OCCUPATIONAL HEALTH IN THE GOLD SECTOR

Occupational diseases include any acute and chronic ailments that occur as a result of an activity in the workplace. These diseases are usually recognised when they occur with more frequency among a particular group of workers than in the general population, or in other worker populations.

In the gold mining sector, the main occupational diseases are OLD – including TB and silicosis – and NIHL. HIV/AIDS is not considered an occupational illness, but it is a significant health issue in southern Africa (where more than two thirds of the world’s new infections occur) and, like silicosis, is a major driver of TB.

REGULATORY STRUCTURES
Ownership of, access to and opportunity in regard to the country’s mineral resources are regulated by the MPRDA, which recognises the state’s custodianship over the country’s mineral resources. The MPRDA regulates all aspects of the industry, including safety and health.

Fundamental legislation – the MHSA – provides for an inclusive, tripartite approach to safety and health.

The health and safety of mineworkers falls under the auspices of the Mine Health and Safety Inspectorate of the DMR. Established in terms of the MHSA, the Inspectorate executes the mandate of the DMR to safeguard the health and safety, not only of mine employees but also of residents in areas affected by mining operations. It works to achieve safety performance levels equivalent to current international benchmarks for underground metalliferous mines, by 2013.

Key definitions and acronyms

- AIDS – Acquired Immunodeficiency Syndrome
- COIDA – Compensation for Occupational Injuries and Diseases Act, 130 of 1993
- DMR – Department of Mineral Resources
- HIV – Human Immunodeficiency Virus
- ILO – International Labour Organisation
- MHSA – Mine Health and Safety Act, 29 of 1996, as amended
- MHSC – Mine Health and Safety Council
- MPRDA – Mineral and Petroleum Resources Development Act, 28 of 2002, as amended
- NIHL – Noise-Induced Hearing Loss
- ODMWA – Occupational Diseases on Mines and Works Act, 78 of 1973
- OLD – Occupational Lung Diseases
- Silicosis – A incurable pulmonary disease caused by inhalation of microscopic dust particles
- TB – Tuberculosis
- WHO – World Health Organisation
At mine level, each shaft has its own health and safety committee and representatives from management and unions are responsible for ensuring compliance with official regulations as well as regular safety training for all employees.

The overarching tripartite MHSC was implemented, in terms of the MHSA, to respond to industry challenges. It involves government, organised labour and mining companies. The MHSC is responsible for advising the Minister of Mineral Resources on occupational health and safety legislation, and research outcomes focused on improving and promoting health and safety in South African mines, as well as responding to health and safety challenges through implementation of focused programmes and addressing milestones agreed to at a safety summit in 2003. These resolutions include achieving a 20 percent decline in accident statistics a year and eliminating silicosis and NIHL by 2013.

OCCUPATIONAL DISEASES AND COMPENSATION

In South Africa compensation for occupational disease is governed by two different statutes. These differ in their administration and the benefits provided.

- **ODMWA** provides for the establishment of the Medical Bureau for Occupational Diseases (MBOD). This falls under the Department of Health, Chief Directorate: Non-communicable Diseases.

- **COIDA** is consistent with ILO Convention 1964 (No 121), on Employment Injury Benefits. It covers occupational injuries and diseases in all industries, including the mining sector, that are not covered by ODMWA; for example, NIHL. COIDA pays lump sums for permanent disability below 30% (level of impairment) and pensions if the disability is determined to be greater than 30%.

- The Compensation Commission for Occupational Diseases, established in terms of COIDA, compensates ex-miners and miners for impairment of lungs or respiratory organs. Loss of earnings incurred during TB treatment is reimbursed. In the case where a miner has died, it compensates the beneficiaries of the former miner.

- COIDA does not make provision for post mortem diagnosis but would still consider a case for compensation if an occupational disease is found at post mortem or if it is determined to be the cause of death.

MEDICAL SURVEILLANCE PROGRAMMES

All employees at industry gold mines undergo medical surveillance. This is conducted at the onset of their tenure, and periodically as determined by their risk profile. In this way medical personnel are able to identify health risks at an early stage and are able to administer an appropriate treatment programme. Most health providers also have campaigns to emphasise the importance of adhering to a prescribed treatment regime.

**ODMWA regulates for:**

- to conduct medical examinations of current and former mineworkers
- to certify diseases that qualify for compensation for current and former mineworkers
- to provide for post mortem benefits if an occupational disease is detected
- to use the lung function loss compensation to pay the lump sum benefit

All medical expenses related to the treatment of the specified lung disease are paid by the mine owner.

