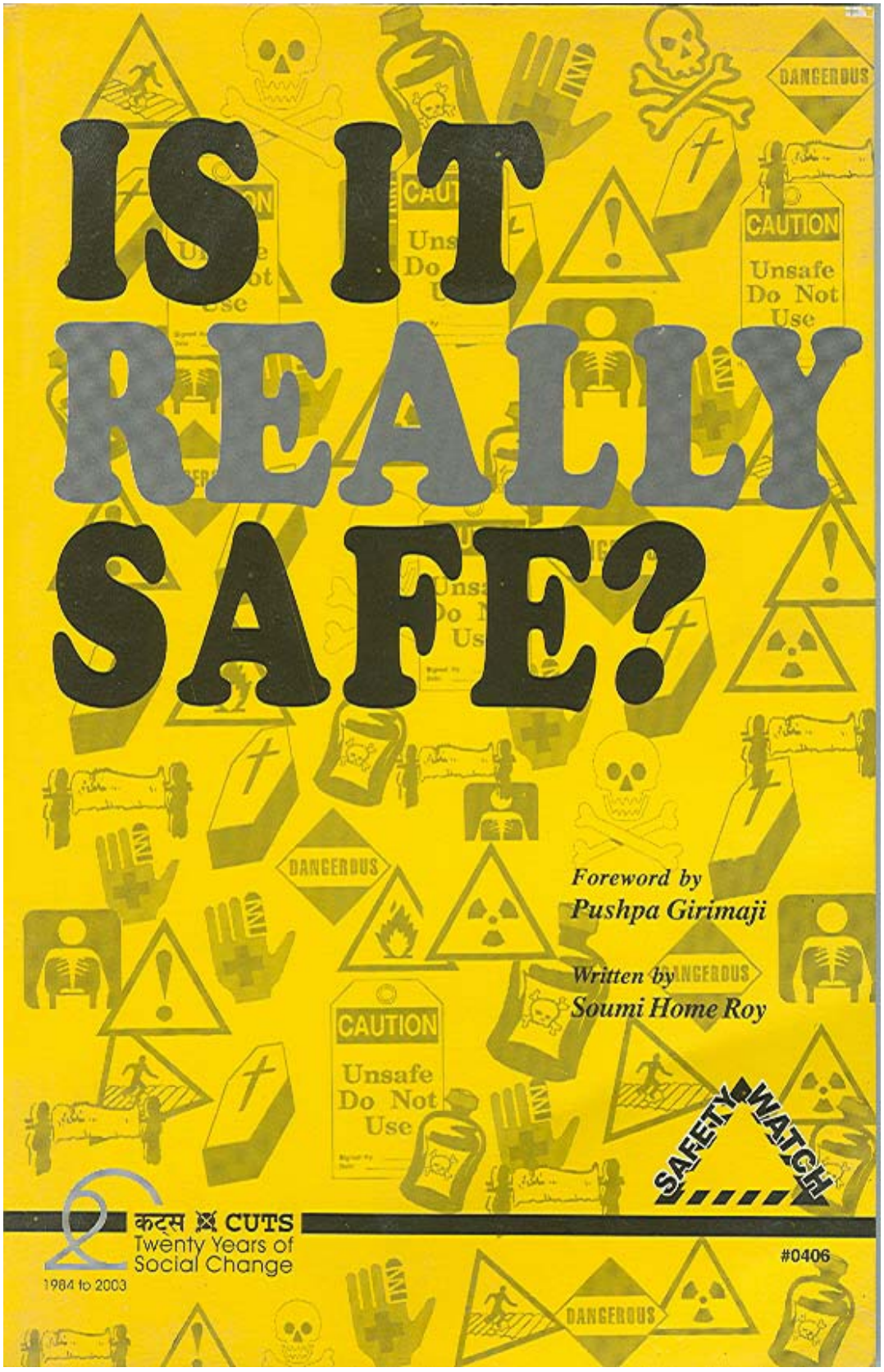

IS IT REALLY SAFE?

Foreword by
Pushpa Girimaji

Written by
Soumi Home Roy

SAFETY WATCH

कट्स ✕ CUTS
Twenty Years of Social Change
1984 to 2003

#0406

Is It Really Safe?

Is It Really Safe?

Caveat Emptor - II

This book is the second in the series of publications under the serial title *Caveat Emptor.* The first one was: 'How To Survive As A Consumer'.

Published by:

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CUTS – Safety Watch

Established in 1983, Consumer Unity & Trust Society (CUTS) is an active social action research and advocacy group based in Jaipur, India and recognised internationally. CUTS works at the grassroots, national, regional and international levels on diverse public interest issues by pursuing social justice and economic equality within and across borders, with value for people as its underlying theme.

CUTS' Centres are located at Jaipur (head office), New Delhi, Chittorgarh and Calcutta in India, and at Lusaka in Zambia, Nairobi in Kenya, and London in the UK.

CUTS' work is divided into five operational areas:

- consumer protection, which includes accountability, regulatory reforms, etc.;
- trade and development;
- competition, investment and regulatory policies;
- sustainable production and consumption, including consumer safety; and
- rural consumers and women's empowerment.

CUTS works with several national, regional and international organisations, such as Consumers International, London, UK; Consumer Choice Council, Washington DC, USA; Central Consumer Protection Council, Ministry of Consumer Affairs, Government of India; National Codex Committee, Ministry of Health and Family Welfare, Government of India; Consumer Co-ordination Council of India, etc. It is represented in several policy bodies of the Government of India, like the Technical Committee on Ecomark, and National Advisory Committee on International Trade of the Ministry of Commerce, among others.

CUTS has been active in the area of consumer safety and consumer protection. Some of the milestones are:

- CUTS is responsible for the enactment and strengthening of the dynamic Consumer Protection Act, 1986 (COPRA), the likes of which is not seen anywhere in the world.
- CUTS succeeded in getting a toxic additive, Brominated Vegetable Oil (BVO), banned for being used in soft drinks in 1990. This led to widespread consumer

awareness on health and safety issues. The BVO episode triggered an amendment in the Consumer Protection Act in 1993, empowering the consumer courts to stop the sale of and/or order the withdrawal of any unsafe or hazardous goods from being sold in the market, under the Right to Safety.

- CUTS obtained an unprecedented compensation of Rs. 50,000 from Otis Elevator Co. for a lift accident victim without going to court in 1987. It was mentioned in the *Limca Book of Records* as the highest lift accident compensation ever paid in India.
- By a class-action petition under the COPRA, CUTS ensured the legal and human rights of nearly 800 poor victims of adulteration in edible oil in Calcutta in 1988-90, commonly referred to as the "Behala Oil Tragedy."
- A CUTS study on road safety, in 1990, became the basis for the National Road Safety Policy adopted by the Government of India in 1993, which seeks to reduce the deaths in road accidents from the existing percentage by 30 percent by 2000. CUTS was nominated to the National Road Safety Council twice and to its first high-level Ministerial Committee, which was established to formulate the National Road Safety Policy.
- Pursuant to an appeal in 1995 on medical negligence by CUTS, the Supreme Court of India ruled that all government employees, even if they, or their families, get free medical treatment, would be entitled for coverage under the COPRA. The landmark judgement settled the controversy of medical negligence being covered under the COPRA.

Feeling the need for more focused action in the area of consumer safety, in 1993, CUTS established "Safety Watch" as an independent programme at its Calcutta Resource Centre. Its mission was "to achieve the citizen's right to be protected against unsafe goods, services and environment, and to promote sustainable consumption and production and provoke questioning and action." The stimulus behind the launch of Safety Watch was the Public Liability Insurance Act, which was enacted in 1989 to provide for compulsory liability insurance by hazardous industries. Added to this was the 1993 amendment to the Consumer Protection Act, 1986, empowering consumers to file complaints against hazardous goods and seek their ban or withdrawal from the market.

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Foreword

During the month of July last year, a glass pane came hurtling down from the first floor window of a school in Delhi on an eight-year old girl waiting with her friends to board the school bus. It split her forehead, causing serious injury requiring hospitalisation. Two more children standing next to her received minor injuries from glass splinters. It is so easy to dismiss this as a freak accident, but, in reality, it is a reflection of the lack of safety consciousness in those who run schools. About a month earlier, a three-year-old child in Noida, Uttar Pradesh, lost two fingers of his right hand on an exercising machine. The play school which the child attended and a gymnasium were located on the same floor of a building and the play school had allowed the child to wander unattended into the gymnasium.

Around the same time, the life of 15-year old Nagendra Singh was cut short tragically, when the iron rods protruding from a truck pierced through his chest. Nagendra was sitting near a window in a Blueline bus. By carrying rods in that fashion, the truck driver endangered the lives of those on the street and by recklessly trying to overtake the truck, the bus driver had also contributed to the death of Nagendra.

We, as people, lack safety consciousness. The result can be seen in a number of avoidable accidents, many times taking a heavy toll. The Uphaar cinema tragedy in Delhi, for example, would not have happened, if only the hall owner had taken adequate fire safety measures. The law enforcement agencies were also at fault for not enforcing the fire safety regulations. But, have we learnt a lesson from the tragedy that took so many lives? Even today, there are cinema halls that flout safety norms with impunity. And, consumers, who pay for the tickets, do not protest. The death and devastation that followed the earthquake in Gujarat provide another example of our callous disregard to safety. If only the houses had been built to withstand earthquakes, the calamity would not have been of that magnitude.

The fact that parts of Gujarat came under “very high” to “moderate” tremor risk category in the seismic zoning map of India was known. There was technology available to render new as well as existing dwelling units earthquake resistant. Yet, no efforts were made to contain the damage in case of an earthquake. No

lessons obviously were learnt even from the earthquakes that ravaged Uttarkashi and Latur. In fact, going by the way some of the high-rise buildings in Ahmedabad crumbled, forget earthquake resistant designs, even minimum quality standards had not been followed.

Let us look at another area: water and food. Considering that the health of a nation depends on the quality of water and food that is made available to the citizens, one expects the government to take adequate measures in this regard, or at least have a time-bound programme for ensuring safe water and food for all the citizens. But, the reality shows otherwise. Today, from our morning cup of tea and milk to vegetables, edible oil, *dal*, rice and wheat, every item of food on our daily menu is suspect. Milk is supposed to be a nutritious food, but it could contain anything from detergent to refined oil, caustic soda or urea. Or, it may have traces of pesticides, heavy metals, preservatives or even hormones, which have been fed to the cattle. Or it could be microbiologically contaminated.

Mustard oil is adulterated with argemone oil, *arhar dal* is mixed with metanil yellow, vegetables and fruits are artificially coloured, and well the list is endless. Until recently, adulteration of food was considered to be a major problem. But, in the last decade or so, food scientists are recognising contamination of food with pesticide residues, heavy metals and mycotoxins as an equally major health problem facing consumers in India. Similarly, release of untreated effluents by industries and indiscriminate use of pesticides by farmers have turned our groundwater in many areas highly toxic with pesticide residues and toxic heavy metals. But, precious little is being done by the state governments to render the water safe. Consumer demand for an independent food and product safety commission to oversee safety aspects has also not found favour with the government.

So long as consumers do not become safety conscious and demand safety in food and water, products and services, homes and public places, they will continue to suffer. And, such a demand would come about only when consumers are educated on these aspects. Book like "Is It Really Safe?" published by CUTS will certainly go a long way in creating safety consciousness among the citizens, the consumers. This book would thus be of immense value to all consumers. More so because it covers almost all aspects of safety-safety in products, services and public places. This would be an invaluable guide to consumers.

Pushpa Girimaji
Consumer Rights Columnist

Preface

Not a day passes when one does not come across news of death/injury from unsafe products or services. One then gets a sense of *deja vu*, because you have already read it before on several occasions. And if you are a right thinking person, you wonder why these things happen again and again. There are laws and regulations, but action to prevent such undesirable happenings seems to be scarce. This book documents some of these incidents with the hope that it would generate higher awareness and lead to some concrete action.

It is the second in the series of publications: *Caveat Emptor*, which means 'buyers beware'. The first one is "How to Survive as a Consumer?" which deals with consumer protection issues. This book: "Is it Really Safe?" looks at consumer safety issues. The third in the series: "Deadly Profits" is on the anvil. This will be a cross-fertilised document which will look at how businesses put profits before human safety, knowing that their action will cause harm. Some of the harm can be long term, while only short term incidents like adulteration with an immediate impact get publicity as it is often sensational.

The most common causes of death/injury now-a-days can be seen in adulterated foods, train accidents, road accidents, fires, building collapses, drowning etc. Adulteration of food articles is rampant in the country and has become a grave menace to the health and well being of the community.

It is the duty of the producer/manufacturer to ensure that the consumers, who are paying for the product, get safe goods. Similarly, it is the duty of any supplier/provider of service to see that the consumers get safe services.

But, in India, is it "too much" to expect safety from producers of goods and services?

When reading the horrendous reports of death/injury, one wonders if there is no law for tackling such a menace. It is ironical that India is quite rich in laws, but lacking sadly in their implementation. While the concerned authorities are not ready to take steps to ensure implementation of the rules due to fear of political interference or other unknown reasons, the producers are less willing

to conform to those laws. The net result is that the consumer suffers and, in the wake of ignorance of laws and helplessness, is even ready to suffer.

Safety is a consumer right and one of the most important features of the right to safety is the right to be protected against the marketing of goods and services which are hazardous to life and property. Although the right to safety is protected by the Constitution of India, the Consumer Protection Act, 1986 and by various laws enacted by the Parliament and the State Legislatures, the current Indian scenario depicts a very poor enforcement. The need of the hour is to effectively enforce this right.

In an attempt to inform and educate the consumers about their safety-related rights, over the last few years, various colleagues at CUTS, including me have written articles on different safety aspects of various issues, after doing literature survey and some fieldwork. Some articles have been published in leading dailies. These articles have also been sent to major consumer groups all over India for their comments and information.

This book is a compilation of the articles written on the subject from time to time, with the aim of increasing consumers' awareness on safety aspects of various products and services. The book also contains valuable comments/ suggestions received from different consumer organisations on the same. The book, written in a reader-friendly language, also provides a synopsis of Indian rules and regulations on safety issues.

The book is divided into five sections:

- Product safety;
- Services safety;
- Health care safety;
- Food safety; and
- Transport safety;

Each section covers important issues like pesticides or adulteration in food, road and rail safety, drinking water safety, etc.

Research reveals that in cases of adulteration, which involve food products such as milk or edible oil, businesses are directly responsible for causing harm to consumers. In the case of transportation, it is either a technical error or sheer negligence that is responsible for the accidents.

News reports on safety of Hepatitis B vaccination, iodised salt and the vitamin A drive show that before adopting the policy, not enough thought has gone

into it. Informed public debates should have been initiated involving experts of the respective field before including Hepatitis B vaccination for children in the Tenth Five-Year Plan, or before administering Vitamin A to children in Assam and before making iodisation of salt optional rather than compulsory. We hope this book would be able to revive the issues for further debate.

Expected Impact of the Book

Consumers should be aware about their safety-related rights and able to push for improved legislations, regulations and standards on safety-related matters and their implementation.

This would ensure that:

- businesses will be more aware about consumer rights to safe products/ services and would act more responsibly and
- regulatory bodies will proactively implement safety standards

Thus, many untimely death and injuries from unsafe products/services could be avoided.

This research was initiated by my erstwhile colleagues: Rajat Chaudhuri and Arjun Dutta. However, it was completed by Soumi Home Roy (née Ghosh), who has done most of the writing work. All credit goes to her and I hope that she uses this research to put into action our Safety Watch work programme of making the world a better place to live in.

Credit is also due to my colleagues: Dipankar Dey, Mita Dutta and Rajan R. Gandhi who oversaw the work at various stages. My sincere thanks are due to Pushpa Girimaji, the noted consumer journalist, for writing the Foreword.

Jaipur
March, 2004

Pradeep S Mehta
Secretary General

Chapter 1

Introduction

Safety is a fundamental right and an essential condition for sustainable development of society. Safety is, however, not defined as a situation with total absence of hazards. Safety is a state in which hazards and conditions leading to physical, psychological or material harm are controlled in order to preserve the health and promote the well being of individuals and the community.

The expansion of the market and the availability of a wide range of consumer goods and services have led to a situation where the possibility of unsafe goods and services creeping into the market is inevitable.

It is the prime responsibility of the State to ensure the safety of the people, provide them a secure environment and establish quick and effective mechanisms for compensating the victims of such systems.

Governments and courts in many countries have instituted safety standards, legislation, and enforcement mechanisms to protect the interests of consumers and grant them the rights of choice, safety, information and redressal.

The right to safety is important for safe and secure living. Without any effective regulatory mechanisms, consumers suffer the most in terms of safety. The right to safety means the right to be protected against products, production processes and services that are hazardous to health or life. It includes concern for consumers' long-term interests as well as their immediate requirements.

Right to Safety under UN Guidelines for Consumer Protection

The UN Guidelines for Consumer Protection clearly mention the right to safety as one of the inalienable rights of the consumer. The Guidelines provide a framework for the governments, particularly those of developing countries, to use in elaborating and strengthening consumer protection policies and legislation.

The UN Guidelines consider two kinds of safety: physical safety and standards for the safety and quality of consumer goods and services.

As regards physical safety, it states that:

> "Government should adopt or encourage the adoption of appropriate measures, including legal systems, safety regulations, national or international standards and the maintenance of safety records to ensure

that products are safe for either intended or normally foreseeable use. Consumers should be instructed to the proper use of goods and should be informed of the risks involved. Vital safety information should be conveyed to consumers by internationally understandable symbols wherever possible."

The Guidelines also recommend the adoption of policies to ensure that manufacturers compensate for defective or hazardous products.

As for the second one, i.e., standards for the safety and quality of consumer goods and services, the Guidelines state:

"Government should as appropriate, formulate or promote the elaboration and implementation of standards, voluntary and other, at the national and international levels for the safety and quality of goods and services and give them appropriate publicity. These standards should also be reviewed periodically to conform to accepted international standards. Further, the Government should encourage and ensure the availability of facilities to test and certify the safety, quality and performance of essential consumer good and services."

Right to Safety in India

The right to safety is protected by the Constitution of India, as well as by various laws enacted by the Parliament and the State Legislatures.

Fundamental Rights: Safety Provisions

Consumers should be aware of certain fundamental rights that have a direct or indirect relation to the right to safety. Such rights are:

Article 21:	Protection of life and personal liberty; and
Article 24:	Prohibition of employment in factories, etc., or engagement in any hazardous employment of children below the age of 14 years.

Article 32 of the Constitution provides for enforcement of such rights. A citizen has the right to move the Supreme Court by appropriate proceedings and the latter has the power to issue directions or writs for enforcement of these rights. Under Article 226 of the Constitution, the High Courts also enjoy similar powers to issue writs in cases of violation of fundamental rights.

Fundamental Duties: Safety Provisions

Article 51 A (g):	….to protect and improve the natural environment including forests, lakes, rivers and wild life and to have compassion for living creatures; and
Article 51 A (i):	….to safeguard public property and to abjure violence.

Directive Principles of State Policy

Although the Directive Principles are not enforceable by law, like the Fundamental Rights, the principles laid down therein are fundamental in the governance of the country and it is duty of the States to apply these principles while making laws. The State is required, in particular, to direct its policy to ensure:

- that the health and strength of workers, men and women and the tender age of children are not abused and that citizens are not forced by economic necessity to enter avocations unsuited to their age or strength [Art. 39(e)];
- that children are given opportunities and facilities to develop in a healthy manner and in a condition of freedom and dignity and that childhood and youth are protected against exploitation and against moral and material abandonment [Art. 39 (b)];
- that free legal aid is provided to the poor and that opportunity for securing justice is not denied to any citizen by reason of economic or other disabilities [Sec. 39A];
- that the level of nutrition and the standard of living is raised, public health is improved and in particular, prohibition of consumption of intoxicating drinks and use of drugs which are injurious to health are prohibited [Art. 47]; and
- that provisions are made for protection and improvement of the environment and safe-guarding of forests and wild life [Art. 48A].

Consumers should be aware of all these provisions, whether justifiable or not, as the Constitution is the mainstay of our legal structure and all the pieces of legislation have to conform to the constitutional provisions to be, and remain, valid.

Industrial development in the field of manufactured goods has led to an influx of various consumer goods into the Indian market, to cater to the needs of the consumers, and a variety of services, such as banking, financing, insurance, transport, housing construction and entertainment have been made available to the consumers.

In order to protect the consumers from exploitation and to save them from adulterated and substandard goods and deficient services, the Consumer Protection Act (CPA) came into force on April 15, 1986.

Under the CPA, 1986, a consumer is a person who consumers goods or avails of services for a consideration, whether a) paid, b) promised or c) partly paid and partly promised. Thus, all of us, who buy goods or who use services are consumers, whether we pay for them directly or indirectly.

The said Act enshrines the following six rights of a consumer:

Safety: The right to be protected against the marketing of goods and services, which are hazardous to life and property.

Information: The right to be informed about the quality, quantity, potency, purity, standard and price of goods or services, so as to protect the consumer against unfair trade practices.

Choice: The right to be assured, wherever possible, of access to variety of goods and services at competitive prices.

Representation: The right to be assured that consumer's interests will receive due consideration at appropriate forums.

Redressal: The right to seek redressal against unfair trade practices or unscrupulous exploitation of consumers.

Education: The right to acquire the knowledge and skill to be an informed consumer throughout his life.

Simultaneously, six other consumer protection laws were amended to give consumers and their organisations the right to prosecute offenders. These laws are:

- Standards of Weights and Measures Act, 1976;
- Prevention of Food Adulteration Act, 1954;
- Bureau of Indian Standards Act, 1986;
- Agricultural Produce (Grading and Marking) Act, 1937;
- Monopolies & Restrictive Trade Practices Act, 1969; and
- Essential Commodities Act, 1955.

India has also introduced certain certification systems to ensure availability of safe and quality products to the consumers. The Bureau of Indian Standards

(BIS) certification marks scheme was introduced in 1956. Various items of mass consumption, which had health and safety implications, were brought under compulsory "ISI" marking through different enactments. Examples of such items are food colours and additives, milk powder and condensed milk, *vanaspati* and *vanaspati* containers, LPG cylinders, miners' equipment, steel products, etc. Another legislation to ensure pre-tested products is the Agricultural Produce (Grading and Marking) Act 1937, which awards "Agmark" for certain food articles, such as edible oils, spices, honey, etc.

Present Indian Scenario

Although Directive Principles clearly spelt out that children should be given opportunities and facilities to develop in a healthy manner, our article "*Beware of pesticide in your food*" reveals that even breast milk contains pesticides residue. Toys are considered as important tools that help children to develop their Intelligence Quotient (IQ). But, unfortunately, most of the toys available in the market are made of harmful Poly Vinyl Chloride (PVC). Similarly, Article 24 prohibits employment of children below 14 years in any hazardous job, but most of the firecracker factories in the country employ child labour. Chocolate, mouth-watering for any children, was recently found to be contaminated. Even lots of imported chocolates are being sold in the country that do not adhere to our food safety norms.

The recent issue of pesticide residue in water and soft drinks also elucidated that our certification system needs more attention and needs to be updated regularly.

The present Indian scenario can be explained as following:

- Lack of awareness of consumers about their safety-related rights (what they can expect and should demand);
- Lack of information on products/services quality and related hazards;
- Lack of interest on the part of manufacturers/producers/service providers/ traders/regulators to implement safety norms; and
- Lack of motivation/interest on the part of regulatory authorities to implement safety norms in a proactive and reactive manner.

The problem is that, even if the Government/Supreme Court lays down certain standards/restrictions, there is laxity in the implementation of such orders/ instructions by the authorities concerned. The consumers also do not show sufficient interest in the follow-up action or extend necessary co-operation to the authorities concerned.

Few examples given below will clear the picture:

- The Supreme Court has banned firecrackers that generate noise greater than 125 decibels but in practice, such crackers are still available in the country during festivals like Diwali.

- The objective of the most important regulation for ensuring food safety and quality, the Prevention of Food Adulteration Act (PFA) 1954, is to formulate and monitor standards of quality and purity. The provisions of the Act are mandatory and their contravention can, theoretically, lead to both fine and imprisonment, but this seldom happens. Even a cursory look at the quality of food commodities being sold in the open market indicates improper implementation of the PFA. Also, a lot of imported products have flooded the Indian markets that do not follow the PFA guidelines.

- As per the Law, hospitals, nursing homes and clinics of doctors, who declare or profess in writing that they provide 24-hour services, are legally bound to attend all cases. Failure to have the requisite equipment in working order and non-availability of competent staff within reasonable time would be inferred as medical negligence. But, in India, common picture is that emergency cases are not entertained by the private clinics/nursing homes by offering lame excuses like non-availability of beds!

- The Centre promulgated the Edible Oils Packaging (Regulation) Order 1998, under the Essential Commodities Act 1955, to make packaging of edible oils sold in retail compulsory, unless specifically exempted by the State Governments concerned. As per the Law, edible oils including edible mustard oil, were to be sold only in packed form from December 15, 1998. It is now over five years since the Edible Oil Packaging Order was promulgated, but nowhere in India it is being properly implemented.

- The National Building Code (NBC), formulated by the BIS, governs the design, safety and health aspects of buildings and structures. The fire protection requirements for all classes of buildings are covered in Part IV of the Code, which was revised and updated in January 1997. But, most high-rise structures constructed by private builders do not have a No-Objection Certificate (NOC) from the Fire Department. In some cases, even government-owned high-rise buildings do not have NOCs.

- Although safety norms, like compulsory wearing of seatbelts by front seat occupants of cars and use of helmets while riding two-wheelers exist, they are rarely followed.

- As per Milk and Milk Products Order (MMPO) 1992, private dairies dealing in between 10,000 and 75,000 litres of milk per day should get themselves registered with the concerned authority. But, in practice, many such dairies operate without the required registration.

All these issues have been discussed in detail in this book.

Thus, we see that we have a number of laws, but they are rarely implemented. There is also lack of initiative on the part of the implementing authorities.

Despite making it mandatory for certain products to adhere to the ISI norms, many products can be found in the markets without ISI specification/marks. Even the ISI marked products, in certain cases, are found not adhering to the specifications. Consumer organisations have highlighted such issues from time to time.

Another flaw of our system is that various laws governing consumer interests are dealt with by different ministries and often the left hand does not know what the right hand is doing. For instance, while the Ministry of Health looks after the Drugs and Cosmetics Act, the Ministry of Petroleum and Chemicals looks after the Drugs Regulation & Control Act. While the Ministry of Civil Supplies deals with CPA and the BIS Act, the Ministry of Agriculture deals with the Agmark law.

One of the main reasons of poor implementation of safety-related measures is the lack of consumer awareness. Majority of the consumers are not aware of the existence of such laws/rules. They are also not aware of their rights and in case of any problem they are not sure whom they should approach.

It is now 17 years since the CPA was introduced, but only a very small percentage of consumers are aware of the existence of the Act. Similarly, from time to time, the Government amends various laws and rules to protect the interests of consumers. But unfortunately, those for whom these changes are made remain mostly ignorant about them. Thus, consumers in India need to be informed, educated and guided on important issues that concern their rights as consumers.

It is quite likely that in the absence of checks by authorities and demand from consumers, producers/manufacturers/traders are not willing enough to comply with the law.

To ensure proper implementation of the existing rules, the need of the hour is an effective consumer movement. The fact that consumers can play a vital role in formulation and implementation of standards is evident from the example of

our Western counterparts, where consumers have already taken over the responsibility of acting as watchdogs. Empowerment of consumers has led to high awareness levels. Thus, there is an urgent need to sensitise consumers, so that they are ready to take the hassle. This book is an attempt to educate consumers on different safety issues related to their daily lives.

We sincerely hope that this book would be successful in bringing about a strong consumer movement, which will ensure that the authorities will strictly implement the rules and producers would be obliged to follow those.

Chapter 2

Product Safety

How Safe is Your Cosmetics?

The inborn desire to look beautiful by using cosmetics has been a practice for thousands of years. However, the use of chemical cosmetics grew rapidly since the beginning of the 20th century. From baby oil to face powder, lipstick, fairness creams et al., cosmetics seem to have become indispensable. India, with its population of over a billion, has become an attractive market for the cosmetics industry. India's cosmetics industry is worth Rs. 1,800 crore, with a growth rate of 25 percent. Currently, the market is flooded with both domestic and foreign products. Apart from the branded products, there are innumerable non-branded ones as well.

Due to the lack of purchasing power, a majority of the population buys low-quality products, which are seldom manufactured following standard procedures. The Bureau of Indian Standards (BIS) warns that substandard cosmetics could contain chemicals, such as strong acids and alkalis, which are harmful for skin. Women are worst affected by toxic chemicals like *para tertiary butyl phenol*, a resin used in adhesives for *bindis* (a spangle ornamenting women's forehead), *paraphenyline diamine* used in hair dyes and *kaali mehendi* (blackened henna powder or paste), lead oxide and dyes in *sindoor* (vermilion), azo dyes in *kumkum* (a saffron-coloured preparation used for making bindis or the likes), etc. Dermatologists caution that poor-quality cosmetics could cause severe itching, swelling, eczema, leucoderma, de-pigmentation and even cancer.

The use of *bindi* and *kumkum* is well known for causing rashes on the forehead. There is no prescribed standard and requirement of a manufacturing license in respect of *bindis*. These are manufactured in an un-regulated and un-supervised manner all over the country.

In recent times, eye-liners and eye-shadows have successfully replaced '*kajal*' (a black substance applied to eyes either for medicinal purpose or its cosmetic value). On the labels, there is no mention of the chemicals used in the preparation of the product. There are no written instructions on these products. The use of such products could lead to trachoma and in the long run, even to cataract or blindness.

Even branded cosmetics could be a source of allergic reactions, depending on the skin type. Ingredients such as fragrance and preservatives could cause

allergic reactions to some people. Sometimes natural ingredients could also result in various skin problems. Nearly half of the respondents in a telephonic survey, conducted by CUTS in November 2001, said "yes" to the query whether they had suffered an allergic reaction to personal care products, mostly in the cases of the use of sunscreen lotions, fairness creams, deodorants, soaps and *bindis.*

Another area of concern is the cosmetics used by beauty parlours. Due to paucity of time or in the hope of "professional" treatment, women frequently visit beauty parlours. But, there is no quality check on the cosmetics these parlours use. In May 2001, it was reported that the use of spurious cosmetics by beauty parlours in Allahabad caused a rash of skin disorders, thereby alarming the medical fraternity. More than 50 percent of the City's cosmetic market was believed to be saturated with "duplicate" and toxic beauty products used in facial makeup, dyeing, hair removing and the likes. Labelled as herbal products, there was no date of manufacture or expiry, batch or code number, etc. If checking is not done rigorously, this can happen in any part of the country.

Manufacturers believe that by labelling a product "herbal" or "Ayurvedic," they can get away with gross violations of the law and simultaneously capitalise on the herbal cosmetic's craze, as people often forget that natural substances can be as toxic as synthetic substances.

Now the question arises whether the herbs used in the cosmetics undergo proper examination. There is a little confusion here. The Hyderabad State Drug Control Authority said that herbal cosmetics are out of their purview. It is the Department of Indian Systems of Medicine and Homeopathy that is responsible for that sector. But, according to the Department officials, most of the "herbal" cosmetics contain chemicals and, hence, these products do not fall under their purview. Thus, the confusion remains and, ultimately, no testing of these products is done.

Cosmetics are governed by the Drugs and Cosmetics Act, 1940. The Act has been amended from time to time, with a view to maintain quality control. However, despite all these amendments, cosmetic manufacturers continue to use substandard raw material. What is more, there is virtually no check over the chemicals used in these cosmetics.

What should the consumers do?

- As a precautionary measure, consumers should check the list of ingredients on the cosmetic container before purchasing and avoid buying the product

if they identify an ingredient that they know they are allergic to. But, as mentioned earlier, often consumers do not find the ingredients' list on the cosmetic pack, despite this being a mandatory requirement.

- Further, even when the full list of ingredients is mentioned, the technical names of the ingredients are meaningless to those without a medical background. Most importantly, the illiterate consumers cannot even read the ingredients' list.

