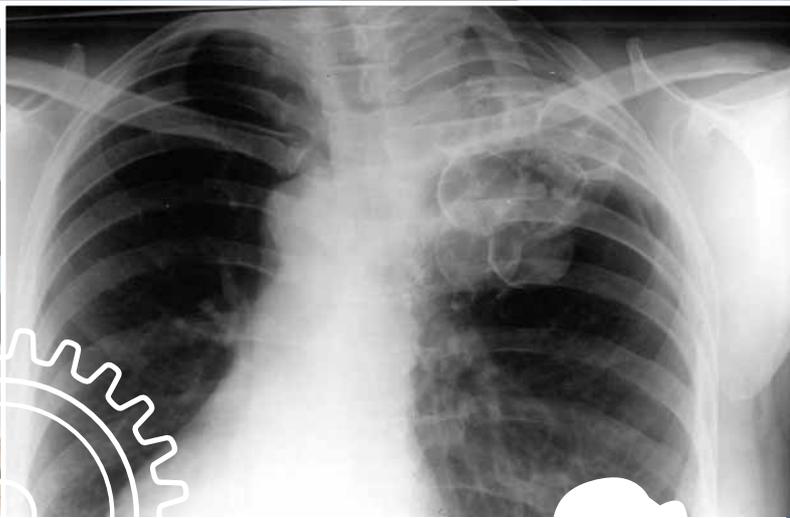


“They hide things like that from us”

The Hidden Epidemic Amongst Former Miners: Silicosis, Tuberculosis and the Occupational Diseases in Mines and Works Act in the Eastern Cape, South Africa.

Jaine Roberts



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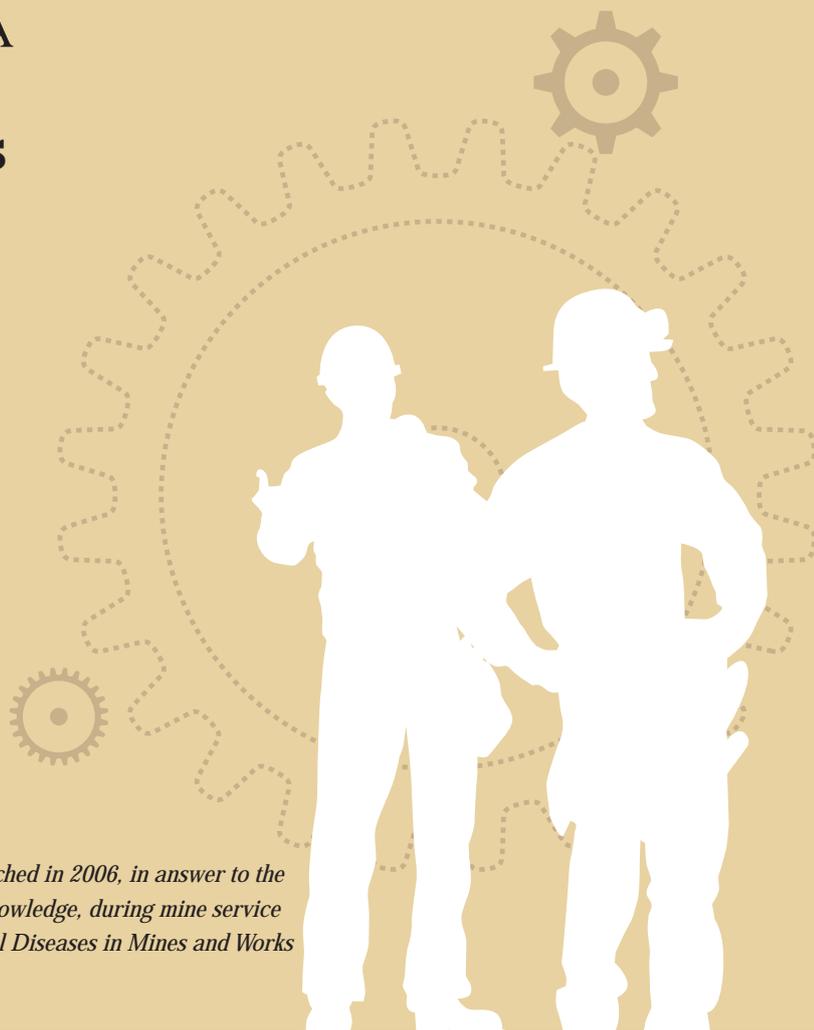
*“They hide things like that from us.” **

THE HIDDEN EPIDEMIC AMONGST FORMER MINERS:

**SILICOSIS, TUBERCULOSIS AND THE
OCCUPATIONAL DISEASES IN MINES AND
WORKS ACT IN THE EASTERN CAPE,
SOUTH AFRICA**

JAINE ROBERTS

JUNE 2009



** Statement by former miner, retrenched in 2006, in answer to the inquiry as to whether he had any knowledge, during mine service or subsequently, of the Occupational Diseases in Mines and Works Act 78 of 1973 (ODMWA)*



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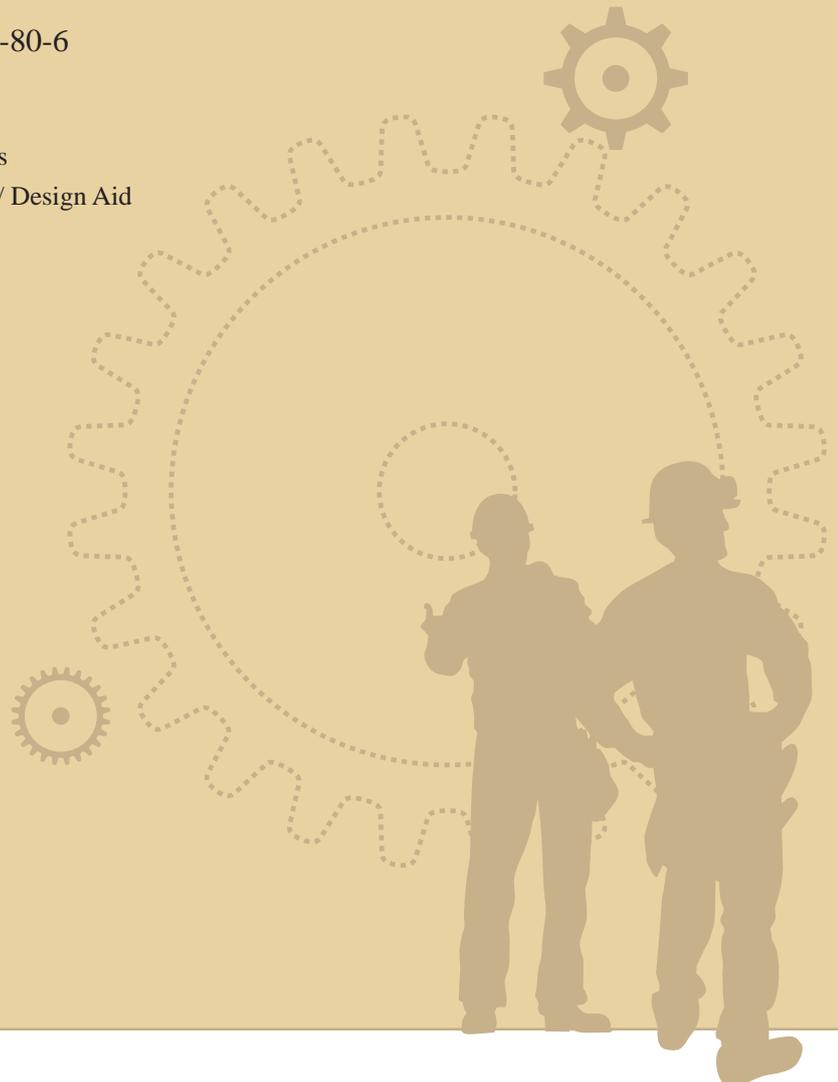
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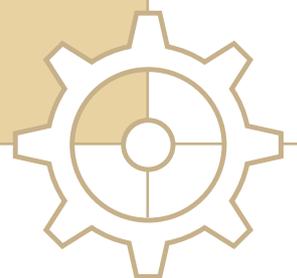
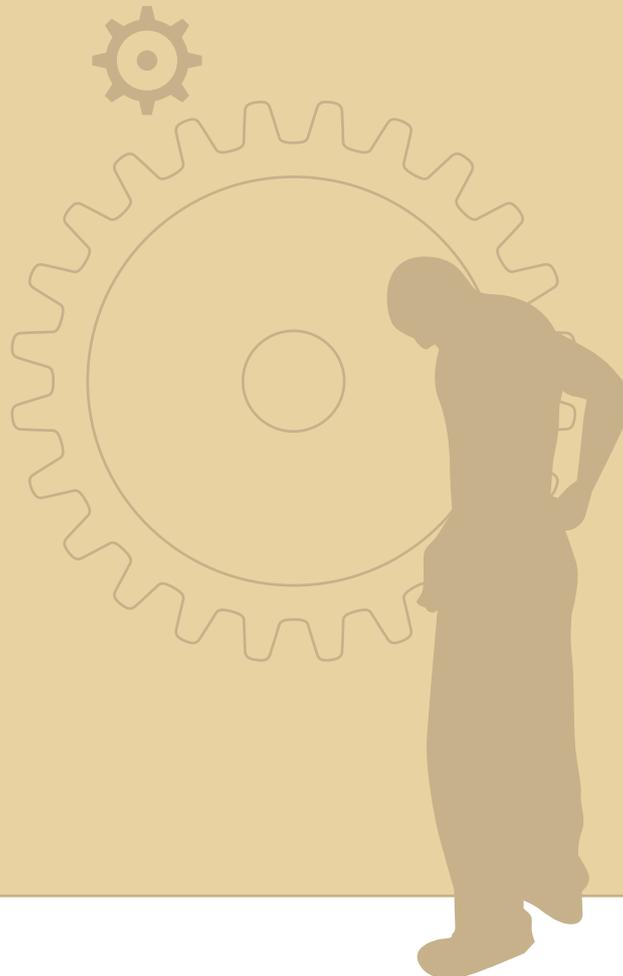
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Cover Design: Sally Dore / Design Aid



But most of the time, of course, we should prefer to forget that they were doing it. It is so with all types of manual work; it keeps us alive, and we are oblivious of its existence. More than anyone else, perhaps, the miner can stand as the type of manual worker, not only because his type of work is so exaggeratedly awful, but also because it is so vitally necessary and yet so remote from our experience, so invisible, as it were, that we are capable of forgetting it as we forget the blood in our veins. In a way it is even humiliating to watch coal-miners working. It raises in you a momentary doubt about your own status as an 'intellectual' and a superior person generally. For it is brought home to you, at least while you are watching, that it is only because miners sweat their guts out that superior persons can remain superior. You and I and the editor of the *Times Lit. Supp.*, and the Nancy poets and the Archbishop of Canterbury and Comrade X, author of *Marxism for Infants* – all of us *really* owe the comparative decency of our lives to poor drudges underground, blackened to the eyes, with their throats full of coal dust, driving their shovels forward with arms and belly muscles of steel.

George Orwell, *The Road to Wigan Pier*



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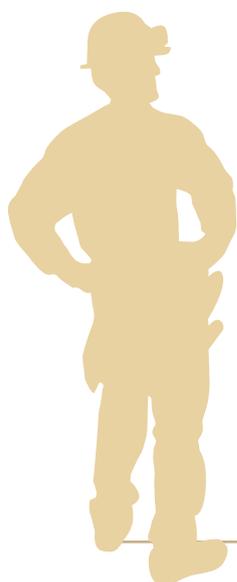
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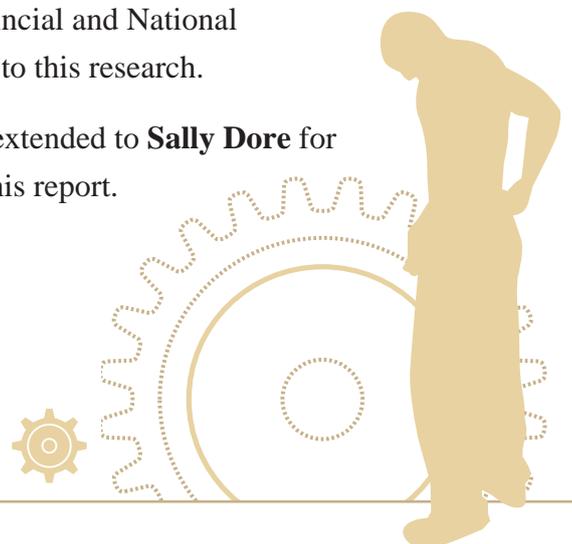
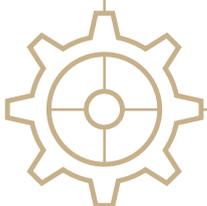
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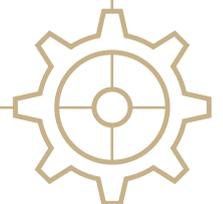
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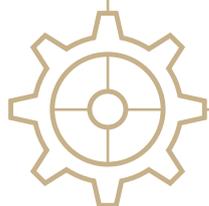


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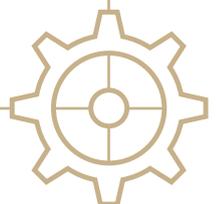


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Glossary

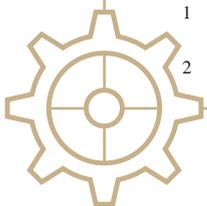
| | |
|---------------|---|
| BME | Benefit Medical Examination |
| CCOD | Compensation Commissioner for Occupational Disease |
| CM | Chamber of Mines |
| COIDA | Compensation for Occupational Injuries and Diseases Act 130 of 1993 |
| COPD | Chronic Obstructive Pulmonary Disease |
| CSG | Child Support Grant |
| DME | Department of Minerals and Energy |
| DSD | Department of Social Development |
| ECDoH | Eastern Cape Department of Health |
| ILO | International Labour Organisation |
| MBOD | Medical Bureau for Occupational Disease |
| MHSA | Mine Health and Safety Act |
| MDR TB | Multi-Drug Resistant Tuberculosis |
| NDoH | National Department of Health |
| NIOH | National Institute for Occupational Health (SA) |
| NIOSH | National Institute for Occupational Health and Safety (USA) |
| NUM | National Union of Mineworkers |
| ODMWA | Occupational Diseases in Mines and Works Act 78 of 1973 as Amended |
| OEL | Occupational Exposure Limit |
| OLD | Occupational Lung Disease |
| PMF | Progressive Massive Fibrosis |
| SIMRAC | Safety in Mines Research Advisory Committee |
| TB | Tuberculosis |
| PTB | Pulmonary Tuberculosis |
| TLV | Threshold Limit Value |

Epidemiology

Epidemiology is an applied science in “the study of the distribution and determinants of health-related conditions and events in populations, and the application of this study to the control of health problems”.¹ **Social Epidemiology**, well defined by the remarkable Medical Sociologist S. Leonard Syme, is the social etiology of disease which attempts to “systematically examine variation in the incidence of particular diseases among people differentially located in the social structure”, and it attempts “to explore the ways in which their position in the social structure tended to make them more vulnerable, or less, to particular disease.”²

1 Last, JM (1988) *A Dictionary of Epidemiology*, cited in Joubert, G. and Ehrlich, R. (Eds) *Epidemiology. A Research Manual for South Africa*. 2nd Edition, Oxford University Press, South Africa.

2 Berkman, Lisa F. and Kawachi, Ichiro. Eds (2000) *Social Epidemiology*. Oxford University Press, New York.



Exposure Response Association

The association between exposure and the proportion of the sample of workers studied who show an adverse effect.³

ILO Classification of the Radiographs of the Pneumoconioses (ILO classification)

Method for classifying chest x-rays of the pneumoconioses by comparison with standard x-ray films. Can be used to grade silicosis from normal to severe using a numeric scale.⁴

Miners

The designation “Miner” is generally and strictly speaking used to refer to frontline production workers in the mines. Those working behind these frontline production workers are then referred to as “mineworkers”. The use of “mineworker” is, however, reductionist as the ‘frontline’ of gold mining can quite simply be regarded as the whole area which is underground. All those working underground can, legitimately, be referred to as “Miners”. In this report the definition “Miner” is used to refer to all those working underground.

Prevalence

Prevalence is the proportion of people with silicosis or tuberculosis at the time of a survey. Prevalence is entirely dependent on the group studied and is meaningless unless this context is given.⁵

Public Health

Public health is “one of the efforts organized by society to protect, promote and restore the health of the population. It is a combination of sciences, skills and beliefs that are directed to the maintenance and improvement of the health of the people through collective and social action. The programmes, services and institutions involved emphasise the prevention of disease and the health needs of the population as a whole. Public health activities change with changing technology and social values but the goals remain the same: to reduce the amount of disease, premature death, discomfort and disability in the population. Public health is thus a social institution, a discipline and a practice”⁶.

Silicosis

Fibrosis of the lung due to the inhalation of free crystalline silicon dioxide (quartz). It is defined radiologically, and pathologically at autopsy. The SIMRAC Health 606⁷ describes silicosis as follows: “There are several different types of silicosis, viz. classic, accelerated and acute, which are distinguished by the degree of airborne concentration and length of exposure to the crystalline silica required to induce them, the speed with

3, 4, 5 From the Glossary of the Safety in Mines Research Advisory Committee (SIMRAC) *Health 606* report (2003), Gavin Churchyard, Lindiwe Pema, Bulewa Magadla, Kobus Dekker, Mark Vermeijs, Rodney Erhlich, Jim Te Water Naude, Jonny Meyers and Neil White.

6 Last, JM (1988) *A Dictionary of Epidemiology*, cited in Joubert, G. and Ehrlich, R. (Eds) *Epidemiology. A Research Manual for South Africa*. 2nd Edition, Oxford University Press, South Africa

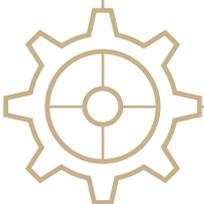
7 Safety in Mines Research Advisory Committee (SIMRAC) *Health 606* report (2003), Gavin Churchyard, Lindiwe Pema, Bulewa Magadla, Kobus Dekker, Mark Vermeijs, Rodney Erhlich, Jim Te Water Naude, Jonny Meyers and Neil White



which they manifest and the degree to which lung tissue is replaced with fibrotic nodules. Classic ‘simple’ silicosis is the result of low to moderate silica dust exposure over a number of years. Complications of simple silicosis include progressive massive fibrosis (PMF), loss of vital capacity, tuberculosis and lung cancer. PMF is a rapid proliferation of nodules which form a stony mass of confluent nodules. The incidence among South African goldminers is not well documented, although cited as approximately 5 percent of cases of silicosis.The major complication of simple silicosis is an increased susceptibility to mycobacterial infections, especially tuberculosis”.

TEBA: The Employment Bureau of Africa

The AngloGold Ashanti “Report to Society 2008” defines TEBA, in its glossary of definitions, as “an institution owned by the South African mining industry, through which the industry has historically recruited labour but which now fulfils a broader social role in addition to its recruitment function”.⁸



Summary of Report

The aim of the research was to assess current and historical surveillance of the pneumoconioses in former miners, in particular silicosis, silico-tuberculosis, and tuberculosis, and to assess the functioning of the Occupational Diseases in Mines and Works Act (ODMWA) surveillance and compensation system which is a responsibility of the Department of Health. The research also aimed to assess the impact of the burden of lung disease and disability on the public health system and on the labour-sending communities from which the miners come and to which they return. The main objective was thus to investigate health systems surveillance of the pneumoconioses in former underground gold miners, and to assess diagnostic and compensation systems under the legal framework of the Occupational Diseases in Mines and Works Act 78 of 1973 as Amended (ODMWA).

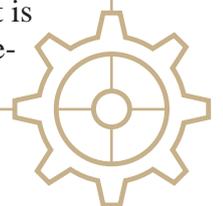
An assessment of available research findings from research undertaken since 1997, along with data from official sources, strongly indicated that this is a historically neglected subject which is a vastly under-researched and undocumented area of occupational disease and ill-health in South Africa.

Chapter One introduces and gives contextual background to the research. Key considerations are the migrant labour system, disease latency, the centralization of services, and the lack of health surveillance in rural areas. The 1994 Leon Commission of Inquiry into Safety and Health in the Mining Industry noted that the most recent research on the health of black former miners was from the 1930s. This gap of seventy years of neglect of the epidemiology of silicosis and silico-tuberculosis started to be closed by the research efforts, starting in 1997, of a few dedicated occupational health professionals. The pulmonary ill-health of black former miners was no longer deeply hidden in the hills of the “homelands” or other rural areas. The strongly mounting evidence of an epidemic of silicosis and tuberculosis amongst former miners, and of the undocumented legacy of disease, is presented in Chapters Three and Four.

Chapter Two provides a detailed description of the applicable legislation in the form of the Occupational Diseases in Mines and Works Act 78 of 1973 as Amended (ODMWA). This chapter includes a short history of the emergence of silicosis and the development of the first occupational lung disease legislation in the early part of the twentieth century. Chapter Two then describes in some detail the different sections, clauses and provisions of the ODMWA.

Chapters Three and Four are, in essence, a literature review of the available data and evidence to date from recent research studies on silicosis and tuberculosis in both miners and former miners. Chapter Three, focusing on silicosis, assesses the silicosis prevalence research that has been undertaken in the past decade amongst both in-service and former miners, and includes a two year review of autopsy data from the National Institute for Occupational Health. Chapter Four, focusing on tuberculosis, starts with a summary assessment of the historical intersection of mining and tuberculosis in South Africa, and presents a review of recent studies on tuberculosis in miners and former miners, as well as presenting some data from autopsy records.

Chapters Five to Fifteen comprise the main body of the research report, and present the findings of the current research. Chapter Five describes the research design and methods of the study, as well as detail on the operational planning and fieldwork. It is noted that a methodology is generally not a straight line from A to Z, one that is pre-



determined, but rather that research methods are adjusted as initial and pilot research findings are revealed.

Chapter Six sets out basic demographic information on the sample of former miners (n=205) This includes age range, marital status, numbers of dependent children and receipt of state grants.

Chapter Seven presents the occupational labour history of the former miners, giving detail on type of underground work, length of service, retention of documentation, provision to them while employed of information on health risks, and the means used to address such health risks. Throughout the report quantitative data is presented alongside qualitative data.

Chapter Eight describes the experiences of former miners in terms of their medical surveillance history while in mine service, medical surveillance at the time of exit from mine service, and medical surveillance subsequent to leaving mine service. A section of this chapter focuses on those former miners who departed mine service from 1996 onwards when the new Mine Health and Safety Act took effect. The intention here was to assess the legal requirement of full Exit Medical Examinations on departure from mine service.

Chapter Nine presents findings on levels of knowledge of the ODMWA amongst the former miners both through mine employment and departure, as well as any knowledge gained subsequently through their local public and private health services.

Chapter Ten describes the current health status of the former miners, and their interactions with both public and private sector health facilities.

Chapter Eleven is an extension of the focus on health status in, specifically, presenting the findings on Tuberculosis amongst the sample of former miners, both in mine service and subsequent to leaving mine service. Within this chapter on tuberculosis further findings are presented from a sub-sample (n=14) of former miners who were in-patients in a dedicated TB hospital.

Chapter Twelve describes the socio-economic status of the sample of former miners. It presents findings on the substantial reliance on state provided social security in the form of state Old Age Pensions, Child Support Grants and temporary TB disability grants, as well as on some marginal income generating activities. Findings on experience of hunger are also presented, as well as information on those study participants who died during the course of the research fieldwork. Chapter Twelve also includes a section which presents some concluding remarks from the former miners themselves.

Chapter Thirteen presents the findings of the health sector survey and interviews. This includes health sector experience of the presentation of former miners at health facilities, an assessment of knowledge of silicosis and of the ODMWA amongst health personnel, and an assessment of the functioning of the ODMWA.

Chapter Fourteen presents the conclusions of all the chapters, and concludes the report.

Chapter Fifteen presents the recommendations that emanate from the conclusions of the research.





chapter 1

Introduction

The intention of this research project was to assess health systems surveillance of the pneumoconioses, in particular silicosis and silico-tuberculosis, in former gold mineworkers, and compensation under the legal framework of the Occupational Diseases in Mines and Works Act 78 of 1973 as Amended (ODMWA). An assessment of available research findings from research undertaken since 1997, along with data from official sources,⁹ strongly indicates that this is a historically neglected subject which is a vastly under-researched and undocumented area of health and occupational disease compensation in South Africa.

The Leon Commission of Inquiry into Safety and Health in the Mining Industry (1994) recognized and noted that while there had been research on occupational lung disease (OLD) over the previous sixty (60) years this research was on in-service miners, that it was research biased towards white miners, and that the last research on black former miners was undertaken in the 1930s.¹⁰ This shocking absence of research amongst black former miners has been addressed through prevalence studies in the last decade. These recent prevalence studies have now provided sufficient evidence of an epidemic of silicosis.

AngloGold Ashanti notes in their Report to Society 2006 that “*it is estimated that some 1 million people have left the mining industry over the past 20 years, whether because of downscaling and closure of operations or retirement and ill health*”.¹¹ This figure needs to be repeated: one million men have left the mining industry in the last twenty (20) years. Not the last century but the last twenty (20) years. Of course, the number still alive remains in question; there is no doubt, however, that it is an exceptionally large number.

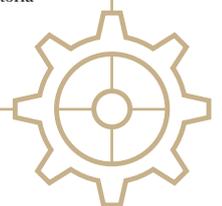
AngloGold Ashanti further acknowledges in relation to silicosis: “*Many of these former employees may not have been diagnosed as suffering from the disease at the time they left the industry or later, in retirement, and they may not have received due compensation from the Compensation Commissioner*”.¹² A doctor who has spent twenty-one (21) years providing care in a mine medical service wrote in 2008: “*Many employees have little or no understanding of the processes that lead to occupational lung disease, their consequences, how to protect themselves from the conditions, the mechanisms of compensation, the Acts that apply, and what their rights and responsibilities are.*”

9 The Leon Commission of Inquiry into Health and Safety in the Mining Industry (1994) determined that between 1974 and 1994, 128 575 mineworkers were certified by the MBOD with occupationally acquired lung disease. If one takes the prevalence data of the Libode and Thamaga studies, and of the SIMRAC Health 606 study, and extrapolates to the total number of miners (over 2 million) who have passed through the system, the officially recorded cases appear to be but a fraction of the likely number of cases. The Leon Commission additionally concluded that dust levels in the mines had not changed in the last 50 years.

10 Department of Minerals and Energy (1995) *Commission of Inquiry into Safety and Health in the Mining Industry*. Government Printer, Pretoria

11 AngloGold Ashanti, *Report to Society 2006*, AngloGold Ashanti. P.119

12 AngloGold Ashanti, *Report to Society 2006*, AngloGold Ashanti. P.119



This coupled with a high level of misinformation and complicated by low education levels amongst miners is a recipe for confusion and frustration".¹³ This mine doctor also noted that private practitioners have no knowledge of the ODMWA or the implications of the benefit examinations, with this not being covered at medical school. Clearly this applies equally to all those doctors in the public sector, as well as, very importantly, to nurses.

The legal core of the ODMWA, however, is that of a "trade-off": the miner has signed away his right to sue the employer for his occupationally acquired lung disease in return for a statutorily guaranteed compensation system where the state and capital, the mining companies, take a measure of responsibility for the harm caused. In being a "trade-off" the surveillance system must, of necessity, be guaranteed. It is the nature of this guarantee, and the measure of responsibility, that is in question, both from the point of view of whether the provisions of the ODMWA, as they stand, are functional and efficient, and whether the provisions of the ODMWA are equitable and socially just.

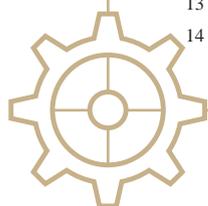
In order to assess the nature of the guarantee, and the measure of responsibility (or social justice and security), encompassed by the ODMWA, it is necessary to assess the functioning of health surveillance systems within the Department of Health and within the private health sector, and to explore the lived realities of these systems for the former mineworkers themselves. One component of the research focused on the health system. Another component encompassed a more complex picture than simply prevalence measurements. The lived experience of ill former mineworkers has been documented, placing them within their home environments and communities in order to tell the narratives of their lives in relation to mine work, their subsequent ill-health, and their experience of health surveillance, health care and compensation outcomes. The research was also designed to elicit information questioning the bio-medical model of degrees of disability through exploring what ill-health means for the former miners themselves in the labour-sending areas.

Although the 1993 Amendment to the Occupational Diseases in Mines and Works Act 78 of 1973 (ODMWA) brought about racial parity in compensation benefits, the infrastructure necessary to achieve equity has been lacking. Occupational health screening facilities are still almost entirely based in urban areas in which white workers have historically lived and not in the migrant labour sending areas of southern Africa. As Francis Wilson¹⁴ has described, oscillating migrant labour leads to a geographic separation between home (rural) and work (urban). The latency period between exposure to risk factors and development of disease means that diseases often manifest after people return to rural areas.

Silicosis, while preventable, is an incurable and progressive disease associated with a number of recognized complications such as tuberculosis, increased susceptibility to respiratory infections, loss of lung function, massive fibrosis and lung cancer. If the mineworker is diagnosed with silicosis while still in employment he may receive statutory compensation. Statutory compensation through the ODMWA is a lump sum

13 Calver, A. (2008) *Miners Compensation. Who Cares?* SA Labour Bulletin; 32: 26 - 28

14 Wilson, F. (1985) *Mineral Wealth, Rural Poverty*. Optima, Vol.33:23-28, and Wilson, F. and Ramphlele, M. (1989) *Uprooting Poverty. The South African Challenge*. Oxford University Press. Cape Town.



payment equivalent to eighteen (18) months salary if loss of lung function is assessed as being between 10% and 40%, and a lump sum payment equivalent to thirty-six (36) months salary (to a maximum of R84,000) if loss of lung function is between 40% and 100%. Medical assessment categorises silicosis into two degrees of impairment: silicosis in the First Degree is defined as a loss of lung function of between 10% and 40%; and Second Degree silicosis is defined as a loss of lung function of between 40% and 100%. A 100% loss of lung capacity simply means death through respiratory failure. Compensation amounts are individually wage based, as well as being capped.

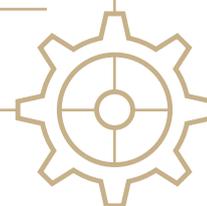
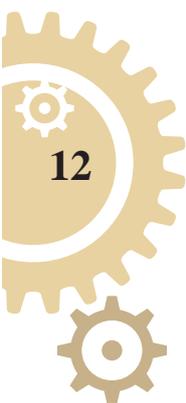
The ODMWA does not provide for any form of compensatory pension, and there is no provision for the costs of ongoing medical care. Hence the ill former mineworker has no source of income after the lump sum payment, and is effectively excluded from the labour market due to ill health. He¹⁵ is additionally reliant on the public health system for his medical care. Once the compensation lump sum payment is used up, it is likely that the cycle of poverty is perpetuated. This is the scenario for the diagnosed, certified and compensated silicotic former mineworker.

The former mineworker who is ill but not yet diagnosed faces an arduous process of, firstly, accessing medical surveillance for diagnosis of his condition. Once his disease has been detected, he must apply to the Medical Bureau for Occupational Disease (MBOD) for certification of a “compensatable” disease. Certification is centralised in Johannesburg and the claimant must himself forward the relevant documents to Braamfontein. Once certified, by the Certification Committee of the MBOD, as suffering from an occupationally acquired “compensatable” disease, the claimant then awaits his statutory entitlement to compensation payment from the Compensation Commissioner for Occupational Disease (CCOD). The CCOD is also centralised in Johannesburg. All communication must be followed up with these two agencies in Gauteng. The MBOD and the CCOD are a function and responsibility of the National Department of Health.

The implications of this system of compensation for occupationally acquired diseases for the former mineworkers themselves, for their families and communities, and for the public health sector requires further investigation. Not only is there a historical burden of disease that has not been properly researched and documented, there have been increasing retrenchments in the last decade and thus increasing numbers of mineworkers returning to the traditional labour sending areas of South Africa and Southern Africa.

No investigation of the equity of the ODMWA compensation system has been done before. It is posited that it is a discriminatory system that is a cheap form of compensation which serves as a subsidy to the mining industry in that it externalizes the costs of occupationally acquired lung disease. The labour sending communities which provide large numbers of migrant mineworkers to the mining industry are likely to have a high prevalence of silicosis and silico-tuberculosis which would have a severe social impact, intensifying deprivation and poverty amongst former mineworkers and their families, as well as within their communities.

15 “He” will be used throughout as women underground miners are a recent change and remain a tiny percentage of the workforce.



Although writing in 1989 and referring to “the bantustans” what Packard (1989) describes remains true for silicosis fifteen years into “the new South Africa”: *“For some areas and periods of history, and specifically for the rural areas or bantustans during much of the period under study, we are often looking through a glass darkly. Occasionally, however, we are able to pierce the darkness created by the biased distribution of South African health resources and statistics and explore, in some detail, the ways in which political and economic development have intersected with biological processes”*.¹⁶

Tuberculosis must be seen as a “product of a particularly pathological intersection of political, economic, and biological processes that have a much wider distribution”.¹⁷ The theoretical underpinning of the research was an understanding of epidemiology, defined as social epidemiology, as being far broader than simply the biological explanations of the causes and determinants of patterns of disease. The realities of migrant labour, and the frequent latency of disease manifestation in the case of silicosis, silico-tuberculosis, and tuberculosis, are particularly pertinent. Mamdani has aptly described “cheap” labour: “for those caught up in it, cheap labour was an incredibly costly system”.¹

The migrant labour system is central to the question of the “guarantee” of the ODMWA. As Terreblanche writes: *“For 60 years the Chamber of Mines played a key role in institutionalising and maintaining the migrant labour and compound systems, and corrupting the collaborating tribal chiefs... This was a comprehensive system of indirect enforced contract labour, and was based on the principle that migrant workers could be paid less than a subsistence wage because they had an agricultural subsistence base in their areas of origin. This principle was maintained until the 1970s, despite the drastic deterioration of socio-economic conditions in the overpopulated ‘reserves’. In real terms, migrant workers on the gold mines earned 20 percent less in 1960, and eight percent less in 1972, than they did in 1911”*.¹⁹

Terreblanche further comments: *“What made the structural exploitation of migrant labour by the gold mining industry so much more problematic was that the gold mines continued to pay low wages (in real terms) despite the deterioration of economic conditions in the ‘native reserves’. The gold mines justified the low wages paid to migrant workers with the argument that part of the ‘reproduction’ cost of labour was carried by the reserves”*.²⁰ Yet as long ago as the 1940s the argument for adequate subsistence support from the rural areas of South Africa was discredited: *“After exhaustive investigations, the Landsdowne commission concluded in 1943 that the idea that the reserves could supply a part of the migrant workers with subsistence was a ‘myth’ because of the growing poverty in the reserves. It concluded that the CM had an obligation to pay migrant workers a ‘living wage’. The chamber rejected this*

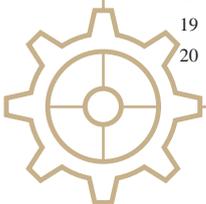
16 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. p.21

17 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. p.19

18 Mamdani, M. (1996) *Citizen and Subject*. David Phillip, Cape Town, p.228

19 Terreblanche, Sampie (2002) *A History of Inequality in South Africa 1652 – 2002*. University of Natal Press, Pietermaritzburg p. 12

20 Terreblanche, Sampie (2002) *A History of Inequality in South Africa 1652 – 2002*. University of Natal Press, Pietermaritzburg p. 277



*recommendation. The chamber also vigorously resisted any move from a migratory to a stable urban labour force, arguing that such a ‘disastrous’ policy would force the closure of the mines”.*²¹

Importantly, and all too often overlooked, not only does the migrant labour system of the mining industry push the costs of the reproduction of labour onto the labour-sending areas, but it has also successfully hidden, and hides, occupationally related disease. These areas become the field “hospital” for absorbing the sick. As Packard (1989) explains: “*changing patterns of sickness and health are linked to the emergence of specific sets of political and economic interests, operating at local, national and international level*”.²²

A further theoretical underpinning of the research was that of theories of social justice, and of the detail of the South African Constitution. The Universal Declaration of Human Rights states that “*Everyone has... the right to security in the event of unemployment, sickness, disability, widow-hood, old age, or other lack of livelihood in circumstances beyond his control*”.²³ Judge Arthur Chaskalson has described how dignity “informs the content of the concrete rights” of the South African Constitution:

*As an abstract value, common to the core values of our Constitution, dignity informs the content of all the concrete rights and plays a role in the balancing process necessary to bring different rights and values into harmony. It too, however, must find its place in the constitutional order. Nowhere is this more apparent than in the application of the social and economic rights entrenched in the Constitution. These rights are rooted in respect for human dignity, for how can there be dignity in a life lived without access to housing, health care, food, water or **in the case of persons unable to support themselves**, without appropriate assistance?... If different and conflicting interests of individuals and groups within our society are to be accommodated, and if full weight is to be given to the transformative purpose of the Constitution, the foundational values of democracy, dignity, equality and freedom must be interpreted consistently with these ends, and if possible, in ways that bring them into harmony with one another. As a consequence of our history, structural impediments remain to the achievement of ‘dignity, equality and freedom’. Millions of people are still without houses, education and jobs, and there can be little dignity in living under such conditions. Dignity, equality and freedom will only be achieved when the socio-economic conditions are transformed to make this possible.*²⁴

Central to the basic rights of access to healthcare and dignity in the event of persons unable to support themselves is the question of just recompense for occupationally acquired disease. Is it a case of there being little or no “guarantee” of the rights,

21 Terreblanche, Sampie (2002) *A History of Inequality in South Africa 1652 – 2002*. University of Natal Press, Pietermaritzburg. p. 277

22 Packard, Radall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg.p.19

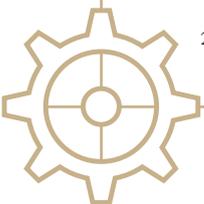
23 Universal Declaration of Human Rights, Article 25. Author’s emphasis.

