ASPECTS OF COMMUNITY HEALTH IN RELATION TO INDUSTRIAL HAZARDS

By Dr. Thelma Narayan*
MBBS., MSc, (Epid.)

1. INTRODUCTION

1.1 Health as a Human Right

Health is defined by the World Health Organisation (WHO) as a state of complete well-being—physical, mental and social and not just the absence of disease. The preamble to the WHO Constitution (1946) state that, “the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition: The U.N Universal Declaration of Human Rights mentions that, “everyone has the right to a standard of living adequate for the health and well-being of himself and his family”.

The Constitution of India (1950) in Article 23 “aims at the elimination of poverty, ignorance and ill-health and directs the State to regard the raising of the level of nutrition and the standard of living of its people and the improvement of public health as among its primary duties, securing the health and strength of the workers, men and women, especially ensuring that children are given opportunities and facilities to develop in a healthy manner:. This lst excerpt is given as an example of the declaration of intent of one of the Governments from which 2 victim groups hail (Bhopal and Silicosis), in the context of which their performance has to be viewed.

More recently in 1978, through the famous Alma Ata declaration all nation states who are members of WHOI, pledged themselves to work towards the goal of Health for All by 2000 A.D. The European Region more specifically in 1985 (3) enunciated that one of the targets for Health for All was the effective protection of people in the region against work related health risks, Strategies included working towards identification of hazards, assessment o risks and evaluation of control measures in the working environment.

In the briefs from the various Asian Groups prepared for the Hearings of the Permanent People’s Tribunal to be held in October 1992, in Bhopal, one does not see the state or the companies striving to achieve the goals expressed above. On the contrary, fairly strenuous efforts see, to be made to withhold information and knowledge and to snuff out protests for justice.

1.2 Occupational and Industrial Health Hazards

Health hazards related to occupations have been long known, documented and studied. Occupational Health and Industrial Medicine or Industrial Health and Industrial Medicine or Industrial Health are well established disciplines. The International Labour organization also has an exhaustive documentation on the subject and is a reference point for information. As science, technology and industry is developing and getting more complex, workers are at risk of being exposed to many more potentially toxic substances, and as a result the types of exposure related diseases are also growing more complex. Better safety

*Society for Community Health Awareness, Research and Action, No. 326, Fifth Main Road, First Block, Koramangala, Bangalore – 560 034.
systems are also being developed. However these are costly and cut into profit margins. They are therefore considered expendable for the Third World where awareness levels on these issues may not be that high, the demand for any type of job is high, life is cheap and even governments are under pressure to produce and export.

Industrial health hazards can arise from physical, chemical, biological. Mechanical, ergonomic and psychosocial factors in the work environment. The exposure response relationship depends on many factors eg., dose / concentration, susceptibility, metabolism etc. There can often be of a generalized nature and may be easily missed by medical practitioners, most of whom are not specially trained in industrial health. Just as an illustration of potential health hazard, Kazantzis, g., and McDonald, J.C., 1986, (3), have given a tentative analysis of current epidemiological knowledge which examines the nature and probable order of risks associated with various types of industry. This is given in the table below.

Table 1: Estimated relative risk of occupationally induced disease or accident in various types of industry.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Acute disease and accident</th>
<th>Chronic disease</th>
<th>Malignant disease</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mines &amp; Quarries</td>
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<tr>
<td>Heavy metals</td>
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<td>Construction</td>
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<td>Fisheries</td>
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<td>Petrochemical</td>
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<td>Transport</td>
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<td>Textile</td>
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<td>+</td>
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<tr>
<td>Manufacture</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Trade, commerce and service</td>
<td>-</td>
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<td>-</td>
</tr>
</tbody>
</table>

• +++ = high, + + = Moderate, + = Slight, - = insignificant

SOURCE: (3)

Communities living around hazards industries can be affected by relatively untreated effluents that are left into the air, soil and water. Most often those are people living in shanty towns/ slums whose conditions of living are anyway precarious. Effects on plant and animal life and thus on the environment and ecology can be damaging as well. The responsibilities of the State and the industries to these communities and to the environment has to be enhanced.

1.3 Disasters
The WHO has defined a disaster as “an event that suddenly overwhelms the capacity of normal system to respond” (Wasserman, 1985). Though used for natural disasters, it could well apply to industrial or technological disasters that have occurred in Bhopal, Chernobyl, etc. It also reflects the inability both of individuals-physically/psychologically and of macrosystems to respond adequately and effectively.