As a solution to the above problems, we could think of a symbol that signifies the safety of the product, as we have ISI marks for cement, electrical appliances, gas/electric ovens, etc.

Such a safety symbol is also necessary to save the consumers from spurious cosmetics. The sale of fake cosmetics is confined not only to small shops in rural markets, as is commonly believed, even big shops in urban markets sell spurious products. According to Globe Detective Agency of Hyderabad, 25 percent of the market has been captured by fake products. They get at least two cases of cosmetic piracy every month. Hair oils, soaps and deodorants are the most vulnerable items, they informed. Since there is no quality check, the consumers buying these spurious products run the risk of skin reactions.

The scenario is quite alarming. But, people tend to disregard the risks, as the impact of harmful cosmetics on health is often felt over a protracted period of time, not immediately.

To protect Indian consumers from this risk, a series of steps is required:

(I) The Government must announce very strict penalties for shopkeepers, beauty parlours and vendors of cosmetics who sell or use products which are fake, un-labelled or do not carry even the minimum required statutory information under the Packaged Commodities Act (such as the name of the manufacturer, to whom the liability can be attributed). If a producer of fake and spurious products is deprived of a sales outlet, he will go out of business. In the case of imported cosmetics, the name and address of the importer must be clearly mentioned and it should be made clear by law that the importer will be legally responsible for the safety aspect of the product.

(II) The Government must publish a list of known toxic chemicals that are banned for use in cosmetics and toiletries. This should be made known to the Industry Associations, and through them, to their constituents. Any

deliberate use of banned chemicals should be severely penalised. Stringent action should be taken against the owners/ directors as well as the senior officials of the manufacturing units deliberately using banned substances or manufacturing fake or spurious cosmetics.

(III) Manufacture of cosmetics and toiletries should not be permitted without a valid manufacturing licence. Records of each manufacturer must be maintained by the State Government, which should renew licences only if there are no serious cases pending against the manufacturer. The licence number must be made part of the labelling requirements.

(IV) The Government should seriously investigate whether some form of certifying label can be awarded to those products that do not contain harmful substances. This could be in the form of an ISI mark.

(V) The standards for cosmetics and toiletries should be universally applicable, irrespective of whether or not a product contains "herbal" ingredients. Buck-passing between different departments of the Government should not be allowed. An educational campaign, demonstrating that so-called "herbal" or "Ayurvedic" cosmetics can also be very harmful, should be launched, so that consumers are not lulled into a false sense of security.

(VI) And, finally, the Government, reputed manufacturers and consumer groups should join hands to inform the consumer of what is safe and what is not.

This article is an updated version of the article "How safe is your lipstick?" which was published in the Times of India on 03.01.02.

Use Mosquito Repellents with Caution

In India, millions of people suffer from mosquito-borne diseases, i.e., malaria, filaria, dengue, etc. The reason is gradual increase in resistance power of mosquitoes against insecticides. Hence, fighting mosquitoes and the diseases spread by them has been a continuous challenge.

Traditionally, we have used various natural products or mosquito nets to cope with the mosquito menace. Our ancestors used to burn natural herbs and their extracts to combat this nuisance. However, modern consumerism is slowly replacing the old, time-tested and safe natural methods. The Indian consumers are provided with wide range of choices of mosquito repellents available in the form of mats, coils, lotions and vapourisers.

The US Environmental Protection Agency (EPA) estimates that more than 38 percent of the US population uses a DEET (diethyl toluimide)-based insect repellent every year and that the worldwide usage exceeds 20-crore consumers annually. The Indian market for various mosquito repellent, viz. coils, mats, lotions and vapourisers is estimated to be Rs. 500-600 crores, growing annually at 7-10 percent. This upward trend is mainly because of the increase in people's willingness and capacity to buy repellents. Advertisements also play an important role in increasing the demand for these products. Although these advertisements highlight the easy-to-use features, they suppress vital information such as their possible effects on human health.

Studies have revealed that many mosquito repellents are hazardous and produce symptoms, such as nausea, anxiety, diarrhoea, convulsions, bronchitis, respiratory problems, eye irritation or even fever in humans. These symptoms and disorders are caused by pyrethroids, a class of insecticides manufactured synthetically. Pyrethroids attack the nervous system of insects, provoking excitation, paralysis and death. Such chemicals are highly toxic and injurious to humans too. Under this class, allethrin-based products are included, i.e., allethrin, d-alletherin, d-trans-allethrin, pynamin, EBT, bio-allethrin, eshiol, eshiothrim, ETOC, etc.

Researches abroad have already established that prolonged use of mats is harmful for several organs in the human body. It can lead to corneal damage, shortness of breath, asthma and even damage the liver in the long run. According to experts, chemicals used in mats and coils can adversely affect

male and female fertility. The blotting paper used in the preparation of the mats contains dioxin, a proven carcinogen. Traces of dioxin are released from the mat during the heating process.

A report by the Cornell University in the USA warns that the prolonged use of these materials could cause nausea, vomiting, diarrhoea and convulsions. According to a study conducted by Dr. Devika Nag at King George Medical College, Lucknow, in 1998, mats and coils should be used only for a few hours at a time. Infants exposed to mats for a long time may get convulsions. Studies in China too have proved that long-term exposure can lead to adverse effects, especially in lightweight individuals, particularly children.

The findings from the researches done in Sweden and the USA on coils, mats and vapourisers are even more dreadful. The research revealed that using these products for a long period could cause brain and blood cancer.

When allethrin was introduced in America about 40 years ago it was intended for outdoor use only. However, in India, small single-room dwellings exist and the usage of allethrin-based coils and mats in such cramped indoor settings makes them even more dangerous. The manufacturers further recommend closure of all windows and doors for about an hour, after putting the mat burner on, for best results.

A multi-centric questionnaire-based study conducted in rural and urban areas of nine states by V.P. Sharma of Malaria Research Centre (MRC), in 2002, revealed that repellents are harmful to human health and their use should be avoided and discouraged. The survey of 5,920 users revealed that more than one in 10 users "complained of a variety of acute toxicity either soon after or within a few hours of use of repellents." The most common complaint was breathing problem, followed by eye irritation, often accompanied by bronchial irritation, headache or skin allergy. Cough, cold and running nose were other complaints and, in two cases, the users who did not have asthma before, became asthmatic. Of those using repellent creams, 11.4 percent reported skin reaction and itching. Of the 286 doctors covered in the survey, 165 or 57.6 percent, reported acute toxicity following use of repellents. Reporting the survey results in February 10, 2001 issue of *Current Science*, Sharma stated that researchers around the world, experimenting with animals, are now discovering that prolonged exposure to allethrin is harmful.

According to recent studies at the Industrial Toxicology Research Institute (ITRC), prolonged exposure to mosquito repellents can be hazardous to the health of children and pregnant women. The vapours inhaled by a pregnant

woman can reach the foetus and, later, can also be passed on to the child through the mother's milk during lactation. This can lead to brain damage in the baby. According to a scientist at ITRC, scented sticks, mats, coils and liquidators contain 1.5 to 3.6 percent of allethrin, and therefore, if the vapours are inhaled by children, it can be unsafe, as it crosses the Blood Brain Barrier (BBB), which is at its formative stage among children. The BBB prevents toxic substance in the blood stream from reaching and damaging the brain. This barrier is breached by allethrin.

Realising the side effects of such mosquito repellents, Gujarat State Consumers Protection Centre had conducted a study on mosquito repellents, in public interest. It requested the Ministry of Health and Family Welfare, Government of India, to issue necessary orders to stop the manufacture and sale of mosquito repellents containing harmful insecticides. However, the Health Ministry has no say in the registration or de-registration of insecticides. As a result, nothing has happened to date.

Commercial formulations may contain a variety of chemicals in order to enhance the efficacy of the product and prolong the activity of the active ingredient. Repellents may also contain perfumes to conceal the odour that repels the mosquitoes. It has been found that mat manufacturers violate the Insecticide Act by using perfumes not mentioned in their "Registration Certificates." Although these insecticides and perfumes do not impair our metabolic process, their reckless and excessive use can lead to accumulation of compounds in the human body.

In the background of such facts and doubts about repellents, the consumer is faced with the real dilemma of "to use or not to use" mosquito repellents. On the one hand, there are mosquitoes and the threat of dreaded diseases like malaria and, on the other, these killer repellents. A study conducted by the National Malaria Eradication Programme (NMEP), Delhi, reported that two million people suffer from malaria in India each year. Under such a compelling situation, people are perhaps forced to die slowly through the route of repellents.

But instead of choosing the path of slow death, people can use various alternatives to chemical-based repellents, such as emptying and drying of stagnant water, good drainage, use of mosquito nets or window screen and burning *neem* leaves. Crushed lemon thyme can also come in handy to overcome the problem.

To help consumers in making an informed choice, all relevant information, such as toxicity profiles of ingredients, method of handling, precautions, etc., should be provided in greater details on the pack of the product.

It is also suggested that the authorities concerned continually re-evaluate the safety of various active ingredients used, in the light of contemporary research findings.

Comments
B. Vaidyanathan, Consumer Protection Council, Rourkela: This is a well-written article, which is quite informative. It has been rightly pointed out that the consumers face a dilemma whether or not to use mosquito repellents. **H.D. Shourie, Common Cause, New Delhi:** There is a greater need of ensuring that the repellents used by the people do not cause harm and steps also need to be taken to ensure that mosquito breeding is overcome to the maximum extent possible. On reading this particular write-up, I, as a citizen, feel somewhat disturbed as to which repellent should be used and which repellent can prove harmful. It would obviously be better for the Malaria Research Centre to propagate the measures as effectively and widely as they can. **Ramaben R Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot:** "Go back to nature," i.e., the use of herbal preparations for mosquito repellents is the best and cheapest substitute. Another option is the use of mosquito curtains.

Celebrate Diwali with Joy, not Accidents

Every year, the sound of firecrackers announces the advent of Diwali. Characterised by a mega firework session in the evening, Diwali has become the festival of sounds instead of lights. People, especially children get more pleasure in bursting firecrackers rather than lighting *diyas*. The fire-related accidents and the restrictions, apart from the increasing awareness on noise pollution, has failed to dampen the spirit of Diwali.

Every body waits for Diwali to come, as it is all about firecrackers and the sparkle it brings to every child's face. But, this festival can well turn out to be a nightmare, if enough precautions are not taken. Every year, the number of accidents caused by fireworks is increasing. On an average, every year 450-470 people die of fire injuries caused by fireworks. The victims, often bystanders, are mostly children below 15. Eye injuries are very common, with many leading to permanent visual loss, which accounts for 20-25 percent of the "Diwali accidents." Huge amount of risk is associated with manufacture, sale and use of fireworks.

Manufacturing of fireworks is a highly risky job, as manufacturers seldom follow the basic safety standards. Fire often breaks out in fireworks factories, killing and injuring people working there. Every year, a large number of accidents take place in fireworks factory all over the country. While the major ones are reported, the minor accidents go unaccounted.

The sale of fireworks is also not without dangers. Sellers are supposed to follow some standard safety norms while selling fireworks. But, mushrooming of stalls displaying crackers violating safety norms is a common picture all over India. With wholesale dealers putting up their shops in densely populated areas, accidents are a serious possibility. The worst part is that sometimes these stalls are an extension of their homes, which makes it dangerous, due to the unavailability of any escape route in case of a fire. The stalls on the road are prone to fire hazards, as even a cigarette butt can ignite the entire stock.

The Explosives Act 1884 and the Explosive Rules 1983 authorise only licensees to trade in fireworks and crackers. Fireworks are not to be sold on footpaths, streets or highways. The outlets should not adjoin shops using, selling or storing inflammable products. Even two shops selling fireworks should be at least 15 metres apart. To be located only on the ground floor, firecracker shops

may be constructed of asbestos, tin or concrete. Wood and cloth are to be avoided, in any case. The shops should measure at least nine square metres and have adequate security measures in place. The electric wiring should be up to the mark. Lights, paints or other inflammable articles are not to be kept on the premises. Water, sand and fire extinguishers must be readily available.

Unfortunately, none of the above steps are followed in India to ensure safety. There are strict legal controls on the sale and use of fireworks in several other countries. In the US, sale of fireworks, barring sparklers, is banned in most states. Firework displays under controlled conditions by professionals and fire brigades are allowed. In Canada, the retail sale of fireworks is banned.

In India, fireworks are being sold to customers irrespective of their age. But, in Canada, sparklers and indoor type fireworks are available only to adults, carrying the necessary "Certificate of Competency." Similar conditions apply in Japan, where minors cannot buy firecrackers. These too contain only a small quantity of explosive mixture. In several European countries, parents have to ensure that children do not get hold of banned fireworks. Their usage is strictly controlled and licensed. The Government of India should also take steps to prevent sale of fireworks to people below 18 years of age.

Use of fireworks is the most risky part. Talking about flying crackers, they have been a menace near *puja pandals* (pavilions erected for religious ceremonies). As a safety precaution, each *pandal* should have separate exit and entrance gates, and entry passage in *pandals* should be such that fire engines can enter into it without any obstruction. Further, bursting firecrackers near *pandals* should be discouraged.

Safety concerns demand that firecrackers should be burst only in open spaces and not in narrow lanes and congested localities. Fireworks for display are not permitted to be ignited within 15 metres of any tent, trailer or canvas shelter of a motor vehicle and 200 metres of any place where explosives, inflammable or hazardous substances are stored. Also, they should not be burst within 200 metres of hospitals, temples and schools, unless permitted by local authorities.

Accidents are most likely to occur when children play with firecrackers. According to the Burns Association of India, *tubris** and rockets are the most dangerous. Sometimes, *rang mashals** also burst accidentally.

(* Various types of firecrackers)

SAFETY TIPS

- Light fireworks only outside the house.
- Parents should accompany their children when they burst firecrackers
- Tight cotton clothes and footwear are a must for children.
- Light firecrackers from the side, without bending over them, and quickly move away, before they burst.
- Avoid dangerous pranks such as throwing lighted crackers or sparklers at others.
- Buy fireworks that are legally manufactured, and follow the directions mentioned on the pack.
- Keep a bucket of water and dump the burnt crackers and sparklers in it. It can also help in putting out a fire.
- Do not rub the eyes after handling crackers, as they contain harmful chemicals that may cause irritation.

Bursting of firecrackers has made Diwali synonymous with air pollution as well as noise pollution. Crackers emit harmful gases like copper, magnesium, zinc, nitrate, potassium and lead. Pollution levels rise by about six to 10 percent during Diwali, with nitrous oxide and sulphur dioxide levels rising considerably. People are prone to getting bronchitis, asthma and heart attacks, besides skin and eye irritations.

Every year, during Diwali, sound pollution reaches alarming levels. While playing with firecrackers, no body seems to remember that young babies, students preparing for examinations and old people in the neighbourhood are also entitled to enjoying a peaceful environment, without becoming a victim of noise pollution. According to medical experts, blast sounds caused by firecrackers, with high decibel level, can permanently damage eardrums, causing hearing impairment. Infants, children, pregnant women, asthmatics and senior citizens are at a greater risk of injuries and shock.

India has a law that bans manufacture, sale and use of firecrackers generating sound more than 125 decibels. The Supreme Court has ordered restrictions on both the decibel levels of firecrackers and the time up to which they can be set off. Any firecracker that emanates a sound of over 125 decibels, four meters away from the spot it is set off, has been banned from being produced. Garlands of firecrackers that comprise 50, 100 or more numbers should not cross the decibel levels of 115, 110 and 105, respectively. The firecrackers that produce noise beyond the permitted levels have been banned. Citizens can set off firecrackers only from 6 p.m. to 10 p.m. No firecrackers should be set off between

10 p.m. and 6 a.m. However, this order does not seem to have reached either the sellers or the users of crackers.

The Court had also directed the authorities to ensure that firecrackers are not used at any time in silence zones such as within 100-metres area of hospitals, nursing homes, educational institutions, religious places and courts. *Are the directives being followed religiously?*

Proper steps should be taken to ensure strict implementation of the laws. There is no doubt that manufacturers and sellers are violating the safety norms, but the common people are also encouraging them. Had they not been purchasing the banned crackers, why would the manufacturers produce such products? Therefore, before blaming others, we ourselves should be more cautious and follow the Supreme Court directives and also encourage others to follow the same. Unless, this is done, no law can be effective in our country. It, ultimately, rests with the people to turn Diwali into a festival of joy and not sorrow.

This article is an updated version of the article "Celebrate the season with joy, not accidents," published in the Times of India on 14.11.01.

Comments

Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot: Children should be persuaded to use less harmful firecrackers. The manufacture of firecrackers with a noise pollution beyond 125 decibels should be strictly banned.

R.D. Saxena, Consumers' Forum, New Delhi: Although crackers generating noise greater than 125 decibels are still available in Delhi and were brought and used by many people last Diwali, the noise level was much less as compared to earlier years.

How Safe are Your Toys?

Playing with toys is an essential part of every child's life. Toys allow children to grow and develop socially, physically, emotionally and intellectually. A child's development during the first five years is more dependent on the available play materials than at any other period. But, unfortunately, toys are not without their hazards.

Many of us will remember the withdrawal of rattles by Lego from the international market in 2001, which was triggered by two cases in Europe where the rattle ends got stuck in the mouths of babies.

Choking remains the leading cause of deaths from toys. It is usually suggested that while purchasing toys, one should ensure that all the parts of toys are larger than a child's mouth, so that no part of it is accidentally swallowed. There are numerous incidents of babies choking on these parts, or getting loose parts stuck in their noses. The Child Safety Protection Act in the US increased the size of banned small balls permitted in toys because of the choking hazard associated with round objects.

Very often toys are attached with long strings or cords, which easily can get wrapped around a small child's neck and cause strangulation. Children's ears are more sensitive than adults and their hearing is easily damaged. Toys such as caps and guns can produce sounds at levels that can damage hearing. Toys with sharp or pointed edges and toys that shoot small objects into the air pose a risk of eye injury. It is critical that the toy one chooses for a child is appropriate for the child's mental and physical capabilities.

Besides unsafe designs, the materials used in toys also pose health hazards for kids. Currently, all over the world, concern is being raised on the safety of PVC (polyvinyl chloride) toys. PVC is the plastic widely used to make toys, as it is cheaper and easier to process and has more colour possibilities than conventional toy-making materials. But, PVC contains harmful chemicals like phthalates, lead and cadmium.

Phthalates are used in PVC toys to make them soft and pliable. As phthalates are not chemically bound to PVC, they are likely to be ingested by children. Independent government studies in the US and several other countries have demonstrated that when children put PVC toys in their mouths, they can ingest

dangerous levels of phthalates. According to Health Canada, a Canadian Government agency, if a child weighing less than eight kg sucks or chews a soft PVC toy for prolonged periods, say, three hours or more a day on a daily basis, phthalates from the toy could pose a potential health risk.

Phthalates have a tendency to leak at a rate of up to one percent each year. In April 1998, the European Union Scientific Committee reported that the two most common phthalates, di ethyl hexyl phthalate (DEHP) and di isononyl phthalate (DINP), seeped from PVC toys at potentially dangerous levels.

DEHP is the most widely used phthalate in PVC plastics, and has been labelled by the US Environmental Protection Agency (EPA) as a probable human carcinogen. In 1982, the International Agency for Research on Cancer (IARC) declared DEHP as a "probable carcinogen." As a result, it was voluntarily withdrawn by many toy manufacturers selling products in the US. In Switzerland, its use has been banned in toys designed for children under three.

In 1996, GreenPeace began an investigation into PVC toys. A total of 71 toys from 17 countries including five from India, were purchased and analysed. Two of the toys purchased from India contained 11.4 and 13.9 percent DEHP of the weight of the toys, which was the highest amongst the amounts found in all the toys sampled.

The European Commission banned phthalates in soft children's toys in 1999. Toy-makers in the US voluntarily stopped using DEHP in their chew products.

Market reports have shown that the use of DEHP has been replaced predominantly by DINP, which has been shown to produce tumours and other chronic effects in laboratory animals. Laboratory tests on animals have shown that intense DINP exposure can cause damage to the kidneys and liver.

It is not only the phthalates that pose danger but also the lead and cadmium present in children's products, as found in the tests conducted by independent laboratories in the US. According to Toxics Link, a Delhi-based non-governmental organisation, it is not necessary to actually swallow lead or cadmium to cause poisoning; even simple licking, chewing, sucking, inhaling and hand-to-mouth behaviour is good enough to do the harm.

Lead is so deadly that it causes irreversible damage to the nervous system, leads to decreased intelligence, behavioural abnormalities and learning disabilities. Since vinyl windows deteriorate from the effects of the heat of the sun and releases lead dust at dangerous levels, vinyl window shades containing

lead have been banned in the US. According to a study conducted by GreenPeace and the University of North Carolina, the same type of deterioration can happen in PVC toys left in the sun. Cadmium is even more toxic than lead and can cause kidney damage and is linked to cancer.

Belgium, Italy, the Philippines, Denmark, Sweden, the Netherlands, Austria, Germany and Spain have either proposed bans for PVC toys, urged toy manufacturers to stop manufacturing them, or recommended that retailers withdraw them from stores. Very recently, the Japanese Toy Association has confirmed that it will not allow toy producers to put the "Save Toys" mark (certified by Japanese Toy Association) on packages of toys intended for chewing, if the toys contain PVC.

Since 1996, GreenPeace has asked toy manufacturers to reveal the ingredients in children's toys. With a few exceptions, the toy industry has refused to disclose this information. Lego, IKEA and Nike have pledged to make all of their products PVC-free.

Possible perils to the health of tiny tots, posed by PVC toys, were accepted recently by a scientific committee of the European Union (EU) in Brussels. Promptly, the Austrian Government prepared to ban PVC toys that require dangerous softeners. Danish, Dutch, German and Belgian authorities also followed suit by recommending voluntary withdrawal of soft PVC toys by the manufacturers.

As governments in the West ban soft PVC toys, activist groups such as GreenPeace fear that in the near future, big names in the business could dump their poisonous products in countries with lax laws and low awareness, such as India.

Imported unsafe toys are already sold unhindered in the best shops in India. Toys also come from China and Thailand, where manufacturing standard is low. Market analysts say that the future for toys, including those made of soft PVC, is bright in India, where the current per capita expenditure on toys is one cent, as compared to $35 in the US.

This, coupled with the fact that most Indian manufacturers do not follow any standards, makes the situation more dubious. The Rs. 1500-crore Indian toy industry is dominated by small producers scattered across the country. This makes it difficult to regulate the industry.

For India, what is alarming is the fact that no Indian Government agency has been monitoring toys, whether manufactured locally or imported ones, for

toxicity. The Bureau of Indian Standards (BIS) has the following standards for toy safety:

IS 9873:	Part I: 2001	Safety aspects related to mechanical and physical properties;
	Part II: 1999	Flammability requirements; and
	Part III: 1999	Migration of certain elements

But, the manufacturers are not obliged to adhere to the BIS guidelines, unless they are exporting. The enforcement of guidelines is yet to be made mandatory for domestic toy manufacturers. Thus, most of the toy industry's ills stem from the voluntary nature of standards. It is high time that the standards are made mandatory, so that every producer follows them strictly. Both the Government and the BIS have the power to make a standard mandatory, if the issue is related to health and safety. In the case of toys, the issue is more sensitive, because it is associated with the heath and safety of children.

Developed nations have their own system for monitoring toy safety and formulating standards. In the EU, the European Committee for standardisation is responsible for safety standards in toys, while in the US, the Consumer Product Safety Commission regulates the safety of toys. India should also set up a toy safety cell at the Centre, which could test toys and order recall. The cell should develop a system of reporting and monitoring toy-related accidents treated in hospitals. Consumers and hospitals should be encouraged to provide them with the data of such accidents.

In India, parents and manufacturers, unlike in the West, are yet to realise the potential hazards of PVC toys. Awareness generation programmes should be organised by the BIS and consumer organisations to make parents aware of the harmful effects of PVC toys. Media should also give due attention to the issue.

Comments

Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot: It is marvellous to know that just two incidents in Europe in connection with a rattle caused the item to be with drawn from international market! When shall we in India, reach that standard? It is alarming to know that PVC toys are hazardous. As the matter of toys relates to children, the Government and the BIS should formulate mandatory standards for toys, as they play a formulating and educating role in the initial stage of the citizens of tomorrow. Awareness generation programmes should be taken up by the BIS and consumer organisations, backed by due publicity by media.

P. Rama Rao, Visakha Consumers' Council, Visakhapatnam: Mothers need to be educated on safety precaution in use of toys. The colours and plastic materials are allergic to skin. Hence, they should be banned from being used in toys. The BIS should involve consumer organisations to create awareness.

Chapter 3

Services Safety

Joyride: Ride to Death?

The business of fun is getting bigger in India. Currently, there are over 100 amusement parks throughout the country. An estimated 600 million Indians venture out to various *melas*, exhibitions and shrines year after year. The Rs. 1,300 crore amusement and theme park industry has big hopes of flourishing in India with an investment of Rs. 400 crore that will add a dozen fun parks across the country in the next two years.

But while everyone is keen on making profits, do they give adequate attention to safety measures?

No! They do not.

The tragic death of a Faridabad businessman in August 2003 clearly revealed how Appu Ghar, one of the biggest amusement parks in India, lacks basic safety measures. This was the second major accident in the park's history. Five years back, another 50-year-old man died of heart failure, after riding the Appu Columbus ride.

Although the amusement park had a valid licence to operate till December 31, 2003, the licensing authority suggested the examination of all the rides at Appu Ghar to see whether they have been maintained properly as required under the licence agreement. The question arises, why the authorities always wait for the accident to happen and then take action, especially when such accidents are so serious?

Every year, several such accidents take place, many of which go unreported. Sometimes accidents occur due to human negligence, whereas sometimes they occur due to the malfunctioning of machines. Most of the time, the amusement parks and joyride operators do not follow safety norms.

A look at some of the major recent joyride accidents will make the picture clear:

Date: May 28, 2003
Place: New Delhi
Incident: At a festival, a Ferris wheel collapsed in strong winds and rain, killing 12 people and injuring 20. The wheel was carrying at least 30 people when it collapsed and the victims were crushed.

Police action: Police stated that the owner of the ride did not have legal permission to operate the ride and that criminal charges would be filed.
The question: How could it operate without permission?

Date: May 2003
Place: Tiruchirapalli
Incident: At a temple festival, a giant wheel snapped and crashed in a gale, injuring 23 and killing eight people. Some say the wheel was not installed properly, others blame faulty equipment.
The question: Who is to blame?

Date: March 2003
Place: Taj Expo at the Palace Ground, Basaveshwarnagar, Bangalore
Incident: A woman, while riding a dashing car at Fun World, asked the operator to stop it when it suddenly started moving erratically. The car suddenly moved in the opposite direction and rammed into the side of the stage. The jerk caused a whiplash that resulted in a huge swelling. She had to spend nearly Rs. 10,000 on medical treatment and tests.
Authority's excuse: The General Manager of Funworld tried to avoid their responsibility by stating that their rides have fitness certificates issued by authorised chartered engineers, who test the equipment annually. The authority also pointed out that since 1995, no accidents have taken place on this, or any other ride and that their staff checks all rides daily.
The question: Who will compensate the woman?

Date: January 19, 2003
Place: Pavagadh, Gujarat
Incident: Seven people were killed and 45 others were injured when a chairlift, which carried pilgrims to a temple at the top of the hill, partially collapsed. A drive pulley got displaced near the third support tower, causing the cable to separate from the pulley and snap. Two cars fell down 150 feet and crashed to the ground. Three cars slid down the cable and hit a support tower, knocking at least three passengers to the ground.
Action: The State Government ordered an inquiry into the incident.
The question: Was it a technical fault or lack of maintenance?

Following is the case of the death of a six-year-old boy in an amusement park in June 2002 where some positive legal action was taken.

Date: June 28, 2002
Place: Thunder Zone Water Park Resort in Swara, Mohali District
Incident: A six-year-old boy was drowned in the pool of this park due to lack of safety measures. There was no tube given to him nor was there any life jacket.

The absence of lifeguards showed the utterly irresponsible manner in which it was being run. There was no ambulance available at the amusement park.
Legal action: In July 2002, the Punjab and Haryana High Court ordered the park to be shut down with immediate effect. It also directed the Chief Secretary of Punjab to have the matter thoroughly investigated and identify the officers responsible for granting the licence for operating the amusement park without proper safety arrangements.

Often, rides in fun fairs organised at different points of time lack even the basic safety measures. Take the case of the fun fair at Vastrapur in June 2003.The following points will clear the picture:

- Tora-Tora ride that rotates at a 360-degree angle and balanced on a platform revolves on its own axis featured scary heights with no safety belts.
- Except for the Cage, none of the other rides have any instruction boards, age limits, precautionary measures or other guidelines for visitors to follow. A cardiac patient or a pregnant woman can judge the actual hazards only after trying the ride.

What was the excuse of the Authority? It claimed that it has an insurance of Rs. 50 lakh and a public insurance of Rs. 20 lakh. The fair had the best of engines, quality and technology and also a medical kit for emergency. However, a close inspection of their first-aid kit revealed a body lotion and an unfamiliar "ointment". There was no fire extinguisher or contact with any local doctor. Even the authorities, who issued the No Objection Certificates (NOC), admit negligence of such organisers.

So why did they issue the NOC? Should they not be more cautious and responsible?

The main cause of deaths and injuries on amusement park rides is preventable error. This would include such things as lack of routine maintenance and disregard for safety rules, by both the operators and the riders.

Each of these rides requires rigorous quality control, be it in the manufacture of the parts or its subsequent maintenance. The wear and tear caused by the speed, vibrations, weather and everything has to be carefully studied to ensure the safety of these rides. If these are not done properly, another shocking accident is not very far away.

The following are some recommendations, which if adopted, could help avoid such accidents in future:

- There should be proper norms and regulations for the issue of certificates to be followed by all. Permanent amusement parks and temporary amusement activities like *melas* and local exhibitions have to be separately treated, with different norms and conditions.
- Rides and attractions in an amusement park must be inspected and certified at least annually. Certificates for rides at fairs and carnivals should not be valid for not more than 30 days.
- Each time a ride is moved to a new location, it must be inspected and a new certificate issued before operation begins.
- The officers responsible for granting of licences to amusement parks, or owners of joy rides, should have the technical expertise to understand the functioning of these machines. Those who grant licences without verifying whether proper safety arrangements have been made should be punished.
- Random follow-up inspection is needed to ensure compliance with the norms and regulations.
- Licences should be revoked upon failure to maintain adequate insurance coverage and also if the operator fails to make proper repairs.
- Every amusement park should have clear safety instructions in the local language and also list whether or not the rides are safe for the very young, the elderly, cardiac patients, expectant mothers, etc. Pictorial warnings (as many users can be illiterate or are not in a position to understand a particular language) should also be prominently displayed at such places. These precautionary measures must be made mandatory for the owners/organisers.
- There should be an ambulance, doctor and a first aid kit.
- There should be emergency provisions at every amusement park. Public gathering places should certainly have fire-fighting equipment ready. The venue should clearly specify the do's and don'ts.
- Insurance for such amusement parks/*melas*/exhibitions must also be made obligatory and there should also be a provision for "No Fault Liability," like the one in case of vehicle accidents or LPG accidents.
- Safety clasps should have childproof locking systems.
- Big amusement parks should have their own staff for inspecting and testing joyrides daily, who should be properly trained in routine and preventive maintenance.
- As a remedial measure, when any consumer suffers injury or death on account of negligence of the operators/owners, the complaint should be pursued under the Consumer Protection Act for deficiency in service and gross negligence.

Comments

Y.G. Muralidharan, Consumer Rights, Education and Awareness Trust (CREAT), Bangalore: The circus owners, fantasy ride owners, etc., should be made liable in case of accidents.

Geeta Verma, Voluntary Action Network of India (VANI), New Delhi: This article on joyride safety is very informative. The safety measures, in all respects, should be enhanced and regularly (may be twice a year) checked by the regulatory authorities.