24 Judge Arthur Chaskalson, Third Bram Fischer Lecture, Human Dignity As a Foundational Value of Our Constitutional Order, Johannesburg, 18 May 2000. Author’s emphasis.



acquired through the legislative “trade-off”, for surveillance and compensation for former miners? Is it a case of former miners themselves, and their communities, bearing these costs? Wilson and Levy have commented on British Workmen’s compensation: *“Adequacy of compensation has never been a guiding principle of British Workmen’s Law. Payments thereunder have always been regarded, with some justification, as contributions wrung from employers, who collectively and individually insisted upon the ‘principle’ that the injured workman should shoulder a part of the loss arising from circumstances, which in most cases, were wholly beyond their control”*.²⁵

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- 25 Terreblanche, Sampie (2002) *A History of Inequality in South Africa 1652 – 2002*. University of Natal Press, Pietermaritzburg. p. 277
- 22 Packard, Radall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. p.19
- 23 Universal Declaration of Human Rights, Article 25. Author’s emphasis.
- 24 Judge Arthur Chaskalson, Third Bram Fischer Lecture, Human Dignity As a Foundational Value of Our Constitutional Order, Johannesburg, 18 May 2000. Author’s emphasis.
- 25 Wilson, A. and Levy, H. Workmen’s Compensation, cited in Tweedale, G (2000) *Magic Mineral To Killer Dust: Turner and Newall And The Asbestos Hazard*, Oxford University Press, Oxford, p.59

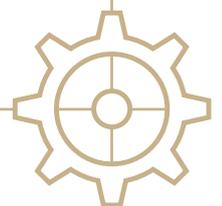


The Legislation

The Occupational Diseases in Mines and Works Act 78 of 1973 (ODMWA) as amended (Amendment Act 208 of 1993 and Amendment Act 60 of 2002) provides for the evaluation of both former and active miners for compensable occupational lung disease and, importantly, for the lifelong monitoring and surveillance of former miners. The lifelong eligibility for benefit medical examinations is imperative in diseases of sometimes long latency periods. The surveillance of in-service miners is the responsibility of the employer in terms of the Mine Health and Safety Act 29 of 1996 (MHSA) while the monitoring and surveillance of former mineworkers is the responsibility of the Department of Health. The ODMWA Amendment Act 208 of 1993 removed all provisions which differentiated between persons on the grounds of their gender or race group; notably, it was the last of South Africa's racially unequal legislation to be corrected.

The ODMWA surveillance and compensation system for occupationally related lung disease in miners is a “trade-off” in that the miner has relinquished his right to sue the mining company for any occupationally acquired lung disease in return for a legislated, state administered, and guaranteed surveillance and compensation system. (A large question mark, however, hangs over this “guarantee”). This National Department of Health administered statutory occupational health system provides for medical surveillance and certification of disease through the Medical Bureau for Occupational Disease (MBOD), which falls under the Chief Directorate: Non-Personal Health Services, and through the Pathology Division of the National Institute for Occupational Health (NIOH), which falls under the National Health Laboratory Service (NHLS).

The ODMWA provides for compensation payment through the Compensation Commissioner for Occupational Disease (CCOD). The MBOD and CCOD only deal with diseases in miners; in other words, the ODMWA is a distinct and separate occupational health dispensation specifically for mine and risk works related diseases. Accidents and injuries in mining fall under the Compensation for Occupational Injuries and Diseases Act 130 of 1993 (COIDA) administered by the Department of Labour and which has a separate Compensation Commission. COIDA covers all workers in South Africa for injuries, and all workers with the exception of mineworkers for diseases. Thus a mineworker injured in an underground accident will be covered by COIDA, while the underground mineworker with silicosis will be covered by the ODMWA. There is no health-based or medical reason for such separation of occupational health legislation. The reasons for this special dispensation for mining shall become clearer as the exposition of this research report progresses.



2.1 A Short History of Silicosis and Legislation

The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910 (1994) by Elaine Katz, (1994)²⁶ provides a historical account of the extent of silicosis that ravaged the lungs of the early (white) miners. Katz notes in the introduction to this seminal history of the early years of mining in South Africa: “Although a great deal has been written about the development of the Witwatersrand gold mining industry, only a tiny slice has been devoted to its medical and health past....posterity has been extraordinarily slow in acknowledging the devastation wrought by the ‘white death’, or censuring those who did nothing to stop it”.²⁷

The first miners were predominantly foreign migrant workers from England who returned home when ill. Eighty-five percent (85%) of the white miners in the early years were British born and fifty-eight percent (58%) of these men were from Cornwall with a third from the district of Redruth. Katz records that “Redruth was the only foreign mining centre which compiled official silicosis mortality statistics for the returned Witwatersrand rock drillers, who were buried in the ‘rapidly filling graveyards’ of Cornwall”.²⁸ With the epidemiology of silicosis being more closely tracked by doctors in Cornwall it was possible to conclude that “between 1892 and 1910 almost an entire generation of professional miners from abroad died from an accelerated form of silicosis”.²⁹ The fate of black South African migrant miners has, close to a hundred years later, yet to be fully recorded. Decades upon decades have passed without the graves of South African miners, who have returned to their homes in the labour-sending areas of the country, being counted in any epidemiological reports. A grave is too late for any epidemiological inquiry.

The fate of white South African miners started to emerge in the early years of the twentieth century and resulted in pressure being exerted on government and the mining companies to address the health hazards of underground mining. Between 1902 and 1925, “silicosis was the subject of no fewer than nine legislative acts, six commissions, ten parliamentary select committees and four major state industry reports”.³⁰ The Weldon Commission of 1902 confirmed the Government Mining Engineer’s finding of a prevalence of silicosis of nearly 25% amongst white underground miners.³¹ It was estimated in 1911 that the annual silicosis mortality among rock drillers was 140 per 1000.³² The Mining Regulations Commission of the time noted that the “white death” “mowed down miners... at an average age of thirty-five”, and that “most of these miners’ lives had been at least fifteen years shorter than those of their compatriots in Australia”.³³ Of the eighteen (18) members of the 1907 miner’s strike committee, thirteen (13) had died of silicosis by 1914 and two (2) were in the terminal stage of the disease by 1914.³⁴ It was organized and unionised white labour that pushed, in the

26 Katz, Elaine (1994) *The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910*. Witwatersrand University Press.

27 Katz, Elaine (1994) *The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910*. Witwatersrand University Press. p.10

28 Katz, Elaine (1994) *The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910*. Witwatersrand University Press. p.65

29 Katz, Elaine (1994) *The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910*. Witwatersrand University Press. p.213

30 Katz, Elaine (1994) *The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910*. Witwatersrand University Press. p.5

31 Katz, Elaine (1994) *The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910*. Witwatersrand University Press. p.4

32, 33 Katz, Elaine (1994) *The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910*. Witwatersrand University Press. p.212

34 Katz, Elaine (1994) *The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910*. Witwatersrand University Press. p.180

early decades of mining in South Africa, for occupational health legislation, and in 1916 compulsory annual x-rays and medical examinations under a state occupational disease surveillance system was regulated for white miners. Black miners would have to wait until 1993 for the last racist legislation on the statute books, for all clauses instituting differentiating provisions on the basis of populations groups, to be removed so that all the *de jure* provisions of the ODMWA applied equally to them.

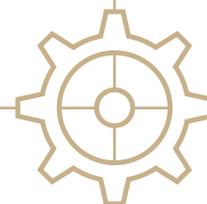
“Miners’ phthisis”, the latter being a word derived from Greek meaning “to waste away”, was legally recognized in South Africa in 1911. The term “miners’ phthisis” was used interchangeably with “silicosis” throughout the first half of the twentieth century and although, internationally, in 1950 “silicosis” became the official term, the use of “phthisis” to refer to silicosis continued to be commonly used in South Africa. Elaine Katz clarifies the use of these terms: “In South Africa the term “phthisis” also caused confusion. Initially most doctors preferred this old fashioned colloquialism to the scientific term ‘pulmonary tuberculosis’. But whereas in Britain ‘phthisis’ consistently denoted pulmonary tuberculosis, in South Africa the name became an ambiguous synonym for both silicosis and pulmonary tuberculosis”.³⁵ Currently many miners and their families still use the term “phthisis” when they mean “silicosis”.

The Miners’ Phthisis Act came into being in 1911 and remained in place with various additions and amendments. It was followed by the Silicosis Act of 1925, the Pneumoconiosis Act of 1956 and the Pneumoconiosis Compensation Act of 1962. (Dust- related respiratory diseases are referred to by the generic term pneumoconiosis/es.) The ODMWA came onto the statute books in 1973. The Miners’ Phthisis Act introduced regulations for periodical medical examination and the compensation for silicosis, initially for white miners and only later, with racially discriminatory provisions, for black miners. Although the social epidemiology of the pneumoconioses is still in its infancy in South Africa, we will soon reach the hundredth anniversary of the Miners Phthisis Act of 1911, a hundred (100) years of occupational health legislation that was, and is, intended to cover the monitoring and surveillance of (and compensation for) the respiratory diseases caused by the inhalation of dust underground in the mining industry. Notable in relation to the quartz rock of South Africa’s extremely deep level mines is that this rock contains a very high content of silica.

2.2 The Statutory Provisions of the Occupational Diseases in Mines and Works Act 78 of 1973 as Amended in 1993 and 2002

As the ODMWA, unlike COIDA, is a far from well-publicised Act, it will be useful to cite extensively from the Act itself to extrapolate the main provisions of this legislation. This is divided into sections starting with what the MBOD was established for and its structure, medical surveillance and the role of medical practitioners, the costs of medical surveillance, the definition of “compensatable disease”, degrees of disease and disability, and the amounts of compensation.

35 Katz, Elaine (1994) *The White Death. Silicosis on the Witwatersrand Gold Mines 1886 – 1910*. Witwatersrand University Press. p.17



2.2.1 The Medical Bureau for Occupational Disease (MBOD)

The Medical Bureau for Occupational Disease (MBOD) was established to ensure that the *de jure* provisions of the ODMWA legislation become *de facto*.

Establishment of bureau

- (1) There shall be established a bureau, to be called the Medical Bureau for Occupational Diseases, for the performance under the supervision and control of the director of such functions as may be necessary for the purpose of giving effect to the provisions of this Act and such other functions as may from time to time be assigned to it by the Minister
- (2) The Minister may make such rules as he or she may consider necessary or desirable for the effective performance of the functions of the bureau.

Appointment of director, medical officers and other staff of bureau

- (1) The Minister shall appoint, subject to the laws governing the public service-
 - (a) a Director of the Medical Bureau for Occupational Diseases, who shall be a medical practitioner and who shall exercise the powers and perform the functions conferred upon or assigned to him or her by this Act or by the Minister under this Act;
 - (b) as many deputy directors of the bureau as the Minister may consider necessary, of whom at least one shall be a medical practitioner;
 - (c) as many other officers, being medical practitioners, as the Minister may consider necessary for the performance of the medical examinations and other functions required to be performed by the bureau under this Act;

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter 1, Section 2)

Chapter II of the ODMWA sets out the details of “control in respect of mines and works, and determination of risk”. The **Risk Committee for Mines and Works** is chaired by the Chief Inspector of Mines as determined by the Mine Health and Safety Act, 1996 and comprises the director (MBOD) and four other members, one of whom must be a medical practitioner. This Risk Committee determines the levies to be paid by all mines and risks works to the ODMWA compensation fund managed by the CCOD.

Located within the MBOD is the **Medical Certification Committee for Occupational Diseases**. This committee is established to “exercise the powers and perform the functions conferred upon or assigned to it by this Act”. (ODMWA Chapter IV (1)) The Medical Certification Committee is chaired by the Director of the MBOD, who must be a medical practitioner in terms of the Act, and comprises a medical practitioner nominated by the owners of controlled mines or by an organisation representing such owners, such as the Chamber of Mines, and a medical practitioner nominated by an organization or organizations representing workers. A body called the **Medical Reviewing Authority for Occupational Diseases** consists of medical practitioners appointed by the Minister of Health and exists for the purposes of review of the findings of the Medical Certification Committee.



2.2.2 Medical Examinations

The ODMWA describes the legal framework for medical surveillance of miners and former miners.

- (1) The director shall be charged with the direction and control of all medical examinations provided for in this ACT, and may on such conditions as he or she deem fit authorize or direct any medical practitioner to perform any such examination.

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter 1, Functions of director (1))

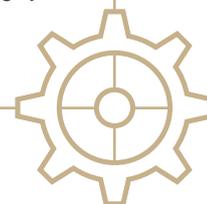
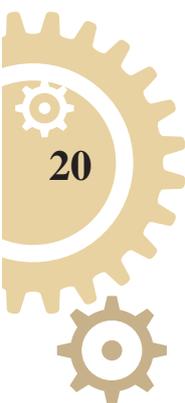
In the Amendment of 2002 the conditions for eligibility for medical examination were changed from annually to being biennial. This was a reduction in the conditions of surveillance as, previously, former miners could request annual x-rays; this can now only be requested every two years. There is, however, a provision for an application for re-examination before a twenty-four (24) month period has lapsed if this application is supported by a medical practitioner. In relation to the process of application for medical examination, the ODMWA contains the following:

Application for medical examination for compensatable disease

- (1) Any person who works or has worked at a mine or works, or any person acting on behalf of such a person, may at any time apply to the director for a medical examination of such a person for the purpose of determining whether such a person is suffering from a compensatable disease, or, if he or she has previously been found to be suffering from such a disease, the degree of such a disease.
- (2) Upon receipt of such application, the director shall, subject to the provisions of subsection (3)-
 - (a) cause the person concerned to be medically examines as soon as possible;
 - (b) submit to the certification committee a detailed report on the condition of the health of that person; and
 - (c) cause such further examinations, tests and observations to be carried out as the director may deem necessary or as the certification committee may require.
- (3) The director may refuse such application if the person concerned was medically examined under this Act within a period of 24 months immediately preceding the date on which such application is received, unless the application is supported in writing by a medical practitioner.

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter III, section 32)

Chapter III Section 32 (1) (a) of the ODMWA states that the Director of the MBOD is “**obliged to cause such a person to be medically examined as soon as possible**”.



The Act states that any person who has worked in a mine or risk works, or any person acting on behalf of such a person, may “*at any time apply to the Director for a medical examination of such a person for the purpose of determining whether such a person is suffering from a compensable disease*” (ODMWA Chapter III, Section 32). This applies equally to a person who has already been found to be suffering from a compensable disease in determining any subsequent change in the degree of disease. Once Second Degree (see later section on degrees of disease) is diagnosed, there is no further eligibility for free medical examination or for autopsy.

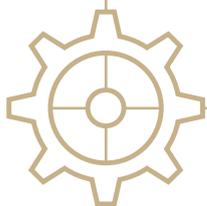
There is an element of duty and obligation within the Act that falls on health professionals to examine and report. The following provisions for medical examination, and for post-mortem services, set this out. The latter, post-mortem or autopsy, notably, requires the consent of the next of kin.

Report by medical practitioner on person who has worked at mine or works

- (1) Whenever a medical practitioner in the Republic considers or suspects that any person medically examined or treated by him or her, who has to his knowledge worked at a mine or works, or who he or she believes on reasonable grounds to have so worked, is suffering from a compensable disease, such practitioner shall forthwith communicate to the director his findings at the examination, and shall on demand by the director furnish such further information at his disposal in regard to the examination or the health of such person as the director may require.
- (2) The director may in writing direct a medical practitioner who has communicated his findings at the examination of any person to the director as contemplated in subsection (1), to perform, with the consent of the person concerned, a further medical examination of that person or such an examination of a nature determined by the director, and a medical practitioner so directed who has performed an examination in accordance with the direction, shall forthwith submit to the director a detailed report on the result of the examination.

Duties of medical practitioner in regard to post-mortem examination or service

- (1) The director may authorize or in writing direct any medical practitioner in the Republic to perform a post-mortem examination or other post-mortem service under this Act of a nature determined by the director, and a medical practitioner so authorized or directed who has performed a post-mortem examination or other post-mortem service in accordance with such authorization or direction, shall forthwith submit to the director a detailed report on the result of the examination or service performed by him or her.



- 
- (2) A medical practitioner in the Republic who attended a deceased person at the time of or immediately before his death, or has opened the body of a deceased person, and who knows or has reason to believe that such person worked at a mine or works, shall remove the cardio-respiratory organs and any other prescribed organs or parts of the body of the deceased and shall send such organs and parts of the body to the prescribed place or, if no place has been prescribed, to the bureau or to any other place specified by the director, in accordance with the prescribed procedure or, if no procedure has been prescribed, in accordance with such instructions as may be issued by the director.
 - (3) Notwithstanding anything contained in subsection (1) or (2), a medical practitioner shall not perform a post-mortem examination on any deceased person or remove his cardio-respiratory organs or any other organs or parts of his body, without the consent of his widow (if any) or an adult near relative of the deceased, if the widow or such a relative can readily be consulted.

Arrangements for post-mortem examinations and services

The Minister may with the concurrence of the Minister of Finance enter into such agreement or make such other arrangements with any institution, hospital or organization as the Minister may consider necessary for the performance of any post-mortem examinations or post-mortem services required under this Act.

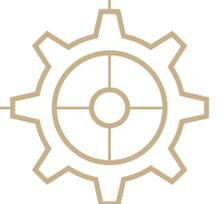
(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter III, Sections 33 - 35)

An article in the SA Medical Journal, in June 1976, titled “*The Obligations of Medical Practitioners in Relation to the New Mines and Works Act*” strangely only focused on the obligations for autopsy and said nothing whatsoever about post-service medical surveillance obligations. It did emphasise that any medical practitioner who attends a miner is “obliged” to remove the cardio-respiratory organs and send them to the MBOD, and that a pathologist performing a routine autopsy on a miner must follow the same procedure, noting that the “onus” rests on the medical practitioner or pathologist. It was also noted in this article: “*It is sufficient for the deceased to have worked for as little as one shift in a mine or works for the case to be considered*”.³⁶

2.2.3 The Costs of Medical Examinations

The ODMWA, in Chapter III Section 32 (3), entitles former mineworkers to bi-annual medical benefit examinations. These examinations are free regardless of the findings of “compensatable” or “no compensatable” disease. The costs of medical examinations are clearly defined in a section of the Act.

36 Goldstein, B. and Webster, I. (1976) *The Obligations of Medical Practitioners in Relation to the New Mines and Works Act*. SA Medical Journal, 12 June 1976.



The costs of medical examination for in-service mineworkers are borne by the employer, as are any employment entry medical examinations. Former mineworkers are covered by public funds which means free provision at public sector health facilities, or via the MBOD-specified amount being re-imbursed to private sector medical practitioners. In other words, the operating costs of running the MBOD and the costs of medical benefit examinations are borne by the National Department of Health.

Cost of medical examinations

- (1) The cost of any medical examination under this Act, and the cost incurred to keep a person under observation in accordance with any provision of this Act, shall
 - (a) in the case of a person who works at a mine or works, or whom the owner of a mine or works intends to employ, be borne by the owner of the mine or works; and
 - (b) in the case of any other person, be paid by the Director-General from moneys appropriated by Parliament for that purpose.
- (2) For the purposes of this section ‘mine or works’ means a controlled mine or a controlled works or a mine or works in respect of which the Minister has under section 12 applied the provisions of this section.

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter III, Section 36)

In terms of examinations by private sector practitioners the ODMWA states the following

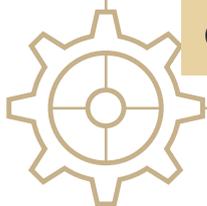
Medical practitioner and a person examined entitled to fee or costs under certain circumstances

- (1) If a medical practitioner who is not in the full-time service of the State or of an institution of which the maintenance costs are defrayed wholly from State funds or of an owner of a controlled mine or controlled works-
 - (a) has in terms of an authorization, request or direction by the director performed any medical or post-mortem examination or other post-mortem service under this Act; or
 - (b) has removed the cardio-respiratory or other organs or parts of the body of a deceased person in terms of section 34 (2) to the satisfaction of the director,

he or she shall be entitled to payment, from moneys appropriated by Parliament for that purpose, of-

- (i) any cost reasonably and necessarily incurred by him or her in order to perform such examination or service; and
- (ii) the fee determined by the Minister in consultation with the Minister of State Expenditure;

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter III, Section 37)



Additionally, under Section 37, which is entitled “Medical practitioner and a person examined entitled to fee or costs under certain circumstances”, there is provision for support for transport and other costs incurred in accessing medical examinations.

- (3) Where an application under section 32 for the medical examination of any person has been granted, such person shall be entitled to repayment, from moneys appropriated by Parliament for that purpose, and in accordance with a scale prescribed by the Minister with the concurrence of the Minister of State Expenditure, of costs incurred by him or her to undergo such examination-
 - (a) if he or she is found for the first time, on the ground of such examination, to be suffering from a compensatable disease; or
 - (b) where he or she has previously been found to be suffering from a compensatable disease, if he or she is found for the first time, on the ground of such an examination, to be suffering from a compensatable disease in the second degree, with the meaning of section 44 (2); or
 - (c) in any other case, if he or she has not received from the state a repayment of costs in respect of a medical examination which he or she underwent, during the year immediately preceding the day on which the said application reached the bureau, for the purpose of determining whether he or she is suffering from a compensatable disease.

(Occupational; Diseases in Mines and Works Act 78 of 1973, Chapter III, Section 37)

The only provision for covering the costs of ongoing medical care appears to be restricted to those miners diagnosed with a compensatable disease while in mine service:

Medical Expenses

- (1) The owner of a controlled mine or a controlled works shall from the date of commencement of a compensatable disease pay the legitimate and proven cost incurred by or on behalf of a person in his or her service, or who was in his or her service at the commencement of a compensatable disease, in respect of medical aid necessitated by such disease.
- (2) If, in the opinion of the commissioner, further medical aid in addition to that referred to in subsection (1) will reduce the disease from which the person is suffering, he or she may pay the cost in respect of such further aid or direct the owner to pay it.

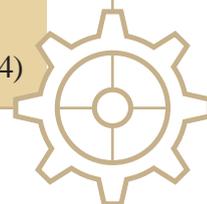
(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter III, Section 36A)

Importantly, the State, in particular the Department of Health, bears the costs of the administration of the Act.

State to bear cost of administration of Act

All expenditure incurred to give effect to any provision of this Act shall, except in so far as any such expenditure is in terms of this Act to be defrayed from another source, be defrayed by the Minister from moneys appropriated by Parliament for that purpose.

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter VIII, Section 134)



2.2.4 Compensatable Diseases or “Standards for Certification of Compensatable Diseases”

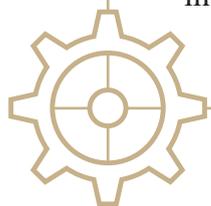
Those diseases that are compensatable are defined in the Act. Firstly, pneumoconiosis is noted, as is the joint condition of pneumoconiosis and tuberculosis. Tuberculosis on its own is only compensatable if contracted in-service or if diagnosed within twelve (12) months of leaving mine service. Chronic Obstructive Pulmonary Disease (COPD) is also compensatable if attributable to mine work, as is progressive systemic sclerosis. “Compensatable disease” is defined in the Act as follows:

'compensatable disease' means-

- (a) pneumoconiosis;
- (b) the joint condition of pneumoconiosis and tuberculosis;
- (c) tuberculosis which, in the opinion of the certification committee, was contracted while the person concerned was performing risk work, or with which the person concerned was in the opinion of the certification committee already affected at any time within the twelve months immediately following the date on which that person performed such work for the last time;
- (d) permanent obstruction of the airways which, in the opinion of the certification committee, is attributable to the performance of risk work;
- (e) any other permanent disease of the cardio-respiratory organs which in the opinion of the certification committee is attributable to the performance of risk work; or
- (eA) progressive systemic sclerosis which, in the opinion of the certification committee, is attributable to the performance of risk work; or
- (f) any other disease which the Minister, acting on the advice of a committee consisting of the director and not fewer than three other medical practitioners designated by the Minister, has, subject to the provisions of subsection (2), by notice in the Gazette declared to be a compensatable disease and which, in the opinion of the certification committee, is attributable to the performance of risk work at a mine or works;

(Occupational Diseases in Mines and Works Act 78 of 1973, Definitions 1 (a))

The Definitions section of the ODMWA states that “Tuberculosis” means tuberculosis of the cardio-respiratory organs of a person who has worked at least 200 shifts in circumstances amounting to a risk and where silica dust or any other injurious dust was present, or any sequelae, complication or manifestation thereof, but does not include inactive or calcified foci”. Importantly, tuberculosis is considered an occupational disease for mineworkers. A constraint, however, is placed on time-frames: it is only regarded as an occupational disease if contracted while in mine service or within twelve (12) months of the last shift worked. The highly questionable nature of this severe limitation will become clearer in the discussion in subsequent chapters of this report.

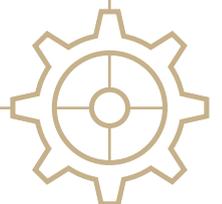


2.2.5 Degrees of Disease

The ODMWA defines two degrees of disease severity. First Degree disability is defined as not less than ten percent (10%) and no more than forty percent (40%) disability caused by one of the scheduled diseases. Second Degree is defined as single disease disability between forty percent (40%) and one hundred percent (100%). The latter boundary of disability would be more accurately described as “death”. Additionally, Second Degree is also defined as more than one compensatable disease simultaneously; for example, silicosis plus tuberculosis. The MBOD houses the Medical Certification Committee (ODMWA Chapter IV section 39) which comprises not less than five (5) medical practitioners who are appointed by the Minister. One of these medical practitioners is nominated by the Chamber of Mines as the employer representative and the other by the National Union of Mineworkers (NUM) as the worker representative. Provision is also made for a Review Committee for the purposes of appeal. The degrees of compensatable disease are specified in the following section of the Act:

Degrees of compensatable diseases

- (1) For the purpose of this Act a person shall be deemed to be suffering from a compensatable disease in the first degree-
 - (a) in the case of pneumoconiosis, if the certification committee has found that he or she is suffering from pneumoconiosis, whether or not it has impaired his cardio-respiratory functions, and the certification committee has found a resultant permanent disability of more than 10 per cent but not more than 40 per cent;
 - (b) in the case of a compensatable disease referred to in paragraph (d) of the definition of 'compensatable disease' in section 1 (in this section referred to as 'the definition'), if the certification committee has found that he or she is suffering from such a disease and the certification committee has found a resultant permanent disability of more than 10 per cent but not more than 40 per cent;
 - (c) in the case of a compensatable disease referred to in paragraph (c), (e), (eA) or (f) of the definition, if the certification committee has found that he or she is suffering from such a disease which has permanently impaired his ability to perform his ordinary work by more than 10 per cent but by not more than 40 per cent;



- (2) For the purposes of this Act a person shall be deemed to be suffering from a compensatable disease in the second degree-
- (a) if the certification committee has found that he or she is suffering from more than one compensatable disease simultaneously which together have permanently impaired his ability to perform his ordinary work by more than forty per cent, or that he or she is suffering from tuberculosis and another compensatable disease simultaneously;
 - (b) in the case of pneumoconiosis, if the certification committee has found that he or she is suffering from pneumoconiosis which has permanently impaired his cardio-respiratory functions by more than forty per cent;

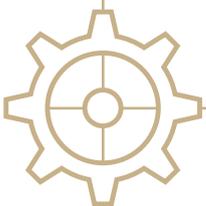
(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter IV, Section 44)

The findings of the Certification Committee in the form of a certificate must be communicated to the person concerned and to the commissioner (CCOD) within ten (10) days. If the miner is still employed the certificated findings must also be sent to the owner of the mine. In the case of post-mortem findings, the certificate of findings must be sent to the dependents of the deceased. If there is a finding of tuberculosis this certificate must be sent to the local authority where the person resides. This is set out under the Notice of finding of certification committee:

Notice of finding of certification committee

- (1) Whenever the certification committee has expressed a finding in accordance with the provisions of this Act, the chairman or person authorized thereto in writing by him or her, shall issue a certificate in the prescribed form setting out such finding and containing such information as may be necessary for the purposes of this Act, and shall within ten days as from the date on which the finding was expressed, cause copies of such certificate to be sent-
- (a) to the commissioner;
 - (b) if the person to whom the certificate relates is still employed at a mine or works, to the owner of such mine or works;
 - (c) to the person to whom it relates, or if it relates to a deceased person, to the dependents, if any, of the deceased.
 - (d)(deleted)...
 - (e) if it is a finding of tuberculosis, to the local authority in whose area the person is to whom the certificate relates.

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter IV, Section 48)



An appeal can be made to the Review Authority for Occupational Disease regarding the findings of the Certification Committee with the limitation of this being lodged no longer than ninety (90) days after the date of the finding of the certification committee. The limitation for appeal of no longer than three (3) months appears to be an onerous restriction in the context of former miners and their families living in remote rural areas where post is irregularly collected and when the appeal must be lodged with the MBOD in Johannesburg.

Review of findings by reviewing authority

- (1) the reviewing authority may review any finding expressed by the certification committee if an application for such a review is lodged with the reviewing authority by the person to whom the finding relates or by any other person acting on his behalf or any organization so acting, or, in the case of a deceased person, by the dependents of the deceased or by any person or organization acting on behalf of such dependents, within ninety days as from the date on which the notice of the finding was given by the certification committee.

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter IV, Section 50)

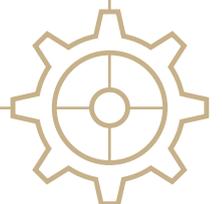
2.2.6 The basis on which benefits are calculated

The Department of Minerals and Energy sets the dust levies for all mines and risks works. The level of risk in all mines and risk works is assessed through periodic gravimetric dust sampling and dust related levies are set by the **Risk Committee for Mines and Works**. These levies are paid by the employer to the Compensation Commissioner for Occupational Disease (CCOD) which then administers the compensation fund called the **Mines and Works Compensation Fund**, and disbursement of payment to claimants. The CCOD is also a responsibility of the National Department of Health. The Act details the payment of levies as follows:

Amounts payable by owner of controlled mine or works

- (1) The commissioner shall determine in respect of each controlled mine or controlled works, in such manner and on such a basis as may be prescribed, an amount payable by the owner of that mine or works to the commissioner, for the benefit of the compensation fund, in respect of each shift worked by any person at or in connection with that mine or works during which such person performed risk work, in order to enable the commissioner to pay to or in respect of every person who performs risk work at or in connection with that mine or works and who is after the commencement of this Act found to be suffering from a compensatable disease, such amounts as may or are likely to become payable under this Act.

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter V, Section 62)



The ODMWA pays out a one lump sum compensation amount. These single payments are wage based and capped at a maximum salary of R2000.00 per month. The single lump sum compensation payment formula translates to less than eighteen (18) month's wages (capped at R2000 per month) for First Degree disease and less than thirty-six (36) month's wages (also capped at R2000.00 per month) for Second Degree disease. The calculations apply to the living as well as to the dependents of the dead. The formula used to calculate these amounts is specified in the following section of the Act:

Benefits payable after fixed date

- (1) When a person is suffering from tuberculosis which does not render him or her permanently unfit to do his ordinary work or to ply his trade or skills, if any, and the certification committee finds after the fixed date that-
 - (a) the said tuberculosis was contracted while the person was performing risk work at or in connection with a controlled mine or controlled works; or
 - (b) the said person was affected at any time within 12 months immediately after the date on which he or she performed work referred to in paragraph (a) for the last time,

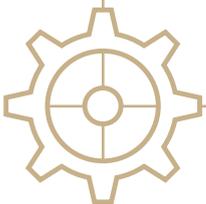
the commissioner may, on application of that person made in the prescribed manner, award to him or her an amount which is equal to 75 per cent of his loss of earnings during the period in which he or she has so suffered a loss of earnings, but not exceeding six months.

- (2) When the certification committee finds after the fixed date that a person is suffering from a compensatable disease which he or she contracted as a result of risk work at or in connection with a controlled mine or a controlled works, the commissioner shall award to such person a one-sum benefit calculated in accordance with the formula-

$$(A \times 12) \times B$$

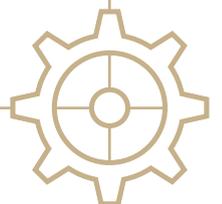
in which formula 'A' represents the person's earnings, but not exceeding an amount of R2 000, and 'B' represents-

- (a) in the case of a person who is found for the first time to be suffering from a compensatable disease in the first degree, 1,31;
- (b) in the case of a person who is found for the first time to be suffering from a compensatable disease in the second degree and-
 - (i) who did not previously become entitled to any benefit in terms of this Act, 2,917;
 - (ii) who previously became entitled to a one-sum benefit in respect of a compensatable disease in the first degree, 1,607;



- (3) The benefit calculated in accordance with the provisions of subsection (2) shall be an amount of at least R7000.
- (4) If a person who died after the fixed date was found to be suffering, at the time of his death, from a compensatable disease, there shall be payable to that person's dependents designated by the commissioner an amount which shall be equal to the one-sum benefit which would have been payable to him or her in terms of subsection (2) as well as in terms of section 79 (3) had he or she not died.

(Occupational Diseases in Mines and Works Act 78 of 1973, Chapter VI, Section 80)



chapter 3

Silicosis Prevalence Research in the last Decade

The late Professor Neil White of the Lung Institute at the University of Cape Town stated: “In my view, the South African gold mining associated silicosis and tuberculosis epidemic is without parallel in human history, when its extent in terms of duration, intensity and magnitude are all taken into account”.³⁷

Strong evidence of an epidemic³⁸ of silicosis has emerged in the last decade. The Libode (Eastern Cape) study³⁹ of 1998 and the Thamaga (Botswana) study⁴⁰ of 1997 showed that in excess of thirty percent (30%) of former mineworkers are suffering from lung diseases, principally silicosis, arising from their employment in the mines. The Safety in Mines Research Advisory Committee (SIMRAC) Health 606⁴¹ report of 2004 revealed a silicosis prevalence of almost twenty-four percent (23.9%) amongst current in-service miners, and noted that this was an underestimate both of prevalence and of lifelong risk. The results of a prevalence study amongst retrenched mineworkers from Lesotho⁴² showed a silicosis prevalence of almost twenty-five percent (24.6%). The findings of these prevalence studies are all consistent and sufficient to provide the evidence base for Dr Neil White’s statement.

It is remarkable that only two research studies in over seventy (70) years, the Libode study in South Africa and the Thamaga study in Botswana, have been done on the health status **and** compensation outcomes of ex-gold miners who had returned to their home areas. Although the most recent study on the health status of a cohort of retrenched gold miners from Lesotho added substantially to the growing body of evidence on the prevalence of silicosis, this recent research did not assess compensation status. It is additionally remarkable that studies of silicosis exposure response relationships in black miners while in employment had never been done until the 2003 SIMRAC Health 606 research by Churchyard *et al.* These seminal studies will thus be discussed in some detail in this Chapter, along with autopsy data on silicosis prevalence as provided by the Pathology Division of the National Institute for Occupational Health (NIOH).