HOW IS WORKERS’ COMPENSATION ADMINISTERED?

The Rand Mutual Assurance Company Limited (Rand Mutual) was founded in 1894 by three mining companies as a non-profit mutual assurance company to administer workers’ compensation for mining industry employees injured in the course and scope of their employment. In 1990, Rand Mutual Life Assurance Company Limited (RMA Life) was established as a wholly-owned subsidiary of Rand Mutual to manage the pension benefits payable to claimants and their beneficiaries.

With the implementation of legislation governing workers’ compensation, Rand Mutual was granted a right to continue to provide such compensation under licence from the Minister of Labour. This licence is currently granted in terms of COIDA.

The business of Rand Mutual in essence, is the receipt, adjudication and administration of workers’ compensation claims, and includes the payment of medical costs, once-off disability payments and the continuing payment of pensions in the case of severe disability and death.

MAJOR OCCUPATIONAL HEALTH THREATS IN SOUTH AFRICAN GOLD MINES

Silica dust and silicosis

The dust associated with gold mining typically contains silica from crystalline quartz. Although the dust is not visible to the naked eye, silica exposure and silicosis are very serious public health issues and result from inadequate dust control in industries using silica-containing materials. The industry approach to achieving total dust control involves a variety of dust suppression systems including wetting and extraction using vacuums and filters. Legislation requires mines to monitor and report dust levels and, although most of the larger companies report that dust mitigation measures are successful, the DMR does not currently verify the information. A proposal to introduce an audit process, agreed at the 2011 Health and Safety Summit, is under consideration.
Silicosis is a cumulative or progressive disease that can take years to manifest. As a result, there is a considerable amount of undetected lung disease in former silica-exposed miners now living in labour-sending areas. The association between silicosis and TB; and TB and HIV/AIDS presents major challenges for public health services in the country. Class action lawsuits by former miners, involving a number of mining companies, have recently been launched.

Since the end of the 20th century, the implementation of the MHSA has seen far stricter industry controls designed to eliminate the incidence of silicosis among a younger generation of miners. Gold industry members aim to at least comply with, or better, the requirement to reduce silicosis exposure measurements. In 2003 the Mine Health and Safety Council set targets requiring that, by December 2008, 95% of all exposure measurements results would be below the occupational exposure limit for respirable crystalline silica of 0.1mg/m². Although the occupational exposure limit for respirable crystalline silica is 0.1mg/m², some mines target a lower level of 0.05mg/m² and, taking into account international research, consideration is being given to lowering the level to 0.025mg/m² in future.

These guidelines and current diagnostic techniques are designed to ensure that no new cases of silicosis emerge among previously unexposed individuals (those entering the industry for the first time in 2008) after December 2013.

**Tuberculosis**

TB has been particularly problematic in mining communities over the years, as workplace hazards – together with tobacco smoking and HIV infection – tend to increase the risk of infection. Many people with active TB become infectious before showing any symptoms, so undiagnosed TB cases are a major source of new infections.

Managing and preventing TB requires workforce education and, in addition to the medical surveillance programmes, employees are encouraged to seek medical care as soon as they experience symptoms. Policies to protect job security and confidentiality are also required and need to be communicated to the workforce. Preventing latent infections from becoming active is a challenge in the mining context, as both silica exposure and HIV infections are important risk factors. Other risk factors that are harder to control include smoking and alcohol intake. Adequate housing lessens the likelihood of cross-infection, while a sound nutrition programme of company-provided meals boosts overall health.

**Noise-Induced Hearing Loss**

Working in a noisy environment poses a risk to employees and can lead to NIHL. Individuals who incur NIHL are generally exposed consistently to high noise levels over a period of time. At a Mine Health and Safety Summit in 2003, a target was set for December 2008, after which the aim was zero cases of compensable hearing loss among individuals exposed to noise.

With the implementation of a hearing conservation programme, industry had to commit to containing any hearing loss to less than 10% among occupationally exposed individuals. The specified occupational exposure limit of 85dBA is achieved by wearing hearing protection devices in a workplace where noise should not exceed a sound pressure level of 110dBA.

Measures introduced by the industry include the muffling of pneumatic rockdrills and, where possible, the replacement of these machines with less noisy alternatives. Measures have also been taken to reduce the noise of fans and other noise-generating equipment, including vehicles that operate within the mining environment. The use of hearing protection devices is mandatory. Other methods used by the industry include limiting employees exposure to noise, for example by shortening shifts. Noise-exposed employees undergo annual audiometric testing to detect any early signs of hearing loss.