Shrish V. Deshpande, Mumbai Grahak Panchayat (MGP), Mumbai: The incidents of death and injuries from the accidents at amusement parks and *melas*/exhibitions at various places in India during last couple of years**,** as brought out by CUTS, raise an important issue of safety of consumers at such public places of entertainment. It is a common knowledge that there are no norms prescribed to meet the safety standards for equipments used at amusement parks. Even if standards are prescribed at some places, its compliance is often neglected. It is advisable to develop stringent safety norms for the various amusement equipments to be deployed at such amusement parks. Although "entertainment" is a State subject in the Indian Constitution, safety norms to be developed should be all-India norms and should not be left to the local or State authorities. Implementation part of it can be left to the local/State authorities. CUTS deserves to be complimented for raising the safety aspect of consumers visiting amusement parks and the same should be taken to its logical end.

Escalators are Safe only when You are Cautious

Ritu Bose was returning home by the Metro rail. At the station, instead of using the staircase, she tried the escalator. Unfortunately, her *dupatta* got caught in the comb plate and was torn. She remained unharmed. Not knowing whom to blame and facing embarrassment, she decided not to report this to the authorities. Such instances of user's foot or an article of clothing getting caught between the escalator steps are not rare for people, who are unaware of safety precautions to be taken while using escalators.

The fatality of escalators can be best gauged from the December 1999 incident when Jyotsna, an eight-year-old girl, got crushed to death while descending an escalator at the Indira Gandhi International Airport. After this incident, the Airports Authority of India (AAI) came up with unconvincing theories, while the manufacturer had inconclusive answers.

The three-member inquiry committee, in its report submitted to the Civil Aviation Minister held the airport management and staff on duty squarely responsible for it. It noted that the authorities at the airport did not even know the location of the emergency stop switch, the timely activation of which could have avoided the accident. The report pointed out that:

- no record was kept by the AAI of the maintenance work done by Otis, the escalator-making firm;
- the expertise of the personnel supervising and monitoring the maintenance, as well as that of the Otis engineers, was not satisfactory; and
- nothing was done to incorporate the latest safety features, which were necessary, in view of upgradation of technology, experience and significant increase in passenger load.

Recently, the Chennai domestic airport would have witnessed a Delhi-type escalator mishap had there been no timely intervention by two policemen. According to airport sources, a passenger was climbing down by the escalator after keeping her bag in front of her. On reaching the ground floor, she tried to take the bag and, in the process, her *saree* got entangled in the escalator. She slipped and fell tripping another woman passenger standing behind her. Seeing this, two policemen from the Reserved Lounge rushed to the escalator and switched the machine off. According to the airport authorities, this incident was caused by the negligence of the passenger. Therefore, one should go through the instructions before riding the escalator for the first time.

In cities, installations of escalators are increasing day-by-day at airports, railway stations, auditoriums and supermarkets. However, no attempt is being made by the manufacturers, or the installers, to educate the users on their proper use. Most escalators do not have alarms that passengers can press midway if something happens. They neither have automatic sensors that stop a moving escalator if some objects get stuck.

Sudden malfunctioning of the escalator, leading to jerks in the reverse direction, may cause riders to fall backwards. Falling down while getting on the escalator because of poor illumination impairing visibility at the foot and children's feet getting caught on the side of the escalator are some common causes of escalator accidents.

In India, the foremost need is to formulate mandatory safety standards for escalators. There should be signboards near all escalators indicating how to use them safely. Every escalator should carry stickers with the last date of servicing and the next due date for the same. Any escalator that fails to meet mandatory safety standards should be shut down, until it is certified as safe. Every escalator should indicate prominently the location of emergency shut-off switches, which should be at the top and bottom of the escalator.

In May 2002, it was reported that the Delhi Metro Rail Corporation was going to install escalators that comply with international and Indian standards. For the safety of passengers, these escalators will have four flat steps instead of two at the top and bottom landing, to ensure that Indian passengers are able to adjust themselves while stepping onto and off the escalator. There would be three properly displayed emergency stop switches for bringing the escalator to a halt in the event of any exigency. These two features are very important and escalators with such features should replace the earlier ones, wherever possible.

Apart from this, passengers riding the escalators should be cautious, to avoid accident. If one exercises the following dos and don'ts, then escalators would be safer for a ride:

(a) Make sure that shoelaces are properly tied before stepping onto an escalator. Besides shoelaces, loose drawstrings attached to children's dress, *duppattas*, *dhotis* and *sarees* can also get trapped in escalators and, hence, people wearing them should be careful.
(b) Stand towards the middle of the steps avoiding the sides to avoid entrapment.
(c) Always face forward and hold the handrail.
(d) Step onto the escalator carefully and be cautious if you wear bifocals.

(e) Step off yourself instead of letting your feet roll off the steps of the escalator. This would prevent the feet from getting caught in the escalator.
(f) Always hold the hands of children while going on escalators and keep them away from the edges.
(g) Never allow children to sit or play during an escalator ride.

This article is an updated version of the article "Escalators are safe only when you are cautious" published in The Times of India on 11.12.01. After that, in almost all the metro stations in Calcutta, signboards with tips for using escalators safely can be found near the escalators.

Comments

R.D. Saxena, Consumers' Forum, New Delhi: The article on escalators is extremely useful and it should be given more publicity. As observed in the article, there is need for formulating mandatory safety standards for all escalators.

Does Your Building Follow the Fire Safety Norms?

Fire accidents in cities and towns in India alone cause an annual average of 20,000 fatal injuries and a financial loss of Rs. 1,200 crore. In the event of a fire, occupants of most buildings, old or new, medium or high-rise, face risks to their lives, as very few buildings are equipped with adequate fire safety measures.

This is because fire safety standards continue to be flouted by builders across the country. The situation is becoming quite alarming as the Indian cities are grappling with unplanned growth of skyscrapers and mammoth apartment blocks. High-rise buildings may look attractive, but they are not as safe as they should be. Most high-rise structures promoted by private builders do not have a No-Objection Certificate (NOC) from the Fire Department. Government-owned high-rise buildings are no exception.

It should take just three minutes for people to escape when a fire breaks out in any high-rise building, say the safety rules. But, how many high-rise structures in India can facilitate quick evacuation in case of an emergency? The tall structures, which have mushroomed all over the country in the last five years, have thrown all fire safety norms to the winds. Breaking the windowpanes and walls of the building by fire services personnel to save those caught in the smoke and flames during fire accidents have become the rule rather than the exception.

The National Building Code (NBC), formulated by the Bureau of Indian Standards (BIS), governs the design, safety and health aspects of buildings and structures. The fire protection requirements for all classes of buildings are covered in Part IV of the Code, which was revised and updated in January 1997.

NBC requires:

- compulsory construction of "escape or separate exit routes" in all high-rise buildings;
- the width of the exit staircase in residential, assembly and mercantile categories should be 1.6, 6.6 and 3.3 metres, respectively, for every 1,000 square metre area;
- the building should provide fire-proof and smoke-proof doors at the entrance of lifts and staircases to prevent upward movement of smoke and fire;
- the doors to the exit staircase should be kept open;

- there should be open spaces around the building, so that a fire engine can move around it;
- buildings should have an external staircase, so that people can move out of the building, if the internal staircase is filled with smoke;
- in buildings more than 15 metres high, "kitchens working on gas fuel, departmental stores and shops should not be operated at the basement." Fire fighting equipment should be provided on all floors;
- the distance between the upper surface of the floor and the lowest point of the ceiling should be at least 2.75 metres (9 feet);
- to ensure adequate water supply during fire-fighting operations, high-rise buildings should have underground static water storage tanks and terrace tanks with specific water pumping capacity; and
- high-rise buildings should have fire-fighting equipments like wet riser, yard hydrant, automatic sprinkler system, manually operated electric fire alarm systems, etc.

However, these are mere guidelines and can only become mandatory provisions if the State Governments adopt them through legislation.

Non-fulfilment of the safety provisions of the NBC comes to the fore during major fire-fighting operations. Accidents show the extent to which promoters and the concerned authorities have made a mockery of the code. Occupants and owners routinely ignore the notices sent to them and, as a result, large number of Indians in cities and towns continue to live and work in firetraps.

In Ludhiana, building plans are approved by the Municipal Corporation's Town Planning Cell. After a fire incident in April 2002, it was found that the building was constructed without having any provision for a rear exit. Who should be held responsible for this, the builder who did not follow the rules, or the Cell whose duty was to ensure that the buildings are constructed following safety norms? It was also reported that none of the skyscrapers in the city, including government buildings, had ever been checked for fire-safety measures. Inquiries also revealed that most of the high-rise buildings in the city had not taken the mandatory NOC from the Fire Department, which was a must for all such buildings. What were the authorities doing, *waiting for another fire to take place?*

In Bangalore, both private and government buildings are yet to obtain NOCs. But, the Fire Department is helpless, as it is not empowered to initiate action on its own. In India, only the Fire Department in Delhi is empowered to initiate action against violators and declare a building unfit.

In May 2003, the Delhi High Court asked the Fire Department to ensure that all building owners should comply with fire safety measures as per the NBC. If any tenant or occupant fails to comply with the same within four weeks, the premises could be sealed by the authorities. In August 2003, four high-rise buildings were sealed by the Delhi Fire Service, as they did not comply with fire safety measures.

In 2002, it was reported that only five percent of Chandigarh's buildings were safe from fire. In February 2003, it was reported that high-rise buildings in Rajkot were flouting the fire safety norms laid down by the Fire Brigade Department of the Rajkot Municipal Corporation. *Was any action taken?*

Although the Andhra Pradesh Fire Service Act 2000, gives the Fire Services Department powers to ensure that fire safety norms are adhered to in all buildings, in October 2002, it was reported that not even one percent of the buildings in Hyderabad complied with the fire safety norms. From the Chief Minister's office at the Secretariat to shopping malls and major hospitals, none of the buildings had clearance from the Andhra Pradesh Fire Services Department.

In West Bengal, the Government does not have a system in place to force older multi-storeyed buildings to comply with fire safety norms. Buildings less than 14.5 metres in height, i.e., which are less than five storeys high, sometimes, do not follow the norms. Fire personnel are not in a position to visit every house to ensure fire safety regulations, as they are understaffed. Only if they receive any complaint, they send inspection teams and, if it is found that rules are not being followed, a notice is served on the owner. *When will these departments learn to be proactive?*

According to Lucknow Fire Services Department, even if high-rise buildings of government, commercial and residential use violate fire safety norms and are at risk, no action can be taken against them, as it is not the fire department's job to initiate action. One is left wondering "w*hose job is it then?"*

There are specific norms laid down by the government, which the builders have to comply with at the time of construction. But, if the norms are not followed, nothing much is going to happen because the Act does not have enough teeth to take penal action against erring builders. Though builders were supposed to make provision for all these fire safety measures at the time of construction itself and obtain a certificate to this effect from the Fire Services Department, nowhere in India are the rules being rigorously followed.

According to experts, Indian standards compare favourably with the fire protection standards followed worldwide, such as the British Standard, BS

476: Part 4-24; German Standard, DIN 4102; American Standard of Testing Material, ASTM 119, and the International Standard Organisation, ISO 834.

Thus, the problem in India is not with the Code, but, as usual, with its enforcement. It is only after an accident that fire authorities generally find out the key causes, as to whether or not the sprinkler systems had worked or whether or not non-combustible materials in the building were of international standards.

A large number of high-rise buildings do not have any fire-safety provisions, as per NBC requirements, because there are no mandatory regulations in force. The fire service departments generally emphasise on installation of in-built fire fighting systems in buildings, but they cannot do much with builders flouting the norms with impunity and development authorities conducting themselves as mere spectators. According to the NBC, it is mandatory for a builder to seek an NOC from the fire service department before the building is available for tenement. It is then up to the development authorities to see to it that the provisions of the NOC are not being violated. According to the officials of the fire service department, the development authorities rarely conduct checks in these buildings and their department does not have formal powers to conduct inspections.

Suggested actions:

- Clear-cut responsibilities for enforcement of fire safety rules should be set and authority should be granted to the relevant departments to prosecute violators.
- The Government should make it mandatory for builders to comply with the fire force norms, with severe penalties, including rigorous imprisonment, for those who deliberately flout the norms.
- All the States should adopt the norms suggested by the NBC and BIS in municipal by-laws and zoning regulations.
- The authorities must periodically inspect buildings, with and without prior notice, to check for any violation.
- Changes in safety measures should be made from time to time, incorporating the latest international norms of construction.
- Steps should be taken to inspect buildings at various stages of construction, so that sub-standard buildings are not passed.
- A major department, which could help in preventing fire accidents in houses is the Electricity Department, as 65 percent of fires in the country are caused by short-circuits. Protected, underground cables should be laid, transformers should be regularly maintained and employees of the Electricity Board/ Department, who go to each house for metre reading every month could

also check electricity points for potential fire hazards.

- Another major cause of fire is cooking gas. Apart from advertisements about the risk involved while handling cylinders, awareness generation programmes should be organised to educate people about safe handling of cylinders.
- Many fire accident cases end with the injured being compensated and nothing being done to penalise the guilty. Flat promoters, who neglect safety norms should be severely punished. The wings of the administration that issued them licences without properly checking the safety of the construction and materials should also be punished.
- People need to be sensitised about the fire safety standards so that individuals can take adequate steps to reinforce the safety standards for fire prevention. After sensitisation, individual buyers, before purchasing a flat, may insist upon provision of fire safety norms.
- Fire officers could visit educational institutions to teach the students the safety norms.

The recent Delhi High Court's judgement in the Uphaar Cinema hall case represents a small, but important, step in the effort to make our cities safer places to live in. We hope that the builders and authorities will now become more cautious and ensure that buildings are constructed following all safety norms.

How Safe is Your Drinking Water?

Pure drinking water is becoming a luxury item. A large number of people in India do not have access to safe drinking water. Various sources of drinking water include wells, open ponds, rain-fed and perennial rivers as well as tube-wells. The majority of people draw water from the immediately available source for their consumption. They have neither the time nor the means to test its quality.

In many villages, one can still see cattle and human beings taking bath in the same ponds. Even if humans and animals stop bathing in the lakes, the municipal water that comes in your taps will always have some pollutants, as microbiological and chemical contaminants can enter water supplies. These materials can be the result of human activity or found in nature. For instance, chemicals can migrate from disposal sites and contaminate sources of drinking water. Animal wastes and pesticides may be carried to lakes and streams by rainfall runoff or melting snow. Human wastes may be discharged to receiving waters that ultimately flow to water bodies used for drinking water. Coliform bacteria from human and animal wastes may be found in drinking water if the water is not properly treated or disinfected.

With intensive agriculture leaching out nitrates, phosphates and pesticides into water bodies and to ground waters, and industries pouring out effluent and toxic wastes besides cities and municipalities letting sewage and other urban wastes into the rivers, it is not a safe world anymore.

Naturally occurring contaminants are also found in drinking water. For example, the radioactive gas radon-222 occurs in certain types of rock and can get into ground water.

Many states in the country have been identified as endemic to fluorosis due to abundance in naturally occurring fluoride-bearing minerals. These are Andhra Pradesh, Gujarat, Haryana, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Bihar and Delhi.

In some districts of Assam and Orissa, groundwater has high iron content. About 31 percent of the total area of Rajasthan comes under saline groundwater. Punjab and Haryana too face the problem of saline groundwater. High levels of arsenic in groundwater have been reported in the shallow aquifers in some

districts of West Bengal. Certain places in Haryana, Gujarat and Andhra Pradesh were also found to have dangerously high levels of mercury.

Water from majority of the rivers has been declared unsafe including that of the Ganges. In Madhya Pradesh, there is a river known as "*Khooni Nadi"* (blood-red coloured river) as the water is red in colour because of excessive iron elements in the water. But, people are forced to consume that water, as there is no other source of water in the area. Similarly, crores of people in almost all the states, particularly Madhya Pradesh, Bihar, Orissa and other parts of the country are forced to consume stagnant pond water, infested with dangerous viruses and worms which results in various ailments in people and many of them die prematurely.

According to a World Bank's Report, 70 percent of India's water is badly polluted. Every third person deprived of clean drinking water in the world is an Indian. According to experts, about 86 percent of the total diseases in the country are directly or indirectly, related to the poor quality of drinking water. The latest World Water Development Report of the United Nations has categorised India among the worst countries for poor quality of water. The Asian rivers are most polluted in the world, with three times as many bacteria from human waste as the global average. These rivers also have 20 times more lead than those of the industrialised countries, says the report. The quality of water in India ranks 120 among 122 countries worldwide.

A large number of water-borne diseases are reported in hospitals every year. Water-borne infections manifest themselves in the summer and rainy seasons as diarrhoea and dysentery. These include various virus infections like hepatitis, bacterial infections like typhoid, dysentery, cholera and the common bacteria E.coli, protozoa infections like, amoebiasis and giardia and worms like round worms. Hazards from the toxic effluents from industries are becoming evident over a longer period of time and might even be responsible for the spurt in cardiovascular diseases, like coronary artery diseases and hypertension. Their role in causing cancer has always been a cause for concern.

This is a consumer abuse of the highest order. It violates their rights to basic needs, safety and healthy environment, and their human right to live with dignity. While the right to basic needs assures consumers of safe drinking water and sanitation, the right to healthy environment and safety guarantees a safe and hazard-free environment.

The right to health is a step forward from the right to drinking water. Thus, right to drinking water is a necessary condition for healthy survival.

The UN Guidelines for Consumer Protection 1985 has defined the right to drinking water as, "Governments should, within the goals and targets set for the International Drinking Water Supply and Sanitation Decade, formulate, maintain or strengthen national policies to improve the supply, distribution and quality of water for drinking. Due regard should be paid to the choice of appropriate levels of service, quality and technology, the need for education programmes and the importance of community participation."

What is Clean Water?

There are various scientifically derived parameters for measuring the purity of water. In most of the cases, it is the bacteria, which causes water impurity. Usually, the coliform group of bacteria is being used to evaluate the sanitary quality of drinking water.

The measurement of bacteria in water is that of the Most Potable Number (MPN) per 100 ml of water. Ideally, the MPN should be zero but that is rarely the case. Countries normally evolve their own 'safe' water standards. In UK, drinking water is allowed MPN value up to 3; In Japan, Class l water can contain MPN up to 50.

In India, the recommended MPN standards for drinking water is up to 3, but in reality the MPN count goes into thousands. The main reason for this is leakage into water from pipes and antiquated or ill-constructed sewers. Furthermore, the recommended MPN standard for inland surface water is up to 5000. In reality, the river Yamuna, before it enters Delhi, has an MPN count of 7500. This goes up to 25 million while passing through the Okhla sewage pumping station. This is really horrifying considering the fact that people use streams for purposes of drinking water and bathing.

Another measurement of water pollution is the Biological Oxygen Demand (BOD), measured in mg per litre. Usually, wastes discharged into a river are quantified as "total solids." Some of these are absorbed as "dissolved solids," and the rest are called "suspended solids." Organisms present in the water can consume and destroy dissolved solids, and for this they need "dissolved oxygen" (DO) present in the water. The amount of oxygen needed by these organisms to cope with the dissolved solids is called the BOD, and the greater the pollution, the higher the BOD. When the BOD levels overtake the DO levels, the water body begins to die, i.e., it can no longer 'digest' the wastes present in the water body.

(Source: State of the Indian Consumers, CUTS, 2001)

It is clear from the above that the right to drinking water covers not only the supply of drinking water *per se*, but also the supply of "safe" water for the purpose of consumption. In other words, the UN Guidelines not only cover the production and supply of drinking water, but also the right of consumers as end-users to demand for water free from contamination.

Government Policy and Administrative Measures

Water is a State subject in India. Entry 17 (the State List, Seventh Schedule, Article 246) mentions: "Water, that is to say, water supply, irrigation and canals drainage and embankments, water storage and water power subject to the provisions of Entry 56 of List I."

Entry 56, List I (the Union List) deals with inter-State water disputes. On the other hand, Entry 6 of List II deals with public health and sanitation.

It is therefore clear that the States are responsible for availability and access to safe drinking water. See the following box for Norms for Safe Drinking Water:

Norms for Safe Drinking Water

• Drinking water source should be within:
  • 1.6 kms distance in plains
  • 100 metres elevation differences in hills;
• One hand pump or stand post for every 250 persons;
• 40 litres of safe drinking water per capita (lpcd) for human beings;
• 30 litres per capita per day additionally for cattle in desert development programme (DDP) areas;
• Drinking water is defined as safe if it is free from bacteria contamination, chemical contamination viz. fluoride, iron, arsenic, nitrate and brackishness in excess or beyond permissible limits.

(Source: State of the Indian Consumers, CUTS, 2001)

The Chief Ministers' conference held in July 1996, on Basic Minimum Services, recommended a change in the above norms. It was recommended that the present norm of 40 lpcd be raised to 50 lpcd and the distance norm be reduced from 1.6 kms to 0.5 kms in the plains.

In India, there is the National Water Policy, 1987, that covers some aspects of the consumers' right to drinking water.

There are specific laws governing the supply of drinking water. These laws do not define consumer interests specifically, but frame the rules for supply of water. The Supreme Court has interpreted Article 21, covering the "Right to Life," which includes all that is necessary to enable a citizen to lead a dignified life. Further, there are laws governing pollution of water. These are:

1. Criminal Procedure Code, 1898;
2. Indian Penal Code, 1890;
3. Water (Prevention & Control of Pollution) Act, 1974;
4. Water (Prevention & Control of Pollution) Cess Act, 1977; and
5. The Environment Protection Act, 1986.

In India, administrative measures, with respect to the supply of drinking water, can be divided into two broad categories: urban and rural.

In urban areas, the responsibility of supplying drinking water lies with municipal corporations. Some legislation provide an obligation for supply of potable water, thus asserting the consumers' right, such as the Bombay Municipal Corporation Act.

The Calcutta Municipal Corporation Act, 1980, provides an interesting case. While the right to water exists in the relevant provisions, it is defeated by a general waiver of the City body's obligation, which relies on: "The Corporation will do all what is required under the Act, but subject to availability of resources." A similar provision exists in Tripura State law governing municipalities. At the same time, the State law of Rajasthan covers the State's obligations without the 'endeavour' escape clause.

On the other hand, in rural areas the supply of drinking water is decentralised in nature. The Governments only provide broad administrative goals and guidelines for the supply of water.

Current Scenario in India

Drinking water falls under the purview of the Union Ministry of Urban Development and Poverty Alleviation (MoUDPA). The Central Public Health and Environmental Engineering Organisation (CPHEEO), which is under this Ministry, sets the drinking water quality guidelines. In urban areas, local bodies, such as Municipalities and Public Health Engineering Departments and, in rural areas, the Rajiv Gandhi National Drinking Water Mission, under the Union Ministry of Rural Development, are expected to follow these guidelines. However, water is a state subject. The role of the MoUDPA is therefore merely recommendatory in nature. It is the State Governments that must adopt standards and enforce them.

The CPHEEO has recommended the drinking water quality standards in its *Manual on Water Supply and Treatment,* which says, "the physical and chemical quality of drinking water should be in accordance with the recommended guidelines." It describes the parameters such as turbidity, chlorides, fluorides, arsenic, cadmium, pesticides and so on. The prescribed standards exist in two forms, or criteria: "acceptable," and "cause for rejection." "Acceptable" defines the limits up to which water is generally acceptable to the consumers. "Cause for rejection" means water contains substances in excess of the limit defined as "acceptable," thus rendering water not acceptable. Interestingly, the range provided in the guidelines is so wide that what should have been rejected as "unsafe" water becomes the norm.

More interestingly, the manual only recommends standards for drinking water, but they are legally not binding, as they are not part of any gazette notification. According to the CPHEEO officials, these standards have been proposed by the Bureau of Indian Standards (BIS) based on the World health Organisation (WHO) standards. The BIS has also developed drinking water quality standards but they too are not mandatory.

Indian Standards of Drinking Water

The Bureau of Indian Standards has defined the level of solvents for safety purposes. The table below gives the common solvents in water and the permitted levels.

Substance/Test	Unit	Desirable Limit	Maximum Permissible Limit*
Physical Turbidity	NTU	5	10
Chemical pH	Number	6.5-8.5	No relaxation
Hardness	As(CaCo)mg/l	300	600
Chloride	(asCl)mg/l	250	1000
Iron	(as Fe)mg/l	0.3	1.0
Nitrate	(as No)mg/l	45	No relaxation
Fluoride	(as F) mg/l	1.0	1.5
Residual Chlorine	Mg/l	0.2-0.5	No relaxation
Arsenic	(as A)mg/l	0.05	No relaxation
Bacteriological Coliforms	MPN/100ml	10**	No relaxation
E Coli	MPN/100ml	0	No relaxation

** When there is no alternative source for drinking.*
*** Colitone organisms should not be detectable in 100ml of any two consecutive samples.*

Thus, even after 56 years of the independence, India does not have legal standards that would help clearly define "clean" and "potable" water. Municipalities can supply water that is neither potable nor drinkable, but there is little a citizen can do. A consumer cannot take the local water agency to the court if it fails to deliver the quality of water specified in the CPHEEO manual. Under the law, no institution can be ultimately held responsible for the quality of water, because nobody has defined standards that can be legally enforced.

A public interest litigation (PIL) was filed *suo moto* in the Supreme Court (SC) on behalf of the Centre for Science and Environment (CSE), a Delhi-based NGO. The SC issued notices to the Union Ministries of Food and Civil Supplies, Health and Environment and Forests. The genesis of this PIL lay in a letter written by CSE to key members of the judiciary informing them about the findings of laboratory results on pesticide residues in bottled water and raising issues of groundwater and surface water contamination. Pointing out that the issue had "important and severe implications for public health in the country," the letter explained how lax and inadequate norms had led to this scenario.

Although experts claim that just because quality standards for drinking water have not been legislated in the country does not mean that they do not exist. BIS is a statutory body set under the Bureau of Indian Standards Act, 1986. Hence, the standards it sets are part of the statute and should be observed. However, this may happen in developed countries, but not in India, where mandatory act(s)/rule(s) are rarely followed. Therefore, there is no question of following guidelines that are not mandatory.

Of late, the Government of India seems to have realised this alarming situation. The Centre is considering promulgating an ordinance soon to bring drinking water under the definition of food. The ordinance will help fix quality norms for potable water. If such an ordinance comes into existence, all agencies responsible for supplying potable water, including municipal corporation and municipalities will be responsible for maintaining the prescribed standards.

Clearly, with dirty water becoming the single-largest killer of babies in the country, it is vital that standards for what constitutes safe and potable water are defined and legislated on. People should demand legally enforceable safe drinking water standards.

People should have the right to be compensated if they are affected by pollution and overuse of water resources, etc., by an external party. One of such major external party could be industry. Virtually every major river in India is today polluted, with industrial contaminants contributing most to the pollution. Groundwater has been poisoned with industrial pollutants. Not just legislations

but mechanisms for imposition of the penalties for violation of the norms should be in place.

There is an urgent need for partnership among the governments, civil society and the private sector which will achieve the ultimate goal of "Clean and Safe Water for All" in India.

Comments

Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot: It is a pity that even after 56 years of independence, India does not have legal standards that could help to clearly define "clean" and "potable" water. Standards should be stipulated and enforced strictly through the statutory body, BIS. That the Government of India is considering promulgating an ordinance to bring drinking water under the definition of food is quite heartening. The emphasis should be given on the implementation and severe punishment for violators.

P. Rama Rao, Visakha Consumers' Council, Visakhapatnam: The Government should take stringent action against industries, which are responsible for causing pollution.

Chapter 4

Health Care Safety

How Safe are Our Mass Health Campaigns?

In late 2001, 30 children died in Assam after being administered Vitamin A doses in a UNICEF-Assam Government jointly organised Pulse Vitamin A programme. Several hundred children were treated in hospitals with stomach ailments and cramps.

After analysing the reports, three possible reasons for the tragedy could be identified. The death might be due to overdose. In the third phase of the programme, a plastic measuring cap, capable of holding 2.5 times more than the normal dose replaced the usual spoon of exact measure. Moreover, the volunteers were not properly trained to make the parents understand the exact dose and the risk involved in the administration of overdose. However, nutrition experts opined that overdose could not be the likely cause of death of the children as, in a few cases, deaths were also reported from places where the old spoon of exact measure had been used.

A few experts questioned the quality of the medicine used. But, the Drug Testing Laboratory in Calcutta, after analysing the vitamin samples used in the campaign, confirmed that they were in perfect condition.

The third reason could be that no screening was done. Vitamin is a micronutrient that has to be administered carefully. Nutritionists and child specialists strongly feel that screening is necessary to ensure that a child is not suffering from diarrhoea or liver disorder. But, the State Health Minister admitted that it was not possible to screen every child in a campaign of such large magnitude. He said that the parents should have informed the volunteers if their children had such problems. *The question is, had the parents been informed in advance about this risk?*

If it was so difficult to take even minimum precautionary measures, then the State should not have gone in for such programmes, as it involves the lives of innocent children. The authorities have also admitted that the children, who had been given the Vitamin A doses, belonged to areas prone to intestinal diseases like diarrhoea, amoebiasis and malaria.

The death of these children sparked off a debate amongst the scientists about the validity of the Vitamin A campaign in India. Does the country need Vitamin A campaigns at all? What is the justification of such mass health campaigns

without prior assessment of administrative capabilities? What could be the objectives of such programmes?

While scientists in India have long argued that Vitamin A deficiency in children is no longer a concern except in isolated, geographical pockets of the country, United Nations Children's Fund (UNICEF) opines that such campaigns are necessary, as they help reduce the child mortality rate significantly in India.

According to the World Health Organisation (WHO) Guidelines, Vitamin A deficiency is a public health concern, if the mortality rate of children below five years is greater than 70/1000. In 1970, the mortality rate of children under five years in India was 130/1000, thereby making Vitamin A deficiency a public health concern. But, Vitamin A deficiency is no longer a public health concern. According to the studies conducted by the National Monitoring Bureau of India (NMBI), the mortality rate of children below five years is down from 130/1000 in 1970 to 70/1000 in 1997.

Thus, Indian scientists urged the Government to reconsider the necessity of such campaigns. In September 2000, the Ministry of Health and Family Welfare formed a panel of paediatricians, nutritionists, UNICEF and WHO representatives and government officials. The panel, called "National Consultation," assessed the efficacy of Vitamin A campaigns in India. The National Consultation decided that Vitamin A deficiency was a problem only in certain drought-prone parts of India. It also noted the lack of strong evidence linking Vitamin A supplementation with reduced child mortality. The panel directed the State Governments to discontinue vitamin A campaigns. It also said that, in areas where deficiency is a concern, supplements should be given using approaches other than campaigns.

After considering the arguments, the Central Government issued directions to discontinue the campaign in 2000. Despite this, UNICEF launched a campaign in Assam through the State Government's Department of Health, on November 11, 2001.

UNICEF did not even consider the WHO Guidelines, which says that Vitamin A deficiency is a concern if Bitot's spots are seen in more than 0.5 percent of children. A survey conducted before the campaign by the Indian Council of Medical Research (ICMR) found Bitot's spots in only 0.3 percent of the 11,000 children examined in each district of Assam. Consequently, there was really no need to target all the children for this programme. Only children with malnutrition or clinical Vitamin A deficiency should have been targeted. Nutrition expert, C. Gopalan, thinks that such supplementation programme is totally unnecessary

when green leafy vegetables and seasonal fruits, plentifully available in the countryside and within the economic reach of the poor, can control the problem.

Also, UNICEF did not implement the 'Triple A' approach that it recommends for assessing the seriousness of a problem. Triple A is the short form for "Assessment, Analysis and Action." In Assam, it skipped the first two.

Another objective behind such campaigns could be that, in order to achieve some political mileage, State Governments launch such massive campaigns. After the incident, the Centre has asked all the States to stop Vitamin A campaigns for children and emphasised on improving the routine immunisation work.

Some nutritionists believe that the supplement industry is exploiting people for considerable commercial gain. Efforts are being made to expand the market for synthetic Vitamin A in poor South Asian countries.

Whatever be the objectives, this incident has raised a big question about the safety of these health campaigns. The Centre has admitted that campaigns of such nature require intensive training of field staff and an effective monitoring system, which the present system is unable to take care of, especially in areas having weak infrastructure.

The Assam Chief Minister has ordered a CBI enquiry. We urge upon the CBI to investigate whether any vested interest was involved in using human beings as guinea pigs in experiments, as had happened earlier at the Regional Cancer Centre in Kerela, where one of the scientists of the John Hopkins University tested experimental cancer drugs on patients without any prior approval from the authorities.