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- 37 White, N. (2004) *Silicosis. What is to be done?* Theme Paper, Division of Occupational Medicine, University of Cape Town and Groote Schuur Hospital.
- 38 An epidemic is a prevailing or prevalent disease amongst many people at the same time in a community or region. The evidence presented from the Libode and Thamaga studies, as well as the SIMRAC 606 study, justifies the use of the term epidemic.
- 39 Trapido, A.S., Mqoqi, N.P., Williams, B., White, N.W., Solomon, A., Goode, R.H., Macheke, C.M., Davies, A.J., and Panter, C. (1998) *Prevalence of Occupational Lung Disease in a Random Sample of Former Mineworkers, Libode District, Eastern Cape Province, South Africa.* American Journal of Industrial Medicine 34:305-313
- 40 Steen, T.W., Gyi, K.M., White, N.W., Gabosianelwe, T., Ludick, S., Mazonde, G.N., Mabongo, N., Neube, M., Ehrlich, R. and Schierhout, G. (1997) *Prevalence of occupational lung disease among Botswana men formerly employed in the South African mining industry.* Occupational and Environmental Medicine, 54:19-26
- 41 Churchyard, G., Pemba, L., Magadla, B., Dekker, K., Vermeijs, M., Ehrlich, R., Te Water Naude, J., Myers, J., and White, N. (2003) *Silicosis prevalence and exposure response relationships in older black mineworkers on a South African goldmine.* Johannesburg, South Africa. Safety in Mines Research Advisory Committee.
- 42 Girdler-Brown, Brendan V., White, Neil W., Ehrlich, Rodney I., and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers.* American Journal of Industrial Medicine 51:640-647

3.1 The Thamaga Study

The Thamaga study⁴³ in Kweneng District, Botswana was a cross-sectional pneumoconiosis prevalence study of three hundred and four (304) former miners. It was a community based study that utilized a questionnaire, medical examination, chest radiography in accordance with the International Labour Organisation (ILO) Specifications, and spirometry. The District of Kweneng was selected as being typical of many in Botswana that have a long history of recruitment for the South African mines.

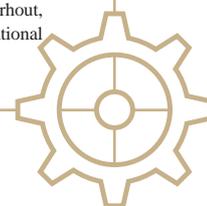
The sample was generated through a household survey where over one thousand (1000) former miners were identified. Random numbers generated a sample of one hundred and one (101) of the two hundred and twenty (220) who were invited to participate. A second sample of two hundred and three (203) was generated through open invitation to those former miners in the community who had a long mine service history or lung problems. The mean age was 56.7 years with a range of 28 - 93, and mean duration of mine service was 15.5 years with a range of 2 – 42 years and an average length of mine service of 14.7 years. Interesting additional data on the high prevalence of disabling injuries was generated from the research: over twenty-three percent (23.4%), or 71 cases, had an occupational injury ranging from finger injuries, finger amputations, lower limb fractures and dislocations, upper limb fractures and dislocations, multiple injuries and eye injuries which included three cases of total blindness caused by chemical burns.

The results of the Thamaga study revealed a high occupational disease burden amongst former migrant Batswana miners. The study found a pneumoconiosis prevalence of 26.6% – 31% (two readers), and a 6.8% prevalence of progressive massive fibrosis (PMF). Of those who had had most of their mining experience in gold mines, two hundred and thirty-four (234) had worked underground and detailed sub-analysis of results in underground gold miners was undertaken. It was found that although pneumoconiosis occurred in some miners after less than five years underground service, it “was not detected until six to ten years after first exposure. Similarly PMF was not read until 16 – 20 years after first exposure, although it was documented in men with fewer than five years of exposure. These findings indicate a latent period between exposure and manifestation of radiological abnormalities of at least five years for pneumoconiosis and at least 15 years for PMF”.⁴⁴ The study showed that, at the minimum, one of every five miners with pneumoconiosis will develop PMF.

There are some pertinent considerations in relation to possible challenges of inherent bias in the design of the Thamaga study. These are discussed by the authors, and relate to selection and survival biases in the population sample. Clearly, self selection can increase prevalence estimates. However, the study found no significant difference

43 Steen, T. W. , Gyi, K. M. , White, N.W. , Gabosianelwe, T. , Ludick, S. , Mazonde, G. N. , Mabongo, N. , Neube, M. , Ehrlich, R. and Schierhout, G. (1997) *Prevalence of occupational lung disease among Botswana men formerly employed in the South African mining industry*. Occupational and Environmental Medicine, 54:19-26 (1997)

44 Steen, T. W. , Gyi, K. M. , White, N.W. , Gabosianelwe, T. , Ludick, S. , Mazonde, G. N. , Mabongo, N. , Neube, M. , Ehrlich, R. and Schierhout, G. (1997) *Prevalence of occupational lung disease among Botswana men formerly employed in the South African mining industry*. Occupational and Environmental Medicine, 54: p.22.



between prevalence rates in cases included through random selection and those cases included through open invitation. A second claim of bias in the prevalence findings could relate to the charge that these men were selected out of mine service as a consequence of lung disease; that is, a population of sick workers. However, the reverse bias could equally well apply in terms of the healthy worker effect; that is, this is a survivor population group and prevalence estimates would in fact be higher had those who have already died from lung disease been included in the study. What was probably a more important factor in selecting these miners out of mine service was the ongoing contraction in availability of jobs, particularly in the context of changing norms regarding the hiring of migrant miners from South Africa's neighbouring states.

The Thamaga study concluded: "Former miners in Botswana have a high prevalence of previously unrecognized pneumoconiosis, indicative of high previous exposures to fibrogenic respirable dust. Their pneumoconiosis went unrecognized because they had no access to surveillance after employment."⁴⁵

3.2 The Libode Study

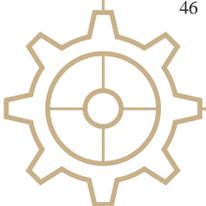
The Libode study (1998) evaluated the prevalence of occupational lung disease in a random sample of former mineworkers and assessed the extent to which workers had been previously compensated under the ODMWA.⁴⁶ The Libode District was chosen because it is a typical labour-sending area complete with an office of The Employment Bureau of Africa (TEBA), formerly known as the Native Recruiting Centre, with its mine labour recruitment records. The TEBA records were used to generate the random sample of miners to participate in the study. The time frame of recruitment was limited to the period from 1969 to 1980: during this period 11,706 men were recruited by TEBA for mine work. The necessary sample size for such a prevalence study is 400. However, to allow for the probability that many of the men might still be working or might be dead, the sample size was increased to 800. The records were numbered and a random sample was generated.

A tracing method was then developed from the TEBA records wherein the rural addresses of the men provide information on the respective village settlements, headmen and chiefs. This required the assistance of community leaders to trace the men. Community meetings were held in all twenty-five (25) settlements in the Libode District, and these meetings were attended by civic leaders, traditional leaders, National Union of Mineworker (NUM) representatives, and an employee of TEBA, and served to explain the aims of the research and discuss informed consent for participation.

Of the random sample of eight hundred (800) miners, fifty-six percent (56%) or four hundred and forty-six men (446) were discovered to be dead. These figures are very strongly indicative that the alive 44%, or three hundred and fifty-four (354) men, are

45 Steen, T. W. , Gyi, K. M. , White, N. W. , Gabosianelwe, T. , Ludick, S. , Mazonde, G. N. , Mabongo, N. , Ncube, M. , Ehrlich, R. and Schierhout, G. (1997) *Prevalence of occupational lung disease among Botswana men formerly employed in the South African mining industry*. Occupational and Environmental Medicine, 54: p. 19

46 Trapido, A. S. , Mqoqi, N. P. , Williams, B. , White, N. W. , Solomon, A. , Goode, R. H. , Macheke, C. M. , Davies, A. J. , and Panter, C. (1998) *Prevalence of Occupational Lung Disease in a Random Sample of Former Mineworkers, Libode District, Eastern Cape Province, South Africa*. American Journal of Industrial Medicine 34:305-313



in fact a “healthier” survivor group. One hundred and sixteen (116) men were found to be still working on the mines and were thus excluded from the sample. This left two hundred and thirty-eight (238) men available for medical examination and compensation history investigation.

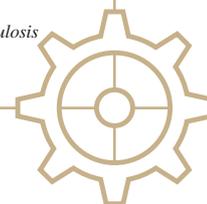
The mean age of these former miners was 52.8 years with a range of 34 to 78 years, and the mean length of service 12.15 years with a range of 6 months to 34 years. Mine service was confirmed through the TEBA records. Of considerable importance from this study is the finding that the self-reported mine service records were consistent with the TEBA records, indicating a reliable accuracy in the reporting by the miners themselves of where and when they served the mining industry.

The proportion of cases diagnosed as having pneumoconiosis was between 22% and 36% (two readers). All these cases were then assessed by the certification committee of the MBOD. Twenty-four percent (24%) of the sample were certified as having a compensatable lung disease. Other cases were taken on appeal. Thirty-six percent (36%) of the certified cases were certified as First Degree pneumoconiosis, and sixty-four percent (64%) were certified as Second Degree pneumoconiosis. Notably 63% of those cases certified as eligible for compensation had had not been compensated under the ODMWA. Of those that had been compensated by the Compensation Commissioner for Occupational Disease (CCOD), 35% had progressed to Second Degree compensatable disease and were thus due for additional compensation. Only 2.5% of those identified as having a compensatable disease had been compensated fully in terms of the provisions of the ODMWA. Of note is that, aside from righting the wrongs of the failures in surveillance and the failures in payments that the men were legally entitled to, the eventual compensation payments to the study participants amounted to a considerable “injection” of money into an impoverished community.

It was noted by the researchers of study on the prevalence of lung disease amongst former Basotho miners (discussed in section 3.4) that a limitation of the Libode study (and Thamaga study – discussed in section 3.3) “is that they included only surviving former miners who were resident in the sending areas at the time of the study. As a result of this limitation the prevalence of silicosis may have been underestimated if those most seriously affected by silicosis had died during the 12 – 15 years since last mining employment. Conversely, silicosis prevalence may have been overestimated if a substantial proportion were excluded because they had found alternative employment and were not resident in the area at the time of the study”⁴⁷. It would seem that the former limitation, an underestimate, is the far more likely scenario within the realities of high unemployment and consequent return to home rural areas, and the fact that the Libode random sample was a survivor group with the majority of the original random sample of 800 having died.

The authors of the Libode study comment that “the cross sectional design of the study only charts the disease status of living people who are not in mine service. It can be argued that men at home in the rural areas represent those selected out of active mining due to lung disease and that this could bias the prevalence data. Two points can be

47 Girdler-Brown, Brendan V., White, Neil W., Ehrlich, Rodney I., and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p.645



made in response to this argument. First, for this to be a plausible explanation, one would expect a higher number of previous certifications to have been recorded by the compensation authorities than the figures shown above. Second, if the random sample group has been selected out of mining due to lung disease, it points to underreporting of occupational disease. Given that both tuberculosis and pneumoconiosis can adversely affect survival, it is also possible that men alive and at home represent an aberrant “healthy” group who are in some way different from the large numbers of dead people in the random sample”.⁴⁸

With such shockingly high silicosis prevalence findings, it is not surprising that the mining industry attempted to discredit the Libode study. Dr M.A.C. La Grange, the then Health Advisor to the Chamber of Mines, claimed in the South African Medical Journal, that the research in Libode was “sensationalized” with headlines such as “Rural suffering”, and that it was not “scientific research”, maintaining that the results were “based on the interpretation of the researchers themselves, and open to all sorts of bias”.⁴⁹ The Libode x-rays were, however, read by two experienced occupational health practitioners: one an experienced registered pulmonologist and occupational medicine practitioner and the other an experienced registered radiologist. X-rays were read blinded and independent, and according to ILO standards. The readings were subsequently confirmed by the Certification Committee of the MBOD. What could be more thorough? The study was a fully randomized sample generated from the TEBA recruitment records of 11, 706 men. While it was a thoroughly scientific study, the findings and the implications thereof were simply not acceptable to the South African mining industry.

Dr La Grange further, erroneously, maintained that silicosis “even in a moderately advanced stage is hardly ever a serious illness”⁵⁰. This is a highly questionable claim if only in the light of the proven increased risk of tuberculosis in the presence of silicosis, the increased risk of respiratory tract infections, the high risk of silicotics developing progressive massive fibrosis (PMF) and the risk of lung cancer. The further question of degrees of disability for those whose only asset is a healthy body in order to sell their physical labour does not seem to have been considered by the biomedical model of Dr La Grange. The Epidemiology Research Unit, linked to the MBOD, that had undertaken the Libode study was promptly closed down. However, a few years later in 2003, further sound evidence of the epidemic of silicosis in gold mining was revealed by a prevalence study amongst in-service miners known as the Health 606 study.⁵¹ The authors of the Health 606 report comment: “Silicosis cannot be regarded as a benign disease on the goldmines”.⁵²



48 Trapido, A. S. , Mqoqi, N. P. , Williams, B. , White, N. W. , Solomon, A. , Goode, R. H. , Macheke, C. M. , Davies, A. J. , and Panter, C. (1998) *Prevalence of Occupational Lung Disease in a Random Sample of Former Mineworkers, Libode District, Eastern Cape Province, South Africa.* American Journal of Industrial Medicine 34: p.312

49 La Grange, M.A.C. (1996) *Occupational lung diseases in former mineworkers.* South African Medical Journal, Volume 86, no 7, July 1996

50 La Grange, M.A.C. (1996) *Occupational lung diseases in former mineworkers.* South African Medical Journal, Volume 86, no 7, July 1996.

51 Churchyard, G. , Pemba, L. , Magadla, B., Dekker, K. , Vermeijs, M. , Ehrlich, R., Te Water Naude, J. , Myers, J. , and White, N. (2003) *Silicosis prevalence and exposure response relationships in older black mineworkers on a South African goldmine.* Johannesburg, South Africa. Safety in Mines Research Advisory Committee.

52 Churchyard, G. , Pemba, L. , Magadla, B., Dekker, K. , Vermeijs, M. , Ehrlich, R., Te Water Naude, J. , Myers, J. , and White, N. (2003) *Silicosis prevalence and exposure response relationships in older black mineworkers on a South African goldmine.* Johannesburg, South Africa. Safety in Mines Research Advisory Committee. P.20



There are clearly severe problems in the ODMWA system – the Libode study showed a high prevalence of previously uncompensated radiological pneumoconiosis in a random sample of former mineworkers, indicating, first, the failure of surveillance mechanisms and, second, a low level of knowledge and implementation of the provisions of the ODMWA. It does not appear that there have been any improvements in health systems surveillance in the decade since the Libode study; in fact, it appears that while there was some improvement in the availability of services in Libode district immediately subsequent to the study, the initiated improvements in surveillance services have since deteriorated so that now neither St Barnabas Hospital, used for the Libode study, nor Mthatha General Hospital, are providing Benefit Medical Examination (BME) services.⁵³

3.3 The Safety in Mines Research Advisory Committee Health 606 Study

The objectives of the Safety in Mines Research Advisory Committee's (SIMRAC) Health 606 research⁵⁴ were to measure the prevalence of silicosis amongst in-service black gold miners, and to measure the exposure-response relationship between silica dust exposure and silicosis for in-service black gold miners. A sequential sample of five hundred and twenty (520) longer service miners, the youngest being thirty-eight (38) years old, underwent medical examinations in 2001. This age group was decided upon as most of these miners would have had twenty (20) years or more of service. Miners were recruited into the study on their return from annual leave. Length of service ranged from just over six (6.3) years to over thirty-four years (34.5), with ninety percent (90%) having had between thirteen (13) and thirty (30) years mine service.

A questionnaire was administered, and medical examination undertaken along with chest x-rays. These x-rays were read into the ILO Classification of Chest Radiographs of the Pneumoconioses by two readers who were both certified by the National Institute for Occupational Safety and Health (NIOSH), USA.

Although the exposure-response findings will not be discussed herein, it is important to note that this study was the first study to relate silicosis prevalence to measures of exposure; in other words to relate the exposure-response relationship between silica dust exposure and silicosis. This allowed recommendations to be made regarding occupational exposure levels (OEL) and showed the need for improved dust control; importantly, the exposure response findings indicated that the current OEL of 0.1mg/m³ does not protect against silicosis and that an OEL of 0.05mg/m³ would not be protective either.

The study found a silicosis prevalence of 23.9 percent, with a further 28.9 percent being read radiologically as abnormal but as having no parenchymal abnormalities. Only forty-three point five percent (43.5%) of the x-rays, or 226 men, were read as radiologically normal. Two prevalence findings need to be noted: the first prevalence of nearly twenty-four percent (23.9%) used the International Labour Organisation (ILO) profusion

53 Personal communication, October 2007, Dr Nava, Medical Superintendent, St Barnabas Hospital, Libode.

54 Churchyard, G., Pemba, L., Magadla, B., Dekker, K., Vermeijs, M., Ehrlich, R., Te Water Naude, J., Myers, J., and White, N. (2003) *Silicosis prevalence and exposure response relationships in older black mineworkers on a South African goldmine*. Johannesburg, South Africa. Safety in Mines Research Advisory Committee.



>1/0 as the definition of silicosis, and the second prevalence finding of eighteen point three percent (18.3%) used the ILO profusion > 1/1 as the definition of silicosis.

This translates to either one in four of in-service black miners over 38 years of age having silicosis, and almost one in five at the higher cut off point. Whichever cut-off point is used, it is evidence of an epidemic of silicosis amongst in-service black gold miners. Additional findings were that fifty percent (50%) of the x-rays where silicosis was present were read at the 2 or 3 level of profusion, revealing a severe degree of silicosis.

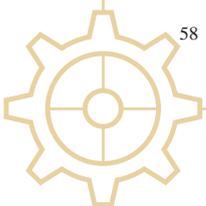
The Health 606 report notes: “In interpreting this prevalence derived from a cross-sectional study, one has to take into account a number of factors. The group studied excluded workers under the age of 38 years, who would have a lower prevalence of silicosis in keeping with their shorter service. On the other hand, the workforce is a ‘healthy survivor’ cohort in that workers found to have complicated pneumoconiosis (including silico-tuberculosis) are required by law to be barred from further risk work and would be selected out of the workforce. The prevalence in current workers is thus an underestimate.”⁵⁵ In other words, prevalence findings amongst in-service miners contains a selection bias: it does not include those who might have developed silicosis while in mine service and then left mine employment, nor does it include those who develop silicosis after exposure has ended and they have returned home.

It is noted by the authors that “prevalence underestimates lifetime cumulative risk (“true risk”). It is well established that quartz exposure carries a lifelong risk of incident (newly appearing) silicosis even after exposure has ceased.”⁵⁶ This reality of disease latency is extremely important in the light of labour migrancy and the return, post-employment, to the rural areas of South Africa. The Health 606 report concludes: “allowing for the fact that the sample in this study was chosen to represent older mineworkers, if one extrapolates these results to the goldmining industry in general, they confirm the existence of a significant epidemic of silicosis in the industry and a concomitant need for dust reduction strategies”⁵⁷.

3.4 A Prevalence Study Amongst Former Basotho Goldminers

A large prevalence study began in 2000 amongst a group of retrenched gold miners from Lesotho. Findings were published in the American Journal of Industrial Medicine in 2008.⁵⁸ This prevalence study was funded via a contract grant from AngloGold Corporation and was undertaken at the company’s mine hospital in the Free State. In investigating the burden of silicosis, pulmonary tuberculosis and COPD, it involved

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- 55 Churchyard, G., Pemba, L., Magadla, B., Dekker, K., Vermeijs, M., Ehrlich, R., Te Water Naude, J., Myers, J., and White, N. (2003) *Silicosis prevalence and exposure response relationships in older black mineworkers on a South African goldmine*. Johannesburg, South Africa. Safety in Mines Research Advisory Committee. p.4
- 56 Churchyard, G., Pemba, L., Magadla, B., Dekker, K., Vermeijs, M., Ehrlich, R., Te Water Naude, J., Myers, J., and White, N. (2003) *Silicosis prevalence and exposure response relationships in older black mineworkers on a South African goldmine*. Johannesburg, South Africa. Safety in Mines Research Advisory Committee. p.35
- 57 Churchyard, G., Pemba, L., Magadla, B., Dekker, K., Vermeijs, M., Ehrlich, R., Te Water Naude, J., Myers, J., and White, N. (2003) *Silicosis prevalence and exposure response relationships in older black mineworkers on a South African goldmine*. Johannesburg, South Africa. Safety in Mines Research Advisory Committee. p.40
- 58 Girdler-Brown, Brendan V., White, Neil W., Ehrlich, Rodney I., and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51:640-647



administration of a respiratory questionnaire, chest radiography (with four readers), spirometry, tuberculosis investigations, and urine HIV antibody assays. It is the first study to report on all three lung diseases amongst a group of miners shortly after their departure from mine service.

The sample comprised seven hundred and seventy-nine (779) former gold miners from Lesotho who had all been retrenched at the same time due to the closure of a mine shaft in March 1998. The study began eighteen (18) months later in locating the former miners through The Employment Bureau of Africa (TEBA) records and inviting them to participate. They were then taken by bus to the mine hospital in the Free State. The authors note that “relatively little is known of the burden of lung disease among former miners owing to a lack of surveillance and poor access to health services” and that “two studies of former black miners who worked in South African gold mines have demonstrated a high prevalence of silicosis”.⁵⁹ The two studies referred to are, of course, the Trapido *et al* Libode study and the Steen *et al* Thamaga study.

Six hundred and twenty-four (624) of the retrenched Basotho miners participated in the study. The mean age was forty-seven (47.4) years. The average duration of mine employment was over twenty-five (25.6) years. Of the one hundred and fifty-five (155) “who did not report for their examination”⁶⁰, forty-one (41) had died. Thirty-five (35) of these deaths (85.4%) were reported, via verbal autopsy, as having had symptoms of lung disease. The other six were recorded as two having died from “assaults”, one from an “accident”, one from “myocardial infarction”, one from “severe diarrhoea” and one from “cancer of the oesophagus”.⁶¹ The mean age for the deceased was 49.2 years. It was noted that “it is unlikely that all deaths were identified and some of the 114 miners who did not attend, and who were not recorded by us as having died, may in fact have died”.⁶²

The study showed a very high prevalence of silicosis, TB and COPD. The TB results are discussed in Chapter Four. Silicosis prevalence was almost twenty-five percent (24.6%) and “thus of a similar order of magnitude”⁶³ as the prevalence findings of the Libode, Thamaga and Health 606 studies. In relation to the generalisability of the findings to the gold mining industry as a whole, the authors note: “However, because miners with severe silicosis might be declared medically unfit for work or choose not to continue with mine work, cross sectional studies are always likely to provide us with a somewhat censored idea of the real lifetime risk that is faced by underground miners employed in the South African gold mines”.⁶⁴ As shockingly high as the prevalence findings of this study amongst Basotho miners are, the real lifetime risk is likely to be

59 Girdler-Brown, Brendan V. , White, Neil W. , Ehrlich, Rodney I. , and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p. 640

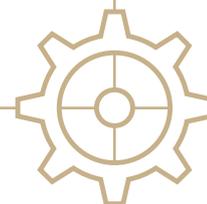
60 Girdler-Brown, Brendan V. , White, Neil W. , Ehrlich, Rodney I. , and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p. 643

61 Girdler-Brown, Brendan V. , White, Neil W. , Ehrlich, Rodney I. , and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p. 643

62 Girdler-Brown, Brendan V. , White, Neil W. , Ehrlich, Rodney I. , and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p. 645

63 Girdler-Brown, Brendan V. , White, Neil W. , Ehrlich, Rodney I. , and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p. 645

64 Girdler-Brown, Brendan V. , White, Neil W. , Ehrlich, Rodney I. , and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p. 645



far greater than this prevalence study reveals. Whether this prevalence finding is an underestimate, as is likely, or, as some might argue, an overestimate due to factors such as the sample being predominantly men from medium and high dust jobs, the extremely high rate of silicosis is of great concern. It is a “huge burden of morbidity and health care need. Access to diagnostic treatment and compensation services is known to be poor in many labor sending communities, compounding the serious health and economic consequences of lung disease for former miners, their families and communities”⁶⁵.

The four prevalence studies of the last decade as discussed (Libode, Thamaga, Health 606 and the Basotho gold miners study) are all consistent and provide sufficient evidence of an extremely high rate of silicosis amongst gold miners. It is notable that the prevalence rates are provided by specific scientifically sound research studies undertaken by medical specialists and scientists. It is unfortunate that accurate prevalence rates can not be obtained from the routinely collected data of the MBOD or from the pathology division of the NIOH. However, the four prevalence studies discussed in this chapter indicate, without doubt, that there is a large burden of undiagnosed silicosis amongst gold miners in South Africa. It is, as Shula Marks has called it, the silent scourge.⁶⁶

3.5 Annual Autopsy Data from the NIOH Pathology Division

The ODMWA requires that the cardio-respiratory organs of a deceased person who has worked at a controlled mine or works be examined for the presence of occupational disease, regardless of the clinical cause of death. There is a legal obligation on the part of any medical practitioner attending the deceased to inform the family of this statutory requirement. For those miners or former miners residing further afield, only the cardio-respiratory organs are removed, preserved in formalin and sent to the National Institute for Occupational Health (NIOH) in Johannesburg. The Pathology Division of the NIOH falls under the National Health Laboratory Service (NHLS). Those miners who die closer to Johannesburg receive a full autopsy. For the overwhelming majority, however, the autopsy is limited to the cardio-respiratory organs. Importantly, the NIOH Pathology Surveillance Report 14/2008 states: “These data are the only comprehensive surveillance data on occupational lung disease in the South African mining industry”.⁶⁷ The surveillance results from the two most recent reports of the NIOH (2007 and 2008) will thus be presented in some detail.

The NIOH 2008 Pathology Division report notes: “The majority of retired white miners come to autopsy”⁶⁸ Notably, from a retrospective cohort study by Hnzido and Murray (1997) of the 1592 white miners who had died 81% (n=1296) had a necropsy done at the NIOH.⁶⁹

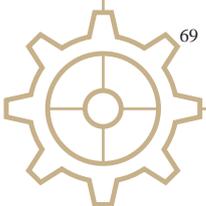
65 Girdler-Brown, Brendan V. , White, Neil W. , Ehrlich, Rodney I. , and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p. 646

66 Marks, Shula. (2003) *The silent scourge? Silicosis, respiratory disease and gold-mining in South Africa*. Paper presented at, and published by, the Wits Institute for Social and Economic Research. (WISER)

67 National Institute for Occupational Health (2008) *Pathology Division Surveillance Report: Demographic Data and Disease Rates for January to December 2007* NIOH Report 14/2008 p.1, Johannesburg

68 National Institute for Occupational Health (2008) *Pathology Division Surveillance Report: Demographic Data and Disease Rates for January to December 2007* NIOH Report 14/2008 p.2, Johannesburg.

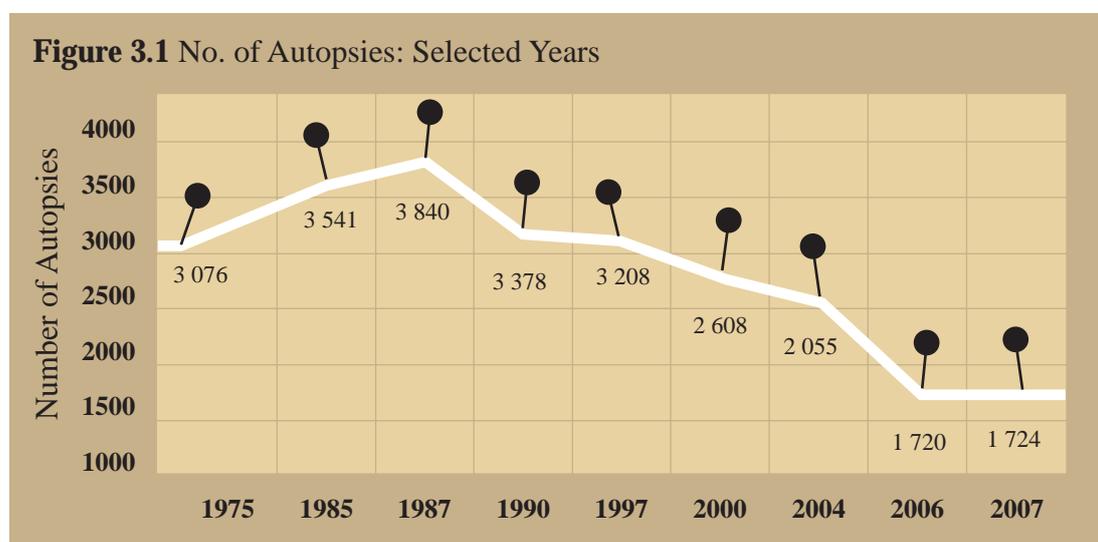
69 Hnzido, Eva and Murray Jill (1998) *Risk of pulmonary tuberculosis relative to silicosis and exposure to silica dust in South African gold miners*. Occupational and Environmental Medicine 1998; 55: 496 - 502



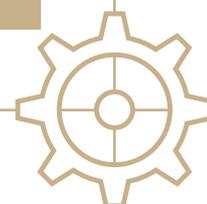
Despite the requirements of the ODMWA, and an obligation on the part of medical practitioners, the numbers of autopsies in relation to the number of men who are in and who have passed through the South African mining industry remains shockingly low. The total number of autopsies annually would appear to reflect a country with a small mining industry and certainly not a country that has had hundreds of thousands of men working in its mines over many decades. It can be concluded that a tiny proportion of all miners receive an autopsy examination. This, however, is not a privilege but a fundamental and basic right under the ODMWA so that, if not diagnosed with an occupationally related disease in life, at least there is a last chance of diagnosis after death and, thereby, for compensation for dependents if certified with an occupationally caused disease.

NIOH autopsy data was not disaggregated into current miners and former miners until the latest Report 14/2008. Just over a third of all autopsies in 2007 were former miners (35.6% or 614 cases) while nearly two thirds were current miners (59% or 1017 cases). Five percent (5.4 or 93 cases) could not be classified as either current or former miners. This disaggregated data indicates that the chance of receiving an autopsy for black miners is far greater while in mine service than after leaving mine service. It is indisputable that the mortality rate, for all causes, amongst former black miners will be far higher than amongst current miners and the inverse should thus apply; that is, the higher proportion of autopsies should be the group of former miners.

As the following figure will show there was a steady increase in number of miners coming to autopsy until 1987, whereafter there has been a progressive decrease in the number of miners coming to autopsy. Some might argue that there has been a considerable decrease in the numbers employed in the mining industry since the early 1990s and hence the decrease in numbers coming to autopsy. This argument is fallacious as those large numbers of retrenched miners, no longer counted in the now contracted mine employment figures, remain entitled to an autopsy examination when they die. It should be the opposite scenario that prevails - a steady increase in autopsy numbers as those retrenched miners die. It cannot be argued that the large contraction in mine employment figures is the simple explanation for decreasing numbers of autopsy examinations.



Source of Data: Pathology Division Surveillance Report, NIOH 14/2008



The NIOH Pathology Division Surveillance Report of 2007 provides autopsy data for 2006 during which only 1720 cases came to autopsy.⁷⁰ The 2008 report records only 1 724 cases coming to autopsy in 2007.⁷¹ The clinical causes of death for black and white miners for 2006 and 2007 are presented in the following table. Black miners coming to autopsy have a very high percentage of respiratory disease (533 cases or 45.8% in 2006 and 580 cases or 50.7% in 2007), along with a high percentage of unnatural deaths (131 cases or 11.3% in 2006 and 124 cases or 10.8% in 2007). There is, surprisingly, a high percentage of white miners where cause of death was not stated.

Table 3.1 Clinical Causes of Death in % for Black & White Miners, 2006 and 2007

| Clinical Causes of death | Black Miners 2006 | Black Miners 2007 | White Miners 2006 | White Miners 2007 |
|--------------------------|-------------------|-------------------|-------------------|-------------------|
| Respiratory | 45.8 | 50.7 | 19.8 | 23.0 |
| Miscellaneous | 13.0 | 11.9 | 14.6 | 19.9 |
| Unnatural | 11.3 | 10.8 | 8.8 | 11.5 |
| Central Nervous system | 10.5 | 9.1 | 4.9 | 2.0 |
| Gastro intestinal | 6.2 | 5.7 | 4.1 | 2.8 |
| Not stated | 6.1 | 6.6 | 27.5 | 21.7 |
| Cardio-vascular | 4.1 | 2.4 | 17.9 | 16.1 |
| Genito urinary | 2.3 | 2.0 | 1.9 | 2.6 |
| Haematological | 0.9 | 0.8 | 0.6 | 0.4 |

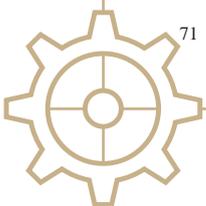
Source of Data: NIOH Pathology Division Surveillance Reports 2/2007 and 14/2008

Occupational diseases reported on are pulmonary tuberculosis (discussed in Chapter four), emphysema, silicosis, primary lung cancer, asbestosis, mesothelioma, massive fibrosis, coal workers' pneumoconiosis and mixed dust pneumoconiosis. Discussion herein will be limited to silicosis. It must be remembered that for the rates cited, the denominator used is the total number of autopsies.

In 2006, silicotic nodules were found in the lungs of over twenty-three percent (23.8%) of all autopsies, ninety-one percent (91%) of which came from the gold mining industry. In 2007, silicotic nodules were found in the lungs of 22.9% of all autopsies with eighty-eight percent (88%) coming from the gold mining industry. The rate of silicosis in gold miners increased from 191/1000 in 2000 to 316/1000 in 2006, decreasing slightly to 303/1000 in 2007.

⁷⁰ National Institute for Occupational Health (2007) *Pathology Division Surveillance Report: Demographic Data and Disease Rates for January to December 2006*. NIOH Report 2/2007, Johannesburg.

⁷¹ National Institute for Occupational Health (2008) *Pathology Division Surveillance Report: Demographic Data and Disease Rates for January to December 2007*, NIOH Report 14/2008, Johannesburg.



A race-based referral bias is indicated in that a disproportionately higher number of white miners came to autopsy at thirty-one percent (31.1%) of the total cases in 2006. This remained unchanged in 2007 at thirty-one percent (31.3%). This is entirely disproportionate to the population group breakdown within the mining industry. It is additionally notable that the mean age at autopsy for black miners was nearly forty-five years (44.7) in 2006 and slightly lower at forty-four and a half years (44.5) in 2007, while the mean age at autopsy for white miners was just over sixty-five years (65.1) in 2006, and nearly sixty-four years (63.9) in 2007. A large proportion of the autopsies for black miners are likely to have been for those who had died in mining accidents as detailed earlier in the section on clinical causes of death being “unnatural”.

The low numbers of black miners reaching autopsy is most likely a consequence of insufficient knowledge of the provisions of the ODMWA on the part of the miners themselves, their relatives and health personnel. An explanation frequently put forward for the low numbers of black miners coming to autopsy has long been that of “culture” or “tradition”; in other words a reluctance on the part of relatives to agree to the removal of the cardio-respiratory organs for the purposes of post-mortem examination and ‘insistence’ on intact burial. This is a highly questionable claim and was thus an important area of inquiry for this research, along with inquiry regarding preferences for allopathic or traditional medicine.

As is to be expected, silicosis rates increased with increasing age in both black and white miners but the age distribution of cases differed between the two population groups for both 2006 and 2007. Of note is that autopsy data reveals that silicosis was diagnosed in sixteen (16) men under forty (40) years of age in 2006, and in eighteen (18) men under forty (40) years of age in 2007, thus placing questions yet again around the long-standing claim that silicosis requires decades long exposure to dust containing silica.

The rates of silicosis for black miners are considerably higher for every age group, and in most age groups are more than double the rate for white miners, indicative of much higher numbers of black miners in high dust jobs. The selected data presented in the following two tables reveals that the silicosis rate for black miners between the ages of 40 and 49 was 380/1000 in 2006 and 388/1000 in 2007, while for white miners in the same age group it was 200/1000 in 2006 and 103/1000 in 2007. In the age group 50 – 59, the silicosis rate for black miners was 475/1000 in 2006 and 559/1000 in 2007, and for white miners 222/1000 in 2006 and 184/1000. Thus an increasing rate for silicosis in black miners can be noted, while there has been a decrease in the rate of silicosis in white miners. The higher numbers in the older age groups amongst white miners and higher numbers in the younger age groups among black miners is also notable.

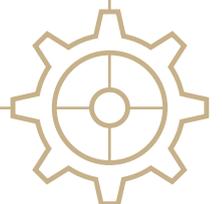


Table 3.2 Prevalence of Silicosis in the Gold Mining Industry by Age and Population Group, 2006

| Age | Black No. | Black Rate | White No. | White Rate |
|---------|-----------|------------|-----------|------------|
| 30 - 39 | 15 | 86 | 1 | 71 |
| 40 - 49 | 150 | 380 | 7 | 200 |
| 50 - 59 | 77 | 475 | 14 | 222 |
| 60 - 69 | 6 | 667 | 37 | 301 |
| 70 - 79 | 0 | – | 36 | 356 |

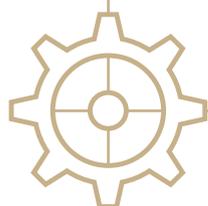
Source of Data: Pathology Division Surveillance Report, NIOH Report 2/2007

Table 3.3 Prevalence of Silicosis in the Gold Mining Industry by Age and Population Group, 2007

| Age | Black No. | Black Rate | White No. | White Rate |
|---------|-----------|------------|-----------|------------|
| 30 - 39 | 16 | 95 | 0 | – |
| 40 - 49 | 145 | 388 | 4 | 103 |
| 50 - 59 | 85 | 559 | 18 | 184 |
| 60 - 69 | 3 | 273 | 28 | 269 |
| 70 - 79 | 0 | – | 28 | 286 |

Source of Data: Pathology Division Surveillance Report, NIOH Report 14/2008

Silicosis was diagnosed in men with the relatively short exposure to silica of less than ten (10) years. There were twenty-nine (29) cases of silicosis in men with less than ten (10) years service in 2006, and thirty-six (36) cases in 2007. There were forty-seven (47) cases of silicosis in men with between eleven (11) and fifteen (15) years service in 2006, and thirty-five (35) cases in 2007. The following two tables show the number of cases of silicosis, the rate of silicosis by population group and the number of years of service in the gold mining industry for 2006 and 2007.