Employees diagnosed with early NIHL receive counselling. Where possible they may be redeployed or afforded early retirement, should they no longer choose to be exposed to the noise risk.

Two dedicated teams have been established by the Chamber of Mines to manage the Mining Industry Occupational Safety and Health (MOSH) adoption system for dust and noise. Several leading practices were identified and have been demonstrated on selected mines prior to an industry-wide roll-out.

**Addressing HIV/AIDS**

HIV/AIDS is not classified as an occupational illness but it is prevalent in mining communities and problematic both on its own and as a driver of TB. South Africa has the world’s highest incidence of HIV/AIDS, with between 5.3 and 5.9 million people living with the disease. Given the stigma attached to the disease, it is difficult to determine the number of industry employees with HIV/AIDS, despite a concerted industry commitment to voluntary counselling and testing (VCT). It is believed that up to 30% of gold sector employees may be HIV positive. The disease therefore represents a serious, potential threat – if left unmanaged – to the well-being of the workforce as well as to communities in the labour-sending areas and those surrounding mining operations.

A major challenge is the fact that a high percentage of individuals are unaware that they are infected, which increases the risk of transmission. For this reason, the gold industry places a priority on VCT so that employees may learn their status and obtain vital information about treatment, preventing transmission and the use of condoms.
VCT is considered useful in promoting prevention among those who test negative, and demonstrates to peers that knowing one’s status has positive health impacts. For those who test positive, VCT offers an appropriate treatment programme and other support.

Resistance to testing is problematic with testing sometimes being avoided due to both perceived and real repercussions from being found HIV positive, such as loss of employment, workplace discrimination, ostracism from the community, and ignorance regarding the resources available to treat HIV/AIDS.

The gold industry, through its members, has worked diligently to address the lack of understanding and to confront discrimination by initiating ongoing information and VCT campaigns. Every campaign, apart from encouraging regular VCT, aims to dispel myths, provide accurate information and explain that anti-retroviral treatment (ART) programmes – correctly managed and in conjunction with a healthy lifestyle – can enable many people with HIV/AIDS to live and work with the disease, often for many years.

It is worth noting that the mining industry not only offers some of the best HIV campaigns and programmes to its employees, but it was also the first to offer VCT and ART to its workforce.

**HOW THE GOLD INDUSTRY ADDRESSES HEALTH ISSUES**

**Training and skills development**

Critical and up-to-date technical skills are imperative for a safe, healthy mining environment and the industry is committed to developing safety skills. Because many miners are challenged by low levels of education and the complexity of the risks in mining, a programme to train 40,000 health and safety representatives and union shop stewards (all sectors) has been developed. This R200 million programme (excluding the costs of removing workers from the workforce for two weeks at a time) uses innovative training methods to address identified education and skills gaps.

The level of challenges faced by the mining industry requires world-class research as well as more effective implementation of research findings. A team of experts has been appointed to review and update rock engineering learning material and the Chamber of Mines is working with the industry and other stakeholders to establish a centre of excellence on mine health and safety. Some 15,000 industry employees have been trained to date, and the rate of training is increasing as more people are being trained in a shorter period.

**Awareness: Changing minds, changing mines**

The gold industry attempts to foster a culture of care and respect. The MHSC is conducting research to create a framework entitled “Changing Minds, Changing Mines” to address leadership issues and the systems that will assist in developing and sustaining a culture of zero harm. The Minister of Mineral Resources together with other stakeholders, signed off on a Culture Transformation Framework in November 2011.

**Peer educators**

The gold industry makes extensive use of peer education programmes, a widely-used and effective tool both for imparting health education and for encouraging good health practices. Peer educators are volunteers, drawn from the mine workforce and the community, who are trained in disease facts, prevention and management, and who then interact with their co-workers, friends and families to share their knowledge of disease threats and the resources available to manage them. They also often act as a conduit to the company for community health needs and concerns because they are known and trusted by the people they interact with, and are, consequently, more effective than company or health department officials.

**Healthcare and support**

Gold industry members provide occupational health care facilities on site to treat workplace injuries, and these vary from first aid stations to clinics and hospitals. Primary healthcare facilities are located close to the operations or residences and Occupational Health Care clinics are located on site. The facilities offered by any mine tend to be designed to suit its workforce profile and many companies, as part of their corporate social responsibility programmes, and support healthcare initiatives for workers’ families. This has the benefit of both improving the health and well-being of local communities, and of helping to ensure a healthy workforce for the mining industry and other local employers.

However, as a significant percentage of gold industry employees are migrant workers, with families located in remote areas, the primary healthcare offering is under review.

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