This is an elaborated version of the article "Vitamin A drive violated national guideline" published in the Times of India on 17.01.02.

High Court Judgement

In a recent judgement, the Guwahati High Court has held both UNICEF and Assam State Government responsible for the deaths of 30 children. A two-judge bench of the High Court pronounced its verdict on a public interest case filed by two Assam residents against the State Government and UNICEF. The Court has asked the State Government to pay compensation at the rate of Rs. 20,000, over and above the Rs. 50,000 that eac!h family has already been paid, to the families of the children who died.

The Chief Justice of the Assam High Court, P.P. Navlekar and Justice A.H. Saikia said in their judgement that UNICEF had introduced stronger doses of the vaccine by replacing the traditional two-millilitre spoon with five millilitre cups. Although UNICEF maintains that there was nothing wrong with the vaccines it supplied to the Assam Government, the health workers involved were not properly trained and briefed, leading to the administration of greater doses that many of the sick children could not tolerate.

According to the Court's verdict, there was an element of negligence in the way the Assam Health Department had administered the vaccines, leading to the death of so many children.

Hepatitis B Vaccine: Is the Cure more Dangerous than the Disease?

Viral hepatitis, an infection of liver caused by the Hepatitis B virus (HBV) has shown an alarming increase not only in our country, but all over the world. The virus causes around 60 percent of liver diseases and 80 percent of liver cancers in India. According to the New Delhi-based Indian Council of Medical Research (ICMR), 5,000 people die annually due to liver cancer caused by the Hepatitis B virus.

The US childhood immunisation schedule for 2002 has recommended that all newborn babies in the US should be vaccinated against Hepatitis B before leaving the hospital, as newborn babies can contract the virus from their mothers' infected blood during childbirth. On the Viral Hepatitis Awareness Day, the Secretary of the Indian National Association for the Study of the Liver (INASL) opined that vaccination of all infants is the only long-term strategy to reduce the incidence of Hepatitis B infection in the community. All over the world, people are generally suggested to take vaccines to get rid of this problem.

Hepatitis B vaccination is already a part of the national immunisation programme in 120 countries, including Indonesia, Sri Lanka, Bhutan and Maldives. Going by the WHO recommendations that the Hepatitis B vaccination should be a part of the national immunisation programme, from 2001, the Delhi Government has introduced free Hepatitis B vaccination. The Government of India also plans to include hepatitis B vaccination in the immunisation programme during the 10th Five-Year Plan.

But how safe are these vaccines?

There is no doubt that other immunisation programmes, like the National Pulse Polio Programme, have greatly improved the public health in our country, but the Government should consider expert opinion on the risk and safety of Hepatitis B vaccination before including it in the immunisation programme.

The figures released in 1999 by the National Vaccine Information Centre (NVIC), Vienna, a vaccine safety advocacy organisation, revealed that the number of vaccine-associated "adverse events" and deaths reported in the US children under the age of 14 significantly outweighed the reported cases of Hepatitis B disease in that same age group.

Independent analysis of the raw computer data generated by the government-operated Vaccine Adverse Reporting System (VAERS) confirmed that in 1996, 827 serious "adverse events" were reported to VAERS in children under 14, who had been injected with the Hepatitis B vaccine. In contrast, during that same period, there were only 279 reported cases of Hepatitis B disease in children under 14.

In 1998, France became the first country to suspend the routine immunisation programme for school children, after reports that many children were developing chronic arthritis and other symptoms resembling multiple sclerosis (MS), following the administration of Hepatitis B vaccine. But, France still continues immunisation at birth, as diseases such as multiple sclerosis do not occur in this age group. The US Government study also support the belief that Hepatitis B immunisation strategy at birth is associated with a decreased risk of diabetes, as compared to immunisation strategy after two months of life.

According to the NVIC, 90-95 percent of all Hepatitis B cases recover completely after three to four weeks of nausea, fatigue, headache, arthritis, jaundice and tender liver, whereas up to 17 percent of all Hepatitis B vaccinations are followed by reports of fatigue, weakness, headache, arthritis and fever of more than 100° F. The vaccine can even cause death, according to a 1994 report of the Institute of Medicine.

The Government of New Zealand introduced a massive Hepatitis B vaccination programme in 1988, which was extended to include all children under 16, and over 70 percent of children were vaccinated within a few years, with almost all the immunisations starting after six weeks of life. The initial vaccine was a human blood derived product, but it was switched to a recombinant vaccine around 1990. The annual incidence of type 1 diabetes in people 0-19 years old living in Christchurch rose from 11.2 cases/100,000 children in the years prior to the immunisation programme, 1982-1987, to 18.1 cases/100,000 children ($p=0.0008$) in the years following the immunisation 1989-1991.

The World Health Organisation (WHO), with the assistance of external experts in neurology, epidemiology, immunology and public health, has carefully reviewed the scientific evidence on whether Hepatitis B vaccine can cause diseases, such as MS. The WHO believes that available scientific data does not demonstrate a casual association between HB immunisation and central nervous system diseases, including MS. The WHO also claimed that one billion doses of Hepatitis B vaccine have been used since 1981, with an outstanding record of safety and efficacy, and the vaccine is 95 percent effective in preventing the development of the chronic carrier state of Hepatitis B.

Consequently, the debate is still going on whether the Hepatitis B vaccine is safe or risky. Moreover, in India, there are other administrative and infrastructural bottlenecks. Dr. T. Jacob John, the former President of the Indian Academy of Paediatrics, has cautioned that, unlike in other countries, the Indian Government does not have a policy on vaccines and their use. Pharmaceutical companies run the show.

In late 2001, a pharmaceutical firm in Mangalore created mock panic about the dangers of Hepatitis B vaccine highlighting that HBV is more dangerous than HIV. After this, six doctors in Mangalore, in a letter to the Union Minister for Health and Family Welfare, Dr. C.P. Thakur, urged upon him to formulate a national policy on HBV vaccination and publicise it widely. The doctors opined that HBV poses risk only to the "high-risk group" and not to the general public. Unlike AIDS, the HBV, in 90 percent cases, is cured spontaneously through the body's immune system. According to them, no organisation has recommended mass vaccination of the people against HBV and even the vaccination of newborn babies is not of unequivocal benefit and not universally accepted or practised. They said comparing HBV with HIV by the above-mentioned pharmaceutical firm is scientifically baseless, misleading and dangerous. The doctors warned that if such things continue, then gradually the drug manufacturers would become the 'prescribers.'

Hence, before including Hepatitis B vaccination in the immunisation programme, the Government should initiate a debate on its effectiveness and the risk involved in it. Simultaneously, proper infrastructure should be developed nationwide for proper implementation of such programmes, if experts decide in its favour. Steps should also be taken against the manufacturers who are creating artificial terror. Moreover, there should be a law to compensate children adversely affected from any vaccine. Once these things are done, the Government can think of including Hepatitis B vaccination in the immunisation programme.

This is an elaborated version of the article "Is the vaccine more dangerous than the cure?" published in the Times of India on 08.02.02. Hepatitis B vaccine has been already included in India's Universal Immunisation Programme (UIP). Funds to make it a part of UIP have already been allocated under the 10th Five-Year Plan.

How Safe is Blood Transfusion?

Blood transfusion, in simple terms, is transfer of blood from one person to another, which is done to replace a substantial loss of blood and as supportive treatment in certain diseases, apart from blood disorders. They are a critical part of everyday medical procedures and save millions of lives each year, provided safe blood is guaranteed. Unfortunately, the safety of our blood banks and blood camps leave a lot to be desired.

> In 2001, transmission of Human Immunodeficiency Virus (HIV) through blood and blood products in India was estimated at four percent.
>
> In January 2002, the Health Minister, in a press conference, informed that 5.18 percent of HIV positive cases in Delhi could be attributed to infected blood transfusion.
>
> In October 2003, the National AIDS Control Organisation had reported about four percent HIV infection in the state through blood transfusion.

Improper screening, problems of window period and inadequate infrastructure are the major reasons behind this alarming scenario.

Screening Not Done

An important step in ensuring safety is the screening of donated blood for possible infectious diseases. The National Blood Policy 2002 lays down guidelines to be followed by blood banks for collection, testing, storage and distribution of blood and blood products. Accordingly, all blood collected must now be screened for HIV, syphilis, malaria and Hepatitis B and C. But, there have been repeated instances where blood which had not been screened properly was given to patients, thereby leading to infection.

On July 10, 2003, it was reported in *The Tribune* that a survey report, conducted on behalf of the Government of India, gave startling facts about the pitiable conditions of commercial blood donors. It says that mandatory tests are rarely conducted and about 85 percent blood had not been screened for HIV. It also stated that many blood banks thrived on getting blood from 4,000-5,000 regular professional donors in 18 to 20 major cities in the country. While many blood

banks, located in unhygienic environments, collect and store blood in dirty conditions, some commercial blood banks collect blood mostly from professional donors, a large part of whom are alcoholics and drug addicts, the report said.

In May 2003, the Gujarat Food and Drug Controller Administration ordered closure of 14 blood banks after serious lapses, including "transfusion of HIV-positive blood in some cases" were detected during surprise inspection at the premises of various blood banks in the State.

In January 2003, the Transfusion Safety Squad of the UT Health Department detected serious violation of the guidelines by some nursing homes and private clinics in storing and transportation of blood and its components. Letters were sent to all the clinics and nursing homes to comply with the guidelines and adhere to the provisions of the Drugs and Cosmetic Act strictly.

Window Period

In June 2003, it was reported that an eight-month-old child had tested HIV-positive, after a blood transfusion for an operation at the K.T. Children's Hospital in Rajkot.

In 2002, HIV was found in the blood of eight thalassemic children when they were tested at the School of Tropical Medicine, Calcutta. The Central Blood Bank, Calcutta, found HIV in the blood of another five thalassemic children during the same period. Hepatitis C infected seven more children with the same affliction.

Doctors blamed the present screening and testing procedures used by blood banks for the menace.

HIV kits used by a majority of blood banks are not sensitive enough to detect the presence of HIV in its "window period." This is the period between the onset of infection with HIV and the appearance of detectable anti-bodies to the virus. Experts opined that transfusion of the blood that was tested during the window period was the main reason for this disaster.

According to doctors, blood bank should immediately start using P24 antigen test, as it can detect infection in collected blood samples up to a period of one week after contraction of the disease. However, it may not be economically feasible for government blood banks.

The Institute of Blood Transfusion and Immunohaematology (IBTI) stated that it was not in a position to introduce P24 test that costs Rs. 7,000 and polymer chain reaction (PCR) test, the best way to detect all types of infection that costs a staggering Rs. 22,000 per sample. There is no doubt that incorporation of more tests would make the blood more expensive. But, blood transfusion without these tests being done would incur greater cost for the recipients, in the long run.

According to the draft National Blood Policy, testing for HIV should be restricted to laboratories that have ELISA facilities. It also discourages rapid testing kit and the centres using those must send 10 percent of the samples to a referral centre for revalidation of the results. But, it was reported in a local daily in 2002, the School of Tropical Medicine, the most dependable institution in Calcutta, did not have the ELISA reader instrument. Neither it had any sophisticated machinery as a substitute. The Institute had to depend on old foreign machines that came in India in the '60s.

Storage

Blood should be stored and transported at the right temperature, so that there is no chance of unsafe blood being given to a patient. Blood is stored at regulated temperature of 4° to 6°C (never frozen). Storage of blood should not exceed 35 days, but it is usually used up within three weeks. Each unit of blood should be properly labelled with colour code, according to the blood group, the name of the bank, dates of collection and expiry.

Guidelines
• Frozen blood must never be used for transfusion, as haemolysed blood can have fatal reaction. • Blood with turbidity, having suspended particles, must be discarded. • Blood with bacterial overgrowth, caused due to non-refrigeration of blood for more than four to six hours, should not be used. • Ideally, transfusion should be started within 30 to 60 minutes after being issued from a bank and the procedure should be completed within four hours.

Blood transfusion also faces the problem of over-supply during certain parts of the year. Social service organisations tend to organise camps only during important occasions and festivals. During these times, supply increases beyond preservation capacity, but blood cells cannot be stored beyond a period of 35 days. In most of the cases, due to improper storage, blood becomes unsafe

even before 35 days. The scenario is same all over the country. Further, in rural areas, blood testing and storage facilities are virtually non-existent.

Blood Transfusion Services

In most of the developed countries, where the rate of transfusion-related infections is less, there exists a uniform and organised nationwide blood transfusion service. However, in India, there is no such policy that enables uniformity of the blood transfusion services. There are various small blood banks- private, government and hospital-based.

The major drawback of this system is that one is not sure whether the blood from such sources is actually safe. Additionally, paucity of resources such as trained and skilled manpower and lack of infrastructure, has led to the proliferation of commercial blood and organ donation. In such cases, the risk associated with blood transfusion is high.

COPRA and Unsafe Blood Transfusion

Harish Kumar's wife was admitted with labour pain to a private nursing home in New Delhi. They were informed soon afterwards that a caesarean section was necessary, for which a unit of blood (A+ group) was required. Harish bought the required amount of blood against a payment of Rs. 200. Blood was administered and the operation was successful, and after a week, Harish brought his wife back home.

Three days later, she began to vomit and was running high temperature. She was immediately shifted to a government hospital, where it was diagnosed that she was suffering from Hepatitis B infection that was almost fatal. The virus had also been transferred to Harish Kumar, who showed the symptoms of the infection, along with skin allergy and headaches. Harish Kumar filed a complaint with the Delhi State Commission under Consumer Protection Act (CPA), 1986, demanding compensation from Sunil Blood Bank.

It was obvious that the blood purchased from Sunil Blood Bank was infected, because there was not a single symptom earlier to prove the presence of Hepatitis B virus. The commission also ruled that it was the duty of the blood bank to test the blood and not to stock it if found contaminated, let alone sell it. In its order, it directed Sunil Blood Bank to pay Rs. 20,000 to the family as compensation and Rs. 1,000 as costs.

Government's Role

The overall responsibility of provision of safe blood lies with the Government. The legal framework concerning blood safety issue has been adequately outlined in Schedule XII B of the Drugs and Cosmetics Act/Rules, which stipulates mandatory testing of blood for blood transmissible diseases, including HIV. The rules have been further amended, providing adequate testing procedures, quality control, standard qualifications and experience for blood bank personnel, maintenance of complete and accurate records, etc.

To ensure supply of safe blood, several important steps have been taken, like mandatory licensing of all the blood banks and gradual phasing out of professional donor system since 1998, as per the directives of the Supreme Court, which followed a petition by Common Cause, a voluntary organisation.

As directed by the Supreme Court, State Blood Transfusion Councils (STBCs) were constituted to ensure that safe blood is supplied to the patients, after proper screening, and professional blood donors were banned from donating blood. The STBCs are supposed to keep a watch on the licensed blood banks in the State and make it sure that only safe blood is supplied to the patients after proper screening for AIDS, Hepatitis, malarial parasites and so on.

But, the issue needs much more attention. For quality, safety and efficacy of blood and blood products, well-equipped blood centres with adequate infrastructure and trained manpower is immediately required. A centrally co-ordinated, structured and organised blood transfusion service under a defined authority is needed. The Government should start thinking seriously about modernisation of blood banks at the earliest.

The media, too, can play a role in making people more aware of the precautions that need to be taken before donating and receiving blood. In general, it is safe to donate blood. But, before donating, the donor should make sure that the needle and other clinic materials used to take blood are new, sterilised and used only once. Again, before receiving blood one should check whether the unit of blood has been tested for HIV, Hepatitis B, Hepatitis C, VDRL and malaria. Awareness should be spread among the people, so that they always purchase blood from a licensed organisation and insist on screened blood packs.

This is an elaborated version of the article "City blood banks need modern gear" that was published in the Times of India on 08.05.02. After that, the Central Government, in the second week of September 2002, clearly spelt out its directives on organising blood donation camps in future. As per the provisions, no private blood banks would be allowed to organise blood donation camps. Now onwards, only government-run blood banks and the Red Cross Society would be allowed to organise such camps.

Comments

H.D. Shourie, Common Cause, New Delhi: Blood transfusion is a matter of great importance. There had been reports that, quite often, unscrupulous elements carry beggars to blood banks for donating blood. But, that type of blood can be very harmful for transfusion purposes. I had taken the matter to the Supreme Court long ago and specific orders were issued as to how the blood banks should operate for minimising problems of this nature. I hope that the authorities concerned with this matter are taking the appropriate steps in relation to this problem.

Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot: HIV kits, which are sensitive enough to detect the presence of HIV in its "window period," seem to be the only solution.

Be Cautious about Irrational Prescriptions

Anindita Mukherjee consulted a doctor when she started running temperature, along with a running nose and headache. She was given a full-page prescription with a large number of medicines and medical tests. Sounds familiar to you? Then, like Anindita, you might have become a victim of irrational prescription. This is what is happening not only in India but also all over the world. Unnecessary services are commonplace and doctors are said to prescribe drugs excessively and inappropriately, which not only depletes consumers' pocket but also affects their health, as all drugs have side effects.

The World Health Organisation (WHO) has defined irrational prescribing as "use of a therapeutic agent when the expected benefit is negligible or nil or when its usage is not worth the potential harm or the cost" (1985 draft).

There are three aspects of over-prescription:

- prescription of expensive drugs where cheaper ones could suffice;
- prescription of drugs, which are not indicated by the disease either due to wrong diagnosis or as a defensive measure; and
- prescription of wrong drugs despite their potential side effects.

Intake of strong drugs in diseases like common cold, viral fever, diarrhoea, etc., may cause problems like nausea and weakness and may even affect kidney and liver functioning. While such medicines may be essential and life-saving in specific cases, their indiscriminate use leads to drug resistance not only in the patient, but also in the disease-causing bacteria everywhere. As it has become a global phenomenon, accompanied by virulent outbreaks of diseases and infections, the WHO has called for urgent action worldwide to fight the spread of such drug-resistant diseases.

In an all-India survey carried out by Voluntary Consumer Action Network, in association with Consumer Unity & Trust Society (CUTS) in 1995, data of over 2000 prescriptions were collected by consumer groups of West Bengal, Rajasthan, Gujarat, Maharashtra, Tamil Nadu and Andhra Pradesh. The survey revealed that there was a gross tendency to prescribe useless medicines, like tonics, restoratives, vitalisers and vitamin formulations, when these were hardly indicated. It also showed that government doctors were comparatively more rational than private practitioners. West Bengal showed the highest number of irrational prescriptions.

Over-prescription is common in other parts of the world also. Take the case of antibiotic. The misuse and overuse of antibiotics has given rise to the serious problem of anti-microbial resistance worldwide. A 1992 study, conducted at six government hospitals, revealed that Malaysians were taking far more antibiotics than they needed to, because the doctors were prescribing them excessively. Similarly, a study of an emergency room in a private hospital in Manila showed that over 90 percent of the patients, who received antibiotics, did not really need them. Japanese doctors allegedly prescribe three times more antibiotics per patient than their Western counterparts.

But, why do doctors over-prescribe? According to doctors in India, the Supreme Court judgement to bring doctors under the purview of the Consumer Protection Act 1986 has increased the incidence of over-prescription. To be on the safe side, doctors often, knowingly, prescribe certain unnecessary drugs and medical tests as a defensive measure rather than for a specific diagnosis.

Secondly, many times, patients force doctors to prescribe some unnecessary medicines like vitamin tablets, antibiotics and tests to be on a safer side. It has been seen that even if doctors try to explain these matters to the patient, they do not accept the fact. In fact, the doctors prescribing more and expensive medicine are considered as the best doctors. Therefore, in some cases, patients too are responsible for such useless treatments.

Well, these may be true in some cases, but there is another story in the background. As a large number of brands of the same molecule are available in the market, pharmaceutical companies are after the doctors to prescribe their brands. Their medical representatives frequently visit and offer gifts to influence doctors to prescribe their brands even in cases where they are not really necessary.

Generally, doctors are given free sample medicines and small gift items like note-pads, pens and pen-stands, with the name of the medicine printed on them. But, important doctors, who are trend-setters and see a large number of patients per day, that is, those who have high potential of prescribing their brand are offered attractive gifts like foreign trips, sponsored conferences, air fares, new expensive models of fridges, cars, etc.

A study on drug promotion in India "Promotional Practices of Pharmaceutical Companies in India" conducted by the Forum for Medical Ethics, in collaboration with the Drug Controller General of India and the WHO, revealed that, in the profit-oriented world of pharmaceuticals, doctors are routinely wooed with gifts ranging from mobile phones to sponsored weddings. Over a period of six months, a team of researchers conducted more than 100 in-depth

interviews of pharmaceutical companies, doctors, chemists and medical representatives in Mumbai and came up with these disturbing findings.

The study also indicates that most doctors not only accept sizeable gifts from the pharmaceutical companies but also swallow skewed scientific information. Very few doctors actually bother to search the Internet or read medical journals. Most rely on medical representatives, intuition and sponsored conferences, at which participants are more interested in drinking than learning.

As a result, patients often get drugs that are less effective, and have more side effects, or are more expensive.

The unholy nexus can also be found in medical services. Many doctors receive commission for referrals to other doctors, laboratories and diagnostic clinics.

Many Indian States also permit the practice of un-qualified personnel to prescribe scheduled drugs. Often these doctors have LMP (Licentiate in Medical Practice) or RMP (Registered Medical Practitioner) after their names, which basically means that they have learnt medicine by serving as assistants or compounders to qualified doctors. Such "doctors" cater to the poorer and often less-educated patients and are the prime targets for pharmaceutical companies.

The whole health care scenario gets more dubious, given the systemic problems, such as the absence of any regulatory legislative measures for the drug industry, pertaining to the promotion and sales of drugs. Very rightly, the US government has taken action against the pharmaceutical companies and has issued instructions that expensive gifts should be curtailed. But yes, there are some doctors in India who do not accept any gifts or even medicine samples. Unfortunately, they are much fewer in number.

India should take some positive steps to guard patients against financial losses and exposure to unnecessary and/or hazardous formulations. The following steps are recommended:

- A regulatory mechanism should be instituted to keep a check on the malpractices in the pharmaceutical industry, particularly with regard to promotional measures. Total promotional, sampling and "educational" expenditure, including expenses on sponsorship of medical conferences and symposia, should be restricted to a percentage of turnover, arrived at by a pre-agreed formula.
- Awareness among the common people about drug misuse and the resulting drug resistance should be raised.

- A Patient Package Insert (advising patients about the use, dosage, possible side-effects, contraindications, drug interactions, etc., in simple language.) should be introduced. This can be given away with each filled prescription for a drug and can replace the present doctor-oriented package leaflets, which are incomprehensible to the patient.
- There should be a ban on irrational drugs/combinations.
- Self-monitoring should be done by the Indian Medical Council, with penalties or punitive measures for defaulting doctors.
- There should be compulsory reporting of cases of over dosing of drugs by hospitals, nursing homes, consulting physicians, etc. Such reports should be sent to the State Drugs Control Authorities, who may advise the Medical Council of repeated/deliberate over-prescription by doctors.
- "Doctors" who do not have a basic MBBS degree should not be allowed to prescribe drugs other than OTC (over-the-counter) drugs. Chemists should not honour prescriptions of scheduled drugs from them, under risk of severe penalties.

This is an elaborated version of the article "Be cautious about irrational prescription" that was published in the souvenir released by Visakha Consumers' Council during their 30th Anniversary at Visakhapatnam in November 2003.

Comments

Roopa Vajpeyi, Consumer-Voice, New Delhi: The Drug Controller of India's office needs to spruce up its act, as far as allowing the marketing, use and prescription of some drugs are concerned. There is an urgent need of a study, which would compare the Indian situation vis-à-vis the rest of the world, about drugs that are banned in other countries but are being widely prescribed in India. Hapless consumers unknowingly continue to consume potentially dangerous drugs in India. Examples are *Nimesulide* and *Phenformin*.

G. C. Mathur, BINTY, New Delhi: The doctors' lobby in India and abroad is so strong that for an ordinary consumer, it is very difficult to get justice, particularly when the consumer is illiterate. Then, apart from the *allopathic* system, there are *homeopathic* and *ayurvedic* systems of medicine. In both the cases, the practitioners do not give any prescription on paper to the patient. They also need to be tackled. With

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regard to the allopathic system, it appears from the current scenario that the Medical Council of India or the Councils in the States or the associations of medical practitioners (e.g., Indian Medical Association and its branches in each State) are effectively not doing any prescription audit. In fact, they are the people, who are opposing consumer complaints in consumer courts. Public-spirited medical practitioners, who can dare speak against their fellow practitioners, are hard to find.

Consumers' Forum, Chandigarh: Irrational prescription mainly involves prescription of drugs even when they are not definitely indicated. For example, antibiotics are not effective in viral diseases. Routine administration of antibiotics in cases of common cold, sore throat, diarrhoea, etc., is to be strongly discouraged. Another important factor is the availability of drugs of doubtful use or irrational combinations, e.g., tonics, cough syrups, combination drugs, etc., in the market.

Medical Institutions cannot Deny Emergency Cases

In our overcrowded cities, accidents have taken the form of an epidemic. Poor traffic conditions and bad roads, coupled with reckless driving and complete disregard to traffic rules, has led to high incidence of accidents and accident-related deaths. According to *Express Health Care Management* (a newspaper on health care), every 12 minutes, an Indian dies on the road and 10 times that number get injured.

In such circumstances, the role of medical institutions becomes important, as the first few moments after the accident, i.e., the Golden Hour, are very precious and crucial. Many lives can be saved and disabilities can be prevented by providing timely proper care, that is, by providing immediate treatment to the victims of accidents. But unfortunately, in India, emergency care is the most neglected area of health care today. According to a leading daily, over 30 percent of the emergency patients in the country die before they reach the hospital. Over 80 percent of the accident and emergency victims never get quality medical care during the Golden Hour.

One major reason for which hospitals/clinics/doctors refuse to treat accident cases is the potential medico-legal complications associated with such patients. In other cases, the victim is refused either due to want of bed or other necessary medical equipment/systems.

In 2001, Prithviraj Biswas, a student of the National Institute of Design, died in a tragic hit-and-run accident in Ahmedabad. He was taken to the V.S. Hospital, which is a government hospital, but the staff there refused to treat him. His classmates strongly believe that Biswas could have been saved, if the doctors at V.S. Hospital had attended to his injuries, instead of refusing to treat him and referring him to the Civil Hospital at the other end of the City, where he was declared "dead on arrival."

In May 2002, a 35-year-old woman who met with an accident in northwest Delhi, had to be taken to three different hospitals before finally being admitted in the Loknayak Jayaprakash Narayan Hospital, losing four crucial hours in the process. The first hospital she was taken to did not have either a ventilator or a CT-scan machine. The second one did not have a spare ventilator. The third kept her waiting for over an hour, as doctors in the casualty ward did not see

any merit in admitting her, as they felt that she was in a bad shape. The woman, ultimately, died. Unfortunately, this type of incident is repeatedly happening in every city in India.

In August 2002, in Bangalore, accidents were reported on the Marathahalli, BHEL Ring Road, KR Puram Road, Koramangala-HAL Ring Road and Hebbal, Bannerghatta Road, in which 16 people lost their lives. It is believed that some could have been saved, if they had been attended immediately. Mumbai, which has a population of 13 million people and faces 20 to 30 road accidents a day, also has a similar scenario.

During 2001, 439 people died in 427 road accidents in Calcutta. The data reveals that, in almost all the cases, accident-related injuries had resulted in the death of the victims. This implies immediate medical attention could not be provided to them.

To understand the present situation, Consumer Unity & Trust Society (CUTS) visited some of the big hospitals in south Calcutta in 2002. It was really surprising to see the "No Emergency" signboard at the entrance gate of Sri Aurobindo Seva Kendra, though it runs a full-fledged hospital. A well-known hospital, like the Ram Krishna Mission Seva Pratishthan, said that they accept emergency cases only "if beds are available."

Can a hospital/nursing home refuse medical care to emergency cases? No.

Can refusal of medical care to injury and emergency cases constitute negligence? Yes.

The reason for the above two answers is the same. Although a doctor is free to choose whom he will serve, his liberty does not extend to accident, injury and emergency cases. As per law, hospitals, nursing homes and clinics of doctors, that declare, or profess, in writing that they provide emergency services/24 hour services are legally bound to attend all the cases. Failure to have the requisite equipment in working order and non-availability of competent staff within reasonable time would be inferred as medical negligence.

In many cases it has been observed that doctors wait for the arrival of the police before attending accident victims, especially with head and burn injuries. In such cases, the Supreme Court directives are very clear:

- There are no provisions in the Indian Penal Code, Criminal Procedure Code, Motor Vehicles Act, etc., which prevents doctors from promptly attending

to seriously injured persons and accident cases before the arrival of the police.

- The treatment of the patient should not wait for the arrival of the police or completing legal formalities. All government hospitals and medical institutions should be asked to provide immediate medical aid to all the cases, whether medico-legal or not.

The Supreme Court further observed that Article 21 of the Constitution imposes an obligation on the State to safeguard the "Right to Life" of every person. Preservation of human life is, thus, of paramount importance. The government hospitals run by a state and the medical officers employed therein, are duty-bound to extend medical assistance for preserving human life. Failure on the part of a government hospital to provide timely medical treatment to a person in need of such treatment results in violation of his "Right to Life," guaranteed under Article 21.

The United States is very strict in such cases. By the Consolidated Omnibus Budget Reconciliation Act of 1986 (COBRA), enacted by the US Congress, all hospitals that receive Medicare benefit and maintain emergency rooms are required to perform two tasks before they transfer or discharge any individual:

1. The hospitals must perform a medical screening examination of all prospective patients, regardless of their inability to pay.

2. If the hospital determines that the patient suffers from an emergency condition, the law requires the hospitals to stabilise that condition and the hospital cannot transfer, or discharge, an un-stabilised patient, unless the transfer or discharge is appropriate, as defined by the statute.

In the COBRA, provisions have also been made for imposing penalties against physicians or hospitals that negligently violate the provisions of the said Act. In addition, the individual, who suffers personal harm as the direct result of a participating hospital's violation, can bring a similar suit for damages against that hospital.

Thus, the standard of care in emergency cases in modern day practice implies three obligations:

1. screening the patient;
2. stabilising the patient's condition; and
3. discharging, or transferring, the patient for better treatment.

In India, steps should be taken by the Government to ensure that at least emergency first aid is given to the accident victims. There should also be fully equipped ambulances parked at strategic places that can be contacted by helpless persons needing emergency help.

The victims should be adequately compensated in case of medical negligence, and which should not be too time-consuming. The number of beds in the hospitals should be increased to meet the growing needs of the population. The emergency units at every hospital should be fully equipped to manage all the emergency cases and the medical officer should be available there round the clock. The denial of treatment to a patient should be specifically made a cognisable offence.

Measures should also be taken to make consumers aware of their rights in emergency cases. TV channels, as a part of their social responsibility, should show attractive campaigns at prime times to inform consumer on the above. Once these measures are implemented seriously, many untimely deaths can well be avoided.

This article is an updated version of the article "Clinics cannot deny emergency service" that was published in the Times of India on 26.02.02. After that, the Health Department of the West Bengal Government has made a regulation that neither government nor private hospitals would be allowed to deny emergency cases.

Comments

G. C. Mathur, BINTY, New Delhi: The problem is a medico-legal one. A doctor, whether in any private or government hospital, or self-practising, does not want to get involved in court affairs. The moment an accident case comes to a doctor, it is mandatory to give the first aid before making any reference for further treatment. In fact, the judiciary has to find a solution to this anomaly, or otherwise, this will continue. Our efforts should be to find a solution jointly with the Medical Council of India, State's medical associations, other consumer bodies and bar councils, besides the States' law commissions.

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Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot: The Supreme Court directive, written in bold letters on a notice board, should be made mandatory at the reception counters and the entrances of hospitals and dispensaries, both in English and regional languages.

Chapter 5

Food Safety

Check Out Your Chocolate

Chocolates are, perhaps, the most romantic gift you would want to give, but pause before handing it over to someone you love. A bright inexpensive brand, in all probability, flouts all food safety norms.