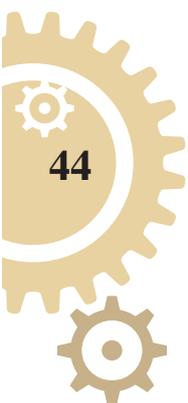


Table 3.4 Number of Cases and Prevalence of Silicosis in the Gold Mining Industry and Years of Service, 2006

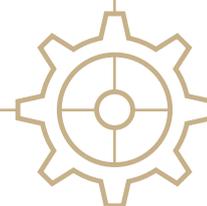
| Years of Service | Black No. | Black Rate | White No. | White Rate | Total No. | Total Rate |
|------------------|-----------|------------|-----------|------------|-----------|------------|
| <1 | 3 | 231 | 0 | – | 3 | 214 |
| 1 - 5 | 2 | 31 | 0 | – | 2 | 29 |
| 6 - 10 | 14 | 125 | 10 | 263 | 24 | 160 |
| 11 - 15 | 38 | 264 | 9 | 196 | 47 | 247 |
| 16 - 20 | 77 | 358 | 11 | 229 | 88 | 335 |
| 21 - 25 | 72 | 497 | 19 | 302 | 49 | 412 |
| 26 - 30 | 30 | 536 | 19 | 302 | 49 | 368 |
| 31 - 35 | 12 | 667 | 16 | 276 | 28 | 368 |
| 36 - 40 | 2 | 667 | 21 | 438 | 23 | 451 |

Source of Data: Pathology Division Surveillance Report, NIOH Report 2/2007

Table 3.5 Number of Cases and Prevalence of Silicosis in the Gold Mining Industry and Years of Service, 2007

| Years of Service | Black No. | Black Rate | White No. | White Rate | Total No. | Total Rate |
|------------------|-----------|------------|-----------|------------|-----------|------------|
| <1 | 1 | 91 | 0 | – | 1 | 77 |
| 1 - 5 | 12 | 152 | 1 | 63 | 13 | 135 |
| 6 - 10 | 19 | 179 | 3 | 83 | 22 | 155 |
| 11 - 15 | 28 | 203 | 7 | 149 | 35 | 188 |
| 16 - 20 | 76 | 396 | 16 | 239 | 92 | 355 |
| 21 - 25 | 74 | 548 | 15 | 246 | 89 | 454 |
| 26 - 30 | 27 | 529 | 21 | 344 | 48 | 429 |
| 31 - 35 | 11 | 733 | 21 | 412 | 32 | 478 |
| 36 - 40 | 1 | 1000 | 7 | 189 | 8 | 211 |

Source of Data: Pathology Division Surveillance Report, NIOH Report 14/2008

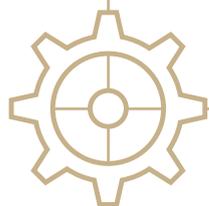


3.6 Conclusion

For the purposes of easy comparison the silicosis prevalence findings of all the research studies, presented in some detail this chapter, are provided in the following table.

Table 3.6 Summary of Available Data on the Prevalence of Silicosis

| Prevalence Study | Prevalence Rate: Silicosis |
|--------------------------------------|----------------------------|
| Libode (South African former miners) | 22.0% - 36.0% |
| Thamaga (Batswana former miners) | 26.6% - 31.0% |
| SIMRAC Health 606 (Current Miners) | 23.9% |
| Lesotho (former miners) | 24.6% |
| NIOH Autopsy Data 2007 | 22.9% |



Tuberculosis as an Occupationally Related Disease

A further burden of disease is tuberculosis: the annual incidence of tuberculosis (TB) amongst mineworkers is 4200/100,000; almost four times (4x) the national incidence for SA of 550/100,000.⁷² Clearly the risk of TB is far higher for miners than for the general population. Many studies have shown that silicosis and underground work are strong risk factors for pulmonary TB. Tuberculosis is classified as a compensable disease for those in mine work if acquired during service or if acquired within one year of leaving mine service. A substantially increased lifetime risk of tuberculosis for miners brings this post-employment one year limitation for classification of Tuberculosis as an occupational disease, and thereby for compensation, into question. Tuberculosis must be seen as a “product of a particularly pathological intersection of political, economic, and biological processes that have a much wider distribution”.⁷³

4.1 A Short History of the Intersection of Tuberculosis and Mining

It was established in the latter decades of the 19th Century that silicosis predisposed miners to tuberculosis. Anthony J. Lanza, a important American specialist in Industrial Hygiene, at the time a newly developing field of knowledge, noted as early as 1913 that the relationship between pneumoconiosis and tuberculosis was significant, and that miners exposed to dust were at an increased risk of tuberculosis even in the absence of poor socio-economic living conditions⁷⁴. Frederick Hoffman, researching granite stone workers in the United States in the 1920s, showed that silicosis alone was sufficient to lead to higher rates of tuberculosis⁷⁵. Hoffman found the rate of tuberculosis was proportionate to the length of time exposed to silica. As the granite stone workers had extremely good living conditions, Hoffman took up the issue with the experts in public health who saw poor living conditions as a necessary precondition for tuberculosis. In 1925, C.E.A. Winslow, in a clear understanding of the complexity of causes of tuberculosis then being posited from many sides and the inter-relationship of the exposure of industrial workers to dust and tuberculosis, wrote:

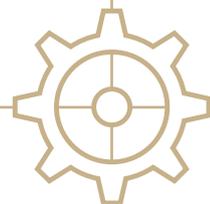
There has been argument, of late, to the relative weight of various factors in the determination of the prevalence of tuberculosis. I am familiar with no single factor in the entire list, whether hereditary or environmental, which shows so clear and so

72 Chamber of Mines of South Africa (2007) *The South African Mining Industry's Sustainability and Transformation Report 2007*

73 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg.p.19

74 Rosner, D. and Markowitz, G. (1991) *Deadly Dust. Silicosis and the On-Going Struggle to Protect Workers' Health*. The University of Michigan Press, Ann Arbor.

75 Rosner, D. and Markowitz, G. (1991) *Deadly Dust. Silicosis and the On-Going Struggle to Protect Workers' Health*. The University of Michigan Press, Ann Arbor.



*striking a statistical relation to the tuberculosis death rate as exposure to the inhalation of siliceous dust.*⁷⁶

The 1938 Conference on Silicosis in Geneva noted that “the effective occupation of the lungs by siliceous dust not only leads to fibrosis but facilitates the development of tuberculosis, either at sites of pre-existing dormant foci of tuberculosis, or at sites where silicotic lesions are developing or have developed at which tubercle bacilli may arrive and become arrested”⁷⁷. Despite the extensive early evidence of the intertwining of dusty work and tuberculosis, the migrant labour system driven forward and relied upon by the mining industry in South Africa saw ill miners simply repatriated to their areas of origin. It was only in the mid-1980s that miners with tuberculosis were retained for treatment on the mines.

Randall Packard’s seminal book on the social etiology of tuberculosis, *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*⁷⁸, provides an accurate exposition of the history of tuberculosis in mining in South Africa. Packard describes the official attitude to tuberculosis between 1948 and 1980 as designed to achieve “the great disappearing act” with residents of the ‘homelands’ falling outside the official statistical records. This ‘great disappearing act’ of “homeland” residents from the official TB records, was preceded decades earlier by the development of the migrant labour system and the growth of mine recruitment agencies. As Packard notes:

*The mining magnates had come to recognize the value of a migrant labor system in which the African worker retained a rural base. The retention of a rural base, in fact, came to be seen as an essential element in the financial structure of the mining industry. For it saved the industry from having to pay for either the reproduction of labor or for the welfare of workers who were too old, sick or injured.*⁷⁹

The spread of TB “reflected not only the high turnover of labor but also the forced repatriation of workers who were sick or deemed to be unproductive”⁸⁰. The 1913 Land Act and the later Grand Apartheid from 1948, physically removed illness from view and removed the recording of illness from official health statistics. Packard notes:

As a result of the unevenness of the health record, it is impossible to explore the complex relationship that evolved between changing sets of political and economic interests, on the one hand, and patterns of sickness and health, on the other hand, with the same degree of specificity for all areas and all times. For some areas and periods of history, and especially for the rural reserves or Bantustans during much of the period under study, we are often looking through a glass darkly. Occasionally, however, we are able

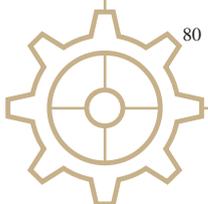
76 Winslow, C.E.A. (1925) Tuberculosis in Dusty Trades. Cited in Rosner, D. and Markowitz, G. (1991) *Deadly Dust. Silicosis and the On-Going Struggle to Protect Workers’ Health*. The University of Michigan Press, Ann Arbor.

77 Report of the 1938 Conference on Silicosis, Geneva, cited in Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. P.85

78 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg.

79 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. P.11

80 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. P.11



*to pierce the darkness created by the biased distribution of South African health resources and statistics and explore, in some detail, the ways in which political and economic development have intersected with biological processes and given rise to the white plague in South Africa.*⁸¹

The development of mining ‘gave rise’ to the dissemination of tuberculosis in South Africa. Mining in South Africa not only produced gold, it produced TB. Dr Grant Millar, district surgeon in Pondoland in 1908, wrote:

*Pondoland is one of the chief recruiting fields for the gold mines of the Transvaal and I have no doubt that this is the primary cause of tuberculosis among the Pondo.*⁸²

Various arguments supporting the repatriation of tuberculous miners over decades to follow were used to justify this method of saving the costs of health care. Astonishing comments were made by mine medical officers and mine managers to rationalize the practice of repatriation, one of which came from the president of the Transvaal Mine Medical Officers Association in 1926 and which was reported in the proceedings of the association:

The President pointed out how anxious natives with tuberculosis were to go home, because they had a feeling that if they could get home their own native doctors might cure them. Although that might not be the case, they had that feeling. If one stopped them they very often died out of sheer disappointment.⁸³

Other prevailing rationalizations were that the rural home was a place of rest and recuperation; a rural idyll or ‘healthy reserve’ away from the hardships of mine conditions. In relation to the latter, victim-blaming was prevalent as revealed in this excerpt from an early Memorandum of the Chamber of Mines about the question of inadequate heating and the lack of air space in the labour compounds. Although, almost laughable if it were not so tragic in its implications for requisite air space and consequences for the spread of tuberculosis, the particular comment cited here was from early in the century these were attitudes to, and rationalizations of, practices that continued for many decades to come. The practice of repatriation played a decisive role in the spread of TB outwards from the mining industry.

*It is a well known fact that the natives prefer a crowded room, and, however much air space is provided, insist upon huddling together.*⁸⁴

Packard notes that “the costs of consuming labor as if it were a kind of raw material were becoming too high”⁸⁵ by 1925, the time at which “tropical labour” was withdrawn due to excessive mortality rates. In 1925, a survey by the Tuberculosis Research

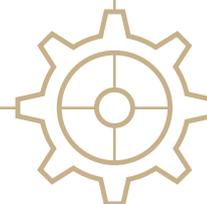
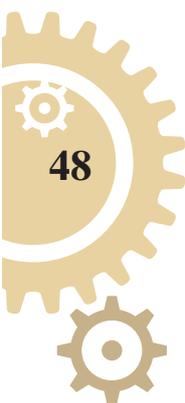
81 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa.* University of Natal Press, Pietermaritzburg. P.21

82 Cited in Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa.* University of Natal Press, Pietermaritzburg. P.93

83 Cited in Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa.* University of Natal Press, Pietermaritzburg. P. 95

84 Chamber of Mines Memorandum *Health of the Natives* (1903) Cited in Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa.* University of Natal Press, Pietermaritzburg. P.78

85 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa.* University of Natal Press, Pietermaritzburg. P. 162



Committee found a TB prevalence of 50.4 per 1000 in those of five (5) years service⁸⁶. The Miners Phthisis Act of 1925 extended compensation benefits to black miners who were found to have TB within 6 months of leaving mine work. However, widespread use of x-rays, other than for screening out TB and silicosis affected workers at pre-employment selection, only really became a reality in the 1950s. TB incidence on the mines was at the same level in the 1970s as it had been in 1919. Transferring the costs continued apace:

*What is clear is that the only source of pauper relief available to African TB patients was in effect designed to transfer the cost of African ill-health onto the shoulders of rural relatives and off the shoulders of urban and state authorities. It is an example of the continued application of the Stallardist definition of the African as a person whose true home was not in the towns and cities of South Africa.*⁸⁷

In the 1980s, the chief medical advisor to TEBA found that 95% of miners repatriated with TB did not receive TB treatment in their home areas.⁸⁸ As Packard succinctly writes in his conclusion, authorities “methodically removed the health problems of blacks from the purview of white society. Similarly, although the mining industry made significant improvements in the conditions under which blacks live and work while at the mines, their primary weapon against TB has until recently been pre-employment medical exams and repatriation of miners who develop the disease”⁸⁹. Packard wrote *White Plague Black Labor* in 1989 and the “recently” he is referring to is the 1980s. It was only from 1985 that the mining companies started to properly provide TB treatment on the mines for in-service miners, and started to move away from the practices of ‘repatriation’. We are still reaping the consequences of a century of the externalization of disease.

4.2 Tuberculosis in Miners

There has been much research that has established the increased risk of tuberculosis in underground miners and in those with silicosis. Research by Cowie (1994) on the epidemiology of tuberculosis in gold miners with silicosis quantified the elevated risk of tuberculosis.⁹⁰ A cohort of miners with and without silicosis and who had not had tuberculosis was followed over a seven year period. The annual incidence of tuberculosis was 981/100,000 in the men without silicosis and 2,707/100 000 in the men with silicosis. The study concluded that it had confirmed and quantified the high risk of pulmonary and of extra-pulmonary tuberculosis in men with silicosis, and that the “incidence of tuberculosis during this 7-yr study suggests that one quarter of these men with silicosis will have developed tuberculosis by 60 years of age.”⁹¹

86 Minutes of the TBRC (1925) Cited in Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. p. 183

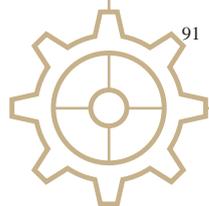
87 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. P. 227

88 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. P. 288

89 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg. P. 300

90 Cowie, R. L. (1994) *The Epidemiology of tuberculosis in gold miners with silicosis*. Am. J. respiratory Crit. Care Med., Vol 150, No.5. Nov 1994, 1460-1462

91 Cowie, R. L. (1994) *The Epidemiology of tuberculosis in gold miners with silicosis*. Am. J. respiratory Crit. Care Med., Vol 150, No.5. Nov 1994, 1460-1462



A 1997 retrospective cohort study on the variation in incidences of TB in subgroups of gold miners, found that there was a significant association between TB and certain occupations such as drilling. The high dust occupations had a rate ratio of 2.3, after adjustment for age, length of service and silicosis, compared to low dust surface occupations. Importantly, the study results also concluded that “analysis of the HIV tested subgroup showed that these results are unlikely to be the result of confounding due to HIV infection”.⁹²

A cohort study of 2255 white gold miners was followed up by Hnizdo and Murray for the incidence of PTB. They were followed up from 1968 – 1971 to 1995. Notably, in relation to the high rate of autopsy for white miners, of the 1592 who died, 1296 (81%) had a necropsy done at the NIOH. The study concluded that “exposure to silica dust is a risk factor for the development of PTB in the absence of silicosis, even after exposure to silica dust ends”.⁹³ This again calls into question the twelve (12) month limitation on tuberculosis compensation.

The SIMRAC Health 606 research on silicosis prevalence amongst in-service black mineworkers excluded miners on tuberculosis treatment as those miners diagnosed with TB while in-service are supposed to remain at the mine until treatment is completed and the sample was restricted to miners returning from their annual leave. Comments made in the Health 606 report, giving reference to a range of other literature reviewed on TB in miners, are worth relaying herein as follows:

The major complication of silicosis is an increased susceptibility to mycobacterial infections, especially tuberculosis. (Zambon 1987, Cowie 1994). Two recent studies, one amongst Danish foundry workers (Sherson and Landers 1990) and the other in South African gold miners (Cowie 1994), have shown that workers with chronic silicosis have a three fold increase in the incidence of tuberculosis when compared with a group without silicosis when matched for exposure and age. The incidence of active tuberculosis increases in direct proportion to the severity of the silicosis; the risk ratio for those with an International labour Organisation (ILO) Classification small opacity profusion 3/3 is comparable to the increased risk of tuberculosis in HIV infected subjects (American Thoracic Society 1997).

Even the earliest silicotic changes may carry an increased risk of tuberculosis (Sluis-Cremer 1980). Hnizdo and Murray undertook a study of the risk of tuberculosis relative to silicosis and silica exposure in which they found that even a negligible degree of silicosis (<5 nodules at necropsy) was associated with an increased risk when compared with those without silicosis. (Hnizdo and Murray 1998) However, the effect of silica dust rather than those few silicotic nodules may be the cause of the increased risk in this case.

SIMRAC Health 606 Report⁹⁴

92 Kleinschmidt, Immo and Churchyard, Gavin. (1997) *Variation in incidences of tuberculosis in subgroups of South African gold miners. Occupational and Environmental Medicine* 1997; 54:636-641.

93 Hnizdo, Eva and Murray Jill (1998) *Risk of pulmonary tuberculosis relative to silicosis and exposure to silica dust in South African gold miners. Occupational and Environmental Medicine* 1998; 55: 496 - 502

94 Churchyard, G., Pemba, L., Magadla, B., Dekker, K., Vermeijs, M, Ehrlich, R., Te Water Naude, J., Myers, J. , and White, N. (2003) *Silicosis prevalence and exposure response relationships in older black mineworkers on a South African goldmine. Johannesburg, South Africa: Safety in Mines Research Advisory Committee. p.19 and 20*



The work of Te Water Naude *et al* (2006) examining the effect of silica exposure in the absence of silicosis on the prevalence of tuberculosis found a high prevalence of pulmonary tuberculosis “significantly associated with dust and silica exposure, even in the absence of silicosis”.⁹⁵ The SIMRAC Health 606 study also revealed that PTB is significantly associated with both dust and silica exposure, independent of the presence of silicosis. It is certain that exposure to silica bearing dust per se increases the risk of TB through its effects on pulmonary defence.

The Safety in Mines Research Advisory Committee (SIMRAC)⁹⁶ has estimated that, in the period 1999 to 2003, silico-tuberculosis accounted for over fifty-five percent (55%) of total mine deaths, far outweighing accidents. These statistics are for in-service mine workers; accurate statistics for the numbers dying of tuberculosis and silico-tuberculosis once they have left mine service are simply not available.

The 2007 SIMRAC⁹⁷ research assessed the prevalence of latent tuberculosis infection (LTBI) in a sample of in-service mineworkers. The study found that gold miners have a very high prevalence of LTBI (89%), as well as a high prevalence of silicosis. Those factors associated with LTBI were found to be current underground work and HIV status. However, this is not HIV-positive status as those who were HIV-negative or, of unknown status, had a higher prevalence of LTBI and were twice (2x) as likely to be infected with TB compared to HIV-positive miners. As will be discussed further in section 4.3, available evidence points to the need to focus on the dust related risks of underground mining in relation to TB rather than simply ascribing the TB epidemic amongst miners to HIV. The latter explanation is epidemiologically far too simple and does not do justice to the “particularly pathological intersection of biological processes that have a much wider distribution” as cited from Packard in this chapter’s introduction.⁹⁸ Importantly, in the SIMRAC research, the associated factor of working underground was even more significant for LTBI than was HIV status. Those who worked underground had four (4x) times the risk of LTBI. The study recommended that, in addition to TB control measures, measures to address dust control were urgent as the research had shown the strong association between LTBI and underground work. Furthermore, dust control measures were recommended as the high prevalence of silicosis was noted as confirming the findings of previous studies.

4.3 Tuberculosis Prevalence Data from the Libode, Thamaga, and Lesotho studies

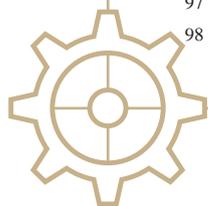
Radiological tuberculosis was classified by the two readers in the Libode study with differing findings. The first reader found that radiological tuberculosis was present in thirty-three percent (33%) of the former miners, while the second reader found it present in forty-seven percent (47%). The then Health Advisor to the Chamber of Mines, Dr La Grange, explained the high rates of tuberculosis amongst former miners as a

95 Te Water Naude, T. M. , Ehrlich, R. I. , Churchyard, G. J. , Pemba, L. , Dekker, K. , Vermeijis, M. , White, N. W. , and Myers, J. E. (2006) Tuberculosis and silica exposure in South African gold miners . *Occupational and Environmental Medicine* 2006;63:187-192.

96 SIMRAC Report 05 08 01 (2007), Department of Minerals and Energy.

97 SIMRAC Report 05 08 01 (2007), Department of Minerals and Energy.

98 Packard, Randall. M (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa.* University of Natal Press, Pietermaritzburg.p.19



consequence of the existing “80% of the adult population of the former Transkei infected” and a consequence of the HIV epidemic.⁹⁹ This is too easy an explanation which gives little consideration to the increased risk of TB in silicotics and the increased risk of TB for underground miners even in the absence of silicosis. It is also an explanation that implies that the TB was contracted at home in the rural areas giving no credence to the extremely high incidence rates of TB amongst miners, nor to the history of the South African TB epidemic.

In the Thamaga study on the prevalence of occupational lung disease among Batswana men formerly employed in the South African mining industry, eighty (80) or over twenty-six percent (26.3) of the men reported that they had previously had treatment for TB. Fifty-six (56) of these men were treated in Botswana and twenty-four (24) in South Africa. Sixteen (16) had been treated more than once for TB. The survey also identified four (4) new cases of PTB, a rate of 13.2/1000. A total of twenty-nine men were treated for TB at the time they were in mine service with 42.3% of these in the first five years of their employment and 58.% in their last year of service. The latter majority group thus reflects a medical separation from employment after TB diagnosis was made. As only ten (10) had been compensated for TB this indicates that there were nineteen (19) men who did not receive their due ODMWA compensation for TB, some of whom were probably diagnosed, started on TB treatment, and then repatriated to continue their TB treatment at home in Botswana.¹⁰⁰

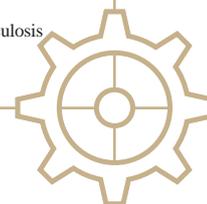
The prevalence of past tuberculosis amongst the Basotho miners in the recent burden of lung disease study by Girdler-Brown *et al* was twenty-six percent (26%). This study found that just over one percent (1.3%) of the 624 men were currently on TB treatment at the time of the study. However, eighteen (18) of the men (2.9%) had active undiagnosed TB which was confirmed on microscopy or culture during the study, and thirteen (13) or 2.1% “were started on TB on clinical grounds”¹⁰¹. There was thus a current TB rate of just over six percent (6.2%).

Since all the men were given exit medical examinations, the authors note that “the high proportion (almost 3%) of these miners who had bacteriologically proven TB suggests either an asymptomatic stage of the disease or failure to access TB diagnostic and treatment services in their home communities. Since 1.28% of the miners were on treatment for TB when they were seen, and assuming that these all had bacteriologically

99 The International Agency for Research on Cancer has recently emphasized the importance of silica as a health hazard, noting the carcinogenicity of inhaled silica. There is evidence that a percentage of cases of silicosis develop massive pulmonary fibrosis which kills rapidly. Silicosis has chronic and acute forms. It is progressive and incurable. It is additionally well established that silicosis and tuberculosis are intimately intertwined, and the preliminary findings of current research by the Health Systems Trust into the profile of XDR TB cases has revealed that the highest occupational profile risk factor for XDR TB was mine work. In the light of such information, Dr La Grange’s statement that silicosis “even in a moderately advanced stage is hardly ever a serious illness” is perhaps a good example of “how the social and political environment shapes the variety of questions traditionally seen as the province of science and the laboratory”. (Rosner D. and Markowitz, G. (2006), *Deadly Dust. Silicosis and the Ongoing Struggle to Protect Workers’ Health*, p.229, The University of Michigan Press, Ann Arbor) In the context of those who have only their physical labour to sell, questions of what constitutes illness and disability require re-evaluation beyond the bio-medical view (the ‘meat-chart’) that regards the loss of lung capacity, susceptibility to tuberculosis and recurring respiratory infections, as insignificant and as “not a serious illness”. Furthermore, if silicosis is “hardly ever a serious illness” one might ask why at the first signs of silicosis have miners long been barred from further mine work with the infamous “red ticket”?

100 Steen, T. W. , Gyi, K. M. , White, N.W. , Gabosianelwe, T. , Ludick, S. , Mazonde, G. N. , Mabongo, N. , Ncube, M. , Ehrlich, R. and Schierhout, G. (1997) Prevalence of occupational lung disease among Botswana men formerly employed in the South African mining industry. *Occupational and Environmental Medicine*, 54: p.22

101 Girdler-Brown, Brendan V., White, Neil W., Ehrlich, Rodney I., and Churchyard, Gavin J. (2008) The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers. *American Journal of Industrial Medicine* 51 p.644



proven TB, approximately 70% of those with bacteriologically demonstrable active TB were not on treatment for their disease”.¹⁰²

The authors further note that “since some of those taking anti-TB treatment that was started elsewhere (e.g., in Lesotho) might have been too ill to travel or might have died from their disease the estimate of TB incidence obtained in this study would underestimate the true incidence of TB in these miners”.¹⁰³ It can be recalled, as discussed in Chapter Three, that of the TEBA records of seven hundred and seventy-nine (779) retrenched men from the one mine shaft, only six hundred and twenty-four (624) participated in the study while one hundred and fifty-five (155) did not. Of these 155 ‘missing’ men, forty-one (41) were confirmed dead, with thirty-five (35) out of the 41 having had symptoms of lung disease prior to death. The mean age at the time of leaving mine service of those who had died within eighteen (18) months of returning home to Lesotho was just over forty-nine years (49.2). The overall mortality rate amongst these retrenched Basotho miners was just over 5 percent (5.2%) and the mortality rate, via verbal autopsy, from lung disease was four and a half percent (4.5%). As the fate of one hundred and fourteen (114) men could not be ascertained, these mortality statistics are partial and likely to be a severe underestimate of the actual mortality rate and of the mortality rate from lung disease.

Interestingly in relation to HIV status for those who were diagnosed as current TB cases, a higher number were HIV-negative: of the thirty-one (31) TB cases diagnosed during the study, only eight (8) or 25.8% were HIV-positive, while twenty-two (22) or 70.9% were HIV negative, and there was one whose HIV status was unknown. This certainly places some questions over the possibly somewhat unscientific claims now all too frequently and dramatically made that eighty percent (80%) of TB sufferers are HIV-positive, that eighty percent of miners with TB are HIV-positive, and that TB and HIV are “married” as is increasingly claimed in the general media. Could these claims possibly be related to an attempt to “marry” TB and HIV, and thereby “explain” the epidemiology of the TB epidemic as being a consequence of HIV? Certainly a reading of Randall Packard’s *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa* (1989)¹⁰⁴ could prevent such poor epidemiological understanding.

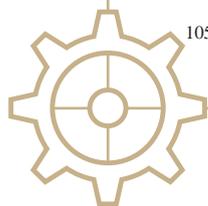
A cross sectional TB and compensation study undertaken in Lesotho in 2004, reports that TEBA registered an average of over fifty-two thousand (52 395) men annually for mine work between 1998 and 2003.¹⁰⁵ This study took as its study population all male TB patients over a one month period in the three hospitals of Maseru District, Lesotho. The aim of the study was to determine what proportion of the male TB patients in these hospitals were miners, and to ascertain their ODMWA compensation outcomes.

102 Girdler-Brown, Brendan V., White, Neil W., Ehrlich, Rodney I., and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p. 646

103 Girdler-Brown, Brendan V., White, Neil W., Ehrlich, Rodney I., and Churchyard, Gavin J. (2008) *The Burden of Silicosis, Pulmonary Tuberculosis and COPD Among Former Basotho Goldminers*. American Journal of Industrial Medicine 51 p. 645

104 Packard, Randall. (1989) *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa*. University of Natal Press, Pietermaritzburg and James Curry Publishers, London.

105 Budiaki, Lugemba (2004) *Tuberculosis and Compensation: A study of a selection of Basotho Mineworkers from Maseru District*. MPH Thesis, Faculty of Health Sciences, University of the Witwatersrand.



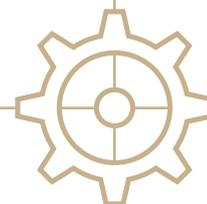
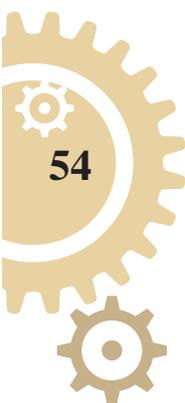
The sample size was four hundred and twenty-one (421) male TB patients. Thirty-eight and half percent (38.5%), or 162 men, were miners. Of these miners over seventy percent (70.4%) were from the gold mines. The majority of the men were former miners at 34.2% (144 men) while in service miners comprised 4.3% (18 men). This latter category of active miners is cause for concern as their TB should have been diagnosed and fully treated while in mine service. The mean age of the miners was just over fifty-one years (51.42). Although the age range was 29 to 84 years, sixty-three percent (63%) of the miners were between 31 and 55 years. For many their current TB was not their first; close to a fifth of the men (19.1%) reported that this was their second time on TB treatment.¹⁰⁶

Nearly eighty percent (79.6%), had had their TB diagnosed in Lesotho while the remaining men were diagnosed in South Africa. If diagnosed while in mine service, miners are discouraged from taking any leave and treatment is supposed to be completed on the mines. This, however, was clearly not the case for many in this sample. Thirty-one (31) miners were diagnosed while in mine service without being fully treated: twenty-three (23) were sent home with referral notes for continuation of their TB treatment in Lesotho, while six (8) were sent home without referral notes.

The study additionally assessed compensation payments. The first notable finding is that none of the former miners reported any certification and compensation payment for any occupationally related lung disease other than TB. This is not surprising in the light of an assessment of the register of occupational health compensation claims for the five year period of 1998 to 2003. These registers are in the Occupational Health Unit clinic at Maseru's Queen Elizabeth II hospital. They revealed a mere two (2) silico-tuberculosis claims for 1998, one silico-tuberculosis claim for 1999, none in 2000, two silico-tuberculosis claims in 2001, one silicosis claim in 2002 and none in 2003. Judging by the silicosis prevalence findings for the cohort of retrenched Basotho miners by Girdler-Brown *et al*, the registers at QE II hospital are not an indication of low levels of silicosis but rather a strong indication of extremely low levels of surveillance and diagnosis.

Tuberculosis compensation payments are limited by the ODMWA to in-service miners and for those certified with TB within 12 months of leaving mine service. The majority (69.1%) of the miners had been diagnosed with TB more than 12 months after leaving the mines and were thus not eligible under the ODMWA for TB compensation. Fifty (50) of the miners were eligible for TB compensation, and twenty-seven had been compensated, while seventeen (17) had applied for compensation. The maximum amount received was six thousand rand (R6,000,00). An assessment of the twenty-eight (28) men who had previously had TB and who had been eligible for compensation at that time, found that just over half had actually received payment. The claim process for both current and previous TB was done mostly at the mines while a few made their submission through the hospital to the TEBA office in Maseru.

106 Budiaki, Lugemba (2004) *Tuberculosis and Compensation: A study of a selection of Basotho Mineworkers from Maseru District*. MPH Thesis, Faculty of Health Sciences, University of the Witwatersrand.



4.4 Active Pulmonary Tuberculosis Data at Autopsy from the National Institute for Occupational Health

Active pulmonary tuberculosis (PTB) was diagnosed in 25.1% of all cases that came to autopsy at the NIOH in 2006¹⁰⁷. The overwhelming majority of these were black miners at 94.9% (432 cases); only 4.6% or 20 cases were white miners while the population group was unrecorded for two (2) cases. The NIOH report notes that the overall rate of active PTB was unchanged from that of 2005. The age distribution of the majority of the active PTB cases was over fifty percent (50.7%) in the age group 40 – 49 years, and over twenty percent (20.6%) in the age group 30 – 39 years. Notably the overwhelming majority of active cases of PTB (76%) came from the gold mining industry. (69% of all autopsies for 2006 were for men who were working or had worked in the gold mining industry).

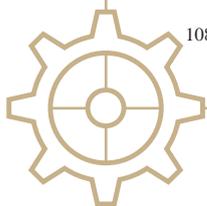
The NIOH report of 2008¹⁰⁸ records that active PTB was diagnosed in over twenty-seven percent (27.4%) of all autopsies in 2007 and that the overall rate of active PTB increased from 251/1000 in 2006 to 274/1000 in 2007. The overwhelming majority of the active PTB cases were once more in black miners at 89.2% (421 cases). Compared to 2006, the PTB cases amongst white miners was higher at 9.5% (45 cases). The age distribution of the majority of the active PTB cases in 2007 was nearly forty-five percent (44.7%) in the age group 40 – 49 years with just over twenty-two percent (22.2%) in the age group 30 – 39 years. Yet again an overwhelming majority of the active PTB cases, nearly seventy-three percent (72.7%) came from the gold mining industry.

Autopsy data from the NIOH reveals that in black gold miners, the rate of PTB increased annually from 171/1000 in 1999 to 398/1000 in 2006, and increased again to 406/1000 in 2007.



107 National Institute for Occupational Health (2007) Pathology Division Surveillance Report: Demographic Data and Disease Rates for January to December 2006. NIOH Report 2/2007, Johannesburg.

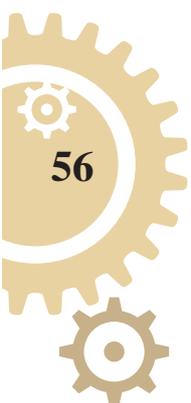
108 National Institute for Occupational Health (2008) Pathology Division Surveillance Report: Demographic Data and Disease Rates for January to December 2007, NIOH Report 14/2008, Johannesburg



Research Design and Methods

It is our contention that popular and professional awareness of disease is not necessarily due to medical advances or epidemiological changes. Rather, it is shaped by social, political, and economic forces as well as technical and scientific innovation. Further, we maintain that it is impossible to understand the history of disease without understanding its social context, including the social constraints that allow for its emergence or disappearance as a problem. As Irving Selikoff has pointed out, “Silicosis is a social disease with medical aspects”.

David Rosner and Gerald Markowitz, *Deadly Dust. Silicosis and the On-Going Struggle to Protect Workers Health*



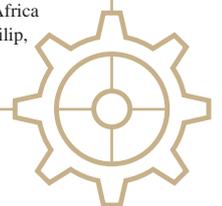
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The study can be described as an investigation of the social epidemiology of lung disease amongst former underground gold miners in the labour-sending areas of the Eastern Cape, and an empirical investigation of the legislated system for surveillance, detection and compensation. The intention of the research was firstly, to generate greater knowledge of the social epidemiology of silicosis and tuberculosis amongst former miners; secondly, to generate greater knowledge of the burden of disease in the social context of the rural labour-sending areas and of the available health services; and, thirdly, to generate greater knowledge of the systematic discrimination of an inequitable compensation system that impoverishes the already vulnerable and intensifies social exclusion.

The site of the study was the Eastern Cape Province for various reasons. Firstly, the Eastern Cape has been a major labour-sending area to the mines; for example, between 1980 and 1990, thirty percent (30%) of the workers employed in the mining industry were from the Eastern Cape.¹⁰⁹ Secondly, it is well established that the migrant labour system has led to uneven development, promoting the centre at the expense of the periphery which has become an eroded subsistence economy. The labour-sending rural areas of the Eastern Cape are amongst the most poverty stricken in the country. Limited resources precluded undertaking the study in the mine labour-sending rural areas of more than one province. It was, importantly, recognized as a key area for future research, that there are many other labour-sending areas in other provinces of South Africa, and in the neighbouring states of the Southern African Development Community (SADC), which have supplied large numbers of workers to the South African gold mines.

