AN INTRODUCTION TO OCCUPATIONAL HEALTH

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"Two hundred thousand subterranean heroes who, by day and by night, for a mere pittance lay down their lives to the familiar 'fall of rock' and who, at deep levels, ranging from 1,000 to 3,000 feet in the bowels of the earth, sacrifice their lungs to the rock dust which develops miners' phthisis and pneumonia."

Sol Plaatjie, first Secretary of the African National Congress, describing the lives of black miners in 1914
Origins of OHS in SA

- European traditions in union health and safety brought to SA in early 1900’s
- Worker action around working conditions
- Govt. need to protect investment in imported labor
- Commission of Enquiry (1902) into TB --> Miners Phthisis Act (1912) - first compensation law
- Factories Act of 1918 - focus on safety
- Imported labour proved to be costly with time --> indigenous labour force
An international crisis

“About two million people are killed by their work every year (International Labour Organisation, 2002)……..and that's just a small part of the carnage at work. If terrorism took such a toll, just imagine what would be said and done"

(Jukka Takala, Director of ILO's SafeWork programme)
Global Burden of Disease and Injury Attributable to Selected Risk Factors (WHO 1999)

Deaths (millions)

- Malnutrition
- Tobacco
- Hypertension
- Water supply, sanitation, hygiene
- Physical inactivity
- Occupation
- Unsafe sex
- Alcohol
- Air pollution
- Illicit drugs

0 1 2 3 4 5 6 7

Occupational risks

- Airborne particulates (COPD, asthma, pneumoconiosis: 45%)
- Risk factors for injuries (unintentional injuries: 40%)
- Carcinogens (leukaemia, lung CA, mesothelioma, other multiple sites: 15%)
Global Burden of Disease and Injury Attributable to Selected Risk Factors (WHO, 1999)

DALYs (millions)

- Malnutrition
- Water supply, sanitation, hygiene
- Unsafe sex
- Alcohol
- Occupation
- Tobacco
- Hypertension
- Physical inactivity
- Illicit drugs
- Air pollution

As % of all DALYs:

- 15.9
- 6.8
- 3.5
- 3.5
- 2.7
- 2.6
- 1.4
- 1.0
- 0.6
- 0.5
1. Risk factors for injuries (unintentional injuries: 53%)
2. Airborne particulates (COPD, asthma, pneumoconiosis: 22%)
3. Noise (hearing loss: 17%)
4. Carcinogens (leukaemia, lung CA, mesothelioma, other multiple sites: 5%)
5. Ergonomic (lower back pain: 3%)

The South African Workplace

- Total Adult Population: 25.6m
- Economically Active: 14.3m (56%)
- Formal sector employment: 80%
- Key sectors:
  - Social: 32%
  - Wholesale: 17%
  - Manufacturing: 17%
  - Agricultural: 13%
  - Finance: 6%

Source: Census 2000
Trends in occupational injuries and diseases in South Africa

- Total injuries (1990) 225 178
  - Temporary 97 266
  - Permanent 15 728
  - Fatal 1 618
  - Diseases (Industries) 128
  - Diseases (Mines) 7 957

- Injuries reported 2001/2: 280 631
- Diseases reported 2001/2: 3 226
### Occupational diseases claims reported 2002/2003 under the Compensation for Occupational Injuries and Diseases Act (COIDA)

<table>
<thead>
<tr>
<th>Occupational disease</th>
<th>Number of claims</th>
<th>% of total Occupational Diseases claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Noise-induced hearing Loss (NIHL)</td>
<td>2549</td>
<td>57</td>
</tr>
<tr>
<td>Diseases caused by biological agents excluding tuberculosis</td>
<td>407</td>
<td>9.0</td>
</tr>
<tr>
<td>Tuberculosis of the lung (in health care workers)</td>
<td>385</td>
<td>8.5</td>
</tr>
<tr>
<td>Pneumoconioses</td>
<td>302</td>
<td>6.7</td>
</tr>
<tr>
<td>Occupational asthma</td>
<td>214</td>
<td>4.7</td>
</tr>
<tr>
<td>Occupational skin disease</td>
<td>203</td>
<td>4.5</td>
</tr>
<tr>
<td>Irritant-induced Asthma</td>
<td>33</td>
<td>0.7</td>
</tr>
<tr>
<td>Work-related Musculo-skeletal disorders</td>
<td>24</td>
<td>0.5</td>
</tr>
<tr>
<td>Mesothelioma</td>
<td>17</td>
<td>0.4</td>
</tr>
<tr>
<td>Diseases caused by chemical agents</td>
<td>8</td>
<td>0.2</td>
</tr>
<tr>
<td>Diseases caused by physical agents excluding noise</td>
<td>6</td>
<td>0.1</td>
</tr>
<tr>
<td>Others</td>
<td>345</td>
<td>7.7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>4492</strong></td>
<td><strong>100.0</strong></td>
</tr>
</tbody>
</table>