In liberalised India, imported chocolates have swamped large, medium and small shop counters. Inferior brands from Nepal, Dubai and other neighbouring countries have entered the metros as reputed global brands only to cater to a niche market. Most of these cheaper brands do not conform to the required standards. But, the present infrastructure is inadequate to effectively monitor the conformity of the standards, as per the national laws.

All food product manufacturers, both Indian and foreign, must get the approval of the Central Committee for Food Standards (CCFS), specifying the type of food product and its contents. But, according to Dr. S. Babu Rao, the Assistant Director at the Food and Toxicology Department, National Institute of Nutrition, currently, food products are being dumped into the market without approval from CCFS. He warned that Indian consumers, who buy imported products without CCFS' approval, could be exposed to health hazards.

In 2001, imported chocolates worth Rs. 50,000 were seized from a shop at Canning Street in Calcutta, as attempts were made to extend the expiry date and most of them were in a melting condition. Earlier, adulterated Indian chocolates were seized from the Raja Katra area of Burrabazar, Calcutta. The attractive packaging of foreign chocolates easily attracts children and, unfortunately, ignorant parents are ready to pamper them.

The irony is that educated people are the customers of such costly foreign chocolates. They buy these unknown costly foreign brands to gift them to their beloved ones on special occasions, like birthdays, weddings, anniversaries, festivals, etc.

Rule 32 of the Prevention of Food Adulteration (PFA) Act 1955 on Essential Labelling demands that a packaged food should bear:

- name and complete address of the manufacturer, packer, vendor & importer;
- name, trade name or description of the product;
- name of the ingredients in descending order of composition;

- net weight or volume;
- distinctive batch number or lot number;
- month and year of packing;
- "best before" declaration up to the month and year and also the date, where applicable, in products like bread, etc;
- the symbol of irradiation and licence number;
- at least one of the languages used for declarations on the label should be English or Hindi in *devnagari* script; and
- the maximum retail price.

To assess the present situation, Consumer Unity & Trust Society (CUTS) conducted a survey of the roadside shops in Park Street, Little Russel Street and Vardhan Market in Calcutta. After doing a little survey, it was found that a number of products in the market were violating Rule 32 of the PFA, which makes it mandatory for every product to carry full information on the labels, detailing the description of the food product.

The findings of the survey are:

- None of the foreign-make chocolates, like Nikolo, Cosmos, Go Fresh, Meentos, Jin Tan, Snicker, Lolibon, Ammer or Bounty, carry the retail sales price, which is compulsory as per clause (r) of Rule 2 of the Standards of Weights and Measures (Packaged Commodities) Rules 1977. Consequently, they are literally practising price discrimination, charging different price for the same product from different consumers.

- None of the above products displays the name and address of the Indian importer. This is a serious violation of Rule 32 of the PFA, as in case of any complaint, no body within India can be reached to seek further information or initiate legal proceedings.

- In most of the cases, full addresses of the manufacturers are not mentioned. Only the name of the company and the city are given.

- In many cases, manufacturing and "best before" dates are written in foreign languages. And, even where the dates are written in English, it is so small in size that reading it is next to impossible. As per Rule 36 of the PFA, the size of the letters and numerals to be used on the label should be proportionate to the size of the principal display panel.

- In one case, addition of synthetic colour, Allure Red E 129, was found, which does not come under the permitted synthetic colours, as per Rule 28 of the PFA.

- In most of the cases, except the name and ingredients, everything else is written in foreign language.

- Many chocolates were found in melted condition, which implies that they were not kept at the proper temperature.

It is really a cause of concern to find such huge number of products in the market that do not follow Indian food laws.

When Indian products are exported to foreign countries, they have to meet the standards of respective countries. Then, why the foreign products that are being sold in our markets do not meet the Indian standards?

In these circumstances, consumers should be aware of the serious implications on their health, if they consume food that violates the safety norms. In fact, individual consumers can take the initiative to prosecute importers and manufacturers, if laws are violated. An awareness campaign should be initiated immediately throughout the country to boycott products that do not adhere to the minimum safety standards, as per our national laws. The Government, media and consumer organisations have to come forward to protect Indian consumers, especially the children, from this menace.

This is an elaborated version of the article "Check out your chocolates", published in the Times of India on 03.04.02.

Comments

B. Vaidyanathan, Consumer Protection Council, Rourkela: People have a craze for anything foreign not only for chocolates. The case in point is Chinese goods, which are flooding the market. These are temptingly very cheap, but the quality is quite sub-standard. People have to be educated about this. The lax enforcing machinery of the Government is the root cause of the entire malady.

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Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot: Surprise checking and investigations at various stages of processing should be planned. Strict punishment to the culprits should be meted out. There should be no leniency in the standards of foods and drinks. Checking of packets, packaging and related details should be carried out periodically at retailers and wholesalers.

How Safe is Your Edible Oil?

Once again, adulterated oil has claimed several lives! The news of the death of three people and the illness of 700 after consuming adulterated oil during August-September 2003 at Malegaon in Maharashtra brought back recollections of the 1987 Behala oil tragedy. A local ration shop adulterated rapeseed oil with the chemical Tri Cresyl Phosphate (TCP). 18 people died and about 1,600 at Behala in Calcutta fell seriously ill after consuming food cooked in that oil. Pradeep S. Mehta, Secretary General of Consumer Unity & Trust Society (CUTS), fought the victims' case in the Calcutta High Court and the Supreme Court. The petition filed by CUTS, under the Consumer Protection Act 1986 before the National Commission, succeeded partially. The ration shop owners received life imprisonment.

The story of adulteration did not end there. Who can forget the outbreak of dropsy in 1998, caused by mixing of mustard oil with argemone oil that claimed over 50 lives and left over 2000 people seriously affected. Immediately after the dropsy incident, the Delhi High Court banned the sale of loose mustard oil in Delhi on August 26, 1998.

In order to ensure availability of safe and quality edible oils, the Centre promulgated the Edible Oils Packaging (Regulation) Order 1998 on September 17, 1998, under the Essential Commodities Act 1955, to make packaging of edible oils sold in retail compulsory unless specifically exempted by the concerned State Governments. As per law, edible oils, including edible mustard oil, were supposed to be sold only in packaged form from December 15, 1998.

The Order mandates that edible oils conforming to the standards of quality, as laid down under the Prevention of Food Adulteration (PFA) Act, can be marketed only in packets with proper declaration on the labels, including the name and the address of the packer/manufacturer.

Unfortunately, due to poor implementation, the Order has not been able to stop the adulteration of edible oil, which is evident from the following cases of adulterated oil that occurred during 2001-2003:

- In 2001, Consumer Education and Research Society (CERC), Ahmedabad, detected adulteration in some 60 brands of edible oils of eight types. Some did not conform to the Agmark standards despite the logo, some did not conform to the international Codex standard, some showed higher acid

value than the ones in the Agmark and the Bureau of Indian Standards (BIS) and some others revealed rancidity. Noted brands like Dhara, Rajmoti, Amrut, Kiran, Engine and Double Hiran were found adulterated.

- In 2001, in Pune, the officials of the Food and Drugs Administration (FDA) seized 6,300 kg of adulterated "Rocket" brand groundnut oil from seven traders, viz. Goel and Co., Sai Trading Company, Arihant Trading Company, Bansal Brothers, Mutha and Company, Kunguma and Sons, Nana Peth and Chakan Soaps and Chemicals.

- In 2002, in Ahmedabad, a large quantity of adulterated palmolein oil worth Rs. 4 lakh was seized from Kalupur-based shops. A local business group, M/s Ambalal Dattra, brought palmolein oil from Kandla and this untreated oil was then sold by sticking fake labels of Purnima Brand on the tins.

- In early 2003, out of the 104 mustard oil samples collected by the Industrial Toxicology Research Centre, Lucknow, as many as 56 of them were found to be adulterated.

These incidents are only the tip of the iceberg. Either the original manufacturer deliberately sells adulterated oil or unscrupulous traders adulterate the oil before selling it. In either case, this is a conscious, deliberate act, with financial gain as the sole motive.

Mustard oil is still being commercially repacked in used tins, and reuse of containers makes it even more difficult to spot the actual source of contamination. In West Bengal, it is reported that at least 60 percent of the mustard oil is sold in used containers. In Gujarat, cases have been reported where dropsy symptoms have been associated with the consumption of palmolein oil as well as groundnut oil. Groundnut oil, which was earlier adulterated with castor oil, is currently adulterated with cheaper imported palmolein oil. Groundnut oil was also reported to be adulterated with cottonseed oil.

What are the reasons behind this?

Adulteration is rampant in many food items, but perhaps more common in edible oil, because of chronic shortage and volatility in prices. Less production of edible oils in the country has led to large-scale imports. The country's edible oil trade is largely unorganised and there are too many players in the industry, thereby making monitoring difficult.

Added to this is the lack of adequate purchasing power, ignorance of consumers, poor testing facilities and tardy implementation of food laws. Over 75 percent of the oil sold in the country is in loose form, creating ideal conditions for unscrupulous traders and illegal blenders to thrive. Traders and others are able to get away with adulteration, because Government's food quality inspection services are lax. Inadequacy of inspectors and lack of professional competence both combine to defeat the intent of the law.

There are several deficiencies and health risks associated with the sale of adulterated oil. Mustard oil, contaminated with argemone oil, can cause epileptic dropsy, blindness and glaucoma. Rancid oil destroys Vitamin A and E. Edible oil adulterated with mineral oil can cause cancer. According to food technologists, cooking oils distributed in loose form run great risks of deterioration in quality through exposure to the atmosphere and, consequently, oxidation. The shelf life of loose oils is limited and they turn rancid sooner. Loose oils also run the risk of contamination, intended or otherwise, through multiple handling, unclean containers, unhygienic storage and transportation. It is easy to adulterate loose oil with cheap materials. The innocent consumer cannot check the quality of oil, except visually.

It is a pity that in spite of repeated instances of adulterated oil, it is over five years since the Edible Oil Packaging Order was passed, but nowhere in India it is being properly implemented. Almost all the States have failed to implement the Order properly. From time to time, many State Governments have expressed their intention to implement the order, but have never gathered enough courage to go ahead. They postponed decisions for one reason or the other and it seems that fear of political backlash and protests by trade intermediaries have prevented the firm implementation of the Order. The result: *consumers are suffering*. Unless the Governments crackdown on adulteration and provide exemplary punishment, such nefarious activities will go on.

There is little doubt that as and when the packaging Order is implemented, many traders who have a vested interest in the present unregulated system would be hurt. But, traders' interest must be subservient to consumers' interest.

That the Government has started thinking about the issue seriously is clear from the following case. In the annual Budget for 2003-2004, excise duty at the rate of eight percent was proposed to be levied on the sale of packaged edible oils. But immediately, concerns were raised that the proposed duty would be a setback to the implementation of the Packaging Order, as this would lead to a mushroom-like growth of "unbranded" edible oil producers in the country. Realising this, the eight percent excise duty on packed refined oil was replaced

by a Re. 1 special excise duty on edible oil and Rs. 1.25 a kg on *vanaspati*. This specific rate, applicable at the refining outlet stage, was levied irrespective of whether the oil was branded or not.

The way out:

- The Edible Oil Packaging Order 1998 must be implemented, if necessary, in phases. To start with, it may be implemented in all the Metros and State Capitals and expanded to other areas within a pre-determined period. State Governments should take the initiative in implementing the order.
- Packing machinery costs between Rs. 30,000 and Rs. 15 lakh, depending on whether it is manual or automatic and also on the speed and quantum of oil to be packed. The Government should extend financial support, in the form of soft loans, to help the small *ghani* (oilseed crushers) operators to invest in packaging machinery of a suitable size.
- Consumers, daily-wage earners in particular, prefer purchasing loose oil, since it is available in small quantities and is, thus, affordable. Therefore to popularise packaged edible oil, small consumer packs/pouches (like in case of tea, coffee, etc.) of 50 gm, 100 gm or 250 gm could be introduced.
- Before purchasing, customers must check that the declaration on the labels of the packets of edible oil contains:
  1. name of the food;
  2. net contents by weight or volume;
  3. list of ingredients (where applicable);
  4. batch number;
  5. date of manufacture and expiry or "best before" date;
  6. name and address of manufacturer or re-packer; and
  7. maximum retail price for that pack size
- Adulteration is a serious offence. Life imprisonment, with a hefty fine, should be imposed on the persons involved in adulteration in cases of grievous hurt or death resulting from the consumption of adulterated oil.
- The media, both electronic and print, could play an important role in generating public awareness.
- Consumer organisations all over India could mobilise the masses and make prevention of adulteration a national campaign.
- Last, but not least, consumers play the most important role in making the Packaging Order effective. In India, lack of awareness, negligence, indifference and lethargy among consumers aggravate inadequate enforcement of laws on food safety. Indian consumers should start demanding edible oil in packaged form only and completely stop buying loose edible oil.

Comments

Dr. Jagadish Pai, Mumbai Grahak Panchayat (MGP), Mumbai: There was a tragedy in Mumbai due to Tri Cresyl Phosphate (TCP) in the Parel area, where the oil was contaminated with TCP and many people developed disability due to consumption of this oil. The TCP was not an intentional adulterant. It is used in motor oil as additive. The trucks that were used to transport motor oil were used, without cleaning, to transport edible oil and, therefore, traces of motor oil got into edible oil. Although this gave only a small amount of TCP, it is so deadly that even at that level it caused toxicity. This is negligence and not willful adulteration.

Government machinery is either corrupt, slow, unwilling or with less resources. Therefore, it must always be backed up by consumer organisations. They must take samples and get it tested by their laboratories (if any) or make public analysts to analyse the same and should authorise FDA to initiate suitable action.

No amount of law or prescription of strict punishment is going to make food safe. It requires constant vigil from the enforcement agency and, if for any reason, they are lax, the consumer organisations should make them work. People should read the labels carefully. Slight alertness and some education will certainly improve the situation.

Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot: Only high standard of morality can save the public from adulteration of any kind. This applies equally to the producers, the sellers of commodities and the enforcers of laws.

Frequency of inspection should be increased and those found guilty should be punished in the shortest possible time. A special system for all this should be brought into being to dispose of such cases rapidly, for inflicting exemplary punishment to those found responsible for adulteration.

Introduction of packaged edible oil in consumer packs/pouches of 50 gm, 100 gm, etc., to popularise it, is a very welcome suggestion.

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Manu T.U., Consumer Rights, Education and Awareness Trust (CREAT), Bangalore: In Karnataka, most supermarkets and leading retail outlets sell packed products. But, loose oil is also available, which is purchased by those who want to buy in small quantities. Even, Janata Bazar, a government-owned retail outlet also sells some quantity loose. Thus, all the consumer organisations in various parts of the country should take up the issue together and make a representation to the Government for an effective implementation of the Act.

Drinking Milk or White Poison?

Milk has been an essential item in the diet of every mammal. Parents insist on including milk in the breakfasts of their children and get angry if their children do not want to take it. But, in some cases, this could actually be a blessing in disguise. This is because the milk may be adulterated by unscrupulous milkmen/ traders and may contain bacteria, pesticides residues or even harmful hormones.

A. Adulterated Milk

Milk, which is apparently frothy, may contain adulterants like urea, detergents, shampoo, chalk powder, vegetable oil, paints, rice flour, wheat flour, starch, baking soda, sugar etc., that could seriously affect health. These adulterants are used in milk to increase the "Solid Non Fat" (SNF) content. The specific gravity of the adulterated milk is so dexterously adjusted that one cannot distinguish between pure and impure. Consumption of such adulterated milk can cause Septic Sore Throat, Bruscellosis, Gastro-enteritis and other ailments.

Dairy farmers are known to add caustic and baking soda as "preservatives" to milk. According to a senior scientist at the National Dairy Research Institute (NDRI), Bangalore, excess use of caustic soda is likely to affect intestinal tissues and lead to renal complications in infants. The chemical mix of urea, soap solution and caustic soda is known to be carcinogenic and can also lead to skin diseases. Pregnant women and kids are highly susceptible to this spurious milk. According to experts, regular consumption of adulterated milk causes a disease called "zoonotic" tuberculosis.

Let us have a look at some milk adulteration cases in 2003:

Lucknow: In August, a test conducted by the Health Department revealed the presence of urea, detergent, shampoo, soda, poster colour and refined oil in milk. About 1,000 samples of milk were tested, out of which 211 were found adulterated.

New Delhi: In August, it was reported that a bulk of milk, 20 lakhs litres, sold by local dairies and milk suppliers in the neighbouring States could be laced with lethal toxins that could wreck the human nervous and intestinal systems.

Chennai: In July, the owner and a vendor of a private milk marketing agency in Vyasarpadi was sentenced to six months' simple imprisonment and a fine of Rs.

1,000 for selling adulterated milk. The milk sample was lifted by the food inspector in January 2000 and was tested at the Public Analyst Laboratory, where it was found to be deficient in milk fat and SNF content.

Tamil Nadu: In July, two dairies, Surampatty and Mudalithottam, were seized for supplying adulterated milk and operating under unhygienic conditions.

Guwahati: In June, some 31 milk samples were tested at the Assam State Public Health Laboratory. Nine of them were adulterated with a very low content of milk fat and also impure water.

In 2002, a survey by the Foundation of Food Research and Enterprise for Safety and Hygiene (FRESH) detected the presence of neutralisers and starch in loose milk and a particular variety of private dairy milk sold in Bangalore.

What is the government doing to prevent such adulteration? Are there no law(s) to protect consumers from adulteration?

In India, milk and milk products are regulated primarily by the Prevention of Food Adulteration (PFA) Act, 1954, and the Agriculture Ministry's Milk and Milk Product Order (MMPO), 1992. The first sets the quality norms for milk while the second sets the norms for an entire dairy project- from buildings to operations.

Rule 5 of the PFA Act defines the standards of quality for all grades of milk. For example, buffalo milk should have minimum six percent fat and nine percent SNF. For cow's milk, it is 3.5 percent and 8.5 percent, respectively. If the milk does not measure up to these parameters, it is said to be adulterated. But, experts feel that the PFA Act is not stringent enough in case of standards of milk.

***Suggested Actions**:*

- Though the PFA is a Central Act, its enforcement is the responsibility of the State Governments and the Health Ministry. Therefore, the State Governments and the Health Ministry have to activate their administrative machinery to prevent adulteration of milk.
- Mobile laboratories should be introduced to check random samples of milk.
- To create consumer awareness about various adulterants used in milk and the related laws/acts for their protection, consumer organisations should conduct a series of awareness programmes on the subject all over the country.

- Consumers should appreciate that, despite the hassles involved in complaining about adulteration, persistent activism will lead to results in the long term, which will benefit all.
- Punishment for the adulterators should be harsher. One-two year's rigorous imprisonment, cancellation of licences and a hefty fine should be introduced and effectively implemented. The fine would also help the PFA department upgrade food testing laboratories and hiring more food inspectors to check adulteration in every corner of the country.
- Scientists are coming up with different kinds of cheap and user-friendly kits to help consumers test adulteration of milk. Steps should be taken to popularise such kits.

B. Pesticide Residues

A proportion of pesticides sprayed on crops affects the milk, since cattle consume the grass as fodder. According to Kishore K Wankhade, Toxics Link, a Delhi-based non-government organisation (NGO), pesticides, like DDT (Dichlorodiphenyltrichloroethane), are rubbed on the body of cattle in dairies to keep away flies and insects, which, in turn, seeps into the body of cattle and penetrates through body fat and ends up in the milk of the cattle. It is a very common practice among the dairy farmers. Pesticides, such as DDT and MCH (Methyl Cyclohexane), have been detected in milk samples from all over the country. While washing brings down the pesticides content in vegetables, no amount of boiling can make the milk safe. Surprisingly, no dairy in India has the equipment to effectively monitor toxic substances in milk, despite the order of the Allahabad High Court for setting up of sufficient number of milk testing units to check toxic residues.

One would be shocked to know that the Government's core group on water set up after the bottled water controversy, found that, in comparison to water, much higher quantities of pesticides are consumed through milk, food grains and other food products!

What have different tests been saying in this respect?

- In 1993, a report by the Indian Council of Medical Research (ICMR) revealed that 74 percent of milk samples in Maharashtra, 70 percent in Gujarat, 57 percent in Andhra Pradesh, 56 percent in Himachal and 51 percent in Punjab had DDT levels above the tolerance limit. Other States had around 10 percent.
- The analysis of 468 milk samples by the All India Co-ordinated Research Project (AICRP) in 2001 revealed that DDT was detected in 41 percent of the samples and Hexachloro CycloHexane (HCH) in 65 percent cases. Among these, eight percent of the samples contained DDT above the maximum

residue limit (MRL), while 15 percent had HCH content above the MRL. DDT and HCH are known causes of cancer and genetic defects.
- Out of the 244 samples of cow's milk tested by the Punjab Agriculture University in 2002, 27 contained lindane, otherwise known as BHC, while 244 contained DDT residues.

Suggested Actions:

Under the PFA Act, tolerance levels have been set for over 20 insecticides and pesticides in milk and its products, which include BHC, DDT and Chlorpyrifos. Those must be rigorously implemented. Most importantly, India urgently needs a policy governing correct usage of pesticides, since this affects drinking water and the entire food chain. This is a matter requiring intervention at the highest levels.

C. Presence of Bacteria

A major problem with dairy farming in India is the milking of cows under unhygienic conditions. By the time the milk reaches the collection point or dairy, bacteria have multiplied, lowering the quality of milk. According to the field-level officials of milk cooperative societies, although awareness is being created amongst farmers on the production of quality milk, basic guidelines on hygiene are rarely followed.

Some survey findings are given below:

- According to the PFA Act, the normal count of bacteria in healthy milk is below 30,000 in one ml. But, the survey conducted by the National Dairy Development Board (NDDB) in 2001 found the bacterial count in the most unhygienic milk sample to be around two crores in one ml!
- In 1999, 28 widely-sold brands of milk, in 500 ml packets, were found contaminated with bacteria in a laboratory test conducted by Consumer Education and Research Society(CERC) in Ahmedabad.
- In 2003, a survey by the College of Veterinary and Animal Sciences found that about 85 percent of the milk samples collected from the milk societies in Kerela did not meet the Coliform standards prescribed by the BIS.

Suggested Actions:

- Dairy farmers should be trained properly to enable them to carry out operations under hygienic conditions. They must realise the implications of not following hygienic practices.
- It should be possible for milk co-operatives to "grade," or provide ratings for individual milk suppliers on the basis of the bacterial count and pay them a premium for milk which is free from pathogen bacteria.

- An effective method is needed to keep a strict watch on the quality and hygiene of the milk supplied by the dairies.
- Certain tests of milk, like tests for chemical analysis of milk and bacteriological analysis of milk, should be made mandatory.
- To ensure hygiene and safety of milk, proper action should be taken, so that private dairies dealing in between 10,000 and 75,000 litres of milk per day register themselves with the concerned authority, as per the MMPO.

D. Use of Hormone Injection

Some farmers indulge in the practice of giving injections of hormone Oxytocin, which is used in humans to induce labour, to their cows and female buffaloes. The milk of such animals contains this hormone and, thus, their effects on a human consumer's health can well be imagined. Additionally, the animal itself suffers acute pain due to uterine contractions.

In August 2003, a report was published based on the survey conducted by the NDDB in 2001, which revealed that a large number of cattle-shed owners were giving injections of the hormone Oxytocin.

Suggested Actions:

- Random checking of milk supplying by dairies should be undertaken to detect presence of Oxytocin. If detected, the farmers indulging in the practice must be banned from supplying milk to the Co-operative.
- Sales of Oxytocin through retail chemists must be banned and the drug should only be available through hospitals and registered nursing homes.

The problems associated with the milk sector are varied. To ensure supply of safe and high quality milk to consumers, the Government should plug loopholes in the existing laws and also effectively implement them. Media and consumer groups should extend their hand to help the Government in this regard.

This article "Drinking milk or white poison" was published in the Consumer Network magazine of Consumer Coordination Council in September 2003.

Comments
Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal: We totally agree with the actions suggested in the article *vis-a'-vis* the hazards of adulterants, pesticides, bacteria and hormones in milk.

The Great Indian Iodised Salt Debate

Salt iodisation has been an important and cheap tool to fight iodine deficiency that has been the leading cause of preventable brain damage and mental retardation in the world. More and more countries are adopting the strategy of Universal Salt Iodisation, recommended by the World Health Organisation (WHO) and the United Nations Children's Fund (UNICEF). WHO's current recommendations for daily iodine intakes is 150 micrograms (mcg) for adults and children over 12 and 200 mcg for pregnant and lactating women. Dietary intake of iodine should not exceed 1000 mcg per day for any length of time. The US, Canada, Vietnam, Turkey, Zimbabwe, Nepal, Pakistan and Sri Lanka have all gone in for a salt iodisation programme.

In 1984, the Government of India decided to iodise all edible salt in the country, i.e., India adopted Universal Salt Iodisation (USI), and in 1998, it was made mandatory for all edible salt manufacturers to sell only iodised salt.

But, recently, concerns have been raised about the need for and safety of iodised salt. In response, the Union Health Ministry has decided to make iodisation of salt optional, rather than compulsory, recommending that iodised salt should be taken only if advised by doctors. There is no need for compulsory iodisation, when sufficient iodine is present in our daily food.

The opponents of salt iodisation have pointed out that too much consumption of iodised salt can be harmful, since excessive iodine intake has been associated with various health problems, including abortion and decreased resistance to infection and disease. People who have the habit of taking too much salt with their food, consumes a sufficient amount of iodine in their diet, thereby facing the risk of excessive iodine intake.

The proponents of salt iodisation pointed out that the chance of excess iodine consumption is really not that high in India. As per the Government of India recommendations, the level of salt iodisation (quantity of iodine added to salt) should provide a minimum of 150 mcg of iodine per day at the consumption level. In India, a daily consumption of 10 gm of salt (about two teaspoons), containing 15 parts per million (ppm) of iodine, would add a maximum of only 150 mcg of iodine. Out of this 150 mcg, 30 percent is lost during cooking and the remaining part is ingested.

This effectively means that, if salt was the only source of iodine, a person would have to consume some 13 teaspoons every day, without fail, on a regular basis, for the risks of excessive iodine intake to become significant. The proponents further argue that, occasionally, high consumption of salt is not risky, since iodine, when ingested in large amounts, is easily excreted through urine.

Government opinion is that in countries like the US, the UK, Germany, Australia, Switzerland and Japan, where iodine deficiency cases are reportedly high, non-iodised salt is not banned. Both iodised and non-iodised versions are simultaneously available. But, Dr. Tapan Mukherjee, Visiting Consultant, Ram Krishna Mission Seva Pratishthan, Calcutta, criticised the decision to lift the ban on non-iodised salt. He said that, while people in US, Australia and Switzerland are more educated and conscious, the majority of the population in our country is poor and uneducated. Non-iodised salt, which is available at Rs. 3 per kg, would certainly be more attractive to them than iodised salt available at Rs. 6-8 per kg.

Another major concern is that India is using Potassium Iodate, instead of Potassium Iodide, to iodise common salt. Potassium Iodate has not been approved in the USA. Studies in Australia have shown a high incidence of thyrotoxicosis with Potassium Iodate. According to Dr. Krishnangshu Roy, Drug Controller, West Bengal, no study has been done on the Indian population as yet, so it would not be fair to say that potassium iodate is harmful for Indians.

Some feel that the diet of affluent urban Indians is already rich in iodine and does not require supplementation. But, a large percentage of the Indian population lives below the poverty line and is not familiar with the concept of iodine, cautioned Dr. Sudipto Roy, Honorary Editor, Journal of Indian Medical Association, Calcutta. They do really need iodised salt. He said that, as per the recommendation of the scientific committee during the seminar on March 2000, 1,600 branches of the Indian Medical Association updated the medical practitioners on the benefits and safety of iodised salt. These medical practitioners then, in turn, educated their patients on the benefits and safety of iodised salt.

Dr. Roy felt that the Government decision to permit simultaneous sale of non-iodised salt would certainly benefit small salt manufacturers, but the Government should not trade the welfare of crores of people with the benefits of a few small manufacturers. Instead of allowing the production of non-

iodised salt, the Government could provide financial assistance to these small manufacturers, so that they too could add metered doses of iodine to the salt. This will stop the monopoly of multinational and big corporate houses. In this way, the interests of both small manufacturers and consumers would be protected.

Iodisation of salt has become an unnecessarily contentious issue. No proper epidemiological studies have been undertaken to assess the regional differences in the risks posed by iodine deficiency. Had these been done, it would have been relatively easier to mandate where iodised salt was to be sold and where non-iodised versions were permissible.

As it stands, the opponents of iodised salt have only two reasons for their opposition. The first is the risk of health problems associated with excessive iodine intake. This can surely be quantified by measuring iodine levels in the random blood samples of people. Thyrotoxicosis risks can similarly be assessed by careful statistical analysis to determine whether iodine was the causative factor.

The second reason for opposing iodisation of salt is the concern for small manufacturers. This is patently a concern of those with vested interests, since the prosperity of small manufacturers is hardly a valid reason to accept risks of mental retardation or goitre due to iodine deficiency. If the Government is so concerned about small manufacturers of salt, let them be trained and financed to add iodine to salt.

Medical opinion seems strongly in favour of maintaining the *status quo ante*, and this is the line the Government must pursue. Simultaneously, epidemiological studies and medical risk assessments must be conducted without delay, since it is only on a medical basis that the decision should be taken on where and whether to permit non-iodised salt.

Comments

Jagadish Pai, Mumbai Grahak Panchayat (MGP), Mumbai: Apart from the loss during cooking, there is also some loss of iodine in storage and transportation, which is as high as cooking losses. So, many times, we get only about 40 percent of the original iodine amount from the salt, especially in India where the weather is hot and transport and storage

Contd...

conditions are not the best. However, Hindustan Lever's *Annapurna Iodised Salt* claims to have a technology to prevent or minimise these losses.

Amrit Lal Saha, Consumer Protection Association (CPA), Agartala: The debate should continue in the interest of the general public.

Beware of Pesticides in Your Food

Do you know that practically every bite of food you take could be heavily contaminated with pesticides or insecticides?

The recent furore over whether or not soft drinks manufactured in India by Coca-Cola and Pepsi contain pesticides has highlighted that India lacks a proper pesticide policy. Nutrition experts have warned that, while consumers of soft drinks in India may be paying for their poison, the real threat lies in the "shocking levels" of pesticide residues in daily edibles that impact a far larger mass of people.

> **Pesticide:** A pesticide is any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest. Pests can be insects, mice and other animals, unwanted plants (weeds), fungi, or micro organisms, like bacteria and viruses. The term pesticide covers a wide range of compounds, including insecticides, fungicides, herbicides and various other substances used to control pests.

The poison has seeped into our food chain and is present everywhere. Harmful chemicals are sprayed for increased yield and give the fruit and vegetables a rich luscious look. The vegetables that grow over the ground, like brinjals, ladyfinger and cauliflower, are the worst affected, as the pesticides used on them show residual effects for a long time. Milk products, grains, groundwater, wheat, tea, edible oil and practically all other food items are also heavily contaminated with dangerous pesticides and insecticides. Livestock, poultry and fish too get contaminated when application or manufacturing of pesticides occurs in the vicinity or when residues are transported through the environment. A World Health Organisation (WHO) study several years back revealed that pesticide residue levels even in human milk in India are alarmingly high.

Following table shows how a possible breakfast could be contaminated with pesticide residue:

TOXIC BREAKFAST					
In parts per million	**DDT**	**Alfa-BHC**	**Gamma-BHC**	**Aldrin**	**Dieldrin**
Milk	40	0.147	0.021	0.048	0.005
Butter	0.130	0.260	0.090	0.850	0.470
Jam	trace	0.002	trace	0.001	0.006
Fruit juice	0.040	0.003	-	0.009	-
Tea	0.024	0.021	0.008	0.007	0.004
Ice cream	0.096	0.080	0.111	0.105	0.103

(Source: National Institute of Nutrition, Hyderabad, Published in Pesticide Post, Vol.6, No. 4 & 5, Sep.- Nov. 1998)

Indian Export Affected

- Agro-products grown in Andhra Pradesh are so contaminated with pesticides that several European nations have imposed restrictions on their import.
- Green Indian seedless grapes have been taken off supermarket shelves in Belgium, following the detection of high levels of pesticide residues in products in the Netherlands recently. The Belgian Food Safety Authority took this decision in view of fears of high chemical residue levels, leading to stomach cramps in children.
- A German firm has stopped importing Indian tea, as pesticide residue in tea was found to be more than the international standards. Indian tea has faced the same problem in Japan, too.