As has been explained in Chapter Two, the Medical Bureau for Occupational Disease (MBOD) and the Compensation Commissioner for Occupational Disease (CCOD) are

¹⁰⁹ In 1987, 135 655 men from the Transkei were employed by mines affiliated to the Chamber of Mines as opposed to 38 755 from Kwazulu. A further 14 082 miners in the same year were from the Ciskei. (Source: summary of Monthly Field Reports, The Employment Bureau of Africa (TEBA) in James, Wilmot. G. (1992) *Our Precious Metal. African Labour in South Africa's Gold Industry, 1970 – 1990*, p.56, David Philip, Cape Town)



a function and responsibility of the National Department of Health. The ODMWA system is completely separate to the Compensation for Occupational Injuries and Diseases Act (COIDA) which covers all other workers, and which covers injuries sustained in mining accidents. There are many health systems issues to be explored in this context: access to detection of disease depends largely on access to public sector services for although the ODMWA does not preclude the use of private sector services these are mostly inaccessible and unaffordable in the rural areas of the country.

The silicosis and tuberculosis sufferer additionally relies on the public sector for the palliative care of his condition. Thus, compensated through the ODMWA or uncompensated, the ill former miner is reliant on the public health sector for health care services. It would thus appear that the State is underwriting the costs of ill-health caused by the private sector. The central hypothesis of the research is that the ODMWA is a discriminatory system that is a cheap form of compensation which serves as a subsidy to the mining industry in externalizing the costs of occupationally acquired disease, and placing the burden and costs of disease on the mineworkers themselves and on the public health sector, and causing severe deprivation amongst former mineworkers, their families and their communities in the labour-sending areas of the Eastern Cape, South Africa.

5.1 Research Questions

Following from the above broad objectives and research problems, the following research questions were posed in the development and design of the research:

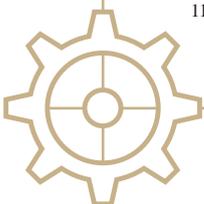
Health Systems Surveillance:

- a) What is the nature and extent of health systems surveillance for occupational lung disease in former miners in the Eastern Cape?
- b) What is the extent of understanding of occupational lung disease amongst health personnel?
- c) What is the level of awareness amongst health personnel of the provisions of the ODMWA?

Access to Surveillance Services:

- a) Have former miners suffering from occupationally related lung disease been able to access their statutory entitlement to Benefit Medical Examinations every two years?¹¹⁰
- b) Are former mineworkers sufficiently aware of their rights under the ODMWA?
- c) If former mineworkers are aware of their rights, why are they not accessing medical surveillance for diagnosis?

¹¹⁰ As indicated by both the Libode and Thamaga studies, and as indicated by the rapid situational analysis of available Benefit Medical Examination (BME) services in the Eastern Cape undertaken by myself in September/October 2007 which revealed that BME services are simply not available in any District or Regional Hospitals in the Eastern Cape province.



Certification and Compensation:

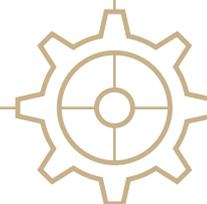
- a) Are former miners being medically diagnosed with occupational lung disease?
- b) If miners are medically diagnosed with occupationally related lung disease, to what extent are they assisted by the attending health personnel in the process of submission of their medical records to the MBOD?
- c) To what extent is there under-diagnosis within communities?
- d) Have those former mineworkers who have been diagnosed and submitted for compensation been certified by the MBOD as suffering from a compensable lung disease, and how was their lung disease classified?
- e) How long did this certification process take, and what affects the process?
- f) If the former miners were certified, have they received compensation?
- g) What problems are experienced via the MBOD for certification?
- h) What problems are experienced via the CCOD for compensation claim resolution?
- i) What amounts of compensation were received?

Disability and Social Exclusion:

- a) What is the nature of the disability caused by silicosis and silico-tuberculosis?
- b) Does the disability caused by silicosis fit the bio-medical model of classification?
- c) What does the illness mean for individuals, their families and their communities?
- d) What palliative care are former miners receiving for silicosis?
- e) If compensation was received, how was the money utilized?
- f) What is the former miner's current socio-economic status?
- g) What are the social costs of silicosis and silico-tuberculosis in the labour-sending areas of South Africa?
- h) Does the ODMWA result in social exclusion?

Issues of Equity:

- a) Does the ODMWA surveillance and compensation system still largely hide the burden of disease either deliberately through the provisions of the Act, or through incapacity within public sector health facilities and compensation agencies?
- b) Is the ODMWA compensation system equitable?
- c) Is the ODMWA a fair "trade-off" in that the right to claim recompense from employers is relinquished for a guaranteed government led statutory system of medical surveillance and compensation?



- d) Is the ODMWA system a ‘cheap’ form of compensation for the mining industry and is the ODMWA system serving as a subsidy to the mining industry?

5.2 Research Design

The intention of the research informed the approach: the key component of the primary data collection was a series of in-depth interviews with former miners in their home environments. The sampling frame was all former underground gold miners in a defined area. This was one hundred percent (100%) sample; that is, all former underground gold miners in the defined area were interviewed. As the research was informed by different demands to those of a prevalence study which requires random sampling, and the intention was to interview all former underground gold miners over ten (10) villages spread some distances apart, a snowballing approach, along with visits to all households to access all former miners, was used.

The investigation of the health system comprised a province wide assessment of available services to determine currently available Benefit Medical Examination services. The sampling frame for in-depth interviews with health personnel was all clinics and the District hospital in the area under study, and in a wider radius within the district around the immediate area. Facility Managers at nine clinics and one District Hospital were interviewed along with additional staff at these facilities. Interviews were also done with the next closest District Hospital and the Regional Hospital.

The research was designed so that the primary data sources would potentially illustrate in greater depth the realities of the ODMWA, and what the implications of this surveillance and compensation system are for miners after they leave mine service and return to their rural homes.

The primary source of empirical data was research fieldwork in Ntabankulu, Alfred Nzo Health District of the Eastern Cape. All interviews were semi-structured with an interview guide appropriate to the relevant component of the research. The interviews were undertaken in isiXhosa, and were recorded. Additional notes were made on an interview tool. The tape recordings were transcribed and translated to English.

5.3 Research Methods

The study was an empirical study generating new primary data sources. There were two primary data collection components to the study:

- A. Former Underground Gold Miners
- B. Health Facilities and Health Personnel

Data was collected through in-depth interviews with former mineworkers in their homes, and with health personnel in health facilities serving the immediate, and wider, area under study. Within these two data collection components both qualitative and quantitative research methodologies were used. The intention with the health service personnel interviews was to do a situational analysis of services available for the implementation of the medical surveillance side of the ODMWA, and to assess provision and accessibility of services, as well as knowledge levels of the ODMWA.



In-depth interviews in both data collection components contained quantitative data elements which were an integral part of the in-depth qualitative interviews. Importantly, the research intended to gather data that would inform the telling of narratives of the lives of former mineworkers. The research process was primarily qualitative in the gathering of data and was rigorous in the inquiry. Quantitative elements were, however, built into this qualitative process. Research does not need to be either qualitative or quantitative but can, simultaneously, use both research methods. Quantitative information can be ‘distilled’ from the qualitative process if this qualitative process is sufficiently rigorous. Chambers in writing on participatory rural research noted the limitations of purely quantitative research¹¹¹. Such a combined methodology is possibly a more accurate way of gathering quantitative data than the process of administering a simplified quantitative questionnaire would be. The qualitative information then elucidates the themes of the quantitative information, ‘shining a light’ on the quantitative data, and the quantitative data ‘shines a light’ on the qualitative data. Numbers alone do not adequately describe social realities and the methods of social science are needed to adequately describe these.

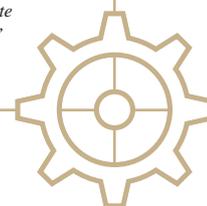
The number of former miners interviewed was two hundred and five (n=205). An additional fourteen (14) former miners were interviewed in a dedicated TB hospital in the district. These latter interviews formed a sub-section of the research fieldwork, were undertaken with the assistance of the Quality Assurance Manager at the dedicated TB facility, and were conducted in isiXhosa and English. These 14 former miners are not included in the 205 of the main study but were a sub-component of the main study.

The intention was to explore health systems issues with regard to medical surveillance and ongoing medical care, along with the compensation claim experience under the ODMWA. Within each cohort former miners were interviewed at home, placing them in the context of their families and communities in order to assess the impact of their occupationally acquired or other disease not only on themselves but also on their dependents, and on the larger labour-sending communities from which they come. A key area of inquiry was that of their lung function impairment and consequent disability in the context of their only asset being a healthy body and having their physical labour to ‘sell’, or to use in supporting themselves in subsistence agriculture or other activities.

The following areas of inquiry were contained within the in-depth interviews with former underground gold miners:

- demographic information
- occupational history of mine work
- history of illness
- experience of health services
- access to diagnostic surveillance and disease detection
- experience of BMEs

111 Chambers writes of large quantitative surveys: “Again and again, over many years and many places, the experience has been that larger scale surveys with long questionnaires tended to be drawn out, tedious, a headache to administer, a nightmare to process and write up, inaccurate and unreliable in data obtained, leading to reports, if any, which were long, late, boring, misleading, difficult to use, and anyway ignored.” Chambers, R. (1994) *The Origins and Practices of Participating Rural Appraisals*. World Development, Vol.22, No. 7.



- experience of application to MBOD for disease certification
- compensation claim experience
- compensation amounts and use thereof
- current socio-economic status
- impact of disability on access to the labour market and on subsistence agriculture/other activities
- palliative care

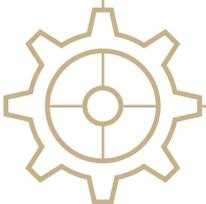
It should be noted at this point that the areas of inquiry regarding application to the MBOD for disease certification, compensation claim experience, and compensation amounts and use thereof, yielded zero data in the absence of any certification and compensation history. It must be emphasized that although it was the original intention of the research to investigate these issues, the realities on the ground yielded ‘blanks’ in both interviews and questionnaires for the areas of silicosis diagnosis, certification and compensation.

5.4 Method As ‘The Road After One Has Travelled It’

It will become clearer, as the design, progress and findings of this research is presented, that it was not possible to answer the large and ambitious range of research questions. They have been presented in this chapter to emphasize the original intention of the research, and to strongly emphasize the extensive and urgent need for further research and action. The exploration of the research questions pertaining to surveillance services and diagnosis soon revealed that it would not be possible within the context of this research to address and answer all the questions initially posed regarding occupational disease certification and compensation. This was largely a consequence of the preliminary investigations and pilot research findings that the questions of diagnosis and compensation were largely irrelevant: diagnosis, certification, and compensation was simply not happening across the province.

On the question of the process of research and research methodology, Carlo Ginzburg has written:

The great French sinologist, Marcel Granet, once said that ‘la methode, c’est la voie après qu on l’a parcourne, method is the road after one has travelled it. But Granet’s jocular remark had a serious – indeed a polemical – content: in any scientific realm discourse on method has value only if is a reflection a posteriori on a piece of concrete research, not when it presents itself (and that is by far the most frequent case) as a series of a priori prescriptions. To tell the story of the itinerary of a piece of research when it has already reached its conclusion (even if it is a case, by definition, of a provisional conclusion) always – as is obvious – carries with it a risk: that of teleology. In retrospect the uncertainties and mistakes disappear or else are transformed into steps of a stair that leads straight to the goal: the historian knows from the beginning what he wants, seeks it and in the end finds it. But in real research things do not go like that at all. The life of a laboratory, as historians like the Frenchman Bruno Latour have described



*it in recent years using an anthropological model, is much more confused and untidy.*¹⁰⁹

The description, as will be found below in section 5.5, of the research planning shows something of the road travelled. Despite preliminary knowledge gained through the available literature and through preliminary investigations along with the pilot process, that levels of detection of disease are exceedingly low, the research questions on certification and compensation were retained as a part of the interview tools. By the end of the road of the research fieldwork, the ‘blanks’ in these sections were a startling finding. The reasons and explanation, however, for these substantial blank returns on the key areas of diagnosis, certification and compensation, was revealed through other components of the research.

There has been minimal prior research amongst former miners in their home context, no research to date that has focused on knowledge of the ODMWA amongst miners and former miners, and no research specifically on the functioning of the public sector health services and access to BMEs in the implementation of the ODMWA. It is thus not surprising that the methods of this 2008 research project were developed as preliminary knowledge grew and as the road was travelled. The original intention to have three cohorts of former miners: the first, those who were certified and compensated; the second, those certified but still awaiting compensation, and the third, those suffering from lung disease but who have not yet been diagnosed, had to be abandoned early on in the decision to access one large sample of all former miners in one labour-sending region. The methodological a priori plan of three comparative cohorts to investigate and answer all the research questions, as listed herein in 5.1, proved to be an imaginary, theoretical ideal. The research had to cover some ground, however, before this was realized.

5.5 Research Planning and Operational Fieldwork

Preparatory investigations were undertaken by the principal investigator in Mthatha, Libode, and Lusikisiki from October 2007 to January 2008. During the course of a series of meetings with Hospital Managers, Occupational Health Nurses and former miners in these areas, it was ascertained that ODMWA services were not available in the public health sector in these regions.

During the period 1997 to 2004 a functional Benefit Medical Examination unit was operational at Mthatha General Hospital. This programme was passionately driven by a dedicated nurse, Mrs Yoliswa Mzimba, which, as well as seeing self-presenting former miners, was actively checking the TB wards of Mthatha General Hospital to invite and screen former miners for silicosis. The unit was thus actively case finding for BME services. Although no longer functioning in this manner, it is a rare example of possible best practice. As is often the case with reliance on the motivation and skills of individual health personnel, and the promotion and movement of such dedicated personnel to other areas of a hospital, as well as a retraction in the availability of doctors, the unit collapsed. Former miners are now reliant on the Occupational Health Unit of Mthatha

112 Ginzburg, Carlo (1993) *Witches and Shamans*. *New Left Review*, July/August 1993, 200, 75 – 85.



General Hospital; notably a unit whose primary responsibility is to attend to the occupational health needs of the staff of the hospital.

It was additionally found that no BME services were available at St Barnabas Hospital in Libode despite the research that took place there in the mid-nineties and which had led to some improvement in availability of BME services immediately after the Libode study. There were no BME services available at St Elizabeth's Hospital in Lusikisiki. A series of pilot interviews were undertaken in early 2008 with former miners in Lusikisiki, OR Tambo Health District, in order to better inform the development of the research, and to better inform the preparatory processes that would be necessary before research fieldwork proper could begin. Importantly, the pilot interviews showed how necessary it was to first fully engage with communities and community representatives in order to prepare, from the community point of view, before undertaking any research work.

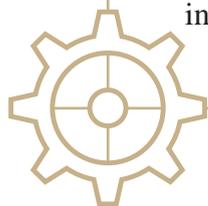
These preliminary investigations led to a decision in March 2008 to place the research in Alfred Nzo and OR Tambo health districts in an area where no research amongst former miners had yet been undertaken. Ntabankulu was selected with the geographical area selected defined as including ten (10) distinct areas or large settlements spread some distance apart. A decision was made that, through visits to every household in this defined area, one hundred percent (100%) sample of former underground gold miners would be reached and invited to participate in the study.

Once this decision had been taken to place the research in Ntabankulu, meetings were held with Traditional Leaders in the form of Headmen and Chiefs, and with local Councillors in the area under study. The intentions of the research were explained to the community representatives, and, subsequently, the request for a community meeting was made. This was agreed to and a call was put out via a range of means of communication, over the many areas, for all former miners and other community members to attend this meeting.

The National Union of Mineworkers Regional Co-ordinator and the Provincial NUM Chairman were also requested to attend this meeting with a view to assisting in the introduction of the research, and, additionally assisting with possible issues and concerns that could arise such as Provident Funds and UIF, issues that lie outside the health sector. These two senior NUM representatives in the Eastern Cape attended this meeting.

The aims and objectives of the research were presented and discussed at the community meeting. The outcome of the meeting was acceptance of the parameters of the research, and support for the research to proceed in these areas. Community representatives were to be kept informed of research progress.

Shortly after the community meeting a number of potential research fieldworkers from the communities under study were invited for interviews. A core team of fieldworkers was then recruited to assist with the research fieldwork. This team was trained in the research methods of the study and trained specifically on the interview tools to be used. Initial interviews with former miners, as a continuation of the introductory training, were undertaken by the full team of research fieldworkers together with the principal investigator and the project assistant. Subsequent interviews were also undertaken by



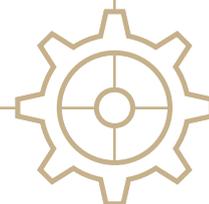
the principal investigator and project assistant, as well as interviews together with the individual fieldworkers, over the following six months.

Each individual interview was allocated a full day in view of the inaccessibility of the areas in which the research was taking place, and in view of the nature of the interview process. It was thus a slow gathering of data through visits to the homes of former miners, meeting them and their families, and hearing from them about their lives as miners, their current health status and health history, their use of health services, their knowledge of the ODMWA and their current circumstances.

5.6 Data Capture

All interviews were recorded and fully transcribed. Observational notes were made on the interview tool and these notes were also used in the data capture process. Qualitative data was analysed thematically. A database of quantitative information was developed through a combination of methods: data was captured from information recorded on the interview tool and from the additional notes, and from a process of extraction or 'distilling' of quantitative data from the full interview transcription documents. This proved to be a time-consuming process but one that was necessary to cross-check the quantitative data. Some of the former miners had left mine service many years previously and some were without any mine service documentation, and it was only possible in the context of longer interviews with a wider inquiry to access certain factual data components of the research.

Analysis and report writing was undertaken once all the data had been captured and checked by the principal investigator. It should be noted that qualitative data, mostly in the form of the voices of the former miners themselves, is presented largely thematically throughout the individual chapters of this report. As a consequence of allowing the voices of the former miners themselves to come through, there is an overlap in these themes through the chapters.





chapter 6

Demographic Profile of Former Miners

I need to stress here the importance of speaking about class as well as race, gender, and national inequalities. One element of the postmodernist era is that class has almost disappeared from political and scientific discourse. Class analysis is frequently dismissed as antiquated, a type of analysis and discourse for “ideologs” not for serious, rigorous scientists. As class has practically disappeared from the scientific literature, it has been replaced by “status” or other less conflictive categories. The disappearance of class analysis and class discourse, however, is politically motivated. It is precisely a sign of class power (the power of the dominant class) that class analysis has been replaced by categories of analysis less threatening to the social order. The class dominance and class alliances existing in the world today are at the root of the problem of poverty. These alliances reproduce the exploitation responsible for that poverty and for the underdevelopment of health.

- Vicente Navarro, *What We Mean by Social Determinants of Health* ¹¹³

All interviews were preceded by a preliminary introduction of the intention of the interview meeting, and of the broader context of areas to be discussed, before beginning with the actual interview and recording of basic demographic data. One former miner, forty-eight (48) years old and who had worked for seven (7) years as a Machine Operator before returning home in 1990, commented after this introduction:

Yes, it is fine to talk. I have never met anyone interested in knowing about our situation on the mines before.

- Former Miner (48), service of 7 years, TB on mines and TB at home

6.1 Age Range of Former Miners

The number of former miners in the sample was two hundred and five (n=205) The ages of the men ranged from 40 years to over 80 years. A fairly high number of the sample were men under 50 years: 38 men or 18.5% of the sample. A further 27.3% of the sample (56 men) were between 50 and 59 years. Thus those below the age of sixty (60) years comprised 94 men or 45.8% of the sample. Those below the age of 65 years comprised nearly sixty percent (60%) of the sample. A smaller group of 25 men (13.1%) were over the age of seventy and these men could be considered an extreme survivor group who had reached the “four score years and ten” of old age. It is notable that longevity was once a common feature of communities in the Eastern Cape with many men reaching their eighties and nineties.

¹¹³ Navarro, V. (2009) *What We Mean By Social Determinants of Health*. Intl. J of Health Services, Vol 39 Number 3, pages 423 – 441; p.427

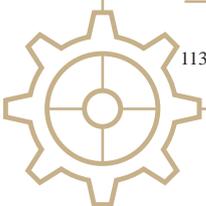
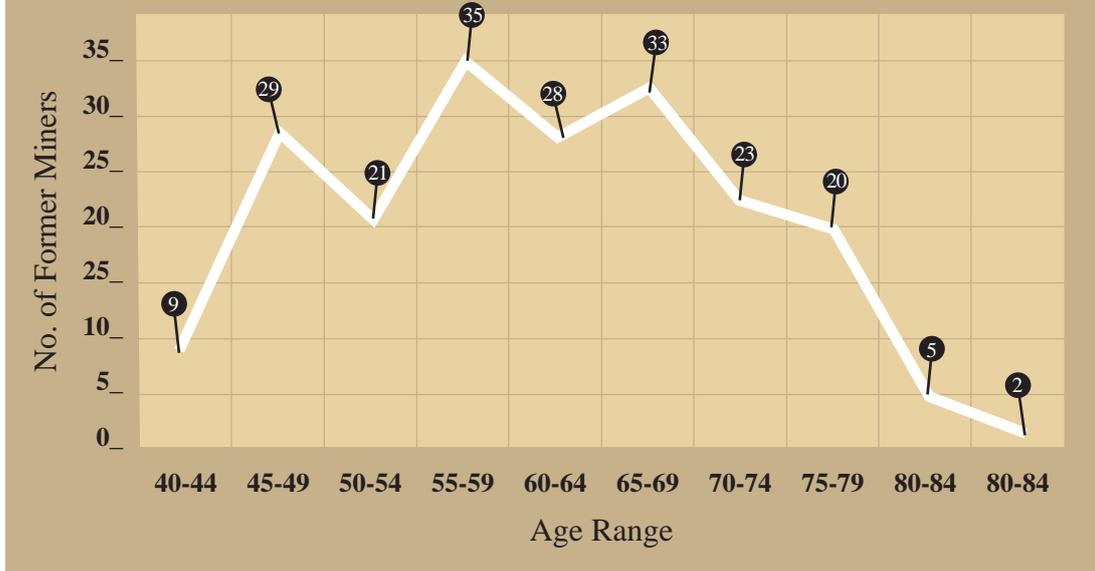


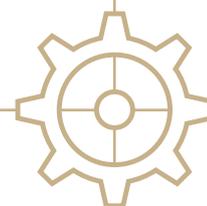
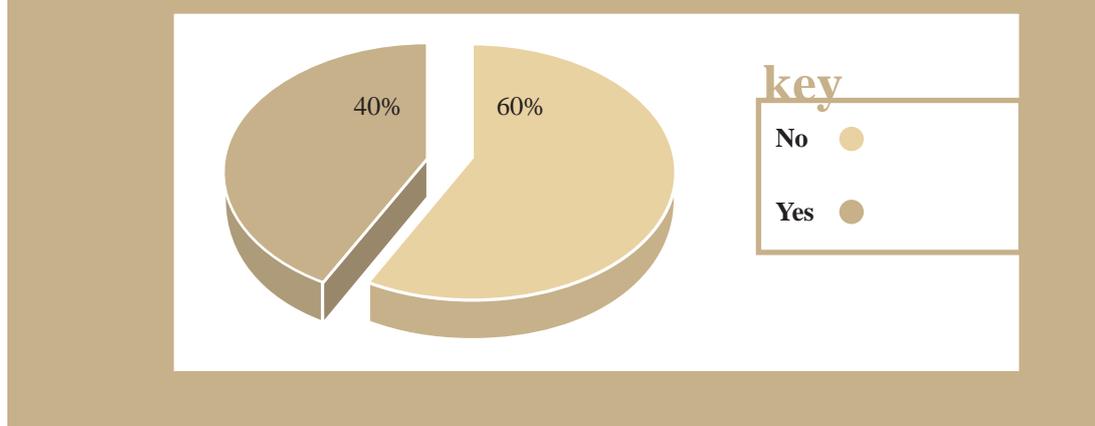
Figure 6.1 Age Range of Former Miners, 2008



6.2 State Old Age Pensions

If the marker of eligible age of sixty-five (65) years for qualification for the state old age pension is taken into account, then 40.4% (83 men) of the sample qualified for a state old age pension, and 59.5% (122 men) of the sample were not yet eligible for the state old age pension. Receipt of this form of social security is shown in Figure 6.2 where it was found that 40% (82 men) were in receipt of the state old age pension, and 60% (123 men) were not receiving the state old age pension. This indicates that one former miner was not yet receiving his state old age pension although already qualifying for it.

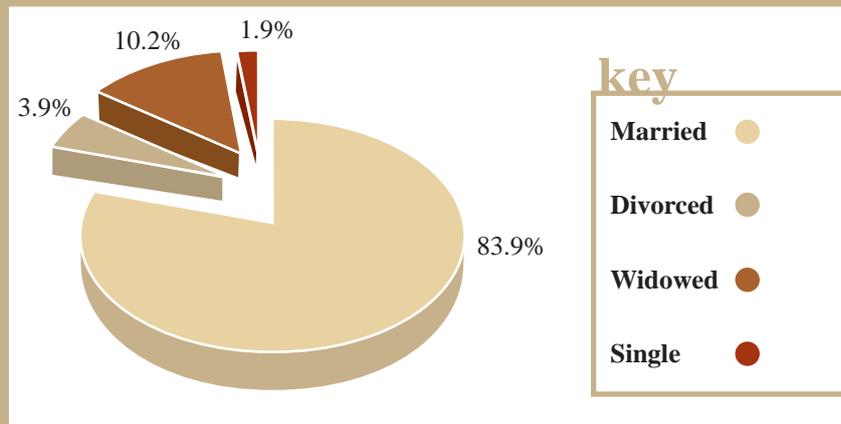
Figure 6.2 Receipt of State Old Age Pension



6.3 Marital Status of Former Miners

The overwhelming majority of the former miners were married: 83.9% (172 men) were married and living with their wives. This is important in the context of being heads of households with dependents, as well as in the context of having care-givers in the event of ill-health. Ninety-eight percent (98%) had been married: 21 men (10.2%) were widowed, and 8 (3.9%) were divorced. Only 4 men (1.9%) were single.

Figure 6.3 Marital Status of Former Miners, 2008



A former miner of sixty-eight (68) years, who had been in mine service for over forty (40) years, from the age of seventeen until leaving in 2000, was currently on TB treatment through his local hospital. He had also had TB while in mine service and was admitted to the mine hospital for two months before continuing working underground. He had also been admitted to his local hospital for two months and had completed his TB treatment. He said that he experienced shortness of breath that was helped by the asthma pump he had been provided with. He spoke in appreciation of all his wife does for him:

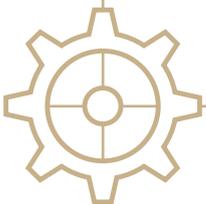
The lung disease has made me a finisher; I'm not able to do anything. It has affected me very much since I can no longer perform the easiest job in the house, so I just sit and wait for the sun to set. My wife accompanies me to the hospital. My wife cares for me. She cooks and washes my clothes, and I ask her to do certain things for me. She does this all day long without a word.

- Former Miner (65), Machine Operator and Rock Blaster, over 40 years service

Another former miner said of his wife:

My wife takes care of me. She easily notices when I'm not feeling well.

- Former Miner (68), Stoper and Driller for 33 years



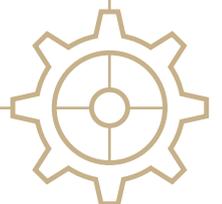
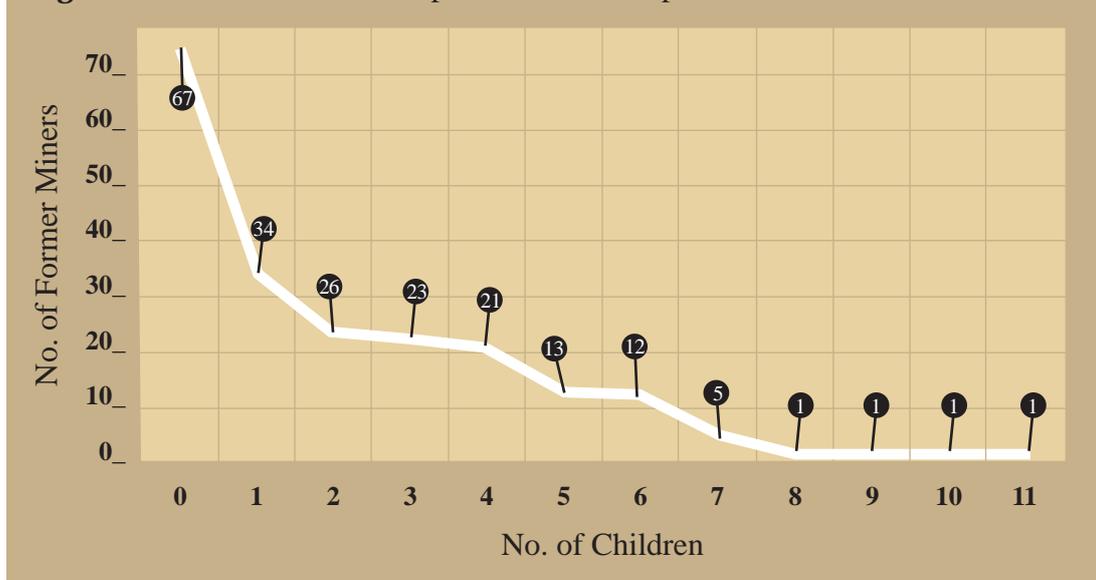
6.4 Dependent Children

The number of dependent children (children under 18 years of age) is shown in Figure 6.4. As is to be expected with a large portion of the former miners in older age groups, 67 (32.6%) no longer had their own dependent children within the household. This does not mean that there were no dependent children in these households as in the overwhelming majority of households there were adult children and grandchildren. The question of dependent children, and the recording thereof, was restricted to those children who were former miner's own children under the age of eighteen (18) years at the time of the study. Over sixty-seven percent (67.4) or 138 of the former miners had their own children under 18 years of age within the household. Thus an overwhelming majority have child dependents.

The numbers of own dependent children per former miner, perhaps better described as school-going children, ranged from one to eleven. This is shown in Figure 6.4. Sixteen and a half percent (16.5%) had only one child, 12.6% had two children, 11.2% had 3 children, 10.2% had four children, 6.3% had five children, 5.8% had six children, and 2.4% had seven children, all under the age of eighteen. One each of four former miners (0.48%) had eight, nine, ten and eleven dependent children respectively.

Thus within the sample of 138 former miners households there resided a total of 449 school-going children who were the miners own dependent children. These numbers are exceedingly high in the context of dependency ratios, and in the context of the needs of raising the future generation. Many households contained other dependent children as well as the former miner's own children, and those households without own dependent children contained dependent grandchildren.

Figure 6.4 Number of Own Dependent Children per Former Miner





chapter 7

Occupational Labour History

I saluted the establishment of the WHO Commission on the Social Determinants of Health and welcome its analysis and recommendations. As a matter of fact, I wish the Commission could receive the Nobel Prize in Medicine, or the Peace Prize, for its work. It has produced a solid, rigorous, and courageous report, and it goes a long way in denouncing the social constraints on the development of health. The report's phrase "social inequalities kill" has outraged conservative and liberal forces, which find the narrative and discourse of the report too strong to stomach.

And yet, this where the report falls short. It is not *inequalities* that kill, but *those who benefit from the inequalities* that kill.

- Vicente Navarro, *What We Mean by Social Determinants of Health* ¹¹⁴

Many of the former miners had started working on the mines at a young age. One former miner who had started at seventeen said:

My father died when I was very young, so poverty sent me to Johannesburg.

- Former Miner (68), "Timber Boy" and later Machine Operator

Another former miner who had started working on the mines just as he was turning eighteen, described an aspect of recruitment processes at that time:

KwaTEBA would make us to take off our clothes and look under our armpits; if you have adolescent hair you were old enough, and if you don't they will tell you that you are young. They also put you on scale and if you were below you were considered as young..... This is not my first dompas; my dompas got finished and they made me another one, a bigger one.

- Former Miner (68), Driller, service of 31 years, departed in 2000

In relation to the use of "boy", one former miner, with laughter, said:

I first became a Panel Operator, and later I became a Machine Operator. I won't say I was a "Machine Boy"! I was not a boy!

- Former Miner (62), departed mine service in 1990 after 24 years service



¹¹⁴ Navarro, V. (2009) *What We Mean By Social Determinants of Health*. Intl. J. of Health Services, Vol 39 Number 3, pages 423 – 441; p. 438



7.1 Types of Underground Work

There was a large range of types of underground work with a high concentration in certain areas. All are referred to as “miners”, as they are all underground workers, rather than distinguishing between the stricter definition of a “miner” as the frontline production worker with the others being called “mineworkers”. It is reductionist to refer to “mineworkers” when they are all “miners” underground. The descriptions used herein are those descriptions of their underground mining work that were provided by the former miners themselves as they reported the title of their role and the nature of their underground mining work.

There is something of a lack of consistency across mining companies in designations. A “Stoper” sometimes refers to a miner who has a blasting ticket and who is the Stope Team Leader, with all the others on the stope then referred to as “Stope Workers”; in other companies all miners in this area of work are simply called “Stopers”. A “Driller” and a “Machine Operator” can be used interchangeably, and in some companies they are referred to as “Rockdrill Operators”, drilling holes for explosives or for bolts. Other mining companies refer to these miners as “Stope Drillers”. See Appendix 2 for an “In Memoriam” list for 2006 which uses the occupational designations for the miners who died in accidents in that year. Notably the overwhelming majority of deaths in AngloGold Ashanti’s worldwide operations were in mines in South Africa.

Many had been in more than one job underground and data was eventually captured for presentation according to the longest length of service in one occupation. These underground roles, as described by the miners themselves, ranged from Stoper, Driller, Machine Operator, Loader, Loco Driver, “Timber Boy”, Pipe Fitter, Blaster, Miner Assistant, Winch Operator, Team Leader, Electrician, Mechanic, Locomotive Guard and Supervisor. Two former miners used the old term “Boss Boy” which designated “Team Leader”.

It will be seen in Figure 7.1 that the highest number were Machine Operators at 28.7% or 59 men, followed by Drillers at 26.3% or 54 men, Stopers at 11.7% or 24 men, and Winch Operators at 9.7% or 20 men. Sixteen men described themselves as Team Leaders and one described himself as a Supervisor; thus 8.2% or 17 men were Team Leaders. The very high proportion in the categories of Machine Operator, Driller and Stoper perhaps reflect the ethnic base of recruitment patterns that has been a noted feature of mine recruitment for many decades as well as, simply, the fact that there are very high numbers of miners in these categories across the mining industry.

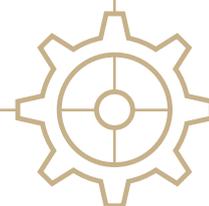
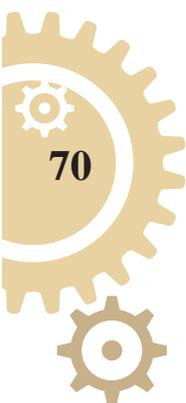
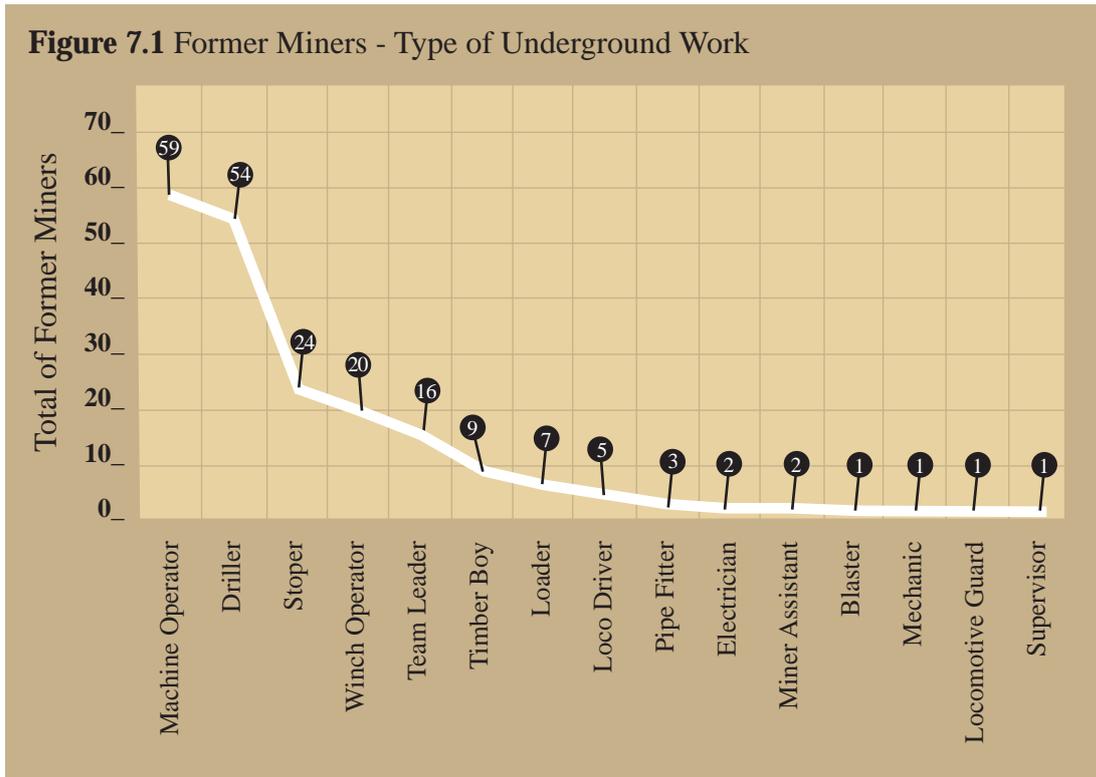


Figure 7.1 Former Miners - Type of Underground Work



7.2 Years of Mine Service

One former miner of sixty-five years of age had started working on the mines in 1962 and continued for the next 34 years until he left in 1996. His last position was that of Winch Driver. When asked what the reason was for his leaving mine service, he commented:

They thought we were old and sent us home.