(Adapted from 2003 Annual Report Compensation Fund, DOL)
### Occupational diseases certified under the Occupational Disease in Mines and Works Act

<table>
<thead>
<tr>
<th>Disease</th>
<th>Number of claims certified (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1992</td>
</tr>
<tr>
<td></td>
<td>(100%)</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>5 220 (66%)</td>
</tr>
<tr>
<td>Pneumoconiosis</td>
<td>2 253 (28%)</td>
</tr>
<tr>
<td>Obstructive Airways Disease</td>
<td>429 (5%)</td>
</tr>
<tr>
<td>Obstructive Airways Disease and Pneumoconiosis</td>
<td>-</td>
</tr>
<tr>
<td>Platinum salt sensitivity</td>
<td>28 (0.5%)</td>
</tr>
<tr>
<td>Progressive Systemic Sclerosis</td>
<td>27 (0.5%)</td>
</tr>
<tr>
<td>Progressive systemic Sclerosis and Pneumoconiosis</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>7 957 (100%)</strong></td>
</tr>
</tbody>
</table>

Sources: Department of Health. Report of the Medical Bureau for Occupational Diseases, 1992 (Graph 8)
Department of Health. Annual Report of the Medical Bureau for Occupational Diseases, 1996-7 (Tables 6, 7 & 9)
Trends of common occupational lung diseases reported in South Africa

**SORDSA*(VOLUNTARY):** 1996 - 2001 (n=6316)

- Pneumoconiosis: 58%
- Inhalation injuries: 9%
- Pneumoconiosis+TB: 7%
- Occupational asthma: 6%
- Tuberculosis: 3%
- COPD: 2%
- Mesothelioma: 1%

**COMPENSATION*(LEGAL):** 2002/3 (n=971)

- Tuberculosis: 40%
- Pneumoconiosis: 31%
- Occupational asthma: 22%
- Inhalation injuries: 3%
- Mesothelioma: 2%

*Compensation for Occupational Injuries and Diseases Act (COIDA)*

*Surveillance for Occupational Respiratory Diseases in South Africa*
Why focus on OH?

- Workers spend up to 50% of their day at work
- Most classes of agents pose their greatest threat in work settings where the exposures are the greatest
- Exposures are more frequent, more concentrated and of longer duration
- Workplace permits “easy” means of accessing groups of exposed workers for interventions
OHS issues in South Africa

Contributory factors:
- Poor employer commitment to OH
- Lack of worker empowerment in the workplace
- Inadequate legislation/poor exposure standards and poor enforcement (focus on safety/compensation)
- Inadequate occupational health service provision (11-18%) and lack of trained health personnel

Impact:
- Economic cost of disease and injury (4% of GDP)
- Poor human resource development profile
WHAT IS OCCUPATIONAL HEALTH?

- PROMOTION and MAINTENENCE of the well being of workers
- PREVENTION of departures from health caused by working conditions
- PROTECTION from risks resulting from factors adverse to their health
- PLACING and MAINTENENCE of the worker in an environment adapted to their physiological and psychological condition

(International Labour Office: 1950)
Broad Principles of OH

- A public health discipline
- Focuses on the interaction between the person or groups of people and the work environment
- Core activities are the recognition, prevention, diagnosis, treatment and social management of a work related health condition
Key components of OH

Occupational hygiene

INTEGRITY OF
THE WORK
ENVIRONMENT

- Legislation/workplace standards
- Workplace interventions
- Occupational health services
- Education and training
- Health information systems
- Research

Occupational medicine

HEALTH OF THE WORKER
Health & Work

The Effect of Work on Health:
- work as a causative factor
- work as a aggravating factor
- work as a contributory factor

The Effect of Health on Work
- incapacity and disability impact on job security
Role Players in OH

- Employers
- Workers and their representatives/trade unions
- Government
- Occupational Health Professionals
Levels of Intervention in OH

Level 0: Prevention at design stage

Level 1: Prevention at source of hazard

Level 2: Diagnosis, Cure and Treatment

Level 3: Social Management and Rehabilitation
THANK YOU