Pesticide Use in India

Pesticide usage in India began in 1948, when DDT (Dichlorodiphenyltrichloroethane) was imported for malaria control and Benzene Hexachloride (BHC) for locust control. The next year, it began to be used in agriculture.

The WHO gifted India a DDT manufacturing plant in 1954. Since then, the use of pesticides has increased several folds in India- thanks to and courtesy of the "Green Revolution" which increased the agricultural output, no doubt, but left India struggling with the residual effects of the extensively used chemical fertilisers and pesticides in the country's soils.

The decade from 1980 to 1990 alone saw the area under pesticides in India increase a whopping 20-fold, from six million hectare to 125 million hectare. Currently, India is the third largest consumer of pesticides in the world and the second largest manufacturer in Asia.

Different Studies on Pesticide Use:

- In 1986, the Indian Council of Medical Research (ICMR) began a project on surveillance of food contaminants in India. It found that 51 percent of food items were contaminated with pesticide residues and 20 percent of these commodities had pesticides exceeding the Maximum Tolerance Limits (MTLs). The All-India Co-ordinated Research Project on Pesticides Residue (AICRP), started in 1986 and sponsored by the Indian Council of Agricultural Research (ICAR), revealed that 60 percent of foods are contaminated with pesticides. Of these, 14 percent were over maximum residue levels (MRLs) of registered pesticides, according to the international standards set by Codex Alimentarius Commission, established in 1962, under the aegis of the Food and Agriculture Organisation (FAO) and the WHO.

Acceptable Dietary Intake (ADI) and the Minimum Residue Level (MRL) are the two indices used world over to determine how safe the food is.

MRL for a pesticide is the minimum safe level of that pesticides residue that can be present in a kilogram of a particular crop.

ADI for a pesticide is the maximum amount of that pesticide residue that can be taken daily for a particular body weight, without adverse health effects.

In India, MRLs have been prescribed for 71 pesticides out of the 185 registered for use in the country by the Central Committee for Food Standards.

- In one study, conducted as part of that ICMR report, 2,205 samples of milk collected from 12 states contained residues of DDT and lindane. The level of lindane in milk was so high that the pesticide residues consumed only from milk constituted 80 percent of its ADI, when milk formed just 10 percent of the diet.

- A study by the Department of Agricultural Economics, University of Agricultural Sciences, says 96.4 percent of the samples of leafy vegetables

in Bangalore are contaminated with pesticide residue. It also showed that the Indian diet contains a daily intake of 0.5 mg of DDT or BHC (both chlorinated pesticides). This is 44 times more than the daily American intake and much higher than the danger limit fixed by the WHO.

- Studies and reports from the Industrial Toxicology Research Centre (ITRC) in Lucknow (*Toxicology Atlas of India: Pesticides, 1990*) have shown clearly that human milk and fat from many parts of India have high levels of pesticide contents. In fact, newborn babies in the country are taking in 40 times the safe levels of DDT through mother's milk. How did the women have pesticides in their breast milk- from water, meat or milk, contaminated with pesticides? An investigation by Tanabe et al (1990) revealed the existence of considerably higher levels of HCH and DDT in human breast milk collected from south India. Polychlorinated biphenyls (PCBs), a toxic organochlorine used in transformers, were also detected in breast milk at lower levels. PCBs were also found in human fatty tissue and blood in a study *(Rao and Banerji, 1988-89).*

- The Consumer Education and Research Centre (CERC), in an investigation *(Insight – the consumer magazine, May-June 2000)*, found that most of the wheat flour brands in India are contaminated with pesticides, some of which are even banned for sale. All the brands contained lindane, which should be absent. DDT was found in many samples, apart from aldrin (banned in 1996) and dieldrin (restricted use) and ethion, an organophosphate, which was above permissible limits.

- The 1992 studies by the Annamalai University and the Ehima University, Japan, revealed that HCH (hexachlorohexane), DDT, aldrin and dieldrin were present in foodstuffs throughout India. Residue levels in dairy products exceeded the guidelines of the WHO and the Ministry of Health in India. The ADI of HCH and DDT was several times higher in India than most developed nations, the study concluded.

- The study by Fiona Marshall from Imperial College, London, found that in Varanasi, some farmers grow crops meant for their own use separately. These are not sprayed with pesticides as often. It also found samples picked up in the morning from roadside shops better than samples picked up in the evening, indicating that pollutants are all along the route on the way to the market, and in the market.

Thus, contamination of food products in the country is quite alarming. This is despite a comparatively low use of pesticides in India. India's consumption of

pesticides is 0.57 kg/hectare against USA's 3 kg/hectare, Korea's 6.60 kg/hectare, Japan's 12.0 kg/hectare and that of Taiwan's 17kg /hectare. According to the pesticides industry statistics, India spends $3/hectare on pesticides compared with $24/hectare spent by Philippines, $255/hectare spent by South Korea and $633/hectare by Japan.

Yet, Indians show the highest levels of presence of pesticide residues in their bodies. About 20 percent of Indian food products contain pesticide residues above tolerance level compared to only two percent globally. No detectable residues are found in only 49 percent Indian food products, compared to 80 percent globally.

The reason lies in non-judicious use of pesticides. This can be attributed to low awareness amongst the farmers about safe pesticides application. Every pesticide has some safety or waiting period. This is defined as the number of days that should lapse before the pesticides reach the tolerance limit. Food products become safe for consumption only after the waiting period has lapsed. If fruits and vegetables are harvested before the completion of the waiting period, they are likely to have higher levels of pesticide residues, which are hazardous to health.

Experts say, in most cases, the use of insecticides is not needed. There are two types of pests in vegetable crops that eat or suck the plants and defenders that consume harmful pests. On vegetable fields that have pests, if defenders ratio is 2:1, no pesticide is needed at all. The defender insects are capable of consuming pests twice their numbers. But, the ignorant farmers take these friendly insects also as foes and the insecticides sprayed by them kill the defenders too.

Further, labelling and specifications on pesticide containers, if any, are usually incomprehensible to the illiterate farmers. Therefore, they tend to ignore them and harvest crops before the waiting period is over.

These problems occur as the vegetable growers rarely go to the agriculture experts, posted in the State Agriculture or Horticulture Departments, to find solutions for pest or insect problems. They usually go to the pesticide dealers to seek counsel for these problems. As most dealers are not qualified in the field of agriculture, they tend to recommend insecticides, which offer maximum profits to them.

But, the agricultural as well as the horticultural departments do not have any power to stop the sale of insecticides to vegetable growers without proper

recommendation. Also, as laws in India are not stringent enough, it cannot stop farmers from harvesting before the waiting period. Therefore, pesticide residues in food items continue to be high.

No instructions are given to farmers on proper spraying methods. There is no protective gear used by farmers, nor are they told that exposure to pesticides could cause deformed babies and other gynaecological problems among women.

Farmers frequently store pesticides in their kitchens, under beds and within easy reach of children. Besides, pesticide containers are also often reused as water containers.

Women working in the field are found to be more vulnerable to pesticides, because they are physiologically different from men; having softer skin usually means more damage, following exposure. In addition, once exposed, the retention of the toxins is more dangerous when the woman is pregnant, as the foetus inside her is also exposed to the poisons through the amniotic fluid and the placenta. There is also the danger of increased miscarriages and spontaneous abortions. In Raichur, local doctors advise pregnant women to leave the area to move away from the dreaded pesticides in the paddy and cotton fields.

Proposed action:

- Farmers should be given proper training on safe application of pesticides and efficient spray technology.
- Vegetable growers must use insecticides after proper guidance from agriculture experts. Horticulture and Agriculture Departments should interact with farmers more closely and try to solve their problems.
- Insecticides should be sprayed only when recommended and the economic threshold level and pests, like defenders, insect ratio, must be taken into account before any spray.
- Consumer organisations should guide the ignorant farmers about the right selection of pesticides and safe use and handling of the same.
- Programmes through mass media like TV and radio, to sensitise farmers on the issue, should be undertaken.

The label on a pesticide container should ideally have all the relevant information. If the label is too small, it can be accompanied by a proper information booklet containing information/instructions in local languages. The label should contain at least the following information:

- product name;
- name and address of manufacturing company;
- net contents;
- pesticide registration number;
- precautionary statement;
- child hazards warning;
- signal word 'CAUTION' in bold letters;
- statement of pesticide classification;
- storage and disposal methods; and
- physical or chemical hazards.

Restricted/ Banned Pesticide Use in India

India produces, uses and trades in pesticides that are banned, or whose use is restricted in some nations, because of their deleterious environmental or health impacts. According to the Ministry of Agriculture, of the 180 registered pesticides in India, about 32 have been banned in other countries (*Down to Earth, June 15, 2003*). Monocrotophos, a highly toxic insecticide, which was banned in the US in 1988, is India's top selling pesticide.

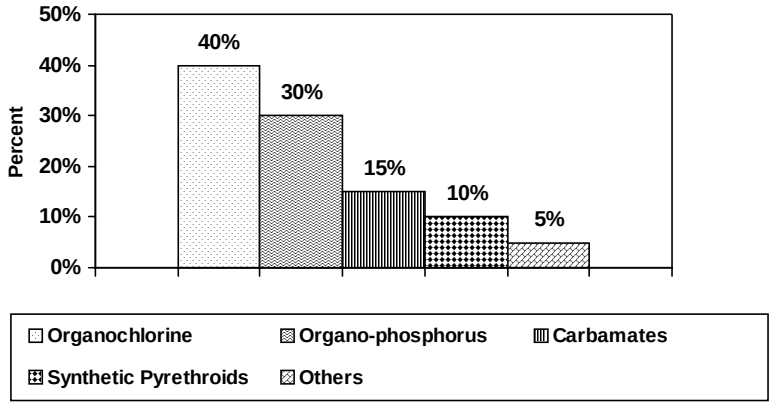
Made in India (Banned or Restricted in Some Nations)

Pesticide	1999-2000	2000-2001[E]	2001-2002[A]
DDT	3600	3500	3600
Malathion	5900	6000	6600
Monocrotophos	9500	9000	9500
Methyl Parathion	1900	1800	2000
Phosphamidon	3200	NA	NA
Dimethoate	1400	1200	1200
Endosulfan	8300	7500	8000
Zinc Phosphide	500	500	600
Aluminium Phosphide	1800	2000	2100
Phorate	6100	5000	5500

(Note: All figures in million tonnes; E- Estimated, A- Anticipated)
(Source: Industrial Data Book, 2002-03)

To one's dismay, organochlorines, the main class of pesticides responsible for contamination, are the most widely used pesticides class in India. While organochlorines, like DDT, dioxin, HCH, aldrin and endosulfan, were banned in the US and many other countries as early as the 1970s, they are still being used in India. The problem with organochlorines is that they are carbon-based substances that have one or more chlorine atoms. They are very persistent, lasting in the world for years before degrading. Dioxin is literally forever. Unfortunately, 40 percent of all the pesticides used in India are organochlorines and another 30 percent belong to the organophosphate category, which are also highly hazardous. Only five percent of the pesticides used belong to the safe and non-chemical categories.

Consumption Patterns of Pesticides in India



{Source: Safety evaluation and monitoring (1999)}

Studies show that DDT, HCH and Malathion account for 70 percent of the total pesticides consumption in the country. The pesticides banned in India continue to flow into the market despite Government notifications. Small farmers prefer them, because they are cost-effective, easily available and display a wide spectrum of bio-activity.

Pesticides Banned in India
Aldicarb, Aldrin, BHC, Calcium cyanide, Captafol 80 percent Powder*, Carbofuron 50 percent SP, Chlordane, Chlorobenzilate*, Cibromochloropropane, Copper Acetoarsenite, Dieldrine*, Endrin, Ethylene Dibromide*, Ethyl Mercury Chloride, Ethyl Parathion, Heptachlor, Maleic Hydrazide*, Menazone, Mehtomyl 12.5 percent L, Mehtomyl 24 percent L, Nicotine Sulphate, Nitrofen, Paraquate Dimethyl Sulphate, Pentachloro nitrobenzene (PCNB), Pentachlorophenol (PCP), Phenyl Mercury Acelate (PMA), Phosphamidon 85 percent SL, Sodium Methane Arsonate (MSMA), Tetradifon, Toxafen, Tri-chloro acetic acid (TCA)*
(*Use banned w.e.f 17.07.2003) *(Source: Directorate of Plant Protection and Quarantine, Faridabad)*

Pesticides Restricted for Use in India
Aluminium Phosphide DDT Lindane Methyl Bromide Methyl Parathion Sodium Cyanide Methoxy Ethyl Merciru Chloride

Possible Hazards of Pesticides and Their Residues

Pesticides, by their very nature, create some risk of harm to humans, animals or the environment as they are designed to kill, or adversely affect, living organisms. Pesticide residues cause acute and long-term toxic effects on humans, animals, fish and birds. Human beings, at the top of the food chain, are most vulnerable to the health risks, as ingestion of toxic contaminants is several-folds higher, through the process of bio-magnification.

The short-term side effects of pesticide poisoning include dizziness, blurred vision, nausea, vomiting, loss of appetite, headache, diarrhoea, convulsions, stomach cramps and muscular cramps. Continued exposure for long periods causes cancer, liver or kidney problems and also affects the central nervous system. It can also cause mutation, resulting in birth defects.

The storage of toxins in fat is a problem of greater importance in women, because of their higher percentage of body fat and the hormonal changes that occur during pregnancy, lactation and menopause, which can result in mobilising internal stores of pollutants many years after initial exposure.

> *When Paul Mueller, the Swiss entomologist, who discovered the insecticidal properties of DDT, was awarded the Nobel Prize for Medicine in 1948, little did the world know the havoc his discovery would create for human beings.*

Another concern is the effect of "synergism," whereby even minute quantities of these chemicals can cause immense harm, when acting in combination with other chemicals. This is particularly relevant in India, where the body burden of pesticides is already relatively high.

Regulation on Pesticides

The main act in India relating to pesticides is the Insecticides Act, 1968. The Insecticides Act was enacted, after several cases of food poisoning caused by insecticides were reported. This was during April and May 1958, when many people died, or fell ill, owing to food poisoning, arising from contamination by a poisonous organo-phosphorous insecticide, Parthenon Falidol. The Union Government appointed a Committee of Inquiry, whose recommendations were implemented in the Act of 1968.

The comprehensive Insecticides Act was passed in 1968 to regulate import, manufacture, sale, transport, distribution and use of insecticides, with a view to preventing risks to human beings, animals and other matters connected therewith.

The legal framework relating to pesticides is fairly complex. Four Ministries are dealing with various aspects of the Insecticides Act, thus making the scenario complex. Following are the Ministries, which are concerned with pesticides:

- Ministry of Agriculture, concerned with the Insecticides Act 1968 (the regulation authority and the State Department of Agriculture implements the law);
- Ministry of Health and Family Welfare (through the Controller of Drugs), concerned with the Poisons Act 1918, and the Insecticides Act 1968 (regarding the aspect of pesticide residues in food and their health implications. The enforcing authority is the Food and Drug Administration of each State);

- Ministry of Chemicals and Fertilisers, concerned with the Insecticides Act 1968 (import and manufacture of pesticides, at the national and state levels, as the case may be); and
- Ministry of Environment and Forests, concerned with the Environment Protection Act and the Insecticides Act 1968 (protection of environment part only).

Thus, the multiplicity of laws leads to complexity, thereby creating difficulties for the citizens, as well as the bureaucracy, agencies and personnel concerned with adjudication and enforcement.

The Insecticide Act was also criticised on the ground that it only aims to mitigate damage, for instance, tackling emissions, toxic waste or impact of pesticides. But it does not talk about whether the use of chemicals is the best way forward for development, whether alternatives are possible, etc. No thought is given to the precautionary principle, which raises fundamental questions about the process of development itself. The present policy only looks at impact mitigation and end-of-the-pipe solutions.

In recent times, there are several measures being taken to regulate the contamination of food by pesticide residues to safe levels. The Government has laid down specific principles for arriving at maximum residue limits of pesticides in various food items. The Prevention of Food Adulteration Act, 1954 has prescribed limits of tolerance for pesticide residues in food and food commodities for a selected number of pesticides.

In 1995, the United Nations Environment Programme (UNEP) decided to eliminate 12 chemicals, all organochlorines, from world chemistry. These were classified as persistent organic pollutants (POPs), owing to their similar toxic behaviour. POPs persist in our bodies as well as in the environment. For instance, though DDT was banned in the USA more than 25 years ago, it still persists in the sediments of the Great Lakes, reducing the fertility of Bald Eagles feeding off the fish there. India has signed the Stockholm Convention, which focuses on reducing and eliminating the release of these 12 POPs, collectively coined as the "Dirty Dozen" by the UNEP. India's signing the convention means that India may, in future, take necessary precautions to improve related conditions in the country, but it does not necessarily mean India will ban POPs just yet. The implementation part is far away.

Srishti, a Delhi-based non-government organisation (NGO), recently filed a petition in the Supreme Court expressing concern over the alarming levels of pesticides contamination in the country. To protect all Indians' right to safe

food and water, the petition asked for a ban on all those pesticides that have been banned in other countries. It pointed out that 36 pesticides and insecticides banned in the developed countries are still used in India. It demanded setting up of a body to prescribe maximum residue levels, according to international standards. In response to this, the Supreme Court has issued notices to five ministries, viz. Ministries of Agriculture; Chemical, Fertiliser and Petrochemicals; Health and Family Welfare, Environment and Forests; and Food and Consumer Affairs, over pesticides contamination of food items, including wheat, milk, fish, tea and edible oil.

Suggested Action:

- India should impose a complete ban on pesticides that are banned in other countries.
- The Government should take necessary action to punish those who use and sell such pesticides that are restricted in India.
- Use of bio-pesticides, i.e., pesticides derived from animals, plants, bacteria and certain minerals, should be promoted, as they are inherently less harmful and less polluting than chemical pesticides. These bio-pesticides when used as a component of an integrated pest management programme can bring down the use of conventional pesticides while keeping crop yields high. In the absence of active promotion and production incentives by the Government, the demand for these products has not gone up. As a consequence, dealers do not stock bio-pesticides and farmers have no access to them. Therefore, proper steps should be taken by the government to actively promote bio-pesticides.
- Random checking for market samples of food commodities needs to be done.
- Programmes to educate public on harmful impacts of pesticides on human health needs to be launched through mass media.
- Facilities should be created for analysis of food samples at District and State levels for monitoring.
- All agencies connected with agriculture and food commodities, directly or indirectly, should take it as their primary responsibility to help in safe-guarding the health of consumers, by giving necessary information on the correct usage of pesticides and their harmful effects.

When Rachel Carson wrote “Silent Spring,” in 1962, suggesting banning of organochlorine pesticides, she was described as an ignorant and hysterical woman, who wanted to turn the earth over to the insects. Hundreds of thousands of dollars were spent by the chemical industry to discredit the book and malign the author. But, it is the overwhelming consumer support that made Rachel the winner. Can’t we Indians do the same?

This article is an elaborated version of the article "Beware of pesticides, artificial colours in vegetables and food products" published in the Times of India on 09.01.03. An article written on the subject in Bengali has been published in a local daily newspaper Nutan Jagat in November 2003.

Comments

H.D. Shourie, Common Cause, New Delhi: The article has highlighted the serious matter of the presence of pesticides and insecticides in food products, particularly vegetables and fruits. The field producers of vegetables and fruits must obviously be made aware that use of such chemicals can cause harm to the consumers. It is very unfortunate that they resort to such measures merely for increasing their earnings. The Government of India and the State Governments must ensure that these practices are effectively curbed and those responsible for such practices should be punished.

G.C. Mathur, BINTY, New Delhi: Farmers are simply concerned with the profit per unit of land with them. Insecticides, pesticides, germicides etc., are all used to increase yield, say, per hectare of land. How to ensure profitability of farmers, without the use of pesticides is the moot question. Consumer organisations should get hold of agricultural scientists to make the farmers aware about the harmful effects of the pesticides.

Chapter 6

Transport Safety

How Safe are the Indian Roads?

Road accident is a serious problem all over the world, especially in the low and middle-income countries, where the death toll is highest and still growing. In the low and middle-income countries, pedestrians, motorcyclists, cyclists and passengers are especially vulnerable. In addition to human suffering, estimated costs of road traffic injuries are between one percent and two percent of gross domestic product (GDP) of these countries.

While many countries have succeeded in reducing the number of road accidents, current trends in India show that the carnage will increase with increasing motorisation and without effective remedial actions. Not a day passes when we do not read reports of at least two or three serious road accidents. In India, the economic cost of road accidents is estimated to be about Rs. 69,502mn, or, 0.69 percent of Nation's GDP *(Industrial Safety Chronicle Oct.-Dec 2002).*

Current figures are alarming and more alarming is the trend. The statistics of road accidents given below are really scary.

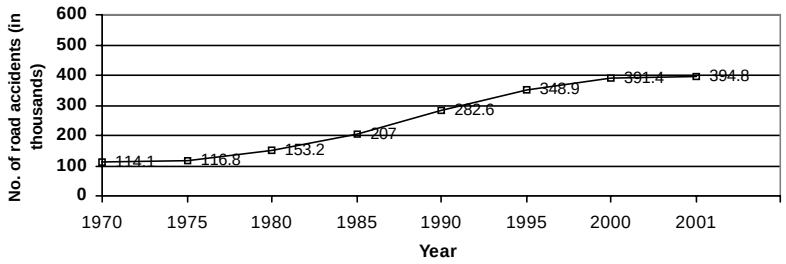
Road Accidents in India (In Thousands)

Year	No. of Registered Motor Vehicles	Road Accidents	Persons Killed	Persons Injured
1970	1401	114.1	14.5	70.1
1975	2472	116.8	16.9	77.0
1980	4521	153.2	24.6	109.1
1985	9170	207.0	39.2	163.4
1990	19152	282.6	54.1	244.1
1995	30287	348.9	70.6	323.2
2000	48857	391.4	78.9	399.3
2001(P)	54991	394.8	80.0	382.7*

(P): Provisional
**: This does not include data for Bihar and 14 districts of UP, since information from the State Governments has not been received.*
(Source: Road Safety Cell, Ministry of Road Transport & Highways)

The accidents kept rising as is visible from the following graph:

Road Accidents in India (in Thousands)



(Source: Road Safety Cell, Ministry of Road Transport & Highways)

Poor conditions of roads, lack of pedestrian safety, flouting of safety norms, substandard safety devices, etc., all these factors, combined together or individually, play the role of catalysts in road accidents.

The Condition of Roads

A bumpy, bone-rattling, awful ride ahead! That is the description of being on city roads that would sound familiar to an Indian, whether one is a driver or a passenger. The picture is the same everywhere, even in our metropolitan cities.

Thousands of taxpayers pay their hard-earned money with the hope that the roads they use would be at par with their expectation. But, it hardly matches with the reality. Most of the roads are in such a bad condition that vehicles have a tough time negotiating them. Most of them are fractured, uneven or badly surfaced, thus posing a great risk for those on, and even off, the roads. Many of the roads need immediate repairing, but for that, citizens have to wait for the elections to come for any action to be taken to improve the conditions of roads.

Then there is the problem of the digging up of city roads. Newly-laid roads seem an irresistible target for the road-diggers from one Government agency or the other. Obviously, digging is done well, but the repair teams do a haphazard job, if at all they bother to do so. The repaired uneven road causes traffic hazards and accidents. *Is there anyone to see that roads are dug up once for all purposes and then metalled immediately thereafter?*

During the monsoon, the condition of the roads is even more dangerous. The need of the hour is to pay attention to quality control while constructing roads. Concrete roads in the city need to be constructed in such a way that they last for at least 50 years. Asphalted roads should last for 10 years.

Pedestrian Safety

A road has two elements - carriageway for the movement of vehicular traffic and footpath for the use of pedestrians. But, it is rare that the pedestrians have a proper footpath available to walk on. Pedestrian paths are always provided on every road in the developed world. At least three metres are needed to enable pedestrians to move comfortably. Only then it would be possible to prevent them from walking on the roads. But in India footpaths have become the sole domains of hawkers, vendors and extensions for regular shops. Even if there is a footpath to walk on, it may still be a hazard with its uneven surface, potholes, fruit skins and other rubbish. Pedestrians are pushed on to the road, and there they face the risk of being hit by speeding vehicles. No wonder, the pedestrians constitute the largest proportion of casualties.

Therefore, the following needs to be immediately ensured:

- Pedestrians must start demanding that at least 90 percent of the pavements should be smooth, levelled, properly constructed and free of encroachments. The pavements should have hand railings along the side adjacent to the road. There should be properly marked and painted pedestrian crossings, fitted with electronic signals.
- All the important roads should be repaired and maintained properly, so that drivers find it easy to be on the roads.

Depending on the type of vehicle that a person is driving, two things are a must for safety: seat belt for drivers of four-wheelers and helmets for drivers of two-wheelers. Legislations regarding both have been cleared by the Central Government.

Use of Helmets

Compared to four-wheelers, two-wheelers are far more dangerous. According to an estimate, per mile travelled, the number of deaths on two-wheelers is about 14 times the number in cars. Motorcyclists are more prone to crash injuries than car drivers, because motorcycles are unenclosed, leaving the rider vulnerable to contact with hard road surfaces.

Dr. Satish Babu, Neuro-surgeon, Satish Gandhi Hospital, Bangalore, did a survey of a 100 patients he treated during 2002, at different hospitals all over Bangalore. His findings are:

- Two wheeler accidents form 60 percent of the total accidents;
- Victims not wearing helmets: 75 percent;
- Age groups of victims: 18 to 32 years - 80 percent, above 32 years - 20 percent;
- Types of injuries:
  - head - 80 percent,
  - face - 75 percent,
  - mild head and face - 15 percent,
  - moderate head and face - 25 percent,
  - severe head and face - 60 percent, and
  - spinal injury - 15 percent.
- Death rate: 10 percent; and
- Significant long-term disability or disfigurement or deformity: 84 percent.

Although helmets cannot provide total protection against head injury or death, they do reduce the incidence of both. The National Highway Traffic Safety Administration (NHTSA) of the USA estimated that helmets reduce the risk of death in a motorcycle crash by 29 percent and the risk of fatal head injury by 40 percent.

Laws requiring motorcyclists to wear helmets are in effect in many countries, viz. Australia, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Indonesia, Ireland, Italy, Japan, Malaysia, the Netherlands, New Zealand, Norway, Portugal, Singapore, South Africa, Spain, Sweden, Switzerland, Thailand and the UK.

In India, Section 129 of the Motor Vehicles (MV) Act, 1988, states, "Every person driving or riding (otherwise than in a side car, on a motorcycle of any class or description) shall, while in a public place, wear protective headgear, conforming to the standards of the Bureau of Indian Standards (BIS)".

Although the MV Act, 1988, very clearly and unambiguously makes it mandatory for the riders of two wheelers to use a helmet, each State has to notify it for it to be enforced. The enforcement being left to the State Governments gives room for ambiguity. Most of the States in India have been criminally negligent in not doing so.

Though there exists a penalty for riding a two-wheeler without a helmet, helmets are a rare sight in Mumbai. "One has to wait for days to see someone wearing helmet," says Surendra Kanstiya of Consumer Guidance Society of India (CGSI), A Mumbai-based consumer organisation. In Gujarat, the State Government has not even notified the law. Therefore, it is perfectly legal to drive a two-wheeler without a helmet.

According to Arjun Dutta of CUTS-Delhi, most people in Delhi use helmets because of the fear of fines. Only some teenagers are sometimes found riding without helmets for short distances.

In Calcutta, people wear helmets where the police is known to be strict, but in places where there is little chance of being caught by the police, people prefer to avoid wearing helmets. Are people fooling the police or are they playing with their own lives?

Some Characteristics of Helmets Certified by BIS

- A helmet should have a hard outer shell and additional material, like protective padding, to absorb the impact. The shell should have an outer surface with a smooth finish and it should not be specially reinforced at any point.
- The shape of the helmet should be in the form of a continuous convex curve, with no visible discontinuities in its curvature.
- It should have a minimum of 10 mm thick layer of protective padding of polystyrene or thermocole to effectively reduce the force of the impact during an accident.
- Each helmet should be clearly marked with the following information on the inside of the shell, like the manufacturer's name or trade mark, size, mass of helmet to the nearest 20 gm, and the year of manufacture.
- Helmets with the BIS mark are subjected to stringent tests like shock absorption, strength of the retention system, rigidity and audibility tests.

Unfortunately, the State Governments have not been able to control the quality of helmets sold, thus, defeating the very purpose. Although there is BIS standard for helmets, the local manufacturers do not comply with the norms and manufacture substandard helmets. According to the Regional Transport Authority (RTA), Hyderabad, most of the helmets imported from places like China and Taiwan are substandard.

With a BIS-certified helmet costing upwards of Rs. 500, many recycled and sub-standard helmets are sold for much lower prices, ranging from Rs. 50 to Rs. 200. With most vehicle owners looking for mere compliance with the rules, they usually go in for the cheaper option, instead of choosing a helmet that will protect them.

Here, what is needed is a campaign to educate and remind consumers of the danger to their lives posed by cheap and substandard helmets.

Use of Seatbelts

Seatbelts are an integral part of car safety. The Supreme Court has passed an order making it mandatory for drivers and front seat passengers to use seatbelt while driving a post-March-1994-manufactured car. In most cities, it is a requirement that older cars are retrofitted with seatbelts.

Although compliance is higher in case of seatbelts, compared to helmets, a closer look at the belt will reveal that the quality of seat belts is really not up to the standard. Instead of proper belts, which are known to cost more than Rs. 1,500 a pair, many people have gone in for inferior straps, which cost only about Rs. 150. The picture is the same all over India. In fact, in Delhi, these two types of belts are popularly known as "*jaan bachao*" (save life) and "*chalaan bachao*" (escape penalty) belts, with the latter being the norm for retrofitting.

Cheap seatbelts have only one strap, instead of two. According to bone specialists, poor quality seat belts can cause a lot of harm, as these are ineffective when a vehicle meets with an accident. A standard seat belt has two straps. One that runs diagonally across the shoulder and chest and the other should pass horizontally across the lower abdomen region. Besides, the seat should be positioned at an angle of 100 to 110 degrees. Any lesser or greater incline would mean that the seatbelts would cover wrong portions of the body, thus, increasing the chances of injuries.

In both the cases, there is a rule that specifies that safety devices, like helmets and seatbelts, must be worn while driving. But, the police are not trained properly about the standards. They have only been asked to check whether one is wearing a helmet while riding a two-wheeler or a seatbelt in case of a four-wheeler.

Cell Phones

Is a mere phone call worth more than life? Well, it certainly seems so from the behaviour of some vehicle drivers on the roads who endanger not only their

own lives but also those of others. Using a cell phone while driving or riding a two-wheeler is dangerous, as it diverts the attention from the road. Further, one hand is taken off the steering wheel or handlebar when using a cell phone, so temporary physical incapacitation adds to the problem of diversion of attention.

A study, published in February 1997, in *"The New England Journal of Medicine"* conducted in Toronto and Ontario, looked at 699 drivers, who owned cell phones and had been in collisions. It concluded that when a phone was used while driving, the risk of a collision was between 3 and 6.5 times higher than when a phone was not used.

On December 1, 2001, New York became the first state to ban the use of handheld cell phones while driving. The use of cell phones while the vehicle is in motion is banned in Australia, Spain, Israel, Portugal, Italy, Brazil, Chile, Switzerland, the Great Britain, Singapore, Taiwan, Sweden, Japan and Austria.

Many of us do not know, or pretend to be unaware of, the fact that using a mobile phone or even a hands-free kit is a traffic offence in India. Driving while talking on the cell falls under "dangerous driving" category and is an offence as per Section 184 of the MV Act. In case of the first offence, the term of imprisonment may extend to six months, or fine amount may extend to Rs. 1,000. For any second or subsequent offence, if committed within three years of the commission of a previous similar offence, the term of imprisonment may extend to two years, or the fine amount may extend to Rs. 2,000, or both.