- Former Miner (65), mine service of 34 years, retrenched as ‘too old’ (53) in 1996

Another former miner with twenty-three years service, most of these as a Driller, said he had “run away” in 2006:

I had TB and I was still working underground. I had to leave because they refused to change my position and I was getting worse every day. I decided to leave rather than stay on and die there. I was not given a medical examination when I left because I ran away. I had been admitted in the hospital for seven months and afterwards I was discharged and sent back underground. That’s when I ran away home..... A doctor here in town told me my lungs are damaged and filthy and that I need to go to the hospital and have them checked. I went but the x-ray machine at the hospital was not working. The mining company is responsible for our ragged health.

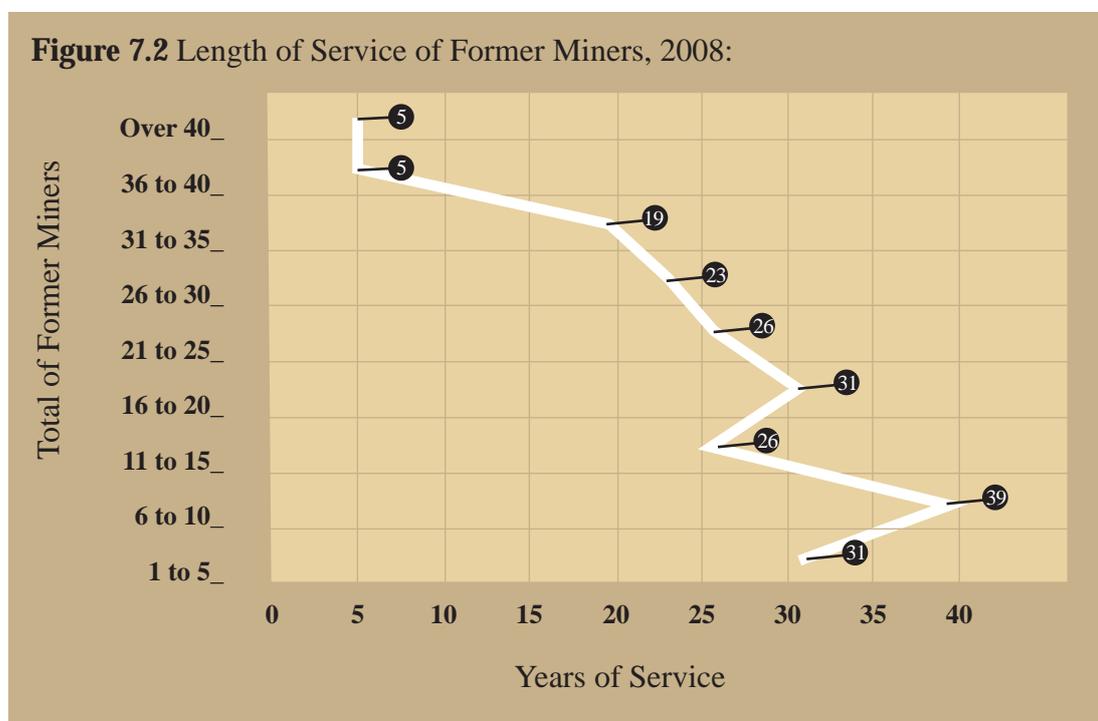
- Former Miner (50), left in 2006 after 23 years as a Driller, TB on mines



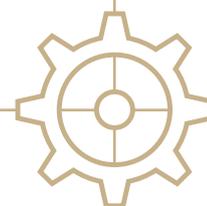
Length of underground service ranged from under five (5) years to over forty (40) years. This data is presented in Figure 7.2 in grouped categories of 1 to 5 years, 6 to 10 years, 11 to 15 years, 16 to 20 years, 21 to 25 years, 26 to 30 years, 31 to 35 years, 36 to 40 years and over 40 years.

The highest percentage, 19% (39 men), of the sample had 6 to 10 years underground service with the next highest category being the range of 16 to 20 years at 15.1% (31 men). The length of service categories of 11 to 15 years and of 21 to 25 years comprised equal percentages at 12.6% (26 men) each. The range of 26 to 30 years service comprised 11.2% (23 men), and that of 31 to 35 years service 9.2% (19 men). Five men (2.4%) had between 36 and 40 years service, with a further five (2.4%) having served over 40 years on the mines. The lowest length of service category of under five years mine service comprised 15.1% (31 men).

Figure 7.2 Length of Service of Former Miners, 2008:



If the total number of years of service of these former miners is added up at the lowest side of the category of length of service range: for example, as 1 year for the category 1 to 5 years and thus 31 men at one year each equaling 31 years, and, for example, as 40 years for the category over 40 with 5 men at 40 years each equaling 200 years, then the total number of years given over by these 205 men to the mining industry is: 3160 years. This is clearly an underestimated calculation as it uses the lower end of years of service range. If the higher end of length of service was used the total number of man years service would be 3985 years. Regardless of the calculation at lower or higher end, it is a figure that gives a sense of the substantial number of man years given over to underground mining work by this, relatively small, sample of 205 former miners. A key question is the extent to which they and their families have benefited from these many years of service to the mining industry. This question is, to some extent, answered in Chapter 12 on current socio-economic conditions.



7.3 Retention of Mine Service Documentation

An important area of inquiry was the question of whether mine service documentation had been retained. Length of service was firstly obtained through self-reporting. In those instances where mine documentation had been retained, the self-report was checked against the available documentation. This proved in all cases to be a full verification of the verbal self-reported length of service. Such a finding supports the adequacy of self-reporting of mine service as a record. The complete consistency of the verbal and the documented records makes a strong case for reliance on the former miners themselves and their individual memory and knowledge, and of the accuracy thereof. Where this is possible, documents are carefully looked after. As one former miner, 65 years old and a Stoper for 25 years, said:

These are my employment documentation. You won't find them in the toilet. They are neatly kept but they are becoming ragged along with me.

- Former Miner (65), 25 years service

Another former miner (57) recalled each year and every mine he worked on. This was checked against his documents. The self-reported description of service was entirely consistent with his documentation. His length of service totaled seventeen (17) years over a twenty-seven year period, and he had TB while at the last mine he worked on. He said:

I started in 1976, during the Independence [Transkei Independence]. We were still using passports then. I was 24. I went first to Impala in Rustenburg. I worked on the surface for one joining and came home. I didn't go back to Impala, I went to Buffelsfontein. We informed each other about where you can get more money. I started by Stopping on my first joining, for one year and then I was a Machine Operator there for two years. Then I went to West Driefontein in Carltonville. It is the deepest mine and there are earthquakes. I was a Driller for one year. Then I worked for a mine known as East Rand in Welkom for two years and I worked as a Machine Operator. Then I went to Beatrix where I worked again as a Machine Operator for four years, then to Orynx in Virginia where I was a Driller for one year, and then I went to Lorraine for five years. Lorraine was the last mine I worked on and I left the mines in 2003 because I was sick. My last monthly salary was R1500.00. I have all the documentation.

- Former Miner (57), “sent home” in 2003

As will be seen in Figure 7.3, a large majority at 70.7% (145 men) had retained documentary proof of their mine service. Only 29.2% (60 men) had no documents related to their employment in the mining industry. One former miner, although he had lost his Clock Card, did remember his number. As he said “*I lost my clock card but I can still remember my number*”. His recall of his mine number was then checked against a payslip that he had retained and it was found to be accurate.

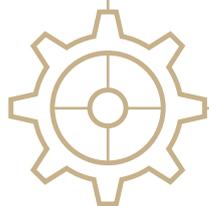
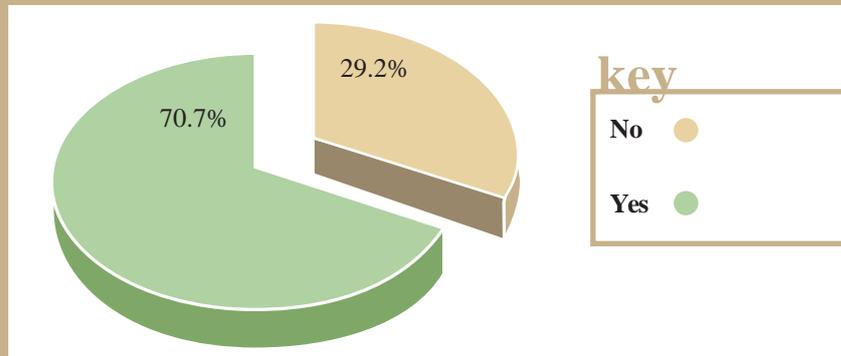


Figure 7.3 Retention of Mine Employment Documentation



7.4 Knowledge of the Dangers of Respirable Dust

The question of whether the former miners had been informed, during their mine service, of the dangers of dust underground was asked of each. The resulting answers have been quantified in Figure 7.4 to reflect that the majority at 77.5% were informed of the dangers of dust. It is of great concern, however, that a large number at 22.4% reported that they had not been informed of the dangers of dust. One former miner (45) said:

No, we were not informed. But we were told to stay on the Madala side [areas where they had finished working]. We used water and goggles.

- Former Miner (45)

Another former miner, aged 65 and who left mine service in 1999 after 25 years, when asked if he was informed of the specific dangers of dust, replied:

We were not informed about that disease. We just used goggles to protect the eyes when drilling. They never informed us about this kind of dust. Never.

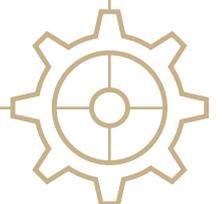
- Former Miner (65), 25 years service, left mine work in 1999

A former miner who left mine service in 1981 after 14 years service, firstly as a Loader and then as a Loco Driver, said:

We were only warned about the dangers of mine safety, not about the dangers of dust.

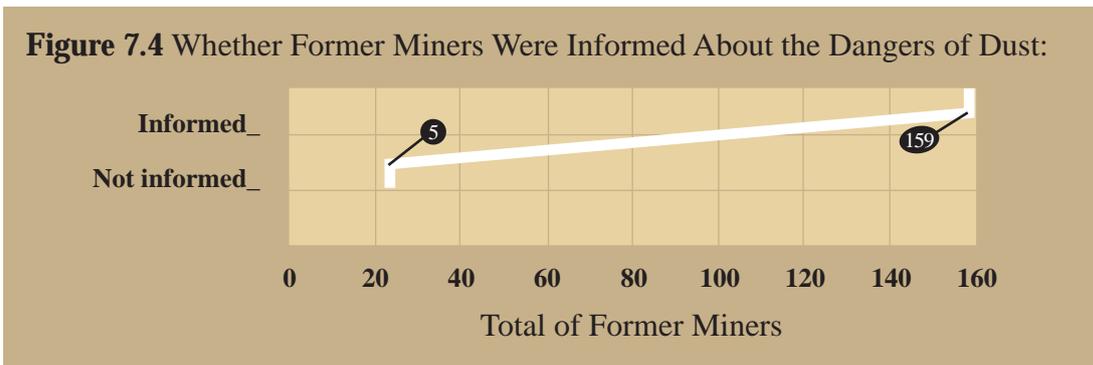
- Former Miner (62), departed in 1981 after 14 years service, no TB on mines, TB treatment for 6 months at local hospital

A former miner aged 67 and who had 20 years service as a Machine Operator, and who and left in 1994, said:



We were explicitly told at the mine school that we must not start work without washing with water first, because dust causes chest infections. But no measures to reduce dust were taken, besides water. We were not informed about anything except what I've said about water.

- Former Miner (67), 20 years service, left in 1994



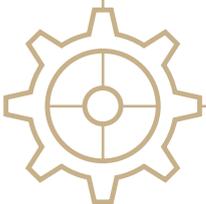
Another former miner (57), who left in 2003 due to illness, commented:

We were informed of the dangers of dust and to prevent it. We were told to wash the area before starting to work. We had nose and mouth masks. We were never told about this ODMWA. We were never told, we only know about the Union. When I left I was sick. I had seizures and the doctors couldn't help me. It was their idea for me to leave. I had TB at my last mine and I was treated. But then I had seizures and the pills and injection did not work. I was not examined as it was already the time of wayawayaya [retrenchment] and they gave us a few cents and sent us home. They sent all sick people home. I didn't get an x-ray when I left..... I saw a doctor here at the hospital. He examined my chest and found out that I have asthma. He said I have dots in my lungs. He also examined my ears and found out that my left ear is deaf. My health hasn't improved, it is continuing. My chest gets tight, especially if I've been working too hard..... I didn't get the Blue Card money because it expired when I was sick and I couldn't claim that money. And TEBA told me that there is a missing documentation. We are depending on the children's support grant and it lasts us only a week. After that we eat food from corn such as papa.

- Former Miner (57), “sent home” due to illness in 2003 without an exit x-ray

A former miner with 25 years service and who had departed mine service after sustaining a back injury commented:

I have Team Leader Certificate and Clock Card....We were informed about dust and we used water to dampen the dust. They would allow the rock to be blasted while we are still in the mine...I am not sure about health information because they used Fanakalo as a medium of instruction. The reason I left the mines was because I had an injury on my waist and my back was not functioning well. They put me in an x-ray when I left to check my back. The mine sent me home because



of my back pain. I do not have problems with my breathing except the pains from my back when I'm coughing.

- Former Miner (51), service of 25 years as Team Leader, left due to back injury in 2007

Another former miner also made reference to the use of “fanakalo”:

We were only using water to dampen the dust from drilling. I was also the one responsible for informing miners about the dangers of inhaling dust. He [instructor] said “when the blasting occurs you must not stand up as this will lead to you inhaling dust and this dust will cause you to get sick with Phthisis. There are no doctors or medicine to cure Phthisis. You should not load dry dust into the winch”. That was what I had to recite to teach miners about the dangers of inhaling mine dust. This was said in Fanakalo.

- Former Miner (73), Team Leader, Mine service of 41 years

7.5 Means Used to Minimise Dust

Questions about receipt of information on the dangers of dust underground was expanded to include an inquiry as to what measures were taken to minimize dust. This inquiry yielded a range of answers which strongly indicate a lack of clarity on the question of being informed about the dangers of dust in the first place. The range of answers indicate knowledge of a general approach to safety rather than specifically of the problem of dust levels. Answers such as “we were provided with hard hat and boots” and “we were given ear muffs” given in answer to the question of what was done to lessen dust, relate only to safety issues and have nothing at all to do with respirable dust. One former miner, however, seemed very aware of the dangers of dust and in response to these questions on measures taken to minimize dust levels said the following.

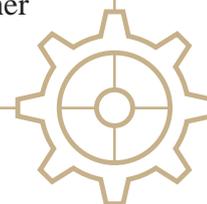
Interviewer: What methods were used to lessen the dust?

Former Miner: Nothing, they were killing us.

- Former Miner (63), left in 1998 after 27 years underground

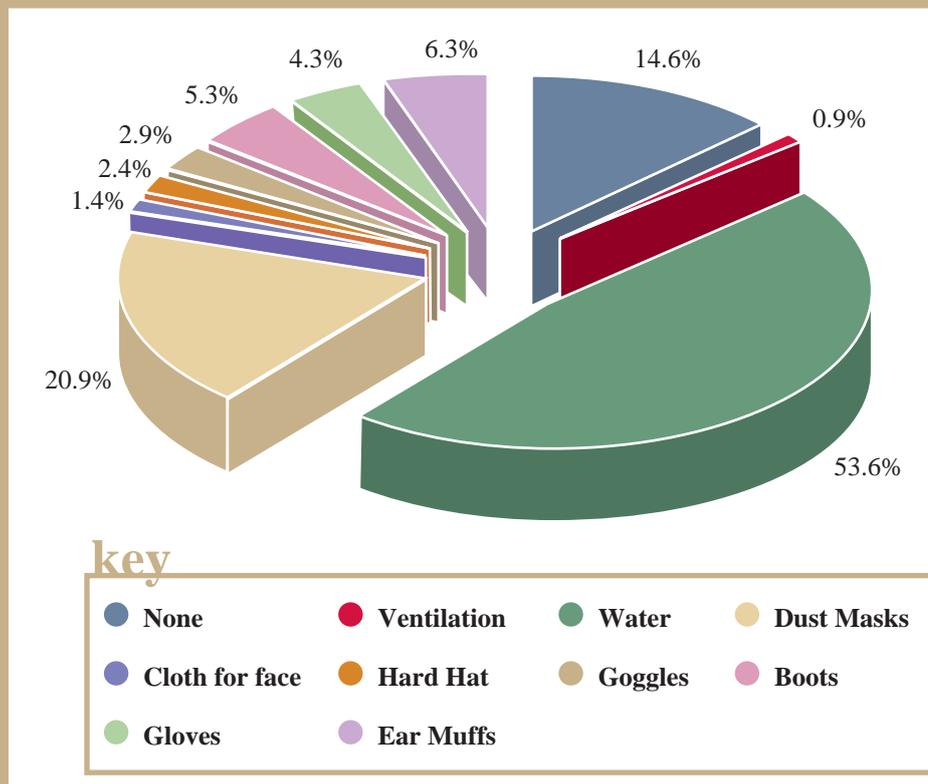
This thus places into question the initial finding that 77.5% of the former miners were informed about the dangers of dust as they had answered positively in response to specific question regarding information on the dangers of dust. It indicates that probably a much smaller percentage were specifically informed about the dangers of respirable dust during their mine service.

Means used to address the dangers of dust were captured quantitatively into the categories reflected in Figure 7.5. In many instances more than one method was mentioned by individual former miners. Only 53.6% of the former miners noted water as a means of dust alleviation. A shockingly low 0.9% (2 men) noted ventilation as the primary means of dust control. A very low number at 20.9% noted dust masks as a measure to address the dangers of dust and 1.4% noted “cloths for face”, while 14.6% of the former miners said that there were no measures at all taken to minimize exposure to dust. The other



general safety means such as hard hat (2.4%), gloves (4.3%), boots (5.3%), goggles (2.9%), and ear muffs (6.3%), noted by the former miners, indicates a less than adequate comprehension of the dangers of respirable dust. This is more shocking in the light of the length of service that has already been presented above.

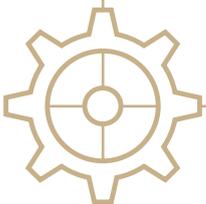
Figure 7.5 What Measures Were Taken to Address the Dangers of Dust



A 57 year old former miner with 29 years service, and who was retrenched in 2002, said of information on the dangers of dust and dust control:

They told us about the dangers of the dust. But we were using nothing. The use of masks and other protective equipment only came recently. They were not used before; there was work and nothing else. My work involved blasting. I was the one causing the dust and we used to wait for a few seconds before the dust could settle down and we will blast again. We blasted again before the dust had settled. The Boers were telling us to go back there and work. You breathe the dust. There is no other way. The Boers were saying “go back there, you said you want a job”. You go back there.

- Former Miner (57), 29 years service, retrenched in 2002



Some comments from former miners in answer to the questions on means used to minimize dust levels were revealing. One former miner in response to the question of whether he was informed of the dangers of dust underground, replied in the affirmative. However, when asked what measures were taken to lessen the dust levels and to lessen exposure, he stated:

We were given hard hats with a lamp, gloves and boots.

- Former Miner (57), 27 years service, retrenched in 2002

This man was employed underground in gold mines for twenty-seven years, and worked, during most of these years, as a Machine Operator. He was retrenched in 2002 at the age of 51. His comment reflects a focus largely on safety equipment and thereby indicates very poor knowledge of the dangers of respirable dust and no understanding of the means that might be available to lessen levels of respirable dust in the workplace. Another former miner, who said he was informed of the dangers of dust underground, said the following in response to questions on measures taken to lessen the dust and to minimize exposure to the dust:

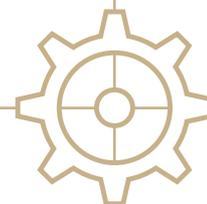
We were given gumboots, gloves, hard hats and overalls.

- Former Miner (48), Machine Operator for 7 years, departed 1990

Another former miner was aware of the dangers of dust. He said:

We were informed of the dangers of dust. We were told to use water before we started to working to prevent phthisis. But it was futile because there was always dust, more especially after blasting. We were as white as snow.

- Former Miner (68), left in 2000 after 33 years service
-



chapter 8

Medical Surveillance History

For much of the twentieth century, an important part of the constellation of belief in science resided in a public faith in its neutrality and objectivity. But because silicosis was of industrial origin, and because every issue faced by public health, medical and engineering professionals had legal and financial implications, many people began to see that the questions posed by scientists and technicians were framed by the larger social and political context. The developing specialties of occupational medicine and industrial hygiene were shaped by their relationship to industry and the financial community.

- David Rosner and Gerald Markowitz, *Deadly Dust. Silicosis and the On-Going Struggle to Protect Workers' Health.*

8.1 Medical Examinations In-Service

A sixty-one (61) year old former miner who had left mining in 2003 after 30 years, mostly as a Driller, and who started working in 1973, described the medical examination he was given on entrance to mining:

We were given chest x-ray, eyes, whether you're blind or not, ears for hearing and hands, if you have scars or not, and urine tests. The doctor also put us on a scale to find out your weight and if you weigh less they place you on the surface and if you are heavy enough you are placed underground. To qualify to go underground you had to weigh more. They also measured your coffin size.

- Former Miner (61), sent home because of “old age” in 2003 [at age 56]

Another former miner also noted the measurement of coffin size:

That was the first thing before you start working underground, to go to the hospital for an x-ray, urine test, ear and eye test, and measurements were taken for the size of your coffin, and then you went for heat tolerant exercises.

- Former Miner (46), Miner Assistant, worked 13 years and left in 1993

Figure 8.1 shows very clearly that the overwhelming majority at 88.7% received medical examinations on entrance to employment in the mines, as well as annual medical examinations on return from leave. Only 11.2% reported that they had not received these.

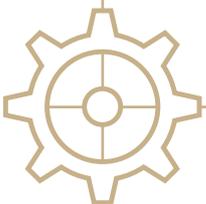
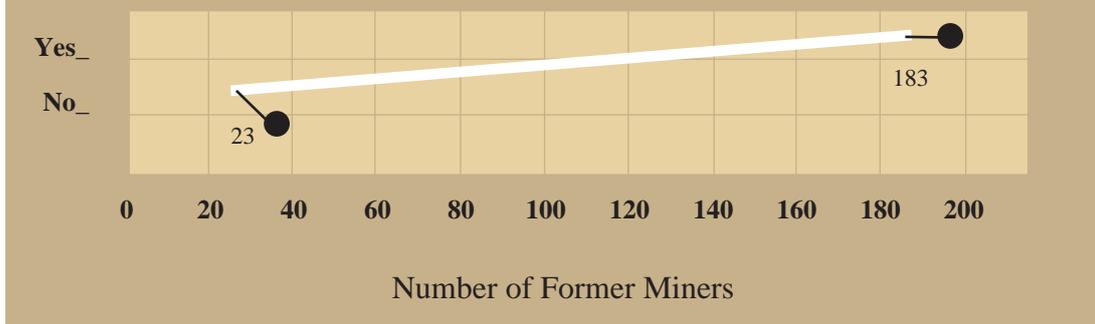


Figure 8.1 Medical Examinations on Entrance and on Return from Leave



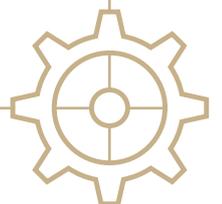
A former miner, aged 41 and who was “dismissed” in 2006 after 20 years mine service, having started at age 18, made the following comments about medical examinations and about dust control measures:

*I've been drilling for so long. If I can get another chance, I'll definitely take it. I want to return as long as I'll be in mines. My last salary was R2500.00 monthly. We were informed about dust. We were not informed in Primrose; it's in Rustenburg where they informed us. We worked in Primrose like there were no principles. You had to be extra cautious there; it was your choice if you wanted to use water. We were not informed about this Act. **It did not exist by then.** We were not given any examination in Primrose but in Rustenburg we were examined by a doctor, we had BP [blood pressure] tests, blood tests, chest x-ray, eye and ear tests. Ears were tested by using big machines. A person had to listen attentively to push the button when the sound came. Eye tests they put different sizes of the alphabet, M placed in different positions and the task was to identify the letter M from the letter W. I think they were bluffing us.*

I left in 2006. I exceeded my leave. However, I faxed a report certificate. They claimed that they did not get it. I got it from a doctor here, I had one consultation with the private doctor and the visit cost R250.00. It was a dismissal. I was examined. They gave me the same examination that I was given at my arrival. They told me my ears were damaged. It was obvious, so many years doing the same job. There was nothing major with my health, except my ears, they converted to going deaf and it's still happening. We used measures to protect ears but they were not good because they aggravated the ears. I haven't had TB but I'm coughing like everyone else. I haven't noticed a change like coughing for a month. This year at the hospital here they only checked my BP, they did not put me in an x-ray.

- Former Miner (41), dismissed in 2006, Driller for 20 years

A former miner aged 57, and who had worked as a Team Leader, left mine service in 1999. He had started work at age 17. He said in relation to his departure and to exit examinations:



We were all sent home and they replaced us with new staff. I was given an examination when I left. It was an x-ray. But there was no telling about this ODMWA.

- Former Miner (57), Team Leader

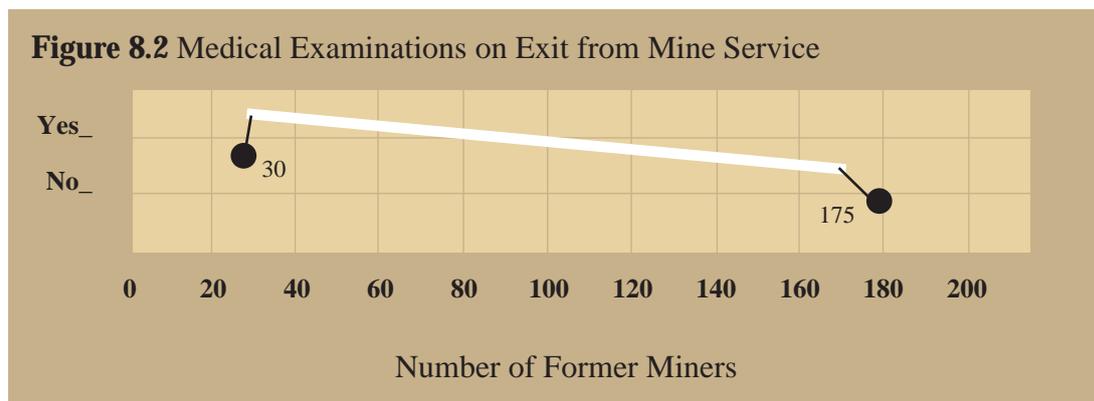
8.2 Exit Medical Examinations

The former miner aged sixty-one (61), and cited at the beginning of section 8.1, said of his 2003 departure and exit examination when he was fifty-six (56) years old:

I was sent home because of old age. We were given a medical examination. We were told nothing. They dismissed us after the examination.

- Former Miner (61), service of 30 years, left in 2003

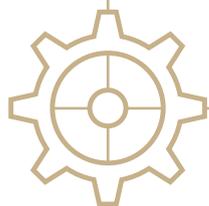
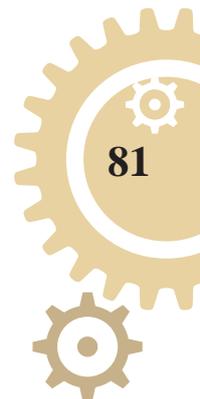
Contrasted to the situation depicted in Section 8.1 of almost full coverage of medical examinations on entrance and during the course of mine service is the inverse scenario of the situation when leaving mine service. Figure 8.2 shows that the vast majority at 85.3% did not receive medical examinations on departure from the mines. Only 14.6% (30 men) received medical examinations on leaving mine service.



There is a striking contrast in the presentation of Figures 8.1 and 8.2. Figure 8.2 is almost the inverse of Figure 8.1.

A fifty-seven year old former miner, who was retrenched in 2002 after twenty-nine (29) years service with most of those years as a machine operator, and who was treated for TB on arrival home, commented in response to the question of exit medical examination:

I was not told. I was only told that old people who have been in the mines a long time were going to be retrenched. We were given the wayawaya letter [retrenchment letter] and sent home. We were not examined. We were not told about this Act that represents miners. We were no longer allowed to go near the places practicing the law, we were just cooped, waiting for our money, and we waited for a month. Chest pains were bothering me at the time and I was coughing very badly. At the mine hospital they said I had TB and hearing loss. I didn't get treatment from the mine hospital. I was sent back home. I was told to go to the TEBA office at home



for my ears. Even the money I was supposed to receive from TEBA I never received it. I was told I will get my money for hearing loss here at the TEBA offices. I never got it. I didn't have TB treatment on the mines, I was just admitted here.

- Former Miner (57), retrenched in 2002 after 29 years service
-

A former miner retrenched in 1997, after 27 years work, and now sixty-five (65) years old, said:

I was retrenched. We were told the mine is closing its operations. I was not given a medical examination. The nurses just asked me if I had any health problem and I told them I was injured underground.

- Former Miner (65), retrenched in 1997 after 27 years service
-

A former miner aged sixty-nine (69), who was a Machine Operator for 22 years and who was retrenched in 2000, described himself as having a medical examination on departure. He said:

Yes, they sent me for a medical examination at the mine hospital and I was told that my ears are not properly functioning.

- Former Miner (69), 22 years, retrenched in 2000

He was not informed of the ODMWA at the time of this exit medical examination. Another former miner, forty-one (41) years old and with 13 years mine service, was retrenched in 1996. He was given an exit medical examination but described it as follows:

They put us in x-ray. That was all. We were not told anything.

- Former Miner (41), retrenched in 1996
-

One former miner, aged sixty-two (62) and who was retrenched in 1985 after 13 years as a Machine Operator, commented:

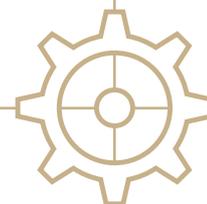
When I arrived on the mines I was sent for an X-ray. And whenever I returned back to the mines from leave at home, I would be sent to do an x-ray. I did not have an x-ray when I left. And I have not had x-ray since leaving the mines.

- Former Miner (62), retrenched in 1985
-

Another former miner aged fifty-six (56) and who left due to illness in 1992 after 10 years service, said:

When I arrived I was x-rayed and did a full examination; weighing, eyes and ears, everything. And injection. When I left I had no examination.

- Former Miner (56), left due to illness, 10 years service
-



A sixty-six (66) year old former miner who had worked for 14 years, mostly as a Stopper, and who was retrenched in 1989, commented:

They wanted to decrease the number of miners who voted for ANC. They thought that we are a bad influence to the new and young miners. They sent us home as quickly as they could. We were not given a medical examination. They couldn't care about what is good for our health. If you continued being sick, you were sent home. They wanted us to die here. We were just garbage.

- Former Miner (66), retrenched in 1989, 14 years service

Another former miner in his sixties, who was retrenched in 2000 after 38 years service as a Driller commented:

We were not given medical examination when we left. We were not even informed about retrenchment. I had TB and I was treated for 2 months in the mine hospital. Then they gave me monthly dates for check-up. After my recovery they sent me back underground and I continued taking my pills. I had TB again. Then I had a letter from the mine, authorizing to be treated at the nearest hospital back at home. Hence I used the letter to continue the course at home. They didn't tell me more at the mine. They don't explain anything there. There's nothing I can say but I am grateful for what the Department of Health is doing for us.

- Former Miner (68), service of 38 years, retrenched in 2000

As a former miner succinctly described the situation:

*The mine was always busy testing **while we were working.***

- Former Miner (51), 19 years service

An older former miner, aged seventy-five (75) and who left the mines in 1987 at the time of a strike, after 35 years service mostly as a Machine Operator, commented, with laughter:

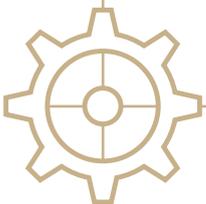
No, I was not given a medical examination when I left. When you are fired, you are fired. You cannot expect to be taken care of.

- Former Miner (75), service of 35 years, left at time of strike in 1987

A former miner aged sixty-three (63) who left in 1996 after 30 years service, resigning as a consequence of illness, and who did not receive a procedural medical exit examination, said:

I requested to leave because I was sick. I was given a chest x-ray. I was very sick. But the mine doctors did not tell me what was happening. So I went to a private doctor in Carltonville who told me that there were "lacerations" in my chest and they were making me sick and he suggested that I stop working underground. So I came home.

- Former Miner (63), service of 30 years from age 21 years, left due to illness in 1996



Similar comments from all the other former miners could be reproduced over and over again within this report. All the former miners reported the same thing: that they were not given any medical examination on exit, or if they were, they were little informed of the medical findings and were certainly not informed of the ODMWA on departure. The words “*We were not told about that*” was the consistently common answer to questions on knowledge of the ODMWA. There was knowledge of COIDA as one former miner described:

I know this Act that protects people when they got injured inside their workplaces. We were not told about that ODMWA.

- Former Miner (41), retrenched in 1996

8.3 Departure from Mine Service

As silicosis is a disease of latency in that it might not show on x-ray on departure from mine service but only show a few years thereafter, an important aspect is the length of time that has passed since leaving the mines. This is equally an important question in the context of whether the former miner has had x-rays and medical examination at any time since leaving mine service.

A further very important area of inquiry related to those who left mine service from 1996 onwards; the year of the new Mine Health and Safety Act which, for the first time, made medical exit examinations compulsory on departure from service. It was important to assess whether this now legal requirement was being implemented for all miners as they left mine service, and the sample was thus divided into those who left pre-1996 and those who left post-1996 for further analysis of the *de facto* situation in relation to the legal requirement of full exit medical examination.

The full sample of former miners in terms of their year of departure is shown in Figure 8.3. The exact year of departure for seven (7) could not be ascertained with sufficient certainty and these are thus recorded as “unknown” (3.4%). Figure 8.3 shows the range of length of time that had elapsed since the former miners left mine work. The year of departure ranges from one (1) in the late fifties, six (6) in the course of the decade of the sixties, and twenty-three (23) or 11.6% during the decade of the seventies. More recent departures were 28 (14.1%) between 1980 and 1984, 28 (14.1%) between 1985 and 1989, 46 (23.2%) between 1990 and 1995, 29 (14.6%) between 1996 and 1999, and 38 (19.1%) between 2000 and 2008. There is thus a sub-sample of over a third of the former miners at 33.8% who had left mine service since the implementation of the 1996 Mine Health and Safety Act and who should have received an official “Exit Medical Examination”. More than half of the sample (55.1%) had left mine service since 1990.