The theme of the WHO day 1991 was Disaster preparedness and this is the decade of disaster preparedness. Strangely they have chosen to focus only or “natural disasters” (though how natural they all are may questionable:)). There could well be an extension of the concept to industrial and other manmade disasters as well.
2. KEY COMPONENTS OF COMMUNITY HEALTH IN RELATION TO INDUSTRIAL HAZARDS

2.1 Information

A basic prerequisite to the initiation of sound community health measures, in situations where industrial hazards exist or where accidents and disasters have occurred, is access to authentic, available knowledge that exists about the particular agents / substances suspected of causing the hazard. A fair degree of information would be available with the industries themselves as they have to provide basic toxicological information, including animal studies, in order to be licensed. However they also have a vested interest in not divulging this information. This has occurred in the Bhopal case and also in the other Asian testimonies. In Bhopal however there was a some element of the unknown in that the chemistry at those high temperatures could also produce further unknown reactions. The case of carbon Disulphide (CS$_2$) in the Korean testimony is a good example. Much information exists on the harmful effects of carbon disulphide. There are also alternative systems of production and safety systems that perhaps were not being used. Withholding information is a strong political act to continue to maintain control. It is stressed again that no scientific public health/ community health measures can be initiated in the absence of authentic information. Medical practitioners can then only treat symptomatically without understanding the underlying pathology. Preventive measures cannot also be taken.

2.2 Awareness

Creation of an awareness among workers and among communities surrounding hazards industries regarding what should be done in the event of an accident forms part of the first stage of prevention. Worker education about the substances/ mechanism used and safety measures required, helps prevention and early detection. Medical practitioners in the surrounding areas or the medical officers of the plant also need to have specific information. Though basic to industry in the West, many of these ideas sound utopian and are considered unnecessary for developing countries, even in concerns run by the same multinational company.

2.3 Early diagnosis and treatment

In early cases, acute cases and accidents the provision of medical treatment immediately would greatly help in preventing further damage. Medical efforts can be directed in 4 main ways
   (a) Mobilization and deployment of reserve medical teams;
   (b) Preparedness of medical facilities (hospital planning);
   (c) Handling of causalities;
   (d) Identification of dead (1)

2.4 Community Diagnosis / epidemiological profiles

When it is suspected that an industry is causing health problems to workers / surrounding communities eg., in the Philippines or following a disaster to proceed on a scientific footing it would be necessary to make a community diagnosis or to develop an epidemiological profile of the groups affected. A relatively simple cross-sectional study of the workers / community i.e those who have been exposed to the hazard can be done. Use of a control group of people who are similar in age, sex, socio-economic status etc., but who are not exposed would provide a comparison from which an estimate of ill-health attributable or caused by the exposure could be derived. This has been done in the case of Asian Rare Earths in Malaysia.
An epidemiological approach could

(a) Provide information about the disease or symptom complex, characteristics of people affected, predisposing conditions etc. Thus it could substantiate / support, disprove or provide clues for a etiological hypothesis;
(b) It could help in deciding upon rational therapeutic interventions. It should be kept in mind that there may not be a cure, but only amelioration of suffering and pain. It could also help in deciding upon secondary and tertiary preventive measures where possible. Thus it would help in the planning of health services including rehabilitation for the affected people;
(c) Provide supportive evidence in court, regarding extent of injury, in claims of compensation for victims (4).

By the scale of its operation, it is best undertaken by the State. However experience has shown that often outside voluntary organizations or ginger groups need to get involved even providing alternative expertise, notwithstanding a tendency to jump to conclusions/ exaggerate. Informed victims groups with support groups play a crucial role.

2.5 Well documented conditions

Some of the testimonies relate to conditions that are well known for instance, among occupational diseases, silicosis (refer testimony of Bhailal Motibhai Patel) is a major cause of permanent disability and mortality, resulting from dense nodular fibrosis of the lung. Once pathological changes have occurred they cannot be reversed. There is therefore no effective treatment for silicosis. Incidentally in India, silicosis has been a notifiable disease under the Factories Act since 1948 and under the Mines Act since 1952.

Similarly much is known about carbon disulphide benzene etc., mentioned in the testimonies. There is thus an urgent need to activate mechanisms by which the health and safety of workers, especially in small scale factories must be ensured. It also appears from the testimonies that the medical community has taken sides with the industry and has not kept the interests of their patients uppermost. Some of the cases could amount to professional negligence.