In spite of the directions issued by the respective State High Courts against the use of mobile phones while driving, people, especially teenagers and businessmen, can be seen talking on cell phones while driving. Ownership of a vehicle and a cell phone usually denotes a higher income, and judging the behaviour of phone-happy drivers, it is clear that there is no relationship between common sense, concern for life and income levels.

What Needs to be Done?

A Road Safety Cell was set up in the Ministry of Surface Transport (currently known as the Ministry of Road Transport and Highways) in September 1986. The cell was entrusted with formulation of policies for road safety, with a view to minimising road accidents in the country. Important schemes being implemented by Road Safety Cell include public awareness campaign, Grants-in-aid to voluntary organisations for organising road safety programmes, National Highway Accident Relief Service Scheme, Refresher Training to Heavy Vehicle Drivers in unorganised sector, setting up of model driving schools etc. A Road Safety Council has been established under Section 215 of the MV Act 1988.

Apart from these, voluntary organisations in many cities have come up to deal with this increasing urban epidemic of death and destruction. Police departments also hold road safety weeks, painting competitions, zero-tolerance drives and demand greater powers to fine and punish. This has gone on for the last two decades. But the killing and the maiming continue unabated.

Thus, it is high time that policy makers, implementing authorities, voluntary organisations and, above all, the citizens of the country paid more attention to the issue. It is time for some harsh steps against those who deliberately flout the law.

Only charging hefty fine will not work. Rather, if one is caught deliberately breaking the law, his licence should be suspended for a year. If he is caught again within, say, six months of a traffic violation, the offender's licence should be cancelled and he must compulsorily serve a period of simple imprisonment. Of course, the police have to enforce these laws.

Apart from this, scientific studies should be undertaken to analyse the cause of road accidents in India. Developed countries have done a lot of statistical analyses in which road accident data has been analysed and the causes determined. In contrast, not a single city in India has a well-formulated scientific process through which data gets analysed.

The traffic police should regularly engage road safety experts and depute their personnel for training in India and abroad.

As teenagers generally tend to disobey traffic rules, there is a need to educate college students about the various safety measures and the consequences of rash and negligent driving. No relaxation should be given in the punishment of offenders due to their age.

Educational programmes, severe punishment for offenders and motivating the public to drive safely are all issues which will help bring down the rate of vehicular accidents, but the sad fact is that ultimately, experience is the best teacher.

Comments

Surendra Kanstiya, Consumer Guidance Society of India (CGSI), Mumbai: In Mumbai, only those parts of roads are good which are of concrete construction. Other parts are full of potholes. To some extent, nature is responsible for this. Heavy rains cause major damage to the roads. Regarding the use of cell phone, in Mumbai it is common to find people talking over the cell phone while driving. I have never seen/ heard anyone penalised for the same.

Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot: Our roads are not only in bad conditions, but according to experts they are not of scientific standards as well. Also, long and non-stop movement, especially of goods transport, is the cause of fatigue for the drivers, making them vulnerable to accidents. Seat belts and helmets are the most important safeguards. It is a pity that the public at large, as in Gujarat, opposes implementation of helmet wearing. The Regional Transport Offices should be stricter in issuing driving licences, emphasising knowledge of rules of the road.

G.C. Mathur, BINTY, New Delhi: While the drivers of vehicles, particularly, heavy duty trucks etc., are by and large negligent and non-conforming to the traffic rules, it is also the pedestrians, who are responsible for negligent crossing of the roads. In the event of negligence on the part of a pedestrian, s/he should be held equally responsible. The time has come in the country, when not the laws but the self-introspection on the part of drivers and pedestrians is more important. Rest I agree with what has been said in the article.

P. Rama Rao, Visakha Consumers' Council, Visakhapatnam: The use of cell phones while driving should be strictly prohibited, particularly two-wheelers. The use of ISI marked helmets should be promoted. There is a need to constitute a Traffic Advisory Committee and hold its meetings at least bi-monthly. The meetings must have the participation of representatives from the departments of roads, telephone and electricity and from the municipality, consumer organisations and other related departments to prevent accidents and accidental deaths.

Abhishek Srivastava, Indian National Consumer's Federation (INCF), Lucknow: The use of helmets in Lucknow is necessary for all, but the traffic system in Lucknow is in poor shape. People are purchasing poor

Contd...

quality helmets due to fear of fine of Rs. 500. But, this would not help prevent road accidents.

Sarwan Singh, **Consumers' Forum, Chandigarh**: Numerous road accidents take place due to improper or inadequate road signs especially within the municipal limits of cities/towns. While the locals become aware of such inadequacies like existence of pot holes, dangerous curves or speed brakers, the outsiders are caught unaware and pay heavily. The absence of zebra marking is the most common omission. The local road authorities do paint these at the time of construction but later on forget to repaint at frequent intervals. Due to our present fast lifestyle, every body is in a great hurry to reach the destination. Therefore, there should be proper road signs to avoid accidents.

How Safe is the Indian Railway?

Over one-and-a-half century old, the Indian Railways (IR) is not only a historic legacy but also the very backbone of our national transport infrastructure. IR is the world's second-largest system under one management, which has an extensive route length of over 63,000 km. The signalling system of the Indian Railways has found place in the *Guinness Book of World Records* as the largest network.

However, in the recent past, travelling by IR has become more like a nightmare. The numbers of rail accidents has been growing in India. Due to the sickening frequency at which train accidents are occurring these days, one tragedy easily overtakes another and yesterday's tragedy is soon forgotten.

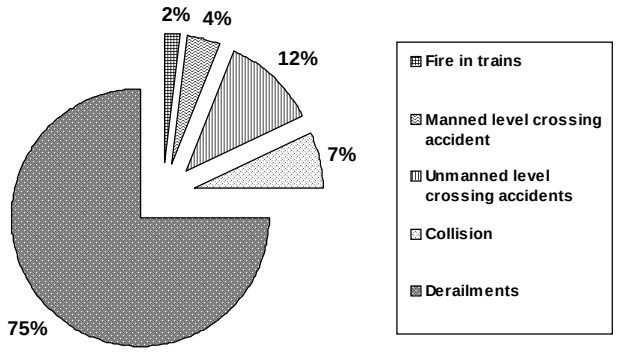
Instead of looking for some excuses, there is a need for serious review of railway safety at the highest level. Currently, there is no accountability among the railway officials. Whenever a train tragedy occurs, investigation begins. But no follow-up measures are taken as per the inquiry committees' recommendations.

In 2003, the IR published a "White Paper on Safety" (WPS). We will discuss various issues related to rail safety in the light of this Paper.

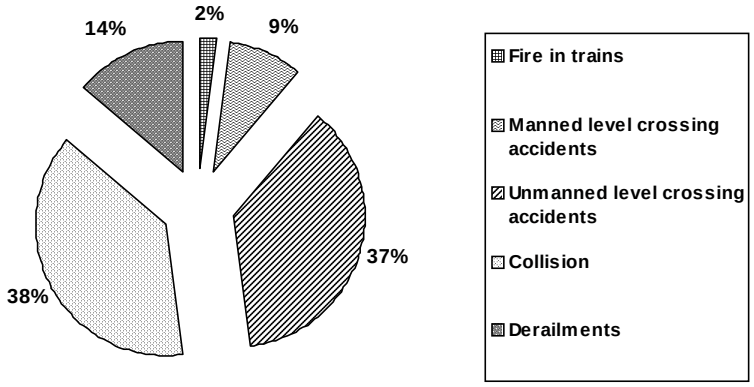
Types of Train Accidents

Accidents, by definition, are occurrences where individual, or collective, failures combine to result in disaster. The WPS defines "consequential train accidents" as train accidents having serious repercussions in terms of loss of human life, injury, damage to railway property, which include derailments, collision, fires in trains and collision of trains at level-crossings.

Type-wise Break-up of Accidents



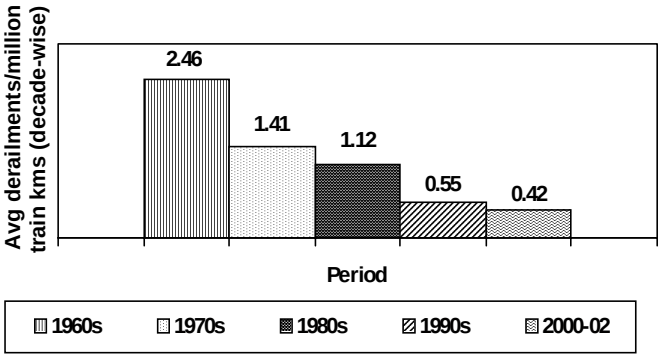
Type wise Break-up of Fatalities



(Source: WPS)

Derailments are caused primarily by two factors — track and rolling stock. Although derailments constitute the largest number of consequential train accidents, i.e., about 75 percent, their impact is generally not highly significant in most of the situations. The derailments consisted of 34 percent passenger-carrying trains, whereas freight trains logged up 66 percent derailments. According to the WPS, the number of derailments has come down from 1,415 in 1960-61 to 280 during the period 2001-02.

Trends of Derailments

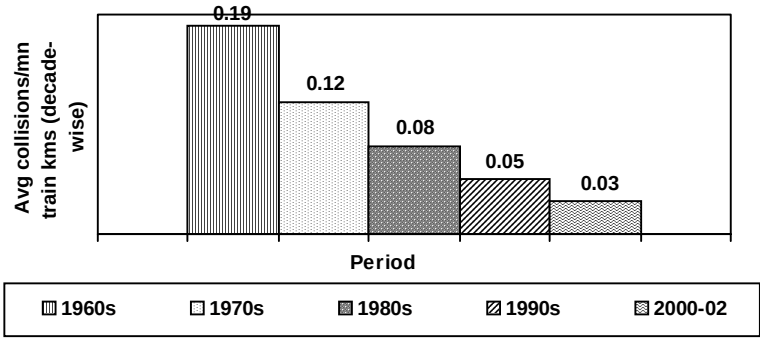


(Source: WPS)

Collision is the most dreaded word in IR, as it accounts for the largest number of deaths. These can be "side collisions," "rear-end collisions" and "head-on collisions." Trains ramming into one another from behind are called ***rear-end collisions***, while trains colliding on the same track from opposite ends are called ***head-on collisions*** and are the most fatal of all accidents. ***Side collisions*** can occur either in station area, while converging or diverging or by fouling the adjacent track in multiple-line territory.

Of the total consequential train accidents that occurred during the last decade, the percentage of collisions involving passenger-carrying trains was only four percent, but they are highly volatile mishaps and call for necessary steps to prevent them at all costs.

Trends of Collisions



(Source: WPS)

The WPS pointed out that over 50 percent collisions are caused by lapses on the part of drivers, while station staff is responsible for 15 percent of the collisions.

Steps Taken/Proposed:

- Anti-collision Device (ACD) has been developed by the Konkan Railway to prevent various types of collisions. ACD works on a satellite-based Global Positioning Satellite (GPS) system. Under the system, satellite equipment is fitted in the engine and the guard-coach of each train to relay co-ordinates from the train to the satellite, which is beamed back to other accident/collision devices within the radio range of about 1.5 km. In case the data received is not normal, the device in the train automatically applies brakes, averting collisions. And, in case a driver ignores the signal and moves on a wrong track, the ACD will immediately apply brakes. The device was put on extended field trials on Jalandhar-Amritsar section of Northern Railway, where equipment-related accidents have come down by 95 percent. The overall cost of providing ACD on complete IR network is estimated to be around Rs.1,600 crore.
- Block proving by axle counter is a device to prevent collisions in the mid-section and has been made functional over 200 stations. Work is in progress at more than 1,000 block stations.
- Flasher lights have been provided on all 7,000 locomotives to warn trains coming from the opposite direction.
- Improved tail lamps have been provided in the rear of all trains for better visibility to prevent rear-end collision.

Fire: Accidents caused by fire in trains have been drastically reduced by improvement of coaches through better designs. Wooden-bodied coaches are a thing of the past. Fires on train are now generally caused by short-circuit in the wiring of the coaches, cigarette butts, leftover of inflammable material, or fire caused in locos. Accidents involving fire in trains could be disastrous, depending on the nature and intensity of occurrences, hence preventive steps are necessary.

Steps Taken:

- Carriage of inflammable/explosive material in passenger coaches is prohibited and punishable under the Railways Act 1989.
- Publicity campaigns are carried out through televisions/newspaper advertisements in the national/local press to educate the public against the hazards of carrying inflammable material.

However, there is hardly any enforcement of these norms, nor provisions have been made for fire extinguishers or other fire-fighting gadgets on moving trains.

Steps to be Taken:

- Pamphlets and handbills, highlighting the need for adopting safety measures, should be distributed to the passengers.
- Posters should be pasted inside all the passenger trains, warning the passengers about the risk involved in carrying inflammable materials.
- Smoking should be prohibited.
- Adequate fire safety measures must be provided in all coaches and a certificate from the Fire Safety Department should be a must for each coach.

Level Crossings: Level crossings are the silent killers on the Indian tracks. Accidents take place both on manned and unmanned level crossings. Of the total consequential train accidents that occurred during the last decade, accidents at level crossing were about 16 percent — four percent at manned level crossings and 12 percent at the unmanned ones.

Accidents at unmanned level crossings occur primarily due to dashing of road vehicles with the oncoming trains and cause fatality of the road user. The WPS states that it has been observed that over 85 percent of all accidents occurring at unmanned level crossings involved passenger-carrying trains, reflecting that the road vehicle drivers normally misjudge the speed of the oncoming trains and take chances while crossing the rail tracks. On an average, every year, 46 percent of train accident fatalities take place at level crossings.

Steps to be Taken:

- Either railway overbridges or underbridges at unmanned level crossings should be constructed.

On an average, during the last decade, 384 persons died in the consequential train accidents every year. This consisted of 178 train passengers, 183 "other persons (primarily road users)" and 23 railway staffs.

Causes of Train Accidents

A range of factors, like human error, antiquated communication and safety equipment, signalling system, ageing bridges and tracks, increase in passenger and freight traffic and sometimes natural calamities, have led to rail accidents in India to date.

Human Failure/Error: As per the statutory inquiries, failures of the railway staff cause most of the mishaps. In its 1997-98 report to the Indian Parliament, the Commission on Railway Safety (CRS) said 83 percent of all major train accidents were due to "human failure." The WPS also identifies "human failure" as the major cause of train accidents. Experts argue that this is an example of taking the easy way out. If "human error" is shown as the cause of the latest tragedy, suspension of the person deemed at fault ends the story. If, however, the failure of the system – tracks, bridges, signalling systems, etc., – is deemed to be the cause, then it implies a lot of remedial work and is, therefore, avoided.

Some of the reasons behind human error are given below:

- Drivers and the running staff work at irregular hours and suffer from safety risks due to disturbed sleep patterns. Studies have shown that engine drivers are less alert and are most likely to commit errors between midnight and dawn.
- At present, drivers sit on hard wooden seats in cabins, where temperatures often soar to an unbearable 56°C. The rest rooms provided for them often have no electricity and they have no recreational facilities.
- Railway surveys say that alcoholism among field staff is a major cause for rail accidents.

Steps Taken/Proposed:

- Drivers should be provided with air-conditioned rest rooms on long-distance trips. They should also get cushioned seats in the engine room.
- Walkie-talkie sets should be provided to drivers to keep in touch with the station officials.
- Mobile Train Radio Communication (MTRC), by means of which driver/guard of a train can communicate with station master/section controller/any other maintenance/operational staff, should be provided.
- Simulators are progressively being used for imparting training to drivers.
- There should be breath analyser tests and random checks for the staffs to curb alcoholism. The railways should relocate the duties of drivers prone to drinking on job.
- If a railway staff is found guilty of any act or omission, which resulted or would have ordinarily resulted in collision of trains, averted collision or signal passing at danger, penalties of removal or dismissal from services are ordinarily imposed.
- Introduction of Auxiliary Warning System (AWS), which ensures that the driver gets a warning signal if the train goes on a wrong track. If the driver ignores the signal, the system applies automatic brakes. AWS has been installed to the extent of over 500 km. At present, the technology is working

successfully in the Mumbai suburban rail network. AWS on 128-km stretch of Southern Railway is in progress.

Surge in Traffic: A big surge in traffic, with slow modernisation, is making our rail network increasingly vulnerable, caution experts. Every year, Ministers introduce new routes to meet the populist demands. The density of rail traffic in India is the highest. About 14,000 trains operate daily in India, among which 8,700 are passenger trains, carrying about 14 million passengers.

But, there is never any attempt to improve the network. With one train quickly following the other, quite often, very little time is available for carrying out crucial maintenance work on the busy or congested sections. Unless the "line block" is available for a few hours every day, it may not be possible for the staff to carry out proper inspections and prevent rail fractures that could lead to derailments. In the eastern region, maintenance of the railways system has assumed serious proportions due to the shortage of equipment and a reduction of competent technical staff. Ultimately, it is the passenger, who suffer.

Lack of Modern Signalling Equipment: The railway signalling system needs to be continuously modernised to cope with the rising traffic density and to meet better safety standards. At the time of independence, the signalling equipment was of a rudimentary nature. Now, the whole picture has changed. Many accidents could be prevented by adopting modern technology and reducing human involvement, particularly in signalling and switching of tracks.

Steps Taken/Proposed:

- Steps have been taken to develop optical fibre-based and digital communication signals at selected routes.
- Track circuit is an essential requirement for any modern signalling system. After the tragic accident at Ferozabad station of Northern Railway in 1995, high priority was given to provide track circuiting of station yards, prioritising them route-wise. Some 2,500 stations of about 4,700 interlocked stations have already been provided with complete track circuiting;
- Provision of Auxiliary Warning System.
- Automatic block-signalling is a permissive signalling system and permits sending of more than one train between two stations with safety and speed.

Steps to be Taken:

- Electronic track signalling should be introduced in all sectors.

Railway Tracks: Tracks form the backbone of railway transportation system. As it is subject to heavy wear and tear, it is required to be renewed periodically on age-cum-condition basis. Some 16,500 km of track is expected to be renewed at a cost of Rs. 6,818 crore in this period from Special Railway Safety Fund only.

Special Railway Safety Fund

The Railway Budget 2002-2003 has planned Rs. 17,000-crore Special Railway Safety Fund (SRSF) to replace the age-old assets in the next six years.

Steps Proposed in WPS:

- Modernisation of track structure;
- Mechanised maintenance of tracks;
- Ultrasonic testing of rails;
- Welding of rails to take care of rail fractures in fish-plated zones;
- IR has taken up a pilot project at the Palwal-Mathura section to install the European Train Control System (ETCS), Level II, which is an automatic system that warns the driver about the track;
- Few spurt trains would be acquired for better track monitoring.

Railway Bridges: India has 1,20,000 plus steel bridges, a lot of which are ageing, weak, distressed and accident-prone. Out of these, 51,430 bridges, i.e., 44 percent, are more than 100 years old and it is said that they have not been even maintained by the successive governments after independence. Everyone knows this, those who run the railways and those who travel. The difference is that the former would not do anything about it and the latter cannot. Experts say that the bridges dating back to the steam era were never designed to take on fast-moving, heavy, air-conditioned coaches of the type used on the Rajdhani class of trains.

In 1989, the Bridge Rehabilitation Committee identified around 25 railway bridges having screwpile foundations, which needed to be dismantled soon. It identified Kadalundi Bridge as one of them and recommended abandoning it. But, the recommendations were not implemented. The result: in 2001, 52 people were dead as Mangalore-Madras Mail tumbled into the river after this bridge collapsed. The 1999 Justice H.R. Khanna Report of the Railway Safety Review Committee identified 262 bridges as 'distressed' and in need of urgent repair. However, *action on the report is still awaited*.

WPS states that distressed bridges are not unsafe, but need rehabilitation/ rebuilding on a priority with increased frequency of inspections.

Steps Taken/Proposed:

- Rs. 1,530 crore have been allotted for bridge works under SRSF and a total of 2,700 bridges are planned to be taken up. As on April 1, 2002, there were 528 distressed bridges, and 341 of them have been rehabilitated during 2002-03. Rehabilitation/rebuilding of the bridges on existing running lines is definitely a challenging task and it is difficult, time-consuming and costlier, as compared to making a new bridge.
- All cast iron pile bridges have been sanctioned for rebuilding.
- Action has been taken to sanction purchase of some of the non-destructive testing equipment and setting up of mobile testing laboratories in nine railway zones to start with, at a cost of Rs. 12.7 crore this year.

Poor Quality of Rails: The hydrogen content in the rail steel plays a very detrimental role in generation of internal rail defects, which lead to fractures. The poor quality of rails used by the Indian Railways was cited as a reason for the Khanna train accident that claimed the lives of 250 people in November 1998. The IR has succeeded in getting the rail steel produced by the Steel Authorities of India Ltd. (SAIL), Bhilai, having the maximum hydrogen content of 2 ppm (parts per million), which earlier used to be up to 5.5 ppm. The hydrogen content now prescribed by IR is well comparable with world standards.

Health of Rolling Stocks: There is a well-defined system of preventive maintenance to provide attention to coaches, wagons and locos, which are examined regularly before commencement of a journey. Some steps are given below which are being taken to maintain the stock in perfect order to run it safely and without causing derailments and collisions:

- Cent-per-cent quality check of rolling stock by Neutral Train Examiners;
- Periodic maintenance and intermediate overhauls;
- Phasing out of outdated stocks;
- Developing Hot Box Detector that could detach defective rolling stock (wagons) *en route* before it becomes too late;
- Introduction of air-brake systems.

Ignoring Recommendations: A statutory probe is ordered after almost every mishap by the Commissioner of Railway Safety (CRS). The CRS has recommended scores of measures to improve the safety situation of Indian Railways, but most of them have been overlooked. There is no follow-up and the report gathers dust in the Rail Bhawan. Most safety committees have

called for strengthening the infrastructure and mechanising the systems for signalling and switching of tracks. However, the bulk of the rail network still relies on outdated, dilapidated safety assets.

Apart from these, bomb explosions and sabotages are also sometimes cited as the causes of accidents.

Commission of Railway Safety (CRS)

The Commission of Railway Safety is an independent statutory body, set up under Section 4 of the Indian Railways Act and is under the control of the Ministry of Civil Aviation. The CRS is to direct, advise and caution the administration through its regulatory, inspection and investigatory functions. It, thereby, assists the railways in ensuring that all reasonable measures are taken with regard to the soundness of railway construction and safety of train operation.

Besides conducting statutory inquiries into serious accidents, CRS performs the following principal functions:

- Inspection of new railway lines prior to authorisation for their opening /to carry passenger traffic;
- Periodical inspection of open lines, i.e., lines under operation;
- Approval of new works, renewals and introduction of new type of rolling stock.

International Comparisons

Railway	No. of Accidents Per Million Train Km
Japan Railway Group	0.65*
Germany	0.91*
France	0.84*
Italy	0.73*
Indian Railway	0.55

*(*Source: East Japan Railway Co. Year Book 2001-02)*
(Note: There may be variations in the definition of accidents)

Need for a National Transportation and Safety Board

Experts advise the setting up of a Safety Board on the lines of the National Transportation Safety Board of the USA, which would look after the safety aspects of its railway network and takes the responsibility for all repairs, maintenance and upgradation. The CRS, reporting to the Ministry of Civil Aviation, is responsible for investigating and recommending solutions to the railway authorities.

It is high time that the Government of India gave a serious look to the safety of both the airlines and the railways and considered setting up of a common statutory body on the lines of the National Transportation and Safety Board that exists in other countries. It could be vested with full control over both the airlines and the railways, with the help of experts from all wings. It is important to make such commissions independent and vest them with statutory powers, so that they could go beyond mere investigation into serious accidents, involving loss of life and property. Unless proper corrective, or follow-up, action is taken on the reports of the CRS, the whole process becomes meaningless. It should not be reduced to a bureaucratic exercise to apportion blame and provide for the payment of compensation.

Other Steps Taken:

Coaches:

- A large number of casualties occur after the accident, when the impact causes a coach to telescope into another, and passengers get crushed under the weight. The Railways have recently begun manufacturing coaches in which tight-lock couplings are being introduced in place of screw couplings. In case of an accident, these couplings do not permit the coaches to separate and climb over each other and, thus, minimising casualties. This anti-climbing property of these tight-lock couplings almost eliminates the chances of a pile-up, such as ones witnessed in the past in Ferozabad, Gaisal, etc.
- The railways are planning to manufacture fireproof coaches and efforts are on to develop prototype coaches.
- All future coaches will be redesigned to have emergency exits, both through the roof and the floor, besides the sides, to facilitate extrication of trapped passengers in case of accidents. Sharp edges too will be eliminated in the design to reduce the chances of injury.

More Power to Zonal Railways:

The general managers of zonal railways have been given more powers for incurring expenditure on safety-related work, such as bridge works, signalling

and telecommunication and track renewals. They could now sanction under specified plan heads Rs. 50 lakh per item, as compared to the Rs. 30 lakh earlier.

Relief Operations:

Speed is crucial in rescue and relief operations after an accident. Officials stress the importance of the "Golden Hour" — the period, within which most lives can be saved, if medical help is available. But, the state of railway rescue and relief operations in the country is very poor. Rarely does help reach the victims within an hour of an accident.

In an attempt to strengthen disaster management following train accidents, the Railway Ministry has recently directed the zonal railways to prepare a detailed list of the local resources, such as civil, army and others, available at the divisional level, for supplementing efforts to tackle rescue and relief measures. Under the directions, the divisional control office is required to have a ready updated list of names, addresses, telephone numbers and other relevant information about local resources for every station. These details are required to be updated in January every year.

The Ministry is also in the process of signing a memorandum of understanding (MoU) with the Defence Ministry on using aircraft, including helicopters, and medical facilities in case of train accidents. After an accident, special trains carrying relief personnel "take at least three hours." Hence, the use of aircraft, including helicopters, would help in improved post-accident ability of the railways.

Wireless sets, video conferencing, Internet and satellite phones would be among the facilities available at accident sites in the next few months.

Steps have also been taken to reduce sabotage-related accidents.

Yet, providing foolproof safety on the tracks is a gigantic task. Any one of the following possibilities, either by itself, or in combination with others, may cause an accident of a train:

- A mistake or an act of negligence by one of its six lakh frontline operating and maintenance staff.
- An incorrect indication on any one of lakhs of signals.
- An equipment/asset failure of loco, wagon, coach, track, signals, etc.
- An irresponsible act of carrying inflammable goods by a less awakened person.

Thus, while the need for maintaining high safety standards can hardly be over-emphasised, it is also true that the gigantic scale of operation of the railways makes it almost impossible to bring down the risk level to zero.

But, if all the steps proposed in the White Paper are properly implemented, the chances of accidents will reduce. The WPS also reveals that the Railway Ministry has successfully identified the main causes behind the train accidents and has proposed certain steps to prevent accidents. Now, on an urgent basis, they have to religiously implement all the steps to avoid any further mishap.

How Safe is Air Transport System in India?

To err is human and modern sophisticated technology is also not immune to failures. Wherever there is motion, incidents are bound to occur. Such incidents, if not properly investigated and prevented, shall lead to accidents. And, air transport system is no exception.

Aviation in itself is not inherently dangerous, but it is terribly unforgiving of any carelessness, incapacity or neglect. Due to higher speeds and larger quantities of inflammable material carried in aircraft, air accidents are more lethal. In modern wide-bodied aircraft, capable of carrying more than 400 passengers, safety, therefore, must be the first and the foremost aim of all measures of control and regulation of air transport operations.

A "near-miss'' incident took place one early morning in November 2003 between two foreign aircraft at about 300 nautical miles off Mumbai. One aircraft was flying from Male to Dubai and the other was coming to Mumbai from Kenya. "Near-miss'' means two planes come close to each other beyond the stipulated safety limits.

As for safety limits, there are different parameters. For example, when two planes are operating at different altitudes, they have to be separated by a 2000 foot gap. This is known as "safe vertical separation." In the above incident, the aircraft violated this limit.

Following the mid-air collision of a Saudi Airlines Boeing 747 and a Kazakh Il-76 on November 12, 1996, in which 365 passengers were killed, the Directorate General of Civil Aviation (DGCA) in India made it mandatory for all aircraft to be equipped with a collision avoidance equipment that will warn pilots if the planes violate safety limits.

In September 2003, a major accident, involving a private aircraft on its inaugural flight, carrying VIPs, like the BJP President and the Union Minister of State for Civil Aviation, was averted at the Hyderabad airport. The passengers had a narrow escape when the ground staff doused the flames emanating from the left engine of the aircraft when it had just started taxiing before the takeoff. The maiden flight of Deccan Airways from Hyderabad to Vijayawada was immediately aborted. The fire occurred around 9.20 am and it was put out with a hand-held fire extinguisher as the pilot switched off the engine. According to

Air Deccan, it was a "technical snag". The Union Civil Aviation Ministry was asked to look into the matter.

Fortunately, in the above two cases, no one was injured. But, the Patna incident in 2000 was horrifying.

Patna Air Crash

On July 17, 2000, Alliance Air flight CD-7412, a Boeing 737-200 aircraft, crashed at 0734 hrs. (IST) while negotiating its approach to the Patna Airport. The flight had taken off from Kolkata and was on a scheduled flight to Delhi via Patna and Lucknow.

Two pilots, four airhostesses and 52 passengers were on board. The entire crew and 49 passengers were killed as a result of the crash. The aircraft was completely destroyed by the crash and the post-crash fire. Besides, five persons on the ground lost their lives.

The Court of Inquiry determined that the cause of the accident was loss of control of the aircraft due to human error. The crew had not followed the correct approach procedure, which resulted in the aircraft being high on approach.

The Court of Inquiry also determined that the aircraft was properly maintained and that no in-flight failure of any system had occurred. In the course of investigation, the Court also observed that Patna Airport had several operational constraints, resulting in erosion of safety margins for operation of Airbus 320/Boeing 737-type aircraft. The Court made the following recommendations:

(a) Improvement in crew training procedures and re-organisation of the quality control set-up of Alliance Air;

(b) Removal of constraints for operation of A 320/B 737- type aircraft at Patna Airport;

(c) Developing the Bihta Air Force Station as an alternative to the existing Patna Airport; and

(d) Maintenance of the landing and navigational aids and airport equipment at all airports in the country to the required standards by the Airports Authority of India (AAI).

Lots of air accidents have taken place in India. While some accidents have claimed a number of lives and left behind a large number of injured persons, some have been without any fatality. Let us have a look at the major air crashes in India.

Major Air Disasters in India				
Date	**Location**	**Airline**	**Aircraft type**	**Fatalities: No. Aboard**
17.07.2000	Patna	Alliance Airlines	Boeing 737-200	52:58
30.07.1998	Cochin, Kerela	Indian Airlines	Dornier	6:6
26.04.1993	Aurangabad	Indian Airlines	Boeing 737-200	56: 118
16.08.1991	Imphal	Indian Airlines	Boeing 737-200	69:69
07.05.1990	Delhi	Air India	Boeing 747-200	0:215
14.02.1990	Bangalore	Indian Airlines	Airbus 320	92:146
17.12.1989	Hyderabad	Indian Airlines	Boeing 737	3
15.12.1989	Pune	Indian Airlines	Vayudoot	11
19.10.1988	Ahmedabad	Indian Airlines	Boeing 737-200	130:135
22.06.1982	Mumbai	Air India	Boeing 707-400	90:90
17.12.1978	Hyderabad	Indian Airlines	Boeing 737-200	1:132
10.05.1980	Rampur Hat	Indian Airlines	Boeing 737-200	2:132
04.08.1979	Mumbai	Indian Airlines	HS748	45:45
12.10.1976	Mumbai	Indian Airlines	Caravelle	95:95
31.05.1973	Near New Delhi	Indian Airlines	Boeing 737-200	48: 65
11.08.1972	New Delhi	Indian Airlines	F27	18:18
09.12.1971	Chinnamanur	Indian Airlines	HS748	21:21
29.08.1970	Silchar	Indian Airlines	F27	39:39
01.01.1978	Maharashtra	Air India	Boeing 747-200	213:213
09.05.1953	Delhi	Air India	Douglas DC-3	18:18
15.09.1951	Bangalore	Air India	Douglas DC	1:27
13.12.1950	Katagiri	Air India	Douglas DC	21:21
(Source: www.airdisaster.com, www.airsafe.com)				

To know why the accident happened, brief details of some major accidents between 1980 and 2000 are given below:

Details of Some Major Accidents (1980-2000)

October 19, 1988; Indian Airlines 737-200; Ahmedabad, India: The aircraft hit an electric mast five miles (eight km) away from the airstrip in poor visibility. All the six crew members and 124 of the 129 passengers were killed.