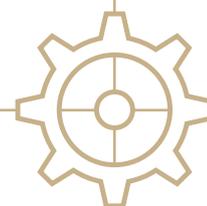
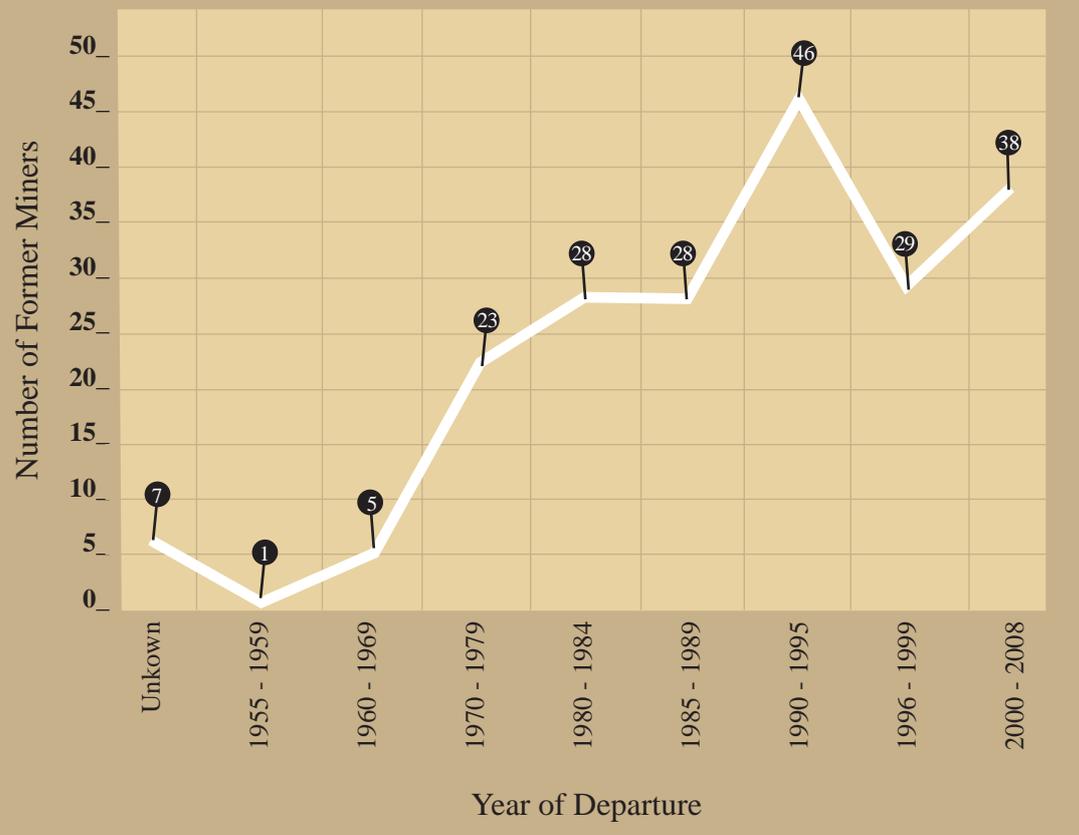


Figure 8.3 Former Miners - Year of Departure from Mine Service



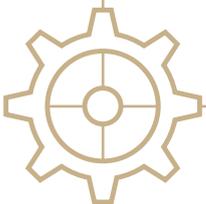
Key to the question of latent disease, and the question of post-employment surveillance and knowledge, Figure 8.4 records, in categories, the number of years that had passed since the former miners left mining. As with Figure 8.3, seven are “unknown” due to the uncertainty of their final year as miners. As one former miner, aged 77 and with 41 years mine service, commented:

Please do ask me the questions. I have nothing to hide but I may not recall everything as it was by then.

- Former Miner (77), service of 41 years

There were some difficulties amongst older former miners in recalling exactly which year they started mine service. Generally, with the help of wives and of available documentation, as well as markers such as the Transkei “homeland Independence” and other historical events and their dates, this could be ascertained with reasonable accuracy. One former miner, aged 63 and who had started at age 18 and worked for 33 years as a Driller, leaving in 1997 without an Exit Medical Examination, said:

I was a grown up young man already when the sun set down at midday and the sky became dark. That was when I left for the mines. They put me on a scale and I completed it so they sent me in the mine. I was on the mines already at the time of Mandela’s arrest. During his release I was still working. I worked until they



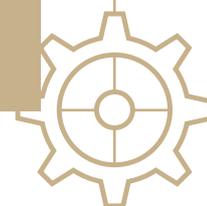
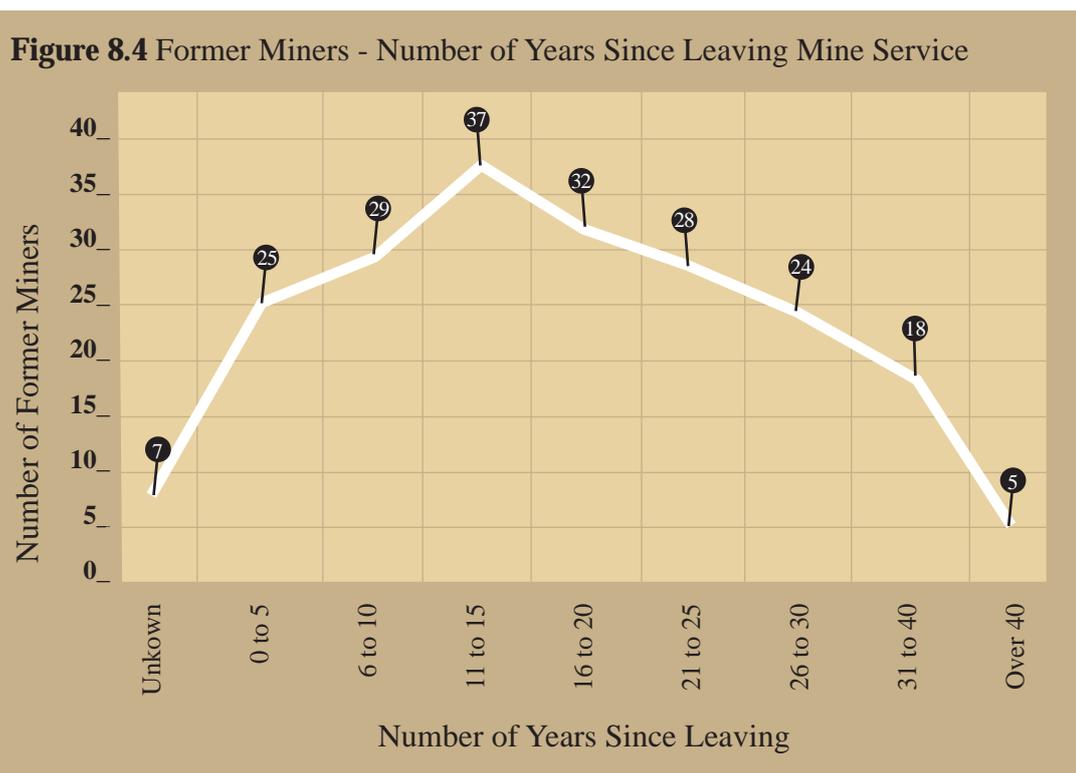
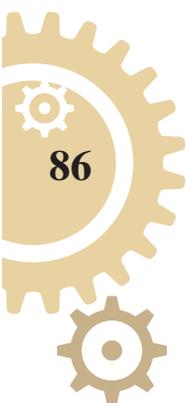
sent me home because I was old. They sent the older group home in exchange of strong active people. They sent us home and that was it. They promised us life when we were still working for them but we got death, we got nothing. They lied to us. All the miners I knew have passed on. They know they owe us but how do you go about asking them?

- Former Miner (63), started at age 18, worked 33 years, left in 1997

This man had retained his framed, as he referred to it, “Machine Certificate”. He was on TB treatment at the time of the interview

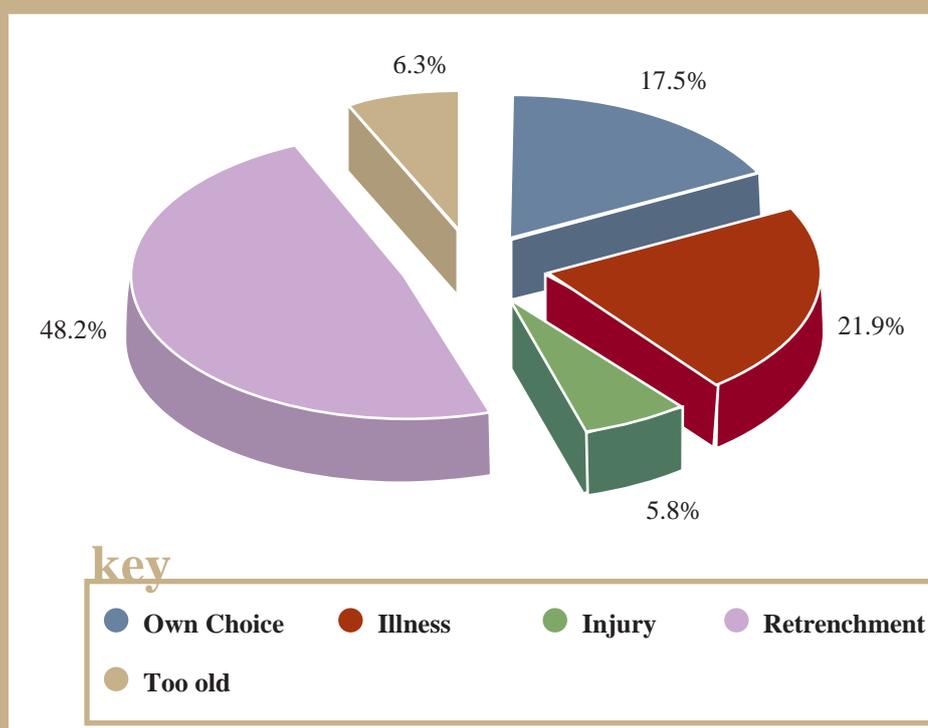
For the highest number (18.6%), eleven (11) to fifteen (15) years had passed since their last underground shift. For the next highest group (16.1%), sixteen (16) to twenty (20) years had passed since their last shift. A further 14.1% had left the mines between twenty-one (21) to twenty-five (25) years previously, and 14.6% had left the mines six (6) to ten (10) years previously. Those who left twenty-six (26) to thirty (30) years previously constituted 12.1%, while those who left thirty-one (31) to forty (40) years previously constituted 9.0%. The importance of these figures will become clearer in the light of later data relating to medical surveillance and knowledge of the ODMWA. Those with a shorter time lapse since leaving mining at less than five (5) years previously comprised 12.6%. The longest number of years elapsed since departing mining was over forty (40) years and these men comprised 3.0% of the sample.

Close to forty-six percent (45.9%) of the former miners had seen up to fifteen years passing since they left mining. Thus almost half of the group under study departed the mines in “the new South Africa”. Just over forty-two percent (42.4%) had left between fifteen and thirty years previously, and close to twelve percent (11.6%) had left thirty (30) to forty (40) years ago.



Following the factual data regarding year of departure from mining, questions were asked about the reasons for leaving the industry. The majority (48.2%) recorded retrenchment as the reason they left the mines. The next highest category was illness at almost 22% (21.9%). In addition to illness, injury was given as a reason for leaving and comprised 5.8%. Only 6.3% had reached normal retirement age and gave being “too old” as the reason for leaving. Those who left voluntarily, their own choice, comprised 17.5% of the sample.

Figure 8.5 Former Miners Reasons for Leaving Mine Service

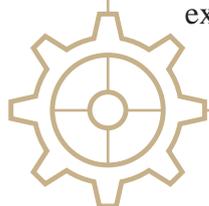


The majority who left due to illness were because of TB or because of ‘chest problems’. One former miner had resigned because of mental illness; he was not counted in the numbers who left due to illness but rather as leaving due to his own choice as he said he resigned. He had done “panelling” for many years, and “ended being a Driller”. He described himself as sick and as having nightmares, saying:

I left the mines because I was sick. I believed that I was bewitched because I started having anxieties whenever I had to go underground. I was not sure what the problem was but I was terrified. Even at night I had nightmares and I would dream as if a table is falling over me. I was terrified but my employers forced me to work until I decided to resign.

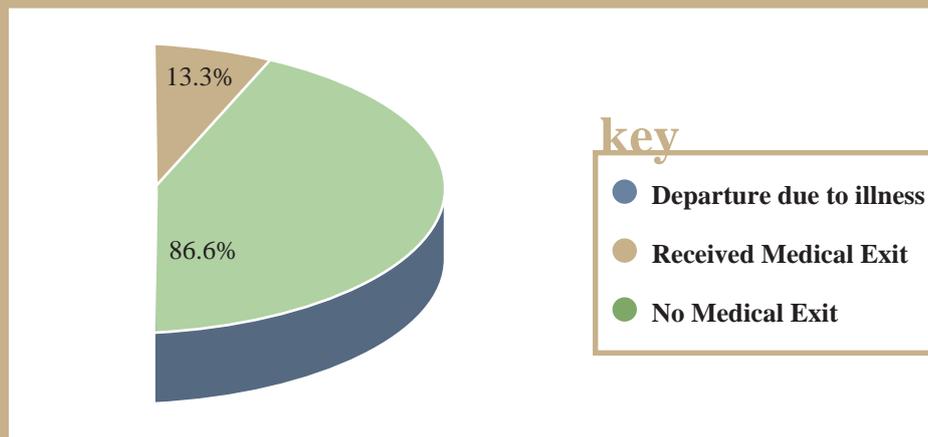
- Former Miner (66), resigned in 1999 after 26 years, currently on TB treatment

The sub-sample of those who left due to illness, a sample comprising 45 men, was assessed in relation to data on exit medical examinations. It would be reasonable to expect that those who left the mines due to illness would all have received medical



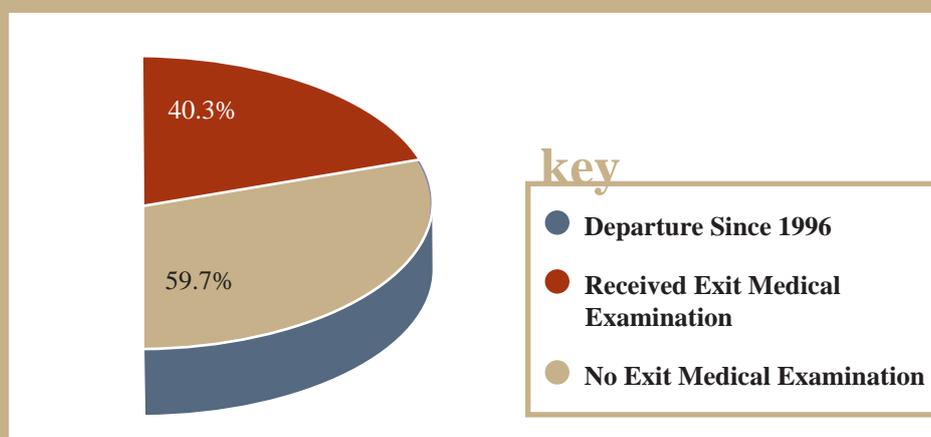
examinations before departure. This was far from the case. Only 13.3% of this sub-sample (6 men) had received medical examinations on exit, while 86.6% of the sub-sample (39 men) had not. This is graphically illustrated in Figure 8.6.

Figure 8.6 Receipt of Exit Medical Examinations for those who left due to illness: 45 men



The sub-sample of those who had left the mining industry since 1996 was analysed in relation to receipt of Exit Medical Examinations, otherwise referred to as Benefit Medical Examinations (BMEs). Sixty-seven (67) men, 32.6% of the total sample, had left mining since 1996. Of these, only 40.2% (27 men) had received Exit Medical Examinations. Those who legally should have received Exit Medical Examinations or BMEs on departure and who did not receive these comprised 59.7% (40 men) of the sub-sample of those who left mining post-1996. This is, again, graphically illustrated in the pie chart of Figure 8.7

Figure 8.7 Former Miners who Left Mine Service since 1996 and who received Exit Benefit Medical Examinations (BME): 67 men



The nature of these Exit Medical Examinations remain, however, in question. One former miner, aged 52 and widowed, was currently on TB treatment through his local hospital and was receiving a TB Disability Grant. When asked who helps care for him, he replied: “*This TB grant*”. Some years ago he had had TB while in mine service, and had been treated to completion in the mine hospital. He described himself as being “sent home” in 2006. He had worked for twenty-three (23) years underground with electrical lighting. He said of his Exit Medical Examination:

I was x-rayed. And they also put me in a big machine to test my hearing and I was deaf still. I am deaf, that is what the doctor told me. Please write that down and emphasise it. Yes, that is what they told me. But otherwise I was well when I left. I had TB again here at home. The doctor told me I have chronic TB and I almost died.

- Former Miner (52), service of 23 years, “sent home” in 2006

When asked if he was informed about the ODMWA at the time of this Exit Medical Examination, he said:

No, I did not hear about it, my sister.

- Former Miner (52), service of 23 years, “sent home” in 2006

A former miner, aged forty-five (45) and who had left mine service in 1998, having worked for 17 years for one gold mining company as a Winch Driver, said the following in relation to the ODMWA, his departure, and his Exit Medical Examination:

No, I have no idea of that [the ODMWA]. I left in 1998. We were all sent home.... I was given a medical examination when I left but we were not told anything. I was feeling well. I only got sick since leaving the mines..... I am trying to pull through. We need clinics and I would need to see a private doctor often.

- Former Miner (45), left mines in 1998, diagnosed with TB in 2005

The question of medical surveillance subsequent to leaving mine service is perhaps well illustrated by the following:

Interviewer : *Have you ever had a chest x-ray?*

Former Miner: *Not since I came back from the mines*

Many of the former miners expressed a wish to return to mine work. Particularly those who were younger were asked if they had tried to return to mine work. A common answer was that they had through the local TEBA offices. One former miner who had left in 1992 after 21 years service as an Assistant Mechanic, or “Spanner Boy” as he described his position, said he had tried to return:

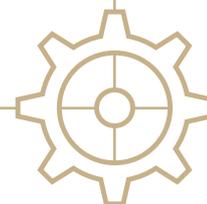
I tried to return to the mines. But I was told I can no longer stand mine work.

- Former Miner (56), left in 1992 and tried to return



Answers to questions about the ODMWA that are similar to such statements as “*I don’t know it at all*”, “*These things are new to us*”, “*It has not reached us yet*”, “*That is new, since Mbeki’s time*”, “*This is my first time hearing of it*”, or “*Maybe that was introduced after I left the mines*” [the latter from a former miner, 66 years old, who left the mines in 1997] could be presented herein another 180 times over. No knowledge had been gained during mine service or subsequently of the legislation covering the diseases of mining, while some knowledge did exist of legislation covering injuries or death through accidents while in mine service. A question frequently asked by the former miners in response to the inquiry on levels of knowledge of the ODMWA was: “*What is it for?*”

The findings on knowledge of the ODMWA are presented in further detail in the following chapter. These findings raise substantial questions regarding the failures in the responsibilities that lie with mining companies to inform their employees of the applicable legislation; they raise large questions on what the Unions are doing to inform their members; and they raise questions about why the public health system, as well as the private health sector, is not informing the patients they are seeing. Is it by omission through lack of knowledge within the public and private health sectors? Is it by intention on the part of the mining companies who do not lack such knowledge of the applicable legislation?



chapter 9

Knowledge of the Occupational Diseases in Mines and Works Act

It is a tenet of democracy that citizens should have full access to information so that they can make informed decisions about policies that affect their lives. In the case of industrial toxins, such information has been regularly denied to workers and the public.

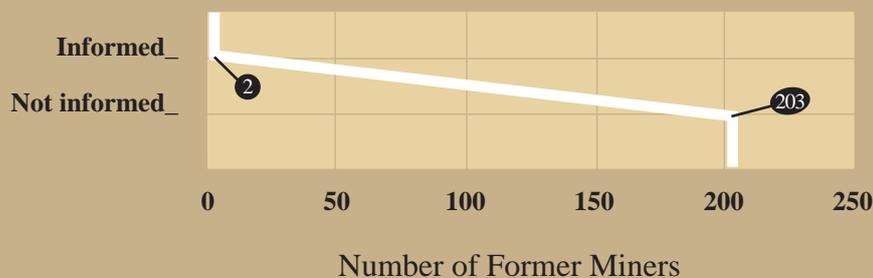
- David Rosner and Gerald Markowitz, *Deadly Dust. Silicosis and the On-Going Struggle to Protect Workers' Health*

Questions pertaining to levels of knowledge of the Occupational Diseases in Mines and Works Act 78 of 1973 as Amended (ODMWA) were only introduced well into the interview process. Firstly, former miners were asked if they had been informed of the ODMWA either during the course of their mine employment or at the time of leaving any of the mines they worked at, as well as the last mine they worked at. Secondly, an inquiry regarding acquisition of knowledge of the ODMWA through interactions with health personnel was undertaken. Knowledge of the ODMWA was found to be appallingly low; a level of knowledge that could effectively be described as non-existent.

9.1 Information on the ODMWA while in Mine Employment

Only two (2) former miners had gained some knowledge of the ODMWA while in mine service. This is 1%. Two hundred and three (203) former miners, 99%, had learned nothing whatsoever of the ODMWA while working in the mining industry. This is doubly shocking in the light of data presented in Chapter Seven that shows an overwhelming majority with long length of service.

Figure 9.1 Whether Informed of ODMWA while in Mine Service or on Exit from Mine Service



One former miner, aged sixty-eight (68), had spent thirty-five (35) working years on one single mine. The bulk of these years had been spent underground as a Stoper. He was moved above ground in 1998 and spent the following seven (7) years working in the kitchens. He had thus served 28 years underground. He left mine service in 2005 without an Exit Medical Examination. In answer to the inquiry as to how his health was at the time of departure from the mine, he said:

I was fine. The only thing that worried me were my ears but they said they are fine. Last year I had something like asthma. We were not informed of this Act that fights for miners.

- Former Miner (68), service of 35 years, left in 2005

One of the two former miners who stated that they were “informed” of the ODMWA while in mine service said the following:

Yes, I heard about it. I heard about it but we were not informed.

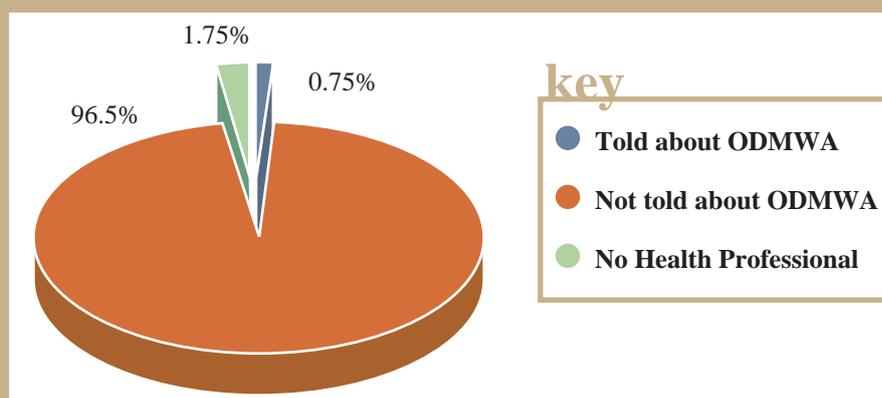
- Former Miner (73), left mine service in 1996 after 40 years on a number of different mines, currently on TB treatment

9.2 Information on the ODMWA through Health Facilities

Questions as to whether health service personnel in the health facilities of their home areas had ever informed them of the ODMWA were also asked. This yielded findings consistent with answers to the questions regarding knowledge of the ODMWA gained during mine service. Five (5) of the former miners had not seen health personnel in their home areas. Of the remaining 203, only two (2) noted that they had gained knowledge of TB compensation from health personnel. This, however, did not extend to detail such as the limitation of diagnosis of TB within 12 months of leaving mine service.

The remaining 198 men, 96.5%, had learned nothing whatsoever about the ODMWA from their local health services. These findings are sharply illustrated in the pie chart of Figure 9.2.

Figure 9.2 Whether Informed by Any Health Facility Personnel of ODMWA

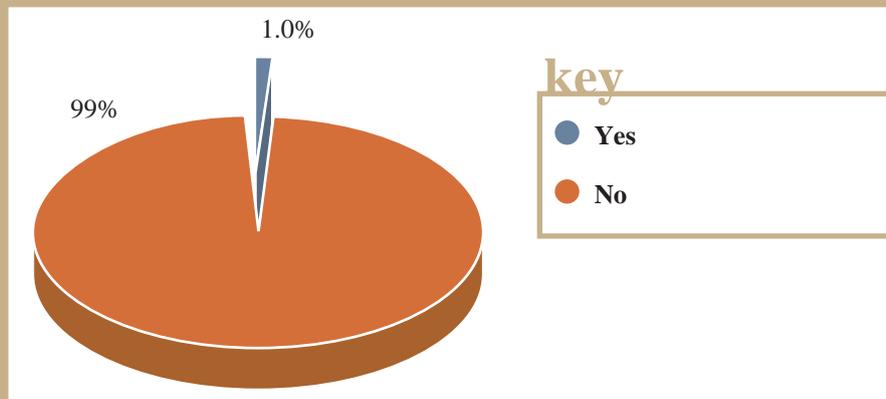


9.3 Knowledge of the ODMWA

Precisely two (2) of the former miners knew something of the ODMWA. This knowledge, however, was minimal in that they had only heard of it as something that covers lung diseases. They had no detail of the provisions of the Act such as their entitlement to lifelong medical surveillance. Thus minimal knowledge of the ODMWA was held by one percent (1%) of the former miners.

The other two hundred and three (203) former miners knew nothing whatsoever of the ODMWA. This means effectively that 99.0% of the former miners had never heard of the ODMWA, let alone heard any detail of the provisions of this occupational disease legislation. These shocking findings are starkly illustrated in the simple pie chart of Figure 9.3

Figure 9.3 Any Knowledge of the ODMWA



One former miner, aged fifty-nine (59) and with 31 years mine service as a Driller and Winch Driver and who left in 1998 because of his second occurrence of TB, said of the ODMWA:

I never heard of it. I don't know it. If I was told I would remember. We are just in the dark.

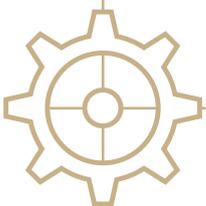
- Former Miner (59), left because of TB, 31 years service

This man was currently on TB treatment and said he had been having TB treatment for two (2) years, and had consulted private doctors several times since he left mine service.

Another former miner aged fifty-seven (57) who was retrenched in 2002 after 29 years mine service which were spent mostly as a Machine Operator, said:

I never heard of that. This is my first time hearing of such law.

- Former Miner (57), retrenched in 2002, 29 years service



A former miner with 23 years service and who left the mines in 1997 said:

I don't know anything like that. If they told me I would remember. We were told to protect ourselves from injury only.

- Former Miner (59), left in 1997, 23 years service
-

A former miner aged sixty-three (63) and who left in 1996 after 23 years mine service commented:

We were only told about loss control which was about the safety of workers underground. I was not told of this law for chest diseases.

- Former Miner (63), left in 1996, 23 years service
-

A former miner aged fifty-six (56) and who left some decades ago in the early eighties said:

I haven't heard of that. When I left there were no unions.

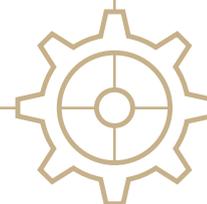
- Former Miner (56), left in 1982
-

An older former miner aged seventy-five (75), who had worked for 26 years mostly as a Machine Operator and who had left in 1982, when asked if he learned anything of the ODMWA during his mine service said:

No. It did not exist by then.

- Former Miner (75), left in 1982

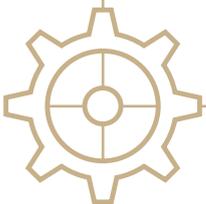
It did exist and has been in existence for over ninety years; for longer than the age of this seventy-five (75) year old man who had left mining in 1982, and who thought that the ODMWA came into being sometime thereafter. This man had been out of mine service for 26 years but had not had any medical surveillance or BMEs during this time. He appears, however, to be one of that rare survivor group, particularly in the light of his having not had TB either on the mines or subsequently. He commented that his state Old Age Pension was not enough as he had two school-going children of his own in the household, along with 7 dependent grandchildren. His surprising good health, he described himself as “hardly coughing”, enabled him to generate some extra income through “roofing mud huts”. He did note in relation to other miners from his community that “the ones I knew are all dead now”. When he was better informed of the ODMWA post-interview, he commented that it all “depends on government as we don't know anything”.



Another former miner (50) said:

I had pthisis but they call it TB. The doctors change it and call it TB. We are not getting even a cent for this; whites think that they are clever. They had death insurances and pensions while we had nothing..... The mine doctors told me TB is curable but I'm still seeing a doctor even now as an outpatient. The doctor will examine and write something down without telling the problem. What amazes most is that he asks you, the patient, your sickness. The doctor is supposed to be the one who gives you the answer.

- Former Miner (50), left in 2007 after 25 years service
-



chapter 10

Health Status and Disability

Dr Walter Polakov, a Director of the United Mine Workers of America, explained the importance of health to American workers. Having studied the problem of silicosis and anthraco-silicosis over a number of years, Polakov explained that “health for wage earners is not merely freedom from pain and disease; it is an essential requirement for earning a livelihood, maintaining a home, and caring for children.” He noted that there was a direct relationship between increasing disability and poverty among American workers. Unlike representatives of management and industry, who used the term disability to describe the physical shortcomings of individual workers, Polakov saw disablement from a very different perspective. He pointed out that if disability was defined by one’s ability to find work, then all those workers who had been excluded from employment because of a suspicious chest x-ray or other medical finding were, technically disabled. He also sought to broaden the definition of disability to include “any organic or functional disorder the source of which may be traced to harmful working conditions or environment”. He argued that simply to make up a list of occupational diseases was inadequate.

- U.S. Congress, Hearings of Senate Bill 3461, 29th February 1940
David Rosner and Gerald Markowitz, *Deadly Dust. Silicosis and the On-going Struggle to Protect Workers’ Health.*

10.1 Health Status

As can be seen in Figure 10.1, sixty-four (31.2%) of the former miners reported that they had no problems with their lungs, while one hundred and forty-one (68.7%) reported that they did have respiratory problems. However, as will be seen later in the presentation of clinical signs and symptoms, this appeared to be inaccurate for the recording of the findings, more quantitatively, of the clinical signs and symptoms did not match the answers to the first simple question of whether they thought that they had a respiratory problem or lung disease, or not. There would appear to be a reluctance to admit ill-health, and this is perhaps largely a consequence of the need to retain the traditional order of the able and strong man who is the head of the household. When separate clinical signs and symptoms were discussed, a far higher number of positive responses were recorded.

In many instances, wives participated in the interview process, and as primary care-givers, they often gave different descriptions of the man’s state of health to the description that he put forward. Perhaps the most tellingly comment was from one former miner who remarked: “**We are all diseased here**”.

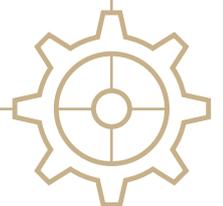
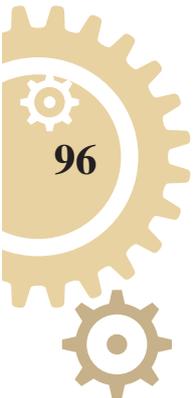
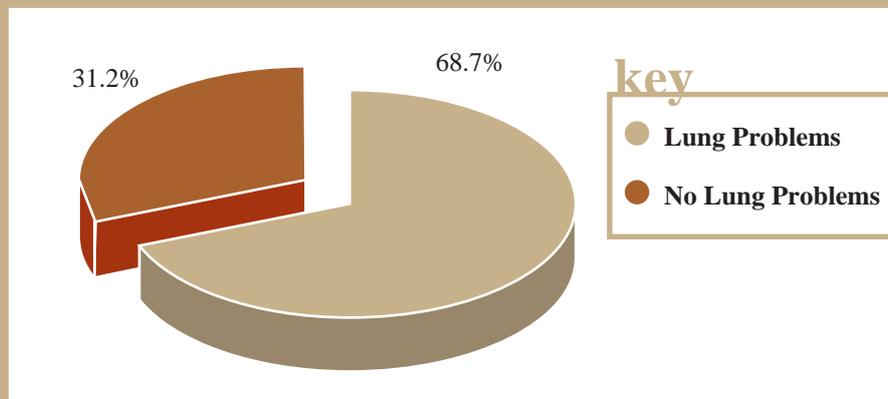


Figure 10.1 Any Respiratory Problems



A former miner who initially said he did not have a lung problem, went on to describe his health and his dependence on an asthma pump:

I left the mines in 1999. I had no strength and I was retrenched. I was tired. Write that down. I was tired of working and I had lost strength. I still feel tired. I never had TB on the mines and I never had it since. I have asthma since I left the mines. I haven't been diagnosed with TB at the hospital, they are giving me asthma pump. I'm wheezing badly at night; the main thing is I'm wheezing. And my cough is dry, very dry because I hardly cough up sputum. I'm breathing rapidly and I've lost weight and strength. I recommend the pump, it feels better after using it.

- Former Miner (51), mine service of 17 years firstly, with “Timber” and then as a Driller, left in 1999, never diagnosed with TB, and who first described himself as not have a lung problem

A former miner (44), whose wife and children had left him and who was dependent on some assistance from his mother's old age pension together with his activities collecting and selling wood, had worked for 16 years as a Machine Operator. He commented:

We were told about the danger of dust. Yes, we were told but we were not given any precaution measures only face masks. It was very dangerous and risky to blast the rock while underground but we had no choice because the whites forced us to do so. I was not informed about anything..... I did not suffer from TB while working. I got sick after I arrived home. I have suffered from TB since leaving the mines, and I was admitted for 3 months in the hospital here. My chest is painful as we speak. It gets tight when breathing and I am often out of breath. If I'm walking I can't reach any further....there should be special doctors for ex-miners or they should be given money to consult private doctors.

- Former Miner (44), Machine Operator, left in 1999

Information on the clinical signs and symptoms of respiratory disease such as coughing, dyspnoea, fever, pain and weight loss were gathered through questions asked of the

former miners, through direct observation, and through question to, and spontaneous participation from, their wives. In many instances the wives, the primary care-givers, would confirm the symptoms described by the former miner, and in some instances contradict the minimal symptoms described by the former miner himself. An interesting area was illuminated through this process. It seems that the patriarchal order requires a man to remain well as head of the household and that this can lead to an under-reporting of ill-health. In such situations, the commentary of a wife, describing the condition of health, particularly the night-time symptoms and inability to undertake certain tasks, appeared to be more accurate. The following transcript section illustrates this.

Former Miner: What troubles me is that when I've been walking I usually feel pain in here [pointing to his sternum]

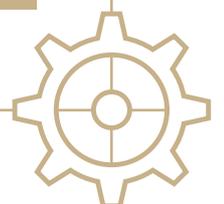
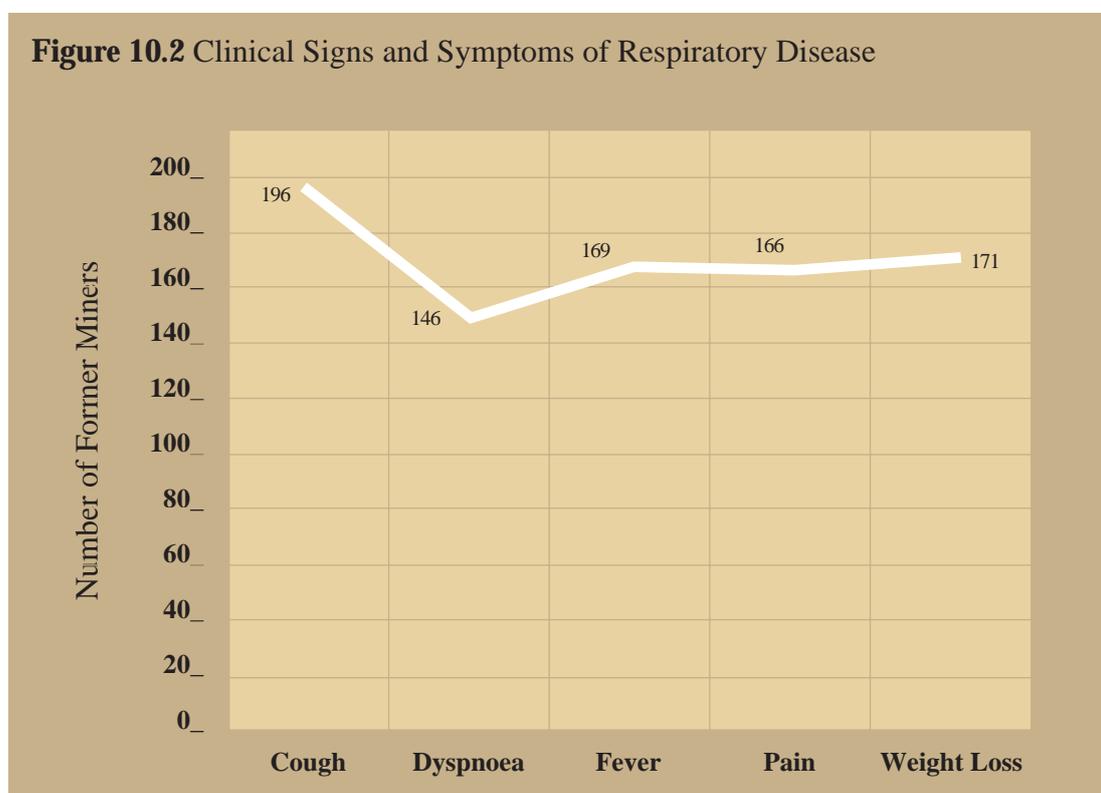
Wife: His legs are swelling, even if he did not walk.

Former Miner: Hold your horses. The only thing that troubles me is the bone of my chest.

Wife: He has pain in his chest. There's no reason of hiding these things. He coughs sometimes throughout the night. You don't want me to say these things?

The results of this general inquiry into the state of respiratory health is presented in Figure 10.2. It can be seen that the vast majority of the former miners had most of these symptoms of respiratory disease. Coughing was experienced by 95.6%; dyspnoea by 71.2%, fever by 82.4%, pain by 80.9% and weight loss by 83.4%.