2.6 Study of unknown hazards

In instances where long term health effects are relatively unknown, as in Bhopal much scientific work is being done across the globe, in various laboratories and also in Bhopal itself. However these are either reported in obscure specialized journals or are classified as confidential and very little of the acquired knowledge reaches the treating medical practitioners and much less to the people. While one can understand that some degree of caution may be necessary since jumping to quick conclusions can cause more harm than good, however the logic of confidentiality and professional secrecy needs to be questioned. Most cases given in the briefs indicate a willful withholding of information to safeguard the interests of the companies / the State.

2.7 Mental health effects

During the past two decades much research has been done on the crippling adverse mental health effects of disasters – natural and man-made. Effects have been found to be worse in man- made instances including industrial accidents and disasters since the element of human control and the possibility of prevention existed. Several emotions including grief, anger, feeling of hopelessness etc., occur. About 10% of the affected population develop long term psychological damage, certain groups being at higher risk. Various strategies / manuals are available for disaster/ community health workers to be trained to handle such problems.

A. Building positive mental health
Positive building up and fostering of a feeling of community and of community organization of the affected groups are a great help in rebuilding positive mental health. Training of field level
community health workers, linking with voluntary organizations and support groups and with the
government health and social welfare system in the area are necessary. It has been reported that
failure of these secondary level support systems is one of the most demoralizing experiences for
victims. Loss of will to live and to hope and strive for a better tomorrow leads to rapid
deterioration (5).

2.8 Removal of Hazard

While this appears most obvious. It is a difficult task, with struggle lasting two-three decades.
Continued exposure to the hazard will worsen the condition of those who already have some
adverse health effect. Others too would be at risk of developing diverse health effects. Several
engineering and management alternatives will have to be explored. Installation and effective
functioning of safety systems need to be ensured. Regular monitoring of the environment as in
ARE, Malaysia and in Bhopal are necessary i.e of soil, water and air where necessary. More
crucial is action that needs to be taken on the findings. This appears inadequate, if not totally
lacking in the above two cases. Gross ecological damage as is envisaged in the gold mining
regions of the Philippines would have long lasting effects, and would need lobbying at a national
level.

Worker involvement in raising these issues is often fraught with problems as they often would
have to risk losing their jobs, their only source of livelihood, as consequence.

2.9 Basic health needs

Need for adequate shelter, potable drinking water and sanitation are basic to good health of
anyone, when health systems of people are compromised due to exposure to industrial hazards /
disasters, provision of basic needs assume greater importance. Bhopal victims with damaged
respiratory systems would find living and cooking on ‘chulas’ in smoky rooms very difficult.
Climbing flights of stairs in the multistoreyed houses built for them would be difficult for some.
Lowered immunity also makes them susceptible to other infections. Water and sanitation are
therefore very important.

2.10 Adequate nutrition, income and employment

Again a very obvious requirement, but often unmet. Special mention is made of the need to
provide appropriate working conditions for victims eg,. dust free environment, relatively light
work, more rest period, good lighting etc.

2.11 Basic medical and health care needs

These also require to be organized eg,. mother and child health care, school health, programmes
for specific communicable diseases that may be prevalent in the region. Provision of curative
medical care, health education, counseling. As mentioned earlier raining of community health
workers or volunteers is very useful.

Once substantial damage has occurred in industrial diseases, there is often no cure and some
degree of disability may result. Sometimes effects are progressive. Further complications of
other related organ systems may develop after some years. Malignancies also take years to
develop.

In such cases, and one such is Bhopal, a “cure” may just not be possible. Victims may not have
access to the type of medical expertise needed to handle these complicated cases.
Rehabilitation measures that are possible could be tried out.
3. Conclusion

Occupation health is thus essentially preventive medicine. The joint ILO/WHO Committee on Occupational Health (1950) defined it as follows. “Occupational health should aim at the promotion and maintenance of the highest degree of physical, mental and social well being of workers in all occupations; the prevention among workers of departures from health caused by their employment from risks resulting from factors adverse to health; the placing and maintenance of the worker in an occupational environment adapted to his physiological and psychological equipment, and to summarize, the adaptation of work to man and of each man to his job (2).

There is no occupation that has zero-risk and having a job at all itself cause problems as studies have shown. However the question has been raised as to what is acceptable risk and acceptable to whom (1). Who pays the price and who gets the benefits?

REFERENCES
4. Narayan, T