February 14, 1990; Indian Airlines A-320; Bangalore, India: The aircraft hit about 400 meters short of the runway. Four of the seven crew members and 78 of the 139 passengers were killed.

August 16, 1991; Indian Airlines 737-200; near Imphal, India: The aircraft hit high ground during descent, about 30 km from the airport. The bowing plane bursts into flame over the Loktak Hydel Power Project. All the six crew members and 63 passengers were killed.

April 26, 1993; Indian Airlines 737-200; Aurangabad, India: The flight crew initiated its lift-off late and the aircraft struck a large vehicle on a road just outside the airport. The vehicle strike damaged one engine and the aircraft later hit power lines and crashed. Four of the six crew members and 52 of the 112 passengers were killed. The administrators of the airport were also cited for failing to regulate the traffic on that road.

(Source: www.airsafe.com)

The passengers of the Indian Airlines Airbus A-300B2-101 on November 15, 1993, were lucky enough to have ultimately returned home uninjured. The aircraft could not land at Hyderabad due to low visibility and carried out a missed approach. After the missed approach, the crew reported a flap retraction problem and decided to enter a holding pattern overhead at Hyderabad, during which the flight crew enquired about the visibility at the nearby Air Force airfields. Since visibility was low there as well, the aircraft was then diverted to Madras. Due to the flap problem, the crew had to maintain low speed and low altitude, as a result of which it experienced fuel shortage. The crew then tried to divert to nearby Tirupati. However, the aircraft could not even reach the Tirupati Airport and executed a forced landing in an open paddy field about 14 nautical miles from the airstrip. The aircraft dragged on to the soft paddy field before coming to the final halt.

On December 2, 1995, following an unstabilised approach, an Indian Airlines Boeing 737 from Mumbai to Delhi, via Jaipur, with 108 on board, touched down some 2000 feet before the end of the runway. The aircraft could not be stopped on the remaining length of the runway and went beyond the runway to *kutcha* ground. Both the engines, the undercarriage and the wings sustained major damage, but fortunately there was no fatality.

Apart from these, there have always been fighter or helicopter crashes, injuring lot of people on board as well as on ground. Seven out of them taking place during the recent past are given below:

August 11, 2003: Three people were killed and 24 were feared dead after a helicopter carrying employees of the Oil and Natural Gas Commission went down in the Arabian Sea.
April 7, 2003: An IAF MiG-21 fighter jet crashed into a milk processing plant in Haryana area near Chandigarh, injuring at least three people.
April 4, 2003: Three women and a child on ground were among the five people killed while four persons were injured, three of them seriously, after a MiG-23 fighter plane of the Indian Air Force (IAF) crashed into a residential area in Mullanpur Dakha near Ludhiana in Punjab.
November 5, 2002: At least five people were killed after a Jaguar fighter plane of the IAF crashed into a residential area near an airbase in Haryana.
October 1, 2002: Two Naval cargo aircraft collided in mid-air during a ceremonial flypast, killing 17 people — 12 Navy personnel on board and three civilians on ground — near Dabholim Airport, 35 km from Goa. Nineteen people on the ground were also injured.

March 1, 2002: The Lok Sabha Speaker, G.M.C. Balayogi was killed, along with two others, when the five-seater private helicopter carrying him crashed in Krishna District in Andhra Pradesh.

Thus, the statistics is quite abysmal despite the fact that a large number of occurrences are not reported, because the airplane was not damaged and none of the occupants were injured. In most cases, an unsafe situation does not occur because of the many back-up and safety systems of a plane.

In India, the main problem is with the system**.** Planes are reportedly forced to land under emergency conditions on account of engine failures. In equal number of cases, hydraulic failures have developed, leading to the collapse of control and landing systems. Anytime an accident can take place. The problem is outdated systems and procedures, cost-cutting (where it should not be done), poor working conditions, lack of planning, and, above all, the bureaucracy.

India's air traffic control system has also been criticised for having inadequate safety measures. Following the 1996 crash of a Saudi jumbo jet over Delhi, a judicial inquiry was set up to investigate India's air traffic facilities and recommend measures to improve them. It concluded that Indian air traffic controllers lacked sufficient training in modern handling procedures, making it difficult to cope with the sharp rise in traffic. After 1996, new air traffic control systems have been put in place at India's two major international airports — at Mumbai and Delhi. But, lack of funds has hampered the modernisation of other airports in the country.

Aviation Laws in India and the World over

World's aviation industry is primarily regulated by rules and laws formulated by the procedure of international treaty and convention. Most of these can be found in the annexes and documents of the International Civil Aviation Organisation (ICAO).

However, all ICAO member-states being sovereign nations have the prerogative of making their own laws and rules, which have to be notified by them in ICAO's Aeronautical Information Publication and inform the organisation on the differences so made.

Aviation Laws Specific to India

Aircraft Act, 1934: This is an Act to make better provisions for control of manufacture, possession, use, operation, sale, import and export of aircraft.

Aircraft Rules, 1937: The Government of India has made 161 rules covering different aviation aspects, including appeals, smoking in aircraft, tariff charges and about aircraft registered in, or belonging to, foreign states.

Civil Aviation Requirements: These are the civil aviation rules and laws made mandatory by the Government of India for all those involved in the civil aviation industry in the country. The Directorate General of Civil Aviation (DGCA) is responsible to monitor and ensure that these requirements are met in Indian Territory.

Institutional Framework:

- **Ministry of Civil Aviation (MCA):** The MCA is responsible for the formulation of national policies and programmes for development and regulation of civil aviation and for devising and implementing schemes for an orderly growth and expansion of the civil air transport.

- **Directorate General of Civil Aviation (DGCA)**: The DGCA is the main regulatory organisation in the country responsible for regulation of air transport services to/from/within India and for formulation, enforcement of civil air regulations, air safety and airworthiness standards.

- **Airports Authority of India (AAI)**: The AAI provides infrastructure facilities. Its aim is to accelerate the integrated development, expansion and modernisation of the operational, terminal and cargo facilities, in line with international standards.

- **International Airports Division (IAD)**: The IAD manages the eight international airports in India at Delhi, Mumbai, Calcutta, Chennai, Thiruvananthapuram, Kochi, Hyderabad and Bangalore.

- **National Airports Division (NAD)**: The NAD manages all domestic airports in the country.

The Civil Aviation Department (CAD), headed by the DGCA, is the authority responsible for air safety and investigation of accidents.

Functions of the Department of Aviation Safety:

- To implement effective safety programmes in all areas of operation and passenger facilities to provide safe environment for aircraft operations and passengers at all AAI airports;
- To undertake investigation of incidents with the objective of comprehensively examining, identifying and analysing the systematic factors which may have contributed to the occurrence of incidents;
- To ensure that air services, communication, navigational and landing aids, rescue and fire fighting services at AAI aerodromes are provided and maintained in conformity with ICAO standards and recommended practices, and civil aviation requirements, issued from time to time;
- To recommend appropriate accident/incident preventive actions to senior management;
- To promote and develop activities that increase knowledge and safety awareness amongst all department personnel of the AAI and, to the extent possible, amongst all personnel of other departments working at the Airport.

Preventing accidents from happening and preventing recurrence of accidents that have happened is the responsibility of everyone in the aviation industry. In order to achieve this goal, air accident investigation boards issue reports and recommendations in the wake of accidents/incidents, regulating authorities collect data on accidents/incidents, aircraft defects, inspection and surveillance data, etc.

The aviation authorities of several countries have been reporting requirement for airlines and repair stations concerning failures, malfunctions and defects of aircraft, aircraft engines, systems, and components. Australia, for instance, has its Aircraft Defect Reporting system, the UK uses a Mandatory Occurrence Reporting System (MORS) and the US has a Service Difficulty Reporting System (SDRS).

Present Procedure for Accident Investigations Followed in India

At present, the Air Safety Directorate, which forms part of the Civil Aviation Department directly reporting to the DGCA, is the authority responsible for the investigation of accidents. In addition, the Central Government can appoint a Committee of Inquiry or order a formal investigation into an air accident under Rule 74 and 75 of the Aircraft Rules of 1937. In India, investigation of air accidents is governed by Chapter 11, Part X of the Aircraft Rules, 1937.

But, there is a need for the investigating authority being entirely separate from and independent of the regulatory authority administering and controlling civil aviation operations. This is because, during the investigation, the conduct and the operation of the various departments of the Government machinery responsible for safe flight operations may be called into question and it is not possible for a person investigating the accident to blame himself, or the department he works for, should he come across any lapses during the course of his investigation.

It has also been seen that the time taken to complete the inquiry and implement its recommendations, especially the inquiry ordered under Rule 75 of the Indian Aircraft Act Rules, is too long. This defeats the very purpose of the inquiry, which should be concluded speedily so that similar accidents in future may be avoided by timely remedial actions.

To inspire greater confidence in the public and operating personnel as to the thoroughness and impartiality of the investigation of accidents and in the assignment of responsibility, where necessary, it is recommended that a strong independent investigating authority, separated from and independent of, the regulatory authority be set up in this country.

What are other countries doing?

In developed countries, the investigation of accidents is entrusted to an organisation independent of the civil aviation authorities. In the UK, for instance, the investigation authorities reports directly to the Board of Trade, whereas in the US, the investigation of accidents, not only in civil aviation but in all forms of public transport, is undertaken by an independent body, called the National Transportation Safety Board, which reports directly to the US Congress. Establishment of such independent organisations has resulted in improved and safe civil aviation activities.

Demand for Independent Safety Board

In India, there has been a demand for an independent safety board, from time to time.

- The Independent Air Safety Board, which should comprise experts, statutorily constituted to ensure their autonomy. Steps must also be taken to ensure the implementation of a system whereby voluntary and confidential reports from aviation personnel can be reported to the independent panel of safety experts. This would be in line with best practices abroad.

- In October 1997, the Seth Committee, which was constituted by the Government of India, Ministry of Civil Aviation, to review the DGCA set-up, Aircraft Act 1934, Aircraft Rules 1937 and various safety regulations to ensure air safety, submitted its recommendations. This exhaustive report was never made public, nor was it accepted/implemented by the Government. One major recommendation urged for an Independent Safety Board.

- The Confederation of Indian Industry (CII)'s international seminar on "Aviation 2000: Strategies for Development", held on July 19, 2002, focussed on sustained long-term development of the aviation sector, which will play an increasingly important role in an integrated world.

- In September 2000, the National Council of Applied Economic Research (NCAER) presented a study on "The Future of Civil Aviation in India – Structure, Policy, Regulation and Infrastructure" to the CII. This report reiterates and endorses every aspect of aviation safety spelt out in the Seth Committee Report.

- In May 2002, an approach paper for the 10th Plan Document, "Civil Aviation in India – Challenges and a Policy Response," was presented to the Planning Commission by the Chairman of CII's Civil Aviation Committee. He also

refered to the Seth Committee Report as a "detailed and thoughtful report," highlighting the fact that it proposed a "National Safety Board (whose independence is guaranteed by the statute), comprising professional experts, to carry out investigations into aircraft accidents and to promote an environment of safety through accident prevention."

The issue of establishing an Independent Air Safety Board has been taken up on a number of occasions by different experts. However, bureaucratic lethargy and resistance to change are hindering the progress. This is not in the public interest as modern society is becoming more mobile, increasingly aware of the benefits of air transportation and expects safe and efficient service. This unsafe scenario cannot be allowed to prevail with potential threat to human life, both in the air and on the ground. It is time, therefore, to give some serious thought to the unsafe environment of the Indian skies, if commercial aviation is to be made safer in this millennium.

Apart from setting up an Independent Safety Board, there is a constant need to significantly reduce the impact of human errors by improvements in aircraft design and air traffic management. Adequate safety is the primary factor for a well-functioning civil aviation system. The Government should implement the recommendations of various inquiry committees. Each accident is followed by an inquiry, which eventually submits its report in a year or two, but there is no mechanism to get these reports implemented. No one is accountable for failing to implement the report.

Steps should also be taken to ensure that all airports in the country check their crisis management systems every month. The fire brigade at the airports should be ready round-the-clock to deal with any eventuality.

Furthermore, the Government intends to wash its hands off its responsibility, by paying meagre compensation to the victims who travelled in the plane. Poor families in residential areas losing their homes and possessions should also be compensated adequately.

The opening up of the Indian economy to foreign capital has led to major increases in air and ground traffic. However, successive governments have failed to improve and modernise the infrastructure. They have only been concerned about cutting government expenditure, to ensure business profitability, but not protecting the travelling public.

The recent incidents have brought renewed calls from the ruling circles for privatisation of the airline industry and airports, on the grounds that this is the

only way to provide adequate funds to rectify the safety crisis. But then, one thing has to be kept in mind, that air transport in the wealthy countries, like the USA, has become less safe, as the industry has been deregulated. Moreover, dangerous cost-cutting and the lowering of safety standards are taking place round the globe, as airlines slash costs and demand lower taxes, in order to undercut their rivals.

Comments

Ramaben R. Mavani, Rajkot Saher Jilla Grahak Suraksha Mandal, Rajkot: The data provided in the article is quite alarming. The hazard of birds around the airport has to be given due importance. Control towers should be equipped with the latest mechanism and physically and mentally efficient and alert personnel is the need of the hour.

P. Rama Rao, Visakha Consumers' Council, Visakhapatnam: Increasing air traffic without appropriate safety measures is one of the main reasons for air accidents. Adequate training should be given to all employees who are involved in the safety wing. Strict vigilance on control system is required.

Annexures

Annex I

Synopsis of Some Important Indian Laws Related to Safety

Essential Commodities Act, 1955

The Act was passed with a view to tackling economic disparities, sociological imbalances, suffering, hunger and starvation. The preamble of the Act clearly states that this law has been passed in the interests of the general public, the object being to secure equitable distribution and availability of essential commodities at fair prices.

Under this Act, the Union Government and the State Governments are empowered to issue permits and licences for supply and distribution of essential commodities and for further control of prices. This Act provides to disadvantaged consumers access to essential commodities, and also plays the role of "checks and balance" on marketing of essential commodities. Special courts have been constituted to prosecute offenders violating the provisions of this Act.

The Prevention of Food Adulteration Act, 1954

This Act came into being to ensure availability of pure and wholesome food to consumers and also to prevent fraud or deception in matters related to food. The Central Committee for Food Standards, under the Directorate General of Health Services, Ministry of Health and Family Welfare, is responsible for the operation of this Act.

The salient features of the Act are:

- It intends to prevent adulteration and misbranding of food.
- It secures purity of food to maintain public health.
- It cautions producers or manufacturers of food to ensure safety.
- It ensures that the food the public buys is, *inter alia,* prepared, packed and stored under sanitary conditions, so as not to be injurious to the health of the people consuming it.
- It provides for adequate punishment of the adulterators.

Standards of Weights and Measures Act, 1976

This Act and the Standards of Weights & Measures (Packaged Commodities) Rules, 1977 deal with information about weights, number, measure, sale price, date of manufacture, name and address and other descriptions of the manufacturers to be printed on the packaged products. The Act stipulates that all goods produced in the country should only be in standard weights and measures, which are annually stamped by the authorities. It ensures that certain commodities can be sold only in certain measures or weights. This Act also appends rules regarding the sale of packaged commodities.

Edible Oils Packaging (Regulation) Order, 1998

In September 1998, the Union Government promulgated this Order under the Essential Commodities Act, 1955 to make packaging of edible oils sold in retail, compulsory, unless specifically exempted by the concerned State Government. As per the law, edible oils including edible mustard oil, were supposed to be sold only in packaged form from December 15, 1998.

The Order mandates that edible oils should conform to the quality stipulations of the Prevention of Food Adulteration (PFA) Act, 1954. The packing should conform to the Standards of Weights and Measures (Packaged Rules), 1977. Under the Act, the packers are required to install facilities for the analysis of oils or make adequate arrangements for testing of samples and register themselves with the Directorate of Vanaspati, Vegetable Oils and Fats and are required to print their registration number on the label of the packing. The Order is to be implemented by the State Governments, which are also empowered to relax some of the provisions of the Order in case of small *ghanis* where the extraction is carried out manually.

Milk and Milk Product Control Order (MMPO), 1992

Milk and Milk Products Order, 1992, administered by the Department of Animal Husbandry and Dairying under the Ministry of Agriculture, was promulgated on June 9, 1992, under the provision of Section 3 of the Essential Commodities Act, 1955, with a view to maintain an increased supply of liquid milk of desired quality to the general public.

This order regulates the production, supply and distribution of milk and milk products throughout the country. The Order also seeks to ensure observance of sanitary requirements for dairies, machinery and premises, and quality control standards for milk and milk products.

Anyone who contravenes, or is deemed to have contravened, any of the provisions of this Order, or any of the terms and conditions of the registration certificate, or fails to carry out any direction or order or request made or instruction given therein, shall be punishable under Section 7 of the Essential Commodities Act 1955 (10 of 1955).

Agricultural Produce (Grading and Marketing) Act, 1937

This Act provides various provisions and specifications with respect to the safety of food and food products and is voluntary in nature. This Act gives power to the Government to lay down grades and grade standards for various agricultural products, known popularly as "Agmark" grades and standards. It has been provided in the Act that "Agmark" labels, carrying the appropriate grade destination mark, should be affixed to the packages containing the graded agricultural produce to enable consumers to ensure that the agricultural produce they are buying is of good quality as per the prescribed grade and standard.

The Ministry of Agriculture is the nodal Ministry for administering this Act.

The Fruit Products Order (FPO), 1955

The Fruit Products Order, 1955, promulgated under Section 3 of the Essential Commodities Act, 1955, aims at regulating sanitary and hygienic conditions in the manufacture of fruit and vegetable products. To ensure good quality products, manufactured under hygienic conditions, the FPO lays down minimum requirements for:

- sanitary and hygienic conditions of surrounding premises and personnel;
- water to be used for processing;
- machinery and equipment; and
- product standards.

Besides this, maximum limits of preservatives, additives and contaminants have also been specified for various products.

Important provisions under this Regulation are as follows:

- Production and sale of fruit and vegetable products, namely, syrups and sherbets, vinegar, pickles, dehydrated fruits and vegetables, squashes, crushes, cordials, barley water, jams, jellies, marmalade, ketchup, sauces, fruits and peels, chutneys, canned and bottled fruits, juices, pulps and vegetables, frozen fruits and vegetables, sweetened aerated water, fruit juice or fruit pulp and fruit cereal flakes and any other unspecified items relating

to fruits and vegetables are covered under this Order (Section 2 (d) of the FPO).

- Manufacturing licences for these fruit and vegetable products is a must (Section 4 of the FPO);

- The manufacturer has to comply with the conditions laid down for labelling, packing and marking. Conditions laid down for quality and compositions also have to be followed. These are specified in the second schedule of this Order.

- No person is allowed to sell any fruit products, which do not conform to the standards of quality and composition, as specified, or which are not packed, marked and labelled in the manner laid down.

This Order is implemented by the Ministry of Food Processing Industries through the Directorate of Fruit & Vegetable Preservation at New Delhi.

The Motor Vehicles Act, 1988

The Motor Vehicles Act consolidates the laws relating to Motor Vehicles, i.e., the laws dealing with the constitution, use and control of motor vehicles. The first enactment relating to motor vehicles in India was the Indian Motor Vehicles Act 1914, which was subsequently replaced by Motor Vehicles Act 1939. The Act of 1939 had been amended several times. But despite several amendments, it was felt necessary to bring out a comprehensive legislation. Keeping in view the changes in the transport technology, pattern of passenger and freight movements, development of the road network in the country and particularly the improved techniques in the motor vehicles management, sweeping changes were made to the Act, which in the present shape is called as the Motor Vehicles Act, 1988.

The Ministry of Road Transport and Highways is the nodal Ministry for administering this Act**.**

Drugs and Cosmetics Act (DCA), 1940

The main objective of this Central Act is to regulate the import, manufacture, distribution and sale of drugs and cosmetics. The problem of adulteration of drugs, production of spurious, misbranded and sub-standard drugs, which pose a serious threat to the health of consumers, are also dealt with by this Act.

Some important provisions regulating the safety of consumers in the Act are as follows:

- The Act covers allopathic, homeopathic and indigenous systems of *Ayurvedic* and *Unani* medicine.
- In the Act, drugs are defined as substances that include all medicines and substances for internal or external use of human beings or animals for diagnosis, treatment, mitigation or prevention of diseases, or those affecting the structure or functions of the body.
- The Act defines a cosmetic as an article used for cleansing, beautifying, promoting attractiveness or altering the appearance.
- Further, a person can be charged of misbranding under the Act, if the drug found from his possession purports to be the product of a place or country of which it is not truly a product.
- Standards of quality for drugs are elaborated in this Act and, moreover, importing of misbranded, spurious and adulterated drugs is prohibited.

The Ministry of Health and Family Welfare is the nodal Ministry for administering this Act.

Bureau of Indian Standards Act, 1986

This law has been framed for development of activities relating to standardisation, marking and quality certification of goods, which will ensure safety of the products and reasonable good quality. The administrative Ministry in charge of the BIS is the Ministry of Food and Civil Supplies.

The powers vested in the Bureau to grant, renew, suspend or cancel a licence to use the Standard Mark are under Section 15 and 16 of the BIS Act and further details are given in the Bureau of Indian Standards Certification Regulations, 1988. The licensing scheme is a third-party product certification scheme, usually on a voluntary basis. The presence of the Standard Mark of the BIS on a product is a means of conveying to the consumer that the product meets the applicable standards of quality of performance and safety. The certification system followed by the BIS is in agreement with the System-5 described in the ISO Guide 28 – 1987, followed in several countries.

Basically, standardisation is a voluntary act. It is up to the producer to decide whether to opt for conformity with the standards and obtain certification marks or not.

Important provisions:

It is provided under the Act that if the Central Government, in consultation with the BIS, thinks it necessary in public interest, it may:

(i) notify any article or process to conform to Indian Standards; and/or
(ii) direct the use of standard mark under licence as compulsory on such an article/process.

Thus, the voluntary character of standardisation has exceptions where products are for mass consumption or where safety from health hazards is concerned. In such cases, standards have been made statutory and certification compulsory, viz. food additives, milk products, *vanaspati* and v*anaspati* containers, burners, dry-cell batteries, electrical lamps, electrical appliances like irons, immersion water heaters, radiators, stoves, LPG cylinders, etc.

The Act is a statute that attempts to set up a benchmark of high quality supported by a visible presentation. The rationale is to help consumers make an informed choice. Stipulations on information about commodities, like quality, quantity and maximum retail price, are made in the Act and the appended rules. Authorities are empowered to seize, confiscate and pass orders of cease, desist and fine.

Water (Prevention & Control of Pollution) Act, 1974

The Act establishes an institutional structure for preventing and abating water pollution. It establishes standards for water quality and effluent. Polluting industries must seek permission to discharge waste into effluent bodies. This Act was India's first attempt to deal comprehensively with environmental issues.

Its important provisions are:

- The Act is comprehensive in its coverage and is applicable to land water, subterranean waters and sea or tidal water.
- Standards for the discharge of effluent or quality of the receiving waters are not specified in the Act itself. Instead, the Act enables the State Boards to prescribe these standards.
- The Act provides for a permit system or consent procedure, to prevent and control water pollution. This Act generally prohibits disposal of polluting matters in streams, wells and sewers, or on land, in excess of the standards by the State Boards.
- The Water Act provides for establishment of Central and State Pollution Control Boards.

Water (Prevention & Control of Pollution) Cess Act, 1977

This Act provides for the levy and collection of cess, or a fee, on water-consuming industries and local authorities, with a view to augmenting the resources of the Central Board and the State Boards for the prevention and control of water pollution constituted under the Water (Prevention and Control of Pollution) Act, 1974.

Environment Protection Act, 1986

In the wake of the Bhopal Gas tragedy, the Government of India enacted the Environment Protection Act, 1986. Its purpose was to implement the recommendations of the United Nations Conference on the Human Environment of 1972, relating to the protection and improvement of the human environment.

The Act authorises the Central Government to protect and improve environmental quality, control and reduce pollution from all sources, and prohibit or restrict the setting up and/or operation of any industrial facility on environmental grounds.

The Act was the first environmental statute to give the Central Government the authority to issue written orders including orders to close, prohibit or regulate any industry, operation or process, or to stop or regulate the supply of electricity, water or any other service. The Act explicitly prohibits discharging of pollutants in excess of prescribed regulatory standards. There is also a specific prohibition against handling hazardous substances, except in compliance with regulatory procedures and standards.

The Insecticides Act, 1968

The Act was passed in 1968 to regulate the import, manufacture, sale, transport, distribution and use of insecticides, with a view to preventing risks to human beings and animals and other matters connected therewith.

One of the salient features of the Act is that the following four Ministries are concerned with it:

- Ministry of Agriculture: The regulation authority for the Insecticides Act, 1968. The State Department of Agriculture implements the law;
- Ministry of Health and Family Welfare (through the Controller of Drugs): Concerned with the aspect of pesticide residues in food and their health implications. The enforcing authority is the Food and Drug Administration of each State;

- Ministry of Chemicals and Fertilisers: Concerned with import and manufacture of pesticides, at the national and state levels, as the case may be; and
- Ministry of Environment and Forests: Concerned with the Environment Protection Act, 1986 and the Insecticides Act, 1968 (protection of environment part only).

The important provisions are:

- The Act established a General Insecticides Board to advise the Centre and the States on the technical aspects of the Act.
- A committee of this Board registers insecticides after examining their formulae and verifying claims regarding safety and efficacy.
- Manufacture and distribution of insecticides are regulated through licensing. A violation of the Act's registration and licensing provisions can lead to prosecution and penalties.
- The Central Government and the State Governments are vested with emergency powers to prohibit sale, distribution and use of dangerous insecticides.
- The Insecticides Rules of 1971 prescribe the procedures for licensing, packaging, labelling and transporting insecticides.
- The rules also provide for workers' safety during the manufacture and handling of insecticides, through protective clothing, respiratory devices and medical facilities.

The Explosives Act, 1884

The Explosives Act, 1884 is designed to control the manufacture, possession, use, sale, transportation and importation of explosives, so as to prevent accidents.

Annex II

General Comments of Other Consumer Organisations on CUTS' Efforts

H.D. Shourie, Common Cause, New Delhi: By writing articles on consumer safety issues, "Safety Watch," Centre of CUTS is performing a very useful task in making the consumers aware of the problems they face in certain matters, which endanger safety.

R.Desikan, Consumers' Association of India (CAI), Chennai: The articles on different consumer safety issues are indeed interesting. We would like to use them in our magazine "*Consumers' Digest of CAI*."

S. Krishnan, Consumer Coordination Council (CCC), New Delhi: Publishing a book entitled *"Is it Really Safe?"* containing all the articles relating to safety of various products and services, for increasing consumer awareness, is an excellent idea. The safety articles for this book make very good reading. We congratulate CUTS for its effort. We are happy to include the article on Milk Safety in September 2003 issue of *Consumer Network Magazine*, in view of its wide spread consumer interest.

V.S. Krishna, National Centre for Human Settlements & Environment (NCHSE), Bhopal: The safety articles are very useful for organisations like us who are actively involved in creating awareness amongst consumers regarding human safety. The information is very useful and we would be happy to translate them into Hindi and publish the same in local newspapers. We are eagerly waiting for the publication of the book "Is it Really Safe?" As soon as it is released, please let us know so that we can buy one or two copies for our District Consumer Information Centre.

Arun K. Misra, Indian National Consumers' Federation (INCF), Lucknow: There is technical, educational and security-based information in the articles. Safety tips for consumers and recommendations provided in the articles would help consumers. There is so much in the articles that common man and consumer can gain a lot of information about their rights and responsibilities. We are sending our heartiest greetings for the successful publication of the book "Is it Really Safe?"

P. Bhattacharya, Principal Secretary, Consumer Affairs Department, Government of West Bengal, Calcutta: CUTS' short write-ups on various matters of concern to consumers made extremely rewarding reading. These pieces need to be widely distributed, and we would be glad to carry them on our website.

Srinivas Narayanaswamy, CONVOICE-TN, Thanjavur: We have received copies of the well analysed and written articles on consumer safety. They make interesting and informative readings. These articles deserve to be compiled in the form of a book.

J**ayprakash Panwar, RACHNA, Dehradun:** I have gone through all the articles. All are thematic, reader-friendly and very useful for public awareness.

Jaidev Singh, Consumers Forum, Chandigarh: I must congratulate CUTS for its work on consumer safety, which was desired to bring awareness among consumers. The articles have been brought to the notice of all the honorary and dedicated convenors of the forum, for onward propaganda and publicity.

Debabrata Jena, Federation of Consumer Organisations, Bhubaneshwar: The safety articles are really very useful and the same would enlighten the consumers in the right prospect.

'CUTS' PUBLICATIONS – CONSUMER PROTECTION

MONOGRAPH

Consumer Protection in the Global Economy

Consumer protection is highly topical for today's competition law. This is just one of a number of other policies which are necessary for effective and comprehensive competition policy. This paper outlines the goals of a consumer protection policy and also speaks about the interaction between consumer protection laws and competition laws. *pp 30, #0101, Rs.50/US$10, ISBN: 81-87222-38-7*

DOCUMENTATIONS

1. State of the Indian Consumer: Analyses of the Implementation of the UN Guidelines for Consumer Protection, 1985, in India

The UN Guidelines for Consumer Protection, 1985, outlined eight consumer rights. In India, the Consumer Protection Act, 1986, mentioned six consumer rights. The report analyses the state of implementation of the UN Guidelines in India. *pp 218, #0103, Rs.200/US$25, ISBN: 81-87222-21-2*

2. How to Survive as A Consumer (English & Hindi)

This book is the first in the series of publications under the serial entitled *Caveat Emptor* or 'How To Survive as a Consumer', *caveat emptor* being a Latin legal maxim for Buyers Beware. It aims to serve many purposes:

- A to Z encyclopaedia for consumer redressal;
- Law for the layperson;
- Invaluable reference for students, business, government, consumer courts, lawyers and consumers on Consumer Protection Act (COPRA), as amended until June 1993; and
- Training Manual on COPRA for activists and paralegals, and even lawyers.

It is a matter of pride that COPRA is a unique law in the entire world. India is the only country with courts set up specifically to deal with consumer complaints.

English: pp 316, #9808, Rs.100/US$12, ISBN: 81-87222-13-1;
Hindi: #0104, ISBN:81-87222-41-7

3. COPRA and the Supreme Court

This is a compendium of decisions given by the Hon'ble Supreme Court of India on different subjects, for creating awareness among the people about their rights and knowledge of law as consumer. There are numerous fields of consumer services like housing, medical facilities, water, electricity, gas, transport service, etc., where a person is likely to be cheated in one way or another and deprived of what is due. This publication will help people, in general, to know first hand about the legal position of the rights of a consumer. *pp 59, #9906 Rs.15/US$5, ISBN: 81-87222-24-7*

4. *Soochana hi Shakti hai* – Information is Power

This is a manual in Hindi and contains vital information for rural people on rights, remedies and government schemes. *pp 78, #9102, Rs.30*

NEWSLETTER (Hindi)

Aap ke Naam Chitthi

This is a monthly newsletter in Hindi illuminates activities of CUTS, achievements of allied organisations and other interesting news and also acts as a principal advocacy document of the Consumer Movement in Rajasthan. *An insert "Sadak Suraksha" is also attached with it. It carries news, information, rules & regulations on road safety issues. Rs.75 p.a.*

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1. Why a Consumer Policy? *(CUTS: No. 10/1995)*
2. An Integrated Consumer Policy - The Rational Base for Protecting Consumers *(CUTS: No. 3/1996)*
3. Citizen's Charter – An Initiative towards Economic Reforms – (English)
   Nagrik Adhikar Patra – Aarthik Sudhaaron ki aur Pahal – (Hindi)
   (CART: No. 1/1999)
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