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The health of mine(r)s

South Africa is a developing country reliant on selling resources. Its financial health and the health of its citizens are massively dependent on and influenced by its mines. The importance of the mining industry can be gauged from a look at some figures – for example, in 2009 the South African mining industry had over 1 000 mines and 483 212 employees; 168 888 were in platinum, 148 832 in gold, 68 006 in coal, and the rest in other commodities.[1] The 16 August 2012 shooting by police that resulted in the death of 34 striking Lonmin mine workers in what has become known as the 'Marikana massacre', and its aftermath, have cost the country billions in damage to property and lost export income. Miners and their families, especially those who wished to work, have suffered severe hardship. Illegal industrial action then spread to other platinum mines, and to gold and other mines; much of the country was held hostage soon afterwards by striking truck drivers; and more recently the Cape winelands have experienced massive protest action. Our international credibility has also taken a huge hit. Violence was a prominent feature of these strikes, reflecting an epidemic of violence in the country, as evidenced during the past year by hundreds of municipal demonstrations and dozens of political assassinations. Political and social causes and ramifications have been examined, but the impact on citizens' health has received less attention.

Before Marikana

'A general strike it was ... The anger of the men rose against the "scabs". They beat them up, burnt their belongings and made life hell for their families until even the non-union men who wanted only to keep their jobs were terrified.' Was this the run-up to Marikana? No – this quote describes the general strike of 1913![2]

An initially much better organised mining strike in 1922 led to the trade unions losing control to the Council of Action and the Communist Party, who wanted a revolt against the government. Hundreds of skirmishes took place in what had become a civil war. Over 200 lives were lost.[2]

Marikana and its historical predecessors had complex and differing reasons for their occurrence. In 1913 a significant factor was the threat to jobs by imported Chinese miners. However, a common denominator was the drop in prices of commodities and the need for marginal mines to make tough calls on job losses and remuneration.

Miners' health

From the start of the South African goldmining boom the health of the miners has been an important issue. In the early 1900s the death rate from pneumonia among recruits from the tropical regions was 26.3 per thousand and from the sub-tropical areas 8 per thousand.[3] A visit by Samuel Evans, chairman of the Crown Mines company, to the Panama Canal in 1911 to see how they dealt with this disease among their workers led to an invitation to Dr William Gorgas to visit South Africa. He provided a damning report on health conditions on the South African goldmines. His advice led to the appointment by Rand Mines of Dr A J Orenstein, an American graduate who had worked with Gorgas at the Panama Canal. Orenstein's sweeping reforms vastly improved the health status of the miners and revolutionised mining medicine and public health in the country. The death rate from all disease on the mines controlled by the Central Mining–Rand Mines group fell from 21 per 1 00 in 1913 to 1.87 in 1967. Orenstein also became the 'father' of black nursing services on the mines by training them despite opposition from the nursing profession. During World War II he was made Director-General of the South African Medical Services.

In the 1960s I worked at Ernest Oppenheimer Hospital, Welkom, which serviced the six Anglo American goldmines in the region. The rate of admissions for pneumonia was 26 per thousand workers annually (J P de V van Niekerk – 'Lobar pneumonia', Ernest Oppenheimer Hospital internal communication, 1965). The rate was highest in the first month of workers' contracts (Fig. 1) and during the colder months, and miners from the 'tropics', comprising 47% of the total complement of African miners at the time, were more than twice as likely to develop pneumonia. Another major cause of disability was hand infections,[4] which peaked at about 1 month into the contract (Fig. 2) and were largely related to the physical effort required.

Wyndham and colleagues, in their study on black miners living in hostels, also found that pneumonia was more prevalent seasonally and was related to fluctuations in recruitment to the mines.[5] They concluded that the danger of an epidemic year for meningitis was highest when there was a large influx of recruits to the hostels on the mine.

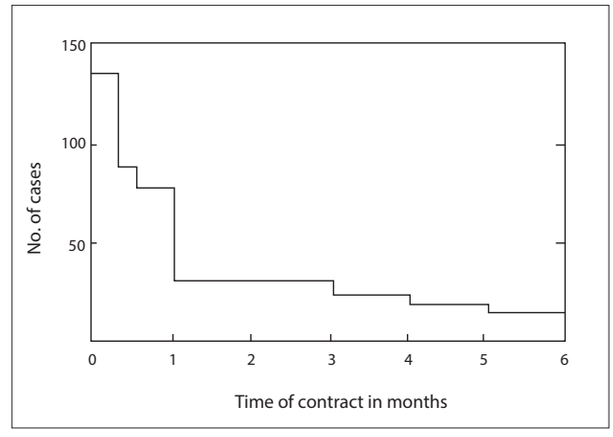


Fig. 1. Pneumonia admissions of goldminers to Ernest Oppenheimer Hospital, 1965.

