

Occupational Diseases – The Silent Enemy

**2nd Annual Occupational Safety and Health Seminar
for MOH Hospitals, Putrajaya
18th July 2011**

*Organized by
Medical Staff Safety & Health Unit
Quality in Medical Care Section
Medical Development Division, MOH Putrajaya*

Prof. Dr. Krishna Gopal Rampal
Perdana University Graduate School of Medicine

WHEN ARE DISEASES SILENT ENEMIES?

Diseases are silent enemies when:

- Information or knowledge of the disease is withheld, omitted or not mentioned.
- There is failure to communicate about them.
- They are not spoken about or concern for it not expressed.
- Definition of the disease is unclear.
- Disease produces no detectable signs or symptoms.

Examples of silent enemies in medical/health literature

- Stress
- Sedentary living - sedentary death syndrome
- Indoor air pollutants including radon
- Trees on the highways-Tree accidents (NHTSA-FARS)
- Hypertension
- Poor eye health and blindness in developing countries
- Occupational diseases

“Whether a disease is silent enemy or not very dependent on the perception of the individuals involved in preventing, detecting and managing it”.

“Occupational diseases infect this nation like a plague. Yet there is no sense of public urgency about the problem. There are a number of reasons for this. First, the dimensions of the problem are hard to grasp. If an asbestos plant explodes and 500 workers are killed, it is instant news. But when 500 former asbestos workers die a cruel and hopeless death in 500 separate hospital rooms and nursing homes, the grief is private. It is rarely the stuff of headlines. No TV cameras record the scene.”

Arnold Miller
President

United Mine Workers of America
AJPH NOVEMBER, 1975, Vol. 65, No. 11

Occupational diseases unlike occupational injuries may occur some time after exposure to the hazard and symptoms are slow to develop. In some instances symptoms become evident only after 20 years or more.

This occurs because:

- it is not recognised by the worker as a disease caused by work as he is not aware of the long term effect of the hazard he was exposed to.
- there is no medical surveillance among those exposed to hazards in the workplace.

Occupational disease is also a silent enemy because:
Gross under-reporting of occupational diseases occurs.

Under-reporting occurs due to:

- True under-reporting of occupational diseases or
- Occupational diseases truly missed

Reasons for under-reporting by medical practitioners:

- unaware of legal requirement to report.
- worried about loss of panel doctor status.

Reasons for under-reporting by employers

- Employers reluctant to report for fear of enforcement

Occupational diseases truly missed because medical practitioners:

- are not aware of occupation as a probable cause.
- do not suspect/link occupation as the cause.
- do not ask complete occupational history.
- are not able to confirm occupational disease

Occupational disease is a silent enemy because:

- long term effect of the disease on the individual
- costs to individual and society.

An occupational disease is a disease which occurs when a hazard associated with occupation/ work is the cause of the disease.

Hazards in the workplace include physical, chemical and biological agents as well as psychosocial and ergonomic factors.

Occupational diseases stand at one end of the spectrum of work-relatedness where relationship to specific causative factors at work has been fully established and the factors concerned can be identified, measured and eventually controlled.

Work related diseases are partially caused by adverse working conditions. Work related diseases are diseases which may be aggravated, accelerated, or exacerbated by workplace exposures, and may impair working capacity. (W.H.O.)

e.g.

Occupational lung diseases e.g. asthma

Occupational cancers

Occupational musculoskeletal disorders

Occupational hearing loss and HAVS

Occupational eye disorders

Occupational skin disorders

Occupational neurological/neurobehavioral disorders

Occupational reproductive disorders

Occupational diseases are a long term cause of disability and death.

Global burden of disease and injury due to selected occupational hazards. WHO Comparative Risk Assessment methodology.

In 2000 occupation was responsible worldwide for:

- 37% of back pain
- 16% of hearing loss
- 13% of chronic obstructive pulmonary disease (COPD)
- 11% of asthma, 9% of lung cancer
- 8% of injuries
- 2% of leukemia

Risks at work caused 850,000 deaths worldwide and loss of about 24 million years of healthy life.