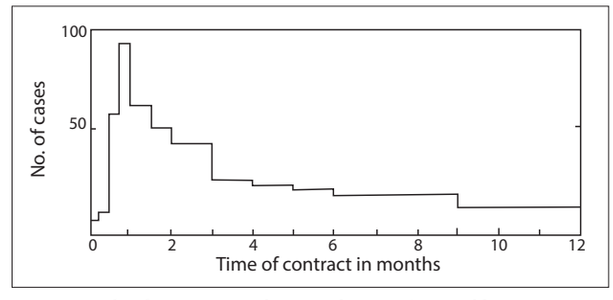


Fig. 2. Hand infections in workers on the Free State goldmines in 1965, related to duration of contract.

Jared Diamond[6] and Howard Phillips[7] have graphically described the dramatic effects on outbreaks of diseases of movement and crowding together of susceptible people.

Spreading disease

Today, apart from general health issues including trauma and silicosis, the key diseases on the mines that are of critical importance to South Africa are HIV/AIDS and tuberculosis (TB).

TB incidence rates in the South African goldmines have historically been three times higher than the national average.[1] Factors that contribute to this are higher rates of silica dust exposure and silicosis that increase the risk of TB, the HIV and AIDS epidemic, and the generally poor communal living conditions in single-sex residences for many mine workers.[1]

The mining industry has reasonably good TB programmes in place.[1] During normal working times, miners who fail to turn up for treatment are 'paraded' and are excluded from having access to areas such as work stations and canteens.[8] However, these sanctions become ineffective during a strike, and personal safety problems in particular could reduce the likelihood of attendance. Defaulting on TB treatment increases the chance of relapse from not having completed the treatment, the danger of developing resistance to the drugs used, and the risk of the patient infecting his or her family, friends and workmates, and other members of the community. People from all over the Southern African Development Community work in our mines, and export TB and HIV along with their earnings. A study found that 10% growth in the incidence of TB incidence in the South African mining sector pushed the rate 0.9% higher in sub-Saharan countries.[8]

Trauma

Although the mining industry aims at zero occupational deaths, the very nature of the deep mines in particular makes it inevitable that injuries and deaths will occur. Miners work in cramped spaces under extreme environmental conditions and surrounded by powerful machines and other equipment. Despite sufficient safety precautions there is the ever-present possibility of major rock falls. The likelihood of injury or death must be considerably increased by the migratory labour system. Novice motor vehicle drivers are much more likely to have accidents than expeienced ones, and in medicine it is well known that the first hundred procedures done by a doctor have many more complications than the succeeding hundred – we can extrapolate the same principle to workers on the mines.[9]

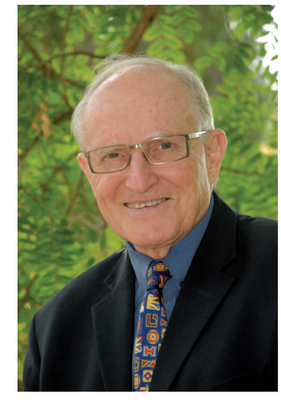
With this understanding, the rationale of closing down these massive industrial operations to investigate mining accident deaths seems to be the equivalent of closing down all traffic in a major city to investigate a traffic accident fatality.

The problems and solutions in a nutshell

The Marikana massacre and subsequent events have forced South Africans to take an urgent look at ourselves. Firstly, the gap between the rich and the poor has the potential for fomenting increasing unrest. Secondly, policy and political uncertainties have recently led to the credit downgrading of South Africa by Moody's and Standard and Poor's, a view echoed by International Monetary Fund reports.[10] Unemployment is a major problem, and jobs can only be increased by addressing these issues – this matter is squarely in the government's domain. Significant influences on the country's unrest have been ascribed to incompetence resulting in poor service delivery and greed and corruption within government. Thirdly, Marikana was also a revolt against the mineral energy corporate sector, which must get closer to workers and their needs. Fourthly, the trade union movement was no longer a constituency-based representation. It had become a self-serving union aristocracy increasingly distanced from the people it was supposed to represent (they also have no business within a political alliance).

Looming large as a further problem is the migratory labour system, still alive and (un)well 18 years into our democracy, with its severely detrimental effects on health of the miners and beyond, as illustrated above. Apart from the health effects it results in major socially disruptive problems. While miners appear to earn reasonable salaries, they are in fact less well off as many migrant miners try to maintain two households – one at work and the other in their rural homes. Financial pressures make them vulnerable to loan sharks who further exacerbate their plight. Alternative systems to migratory labour operate elsewhere in the world, and the drive, will and cooperation of all the major participants are required to remedy this system: the government, corporate sector and the trade unions.

South Africa's economic health and the health of its people depend on well-functioning mines with healthy miners. While it is good to have efficient health systems for the miners, more value can be mined by dealing with the root sociopolitical causes.



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