- Low back pain commonest musculoskeletal disorder in the workplace. 37% of LBP due to work
Causes: Lifting, pushing and pulling of heavy articles, abnormal awkward postures, prolonged standing/ sitting
- Cervicobrachial disorders – pain and discomfort in the neck-shoulder-arm region
Causes: working with VDT work or other jobs involving adopting awkward postures
- Carpal tunnel syndrome missed/not managed until symptoms severe and disabling.
Cause: repetitive movements of wrist joint, VDT work and assembly line work

Hand Arm Vibration Syndrome (HAVS)

Occupations: Exposure to vibration from hand tools
e.g. Power saws, Jackhammers, Grinders, Drills

Health effects:

- Low frequencies (20-40 Hz)
Degenerative osteoarticular lesions in elbows
and shoulders
- High frequencies (40-300 Hz)
Hand-arm vibration syndrome HAVS,
(Vibration white finger, Vasospastic disease)

- Occupational noise exposure does not cause mortality but causes significant morbidity through deafness.
- 16% of deafness due to occupational noise
 - males (22%)
 - females (11%)
- Differences in: occupational categories
economic sectors of employment
working lifetime
- Approximately 89% of total burden in 15–59 years age.
More than four million DALYs lost to NIHL.
SEAR D and WPR B accounted for more than half of years of healthy life lost (large populations, with a high proportion working in high-exposure occupations)

Incidence of asthma increasing in adults.

Adult asthma – 1. persistent childhood asthma

2. asthma reactivated in adulthood

3. new-onset asthma

(2) and (3) likely to be occupational in origin.

Occupational asthma most common and most compensated occupational lung disease in UK.

What percent of adult asthma is occupational? GBD Study 11% of asthma is occupational in origin

Blanc PD, Toren K.(1999)

- Attributable risk (AR) due to occupational exposures varied between 5% and 19% with median value of 9% (half of estimates 5-19%) in 43 studies in 17 countries on asthma
- Reactivated asthma – 19% occupational in origin
- New-onset asthma – 26% occupational in origin

- Finnish study – AR is 6% in men and 4% in women
- Swedish study – AR is 14% in men and 10% in women

	SWORD(UK)	Finland	Quebec
Isocyanates	22.0	2.9	25.2
Animal allergens	9.8	45.4	14.5
Flour and grain	7.1	24.5	14.0
Solder	5.6	-	2.3
Resins and glues	5.2	2.4	6.5
Wood dust	4.1	1.6	12.6

(Meredith S. and Nordman, H 1996)

- GBD study 9% cancers are occupational in origin
- Occupational agents – chemical, physical and biological
- Less than 2% of chemicals in commerce have been tested for carcinogenicity.
- Risk of cancer increases with age, duration of exposure and latency.
- Risk higher among males (nature of job).
- Risk differs by ethnicity (differential placement in dirtiest jobs and fewer opportunities for advancement).

Asbestos mining and handling – Lung, Mesothelium

Dye, rubber workers (Aromatic amines) – Bladder

Cadmium workers – Prostate

Uranium miners (Ionizing radiation) – Lung cancer

Asphalters, coal gas manufacturers (Polycyclic hydrocarbons) – Skin, lung

Farmers, sailors (ultraviolet light) - Skin, lip

Hardwood furniture manufacturers – Nasal sinuses

Irritant contact dermatitis/ Allergic contact dermatitis

Infectious agents – HBV, HCV, HIV

Emerging infections – Anthrax, Nipah, SARS, Avian Flu

Abnormal reproductive outcomes due to reproductive hazards in workplace

Improve information on magnitude of occupational diseases by improvements in reporting systems through:

- Improvements in legislation on reporting system
- Use multiple sources
- Motivate those reporting

Have:

- Guide provided to employers on reporting system
- Guide to employees on system of claims
- Doctors trained in occupational health
- Reporting system simplified
- Legislative measures available to examine medical files of injured/diseased

Most of costs of occupational disease are not covered by workers' compensation.

Greatest contributors to cost are job-related cancer, chronic respiratory disease and circulatory disease.

Workers' compensation missed roughly 46,000 to 93,000 deaths and US\$ 8 -23 billion in medical costs.

Direct costs 1/3 Indirect costs 2/3. Substantial cost shifting from workers' compensation systems to individual workers, their families, private medical insurance, and taxpayers.

Leigh JP and Robbins JA. Milbank Quarterly. 2004

- Understanding of the magnitude, diagnosis, prevention and management of occupational diseases still poor.
- Occupational health practitioners in Malaysia need to determine the magnitude of the problem of occupational diseases and increase awareness of diagnosis, prevention and management among employees, employers, medical practitioners and policy makers.
- Health care policy makers need to understand that prevention and management of occupational diseases is their responsibility too and until then occupational diseases will remain a silent enemy.