Figure 10.2 Clinical Signs and Symptoms of Respiratory Disease



One former miner aged fifty-seven (57), who was retrenched in 2002 after 29 years mine service, described his health:

This coughing has been with me for some time now. I did not even cultivate my fields this year. I'm sick so it is obvious that I cannot do most of the work I have mentioned. It is very bad as I can no longer perform many things that could help me sustain my family. It made me an invalid. The mine has done all this coughing. I have no future. I'm done for. I have pain in my lungs. It feels like being injected with pins in the lungs and back. I have been struggling for most of my life without any success, now this is the end.

- Former Miner (57), retrenched in 2002
-

Another former miner aged fifty-eight (58), with 15 years service and who had started working at 18 and left the mines in 1983, said:

I'm sick inside. I can feel it. I have a very painful arm. It's been a year I've been coughing. I was told that I have a sore inside my lungs. The doctor detected it. I went to uMthatha and I was told the same thing. They told me I have dust in my chest. But I was only given cough mixture.

- Former Miner (58), service of 15 years, left in 1983
-

A forty-seven (47) year old former miner who survives with the assistance of his grandmother's old age pension said:

When I breathe my ribs shrink. It becomes difficult to breathe. There are many who are sick like me. We need people from the Department of Health to come and see our situation.

- Former Miner (47)
-

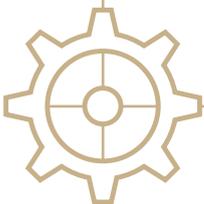
An older former miner, aged seventy-seven (77), with 41 years service and who left in 1991, said:

I can do nothing that needs power. I look after cattle as nobody wants to do it these days. Children these days want to go and wait in bus stops and do nothing but come home to eat. I can't do any jobs especially the important jobs for men in this house. I've been coughing for a long time now. I am short of breathe and especially at night it becomes difficult to breathe. I sometimes breathe rapidly but not all the time. This is not my weight. I was a strong man before the mines ravaged me and left me an empty drum. I am just a hollow now. There is nothing inside there.

- Former Miner (77), mine service of 41 years
-

A former miner, with 20 years service and aged sixty-seven (67), commented:

This is my fourth year without working. It started with my chest. As I'm lying on my back, there is something that is on my chest blocking the air and it becomes



worse at night. The sound from my chest, that is very troubling. It is painful. My arms as well. There are many people suffering like me.

- Former Miner (67)

One former miner described his TB as “the same TB” he had on the mines. None of his family members had had TB. He had had TB during his thirty-eight years of mine service, all of which was at one mine. He commented:

I started by being a Stoper and got promoted until I was a Senior Team Leader at the end. I had TB there and I was treated in the mine hospital. They changed me from underground to the surface for the whole year, and then they put me back underground after recovering. The TB did not change. I get the treatment at the hospital here. The doctor told me I have TB. I think my TB will never be cured.

- Former Miner (69), Senior Team Leader, 38 years service, departed 1995 without an Exit Medical Examination

A former miner only forty-six (46) years old and who was interviewed in late May 2008, died on 25th January 2009. He was on TB treatment at the time of the interview. He had worked for twenty-two (22) years as a Machine Operator before being retrenched in 2004, and he had had TB and been treated while in mine service. He was x-rayed on departure but was given no information about this medical examination, and he had no knowledge of the ODMWA. He described himself as “healthy” when he left mine service. However, he was told he had TB in 2006 and was admitted to his district hospital for five months. His TB recurred yet again. He described his health:

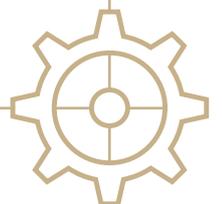
I started coughing again in November 2007 but my cough was dry. I am on TB treatment now. I have lost a lot of weight and I have problems with my breathing. I can only walk for short distances. This has changed my life for the worst since I can no longer do things for myself. I don't think there is something that can help me since I have no power to work again. My left leg is very painful and it is difficult to walk. My left arm is also very painful. I was x-rayed on my last visit to the hospital and I was given Rifampicin and Pyridoxine. They just say I have TB.

- Former Miner (46), retrenched 2004 after 22 years mine service, died on 25th January 2009

10.2 Interactions with Health Facilities

Many men expressed that they were ‘not told anything’ by doctors, and some expressed this in relation to nurses as well. On former miner, a survivor at seventy-seven (77) years but currently on TB treatment, said of the health services:

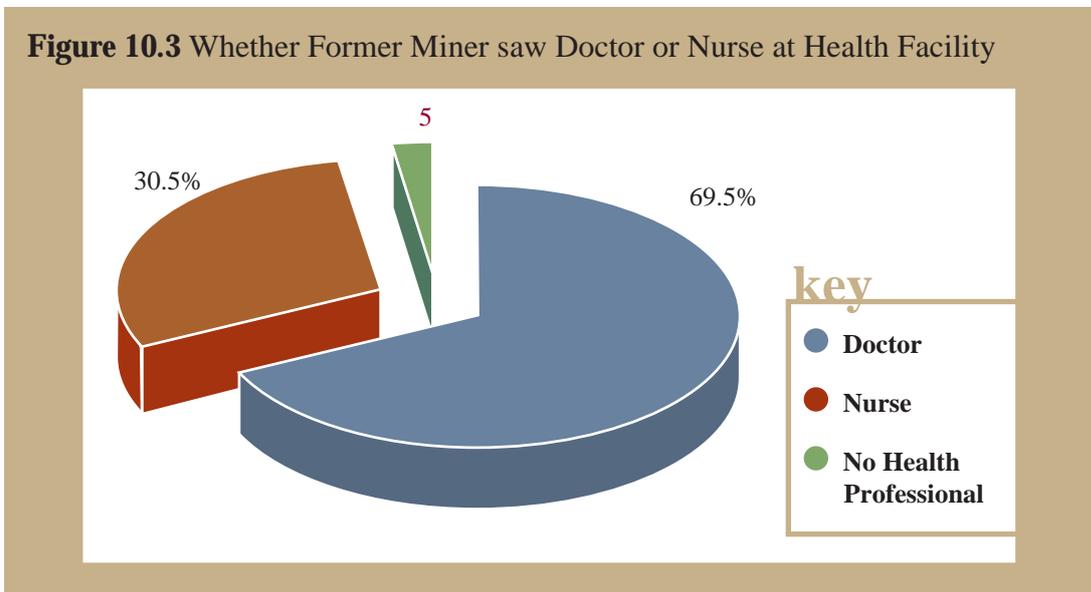
I was examined. I have no idea what it was all about. We can't ask because we have no idea what we are suffering from in the first place. You won't be able to ask anything from those clever nurses and doctors because they'll tell you they



know what they are doing. It is the same for all the miners. I know many but many others have passed on.

- Former Miner (77), Winch Operator for 16 years, departed mine service due to injury in 1991, no TB in service, currently on TB treatment.

Figure 10.3 shows whether the former miners had seen a doctor or a nurse at their last visit to their local health facilities. Five (5) of the men had seen no health professional. A high number at 139 (69.5%) had seen a doctor, while 61 (30.5%) had only seen a nurse. This finding is interesting in the light of data that has been presented on levels of knowledge of the ODMWA and, specifically, whether they had been given any information about the ODMWA by health personnel. It indicates that doctors are themselves not familiar with the ODMWA.



A former miner aged sixty-three (63), who commented that his father had “died in the mines”, and who had had more than three decades of mine service as a Machine Operator, described how he had been diagnosed with TB while in service, was admitted to the mine hospital for one week and was then “sent back in the mine”. He left mine service in 1997 and was diagnosed in 2008 with TB. He was on current TB treatment and had been recommended by a doctor for a TB Disability Grant which he had accessed. He commented:

I went to the hospital and they suspected I have it [TB]. I wasn't admitted. It was TB. I am still taking these pills. They did take an x-ray and they said they saw clots but those people at the hospital are not specific. They just said I had TB and gave me the pills. They keep us waiting on benches for a very long time and at the end of the day you are not getting anything.

- Former Miner (63), TB while in mine service, continued working, left mine service in 1997, TB diagnosed again in 2008.



A former miner aged sixty-four (64) had worked for 38 years on the mines, starting in 1966 at age 22, and, for most of these years, had worked as a Machine Operator. He had five adult children and one dependent child of 15, as well as six household members, some of whom were grandchildren who were in receipt of Child Support Grants. When asked what income the household had he said: “*Apart from Child Support Grant, nothing*”. He was “sent home” in February 2004 and said he was examined on exit as he was “not well” in having problems with his eyes and ears. He was not told about the ODMWA on exit. Although he had not had TB while in mine service, and had not been diagnosed with TB since leaving, he had been suffering from a severe dry cough for the last few years. He said in relation to his recent interactions with health facilities:

I have been coughing for a while now. It is a dry cough. It is 14km to the hospital and I use my horse. I only saw a nurse at the hospital. I also visited the clinic and I saw a nurse. The nurse examined me and gave me medicines. The nurse did not tell me anything. I was promised to be referred to Mthatha. I have seen private doctors; I saw two. This is costly; it is over R100. I also buy medicines. I need to visit the hospital again.

- Former Miner (64), 38 years service, no x-ray since returning home in February 2004

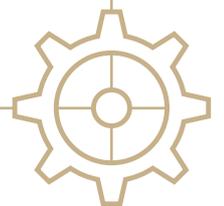
A number of former miners had been told they had asthma, and had been provided with asthma pumps. One fifty-one (51) year old man who had worked for 23 years, firstly in “timber” and “panelling” and later as a Driller, had left in 1999 without ever having had TB while in mine service or subsequently. He commented on his occupational and health history:

We were not informed about this ODMWA. We were only told about how to prevent dangers in the mines.... I had no strength left and I was retrenched in 1999. I was tired of working and I had lost strength. I was not given a medical examination when I left. I never had TB on the mines.....I have asthma since I left the mines and they give me an asthma pump here. I recommend the pump; it feels better after using it.

- Former Miner (51), diagnosed with asthma through local health services

Figure 10.4 presents findings from the inquiry as to whether the former miners had undergone lung x-rays and lung function tests. Obviously those five (5) who had not seen any health personnel would have had neither x-ray nor lung function tests. The question of these two diagnostic tools was not restricted to their last visit to a health facility but left open as to whether they had ever had x-rays or lung function tests through their local health services at any time since leaving mine service. The high number of x-rays results from the high levels of TB, as will be clearer in Chapter Eleven.

Over half of the former miners, 55.6%, had had an x-ray at some stage through their local health facilities, while 21.9% had had a lung function test. This latter finding, however, is doubtful. If the response was positive to the question of a lung function



test, it was recorded as having happened. However, the question was seemingly frequently misinterpreted with many regarding an x-ray as a “lung function test” as can be seen in the following interaction:

Interviewer: Have you ever been given a chest x-ray since leaving the mines?

Former Miner: Yes, they put me in x-ray at....

Interviewer: Have you ever been given a lung function test?

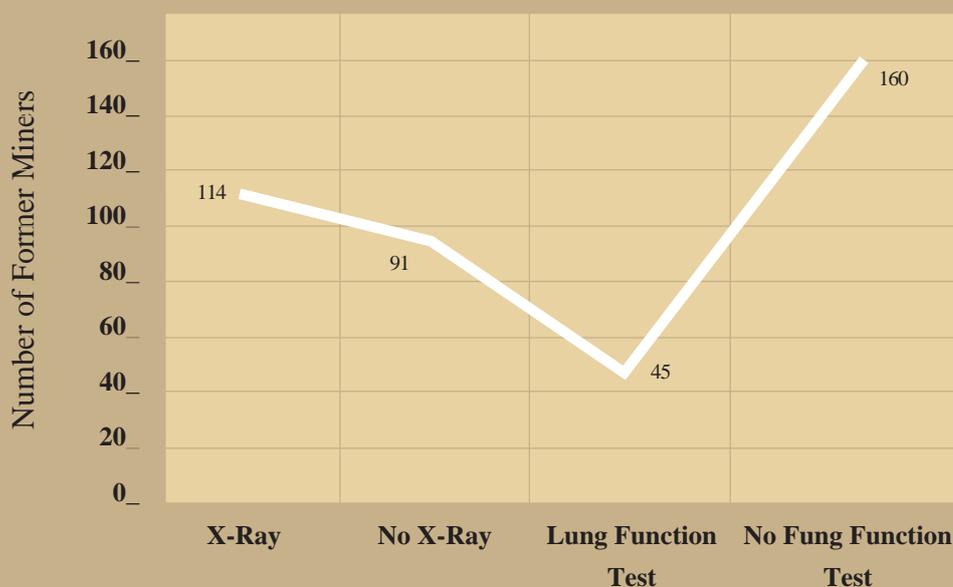
Former Miner: Yes. They put me in x-ray

- Former Miner (51), left in 1999 after 23 years service

The data capture process adhered to strict recording of positive responses to the question of lung function tests even if these responses were revealed, later in the interview, to be confused and thus in the negative; that is, that a lung function test had not actually been received. The question of whether the former miner had undergone a lung function test through his local health services is a good example of such areas of possible misunderstanding and hence inaccurate responses. Quantitative data capture, in this instance, proceeded to record that a lung function test had taken place, even if it was not absolutely certain that there had been an actual lung function test. The high level of lung function tests in Figure 10.4 is thus somewhat doubtful.

Those who had never had a lung function test through their local health services comprised 78%, while those who had not had an x-ray through their local health facilities comprised 44.4%.

Figure 10.4 Whether Former Miner Received X-Ray and Lung Function Test at Local Health Facility



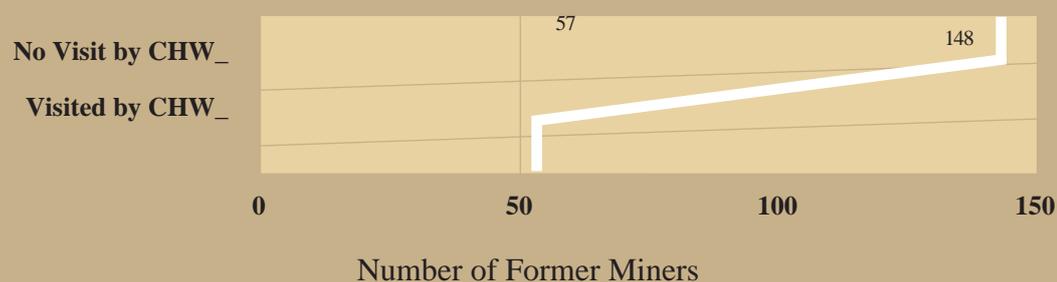
A former miner who had spent a relatively short period as a Machine Operator, from 1983 to 1990, had departed as a result of the “chest problems” he was experiencing. He described this ill-health as having continued since then. He said:

I was very sick so I decided to return home. I was not well. I had chest problems. I had been treated for tuberculosis at the mine hospital and I was admitted there for 3 months. I continued working underground. Then I had tuberculosis after leaving the mines and I was treated here. I have been taking treatment for four years. I have a problem with my lungs, I have difficulty breathing. It feels like I am suffocating slowly. I've been coughing for a long time; probably since I came back from the mines. The cough is very dry which makes it very difficult to breathe. My chest is also painful at other times. The doctor said I have sores inside my chest, and he gave me tablets and cough medicine. He said I had tuberculosis.... I can no longer run or do heavy physical work. Walking is difficult so I take breaks all the way. I usually avoid going uphill. I can work on small gardens; I cannot plough. And I can only dig shallow holes. These chest problems have made me an invalid as I can no longer work to feed my family. I'm always sick and weak.....My wife looks after me and my children. She cooks, washes my clothes, and sends me to hospital when I'm not well. She is available all the time..... Last week we had pap, mixture of wild herbs and mielie-meal, and mixture of samp and beans. We are starving here. Nobody receives any grants in this family. We need something to help us feed our families.

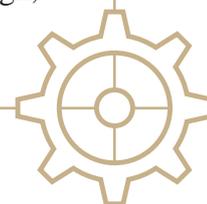
- Former Miner (48), service of 7 years, TB on mines and TB after leaving

With the growing outreach of Community Health Workers (CHWs), it was asked whether there had been any visits from CHWs. Figure 10.5 shows that only 57 (27.8%) had had any experience of CHWs. These were TB DOTS supporters focusing only on TB treatment. With over 71% having had no contact with CHWs it is indicative that CHW programmes are not well developed in these areas.

Figure 10.5 Whether Ever Visited By Community Health Workers



One former miner, aged 54, who had spent 32 years between five different mines, twenty of these as a Machine Operator at the last mine he worked at and was retrenched in 2005. His only current source of income was through one CSG although he had four children under eighteen years old. He said that they survived through planting maize and receiving food from neighbours. However, he described himself as unable to plough,



or dig, or lift heavy objects. He described some of his health history, which included paying R120 to see a private sector physician, as well as seeing a Traditional Healer:

I had TB while on the mines and I was treated at the mine hospital. They did not change me; I continued working underground....I was retrenched in 2005. I did not get an examination when I left though I was already sick. I cough, it has been like this since I left the mines and my cough is sometimes dry and at other times it is not. It becomes difficult to breathe, especially at night, and I wheeze a lot at night. And I have lost weight. There is a lot of pain in my chest. I can't do many jobs here at home because I have no power now.....A doctor attended to me at the hospital here. He told me to apply for a grant. I did apply for it but I have not been successful. I was given an x-ray last year. I have been on TB treatment now for six months..... The Community Health Workers visited me at home. They don't help except checking if you take your tablets at appropriate times.

- Former Miner (54), TB on mines and TB currently, visited by DOTS personnel

10.3 Use of Private Sector Medical Practitioners and Traditional Healers

A particularly valid area of inquiry related to consultations with private medical practitioners to assess use thereof, expenditure and whether any information was received from private sector physicians on the ODMWA. There is a clear trend towards allopathic medicine amongst this sample of former miners, and large sums of money, ranging from R100 to R300 per consultation, were spent on these private sector visits. None of the former miners who had dug deep into their limited financial pockets to pay for these consultations had received information on the ODMWA from the private doctors although a few were given referral letters to apply for Disability Grants, all of which had been unsuccessful.

Figure 10.5 presents this data while Figure 10.6 presents data on whether traditional healers had been consulted. It is clear that there is a preference for allopathic medicine in the high proportion of former miners who had found the necessary cash resources to embark on a consultation with a private medical practitioner. Close to fifty-two percent (51.7%) had paid for a consultation with a private medical practitioner. Only 19.5% had consulted traditional healers.

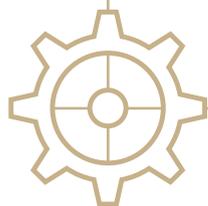


Figure 10.6 Whether Former Miner has Consulted Private Medical Practitioner Since Leaving Mine Service

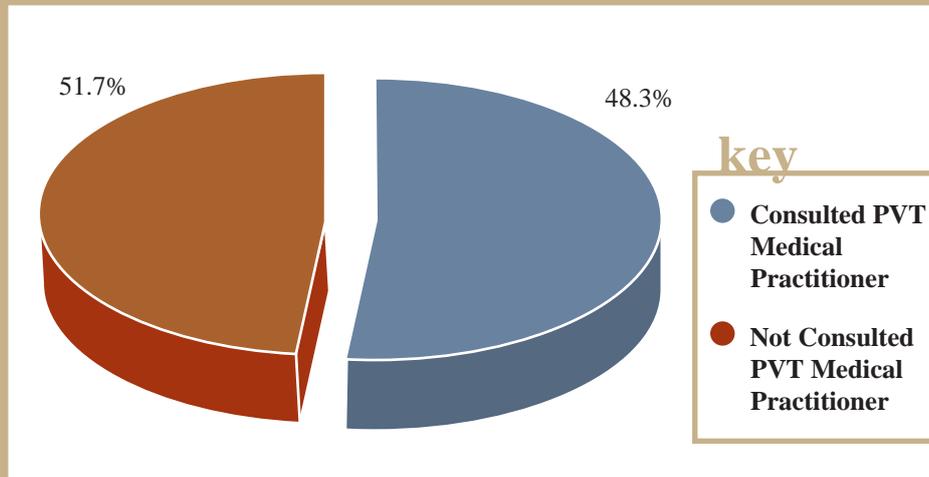
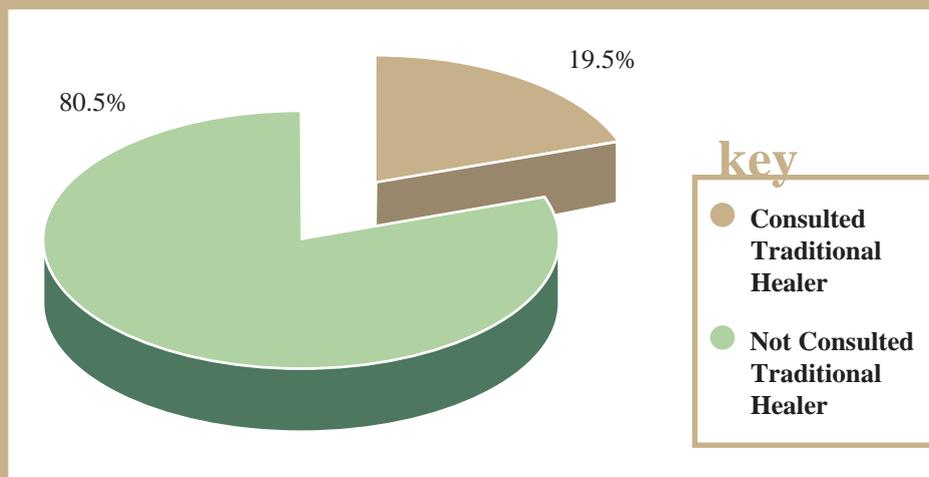


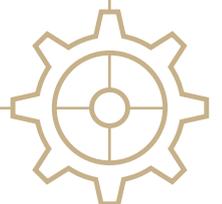
Figure 10.7 Whether Former Miner has Consulted Traditional Healer Since Leaving Mine Service



One former miner, a Driller for 22 years, commented on the use of private sector medical practitioners:

There is no assistance in this area. People get sick every day and they use their money to consult private doctors.

- Former Miner (54)



One miner, aged sixty-five (65), commented on traditional healers:

They are robberies. They ask more money, promising rapid recovery but you'll never see recovery.

- Former Miner (65)
-

A former miner who had worked ten (10) years as a Driller said:

There are medical doctors all over and they are trained to look after our health so I don't see the reason of consulting Traditional Healers. I believe in Doctors.

- Former Miner (49)
-

Another former miner, when asked whether he consulted traditional healers, commented:

No, I don't consult them. It is just that their superstitions do not make sense.

- Former Miner (59), mine service of 26 years, TB twice on mines and once at home
-

The question of autopsy was also raised. None of the former miners were aware of the requirement of the ODMWA for autopsy at death. Thus attitudes to and understanding of autopsy was assessed in order to elicit information on whether autopsy is acceptable or not. A few of the men in their seventies did not find autopsy acceptable. In many instances the response to the question regarding the acceptability of autopsy was immediately positive. In other instances, when the response was initially negative, once the reason for autopsy was explained, this response changed to being positive in saying that autopsy was acceptable to them and their families. For others it was seen as something very desirable and necessary. One former miner said:

I think it is important to know the cause of death, especially for your family.

- Former Miner (57), currently on TB treatment and had TB on mines
-

Another former miner said:

I think it is very important because we would like to know what caused the death.

- Former Miner (68), "Timber Boy" and Machine Operator for 10 years
-

Another sixty-eight (68) year old former miner said:

It is right especially when testing is done by doctors.

- Former Miner (68), a Loader or "Umalayisha" for 13 years
-

A younger former miner of fifty-nine (59) said of autopsy:

I agree because I won't feel anything.

- Former Miner (59)
-



Another former miner thought autopsy might be necessary but commented that it is “too late”:

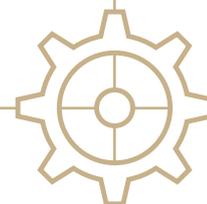
If it is necessary, it is a good thing. But it would be better to be properly examined while alive.

- Former Miner (62), service of 11 years as a Machine Operator, had TB after leaving the mines
-

Yet another, and younger, former miner said of autopsy:

I think it is right as it allows the doctors to know what caused your death, because after burial we won't know what killed you. I have a problem with my lungs; it is just that I don't know what is wrong. We are dying victims of the mines.

- Former Miner (45), Blaster for 16 years, no TB in service or after
-





chapter 11

Tuberculosis

Chemoprophylaxis is also being tested.....As on the mines, it appears to provide some short-term protection, yet it is unclear whether in the long run it will be any more effective than BCG vaccinations as long as the underlying factors that cause TB are not eliminated. It is a clear case of the use of medical technology as a substitute for social and economic reform. Medical authorities would certainly argue, as they so often have in South Africa and elsewhere, that one cannot simply say that the system is unworkable and throw up one's hands in despair. One is obligated to do what one can to reduce suffering within the constraints of the current system. The response to this line of argument must be that the recent history of TB control programs in South Africa, as well as elsewhere in Africa, strongly suggests that doing what can is tantamount to doing very little. All that one accomplishes in the long run is the reproduction of misery. For by giving the impression that TB can be controlled through medical interventions alone, one simply delays serious efforts to alter the basic causes of the disease. Such efforts in effect contribute, albeit unwillingly, to the maintenance of the status quo.

- Randall M. Packard, *White Plague, Black Labor. Tuberculosis and the Political Economy of Health and Disease in South Africa.*

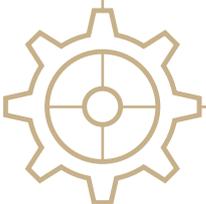
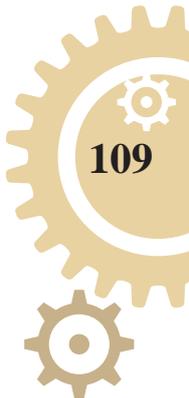
11.1 Tuberculosis While in Mine Employment

A fifty-nine (59) year old former miner who had worked for twenty-six (26) years, starting as a Stoper and moving on to being a Driller, left mine service in 1992. He said of the two times he had had TB while in mine service:

I had TB twice while I was on the mines. I was treated at the mine hospital for six months and I was changed from working underground to working on the surface. They thought I had recovered and they decided to return me underground. I was underground until I had it again. I was moved again to the surface but the salary was lower and I decided to quit. I left in November 1992. I was very sick; I'd had TB twice.

- Former Miner (59), Stoper and Driller, 26 years mine service, TB twice while on Mines

This man had TB a third time when he returned home and was treated as an out-patient at his local hospital for six months. He now relies on an asthma pump. His wife added: "He's a walking skeleton", and he described his inability to do things at home:

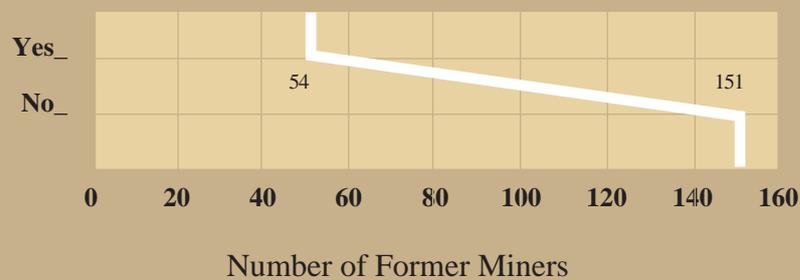


I'm not able to do ploughing and if I've been hoeing exhaustion will reside with me for the rest of the day. I can walk from here to..... Yes, but I will have to bear the consequences. Going uphill I must take rests.

- Former Miner (59), TB twice on mines, once at home.

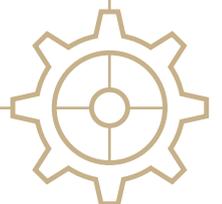
Figure 11.1 shows that 26.3 percent of the former miners had been diagnosed and treated for TB while in mine service, while 73.6 percent had not had TB while employed on the mines. This is not a surprising finding in view of the high rates of TB amongst active miners. A somewhat inverse situation applies post mine service as will be seen in Figure 11.2.

Figure 11.1 Tuberculosis While in Mine Service



A sixty-two (62) year old former miner had TB on the mines, had TB treatment just after leaving mine service in 2001, was on TB treatment again, and receiving a TB Disability Grant, at the time of his interview. He had five (5) school-going children, all above the age of eligibility for CSGs. He had worked for 30 years, describing himself as a “Machine Boy”; he had spent 20 years as a Machine Operator at one single mine, and said he was “operating the machines all the way”. He gave the following description of his history of work, illness and TB:

I have my papers, yes, even those when I first went to the mines, they are still available. Some papers state the time I started getting sick, and those stating when I arrived in the mines. We were only informed about the smoke; they said if you inhale the smoke you will die so you have to move away from the smoke, especially after blasting. Water was used but not when you are entering the mine and water was not used in the old side, that is where most of the smoke came from. We were examined in the mines. We went to do an x-ray, and they also check the ears and eyes. The ears were tested after you have been working for some time, not when you arrive. I left the mines because of illness. [he was 55 at time of departure] It was TB. They were forcing me to work while I was sick. They did examine me when I left. They checked my chest and ears. They said I was fine, that the TB was healed and I was told to go home. I received my Provident Fund money.



I could feel that I was not fine and since then I have been attending the clinic. I first had TB in 1996 on the mines. It started then. I spent four months in the mine hospital and six months as an outpatient. It showed up since I came back from the mines. At the clinic, after I came home, they did not say I had TB. The tablets were not for TB; they were due to the papers, the doctor's letter, I came back with from the mines. When I felt sick I would go to the clinic to get the pills. I can't say they were for tuberculosis because I was never x-rayed at the clinic. My breathing was very thin. Now I am on TB treatment. Sometimes I cough and the sputum won't come up. It is dry. They don't talk about issues relating to our work in the mines. [health personnel] They normally just talk about the fact that if you are taking TB tablets you have to take the tablets every day until the doctor tells you not to take them anymore or TB is finished in your body.

The doctors have never explained. I have seen a private doctor. It cost R120. The private doctor said nothing, he asks you what is wrong. I buy medicines from the pharmacies in town; they cost up to R90, others are R60. The health department can help us by building enough clinics in the rural areas of the Eastern Cape. The mining companies need to pay us our monies, because they destroyed us.

- Former Miner (62), service of 30 years, TB on mines and TB since leaving

Of concern in relation to TB were those miners who had TB at the time of leaving mine service but who were still sent home. One fifty-one (51) year old former miner, who was retrenched in 1998 after 23 years service as a Stopping Team Leader and who was not told of the ODMWA on departure, said:

I was retrenched. I had chest problems at the time; I didn't know if it was TB or asthma. They did give me a medical examination at the time I left. It was TB; just when I was about to come home. I was treated at the hospital here at home for six (6) months. I am the only one in my family that has had TB.

- Former Miner (51), TB diagnosed on mine but treated at home

This same man commented on hostel conditions:

It was bad – we were squatting in the hostel like chickens in a pen.

- Former Miner (51), 23 years in mine hostel, left in 1998

11.2 Tuberculosis at the Time of Leaving and TB Post-Mine Employment

A extremely high proportion of the former miners had been diagnosed and treated for TB since leaving the mines. Figure 11.2 shows that this was the case for more than half of the sample (51.7%). Those who reported not having been diagnosed with TB since leaving mine employment comprised less than half (48.3%).

A 68 year old former miner who was retrenched in 1990 after 25 years, most of these as a Team Leader, and who had TB while in mine service as well as afterwards, although no member of his family had had TB, commented:

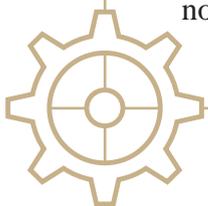
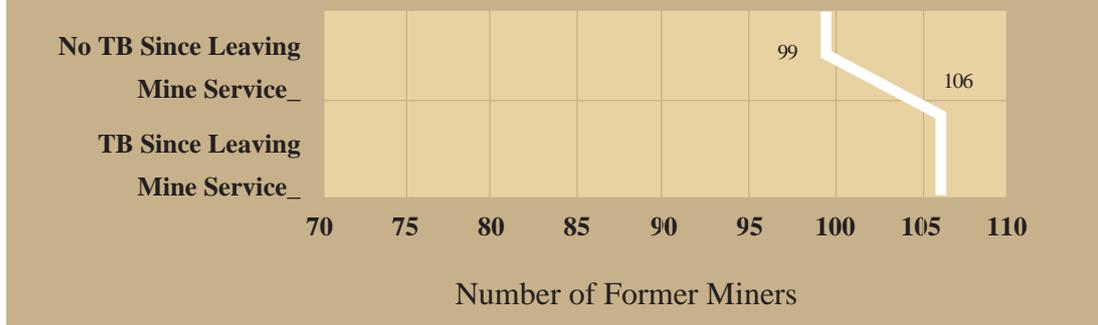


Figure 11.2 Tuberculosis Since Leaving Mine Service



I would like TB to be regarded as an occupational disease.

- Former Miner (68), TB in mine service and afterwards, no TB in family

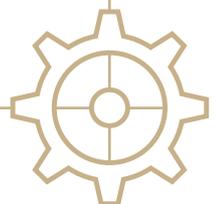
TB is an occupational disease in mining. Perhaps what this former miner intended to mean was that TB should be regarded as an occupational disease for the duration of the miner's life and not just for the twelve month window period subsequent to leaving mine service. A forty-one (41) year old former miner was on TB treatment at the time of his interview in April 2008. It was found that he had left his job as a Driller just a few months earlier on the 3rd January 2008. He said:

I had chest problems. When I was given an x-ray, they found TB. I was sent home. I am doing the treatment now at the clinic.

- Former Miner (41), on TB treatment April 2008, departed mine January 2008

This man had been diagnosed with TB while in mine service but was dispatched without undergoing TB treatment. He was told to go to his local health services at home. He was not informed of the ODMWA at the time of exit and he had no knowledge that TB is compensable in-service, as well as during the twelve months following exit from mine service. He had consulted a private sector physician at a cost of R150 but was no better informed by this physician of his eligibility for compensation for TB than he had been prior to the consultation. While undergoing his TB treatment, his current income was described as “*the money I get from looking after cattle*”. He walked to his local hospital and had had to pay R20. He was also buying cough mixture from the pharmacy in town. Three CSGs provided for his wife and 6 dependent children.

This travesty of the applicable legislation for a miner who had worked for nineteen (19) years as a Driller, and whose last salary was R2900.00 per month, which would have translated to a substantial injection of income support during his TB treatment, led to an urgent intervention, urgent due to the fact that the months available for claiming were quickly passing, on the part of the principal investigator. He was taken to the Occupational Health Nurse at another District Hospital. This Occupational Health Nurse had some knowledge of the ODMWA although she was not aware of the clauses specifying eligibility for TB compensation within 12 months of mine departure. The



process of claiming for this former miner's legal right to TB compensation was thus started. At the time of writing this is still in process with no concrete outcome as yet.

Another former miner was discharged with TB in 2004. At the time he was "sent home", he was 52 years old and had worked as a "Timber Boy" for 28 years, earning R2000.00 per month at the time of his departure from mine service. If he had been treated in the mine hospital at this time he would have been paid while undergoing treatment. He said:

I was told I was not well, so they discharged me. They said I had Tuberculosis. Since I came back I have been constantly receiving TB treatment.

- Former Miner (56), currently on TB treatment

Yet another former miner, aged fifty-one (51) with two young children, and who had served 27 years as a Miner's Assistant, said he was retrenched in 2006 and told at this time that he had TB. He received no compensation for the TB. He commented:

We were retrenched. I was given an examination and they told me that I have TB. I was not feeling well. I had TB; they told me while I was leaving the mine. I was not treated. They sent me home and told me that I'll be treated at the nearby hospital. I still have TB. My wife gives and interprets the pills to me.

- Former Miner (51), retrenched with TB in 2006 and currently on TB treatment

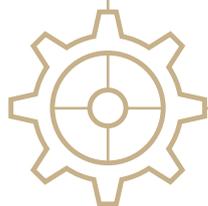
When asked if his local health services had informed him of the ODMWA and of his right to compensation for TB, he said:

No, they didn't tell me anything connected to the mines. The doctor did tell me that I have spots in my lungs and he showed me. After the doctors told me about the dots in my lungs I realized my life is getting worse. I don't have any income. We are getting food from the maize we plough and we go hungry when there is no harvest or limited harvest. I'm not able to do ploughing or cultivating. I can only dig two holes for poles. I walk slowly and I have to take rests. I'm becoming worse every day. But by looking at the manner you are handling the whole thing [this research] it gives me hope. We need help. The mining companies should take the responsibility of our sickness.

- Former Miner (51), retrenched with TB in 2006 and currently on TB treatment

Yet another former miner was diagnosed with TB through his local health services within 12 months of departing mine service. This man was fifty-two (52) and had worked as a Machine Operator for most of the twenty-one (21) years he had spent on one single mine. He was retrenched in May 2001. He commented:

We were informed about the dangers of the dust because we were working in the dust. We were told to use water but it was not helping that much anyway. I was given an x-ray when I was retrenched. But I never heard of this ODMWA while working on the mines.....I was feeling healthy when I left, except coughing. I



started taking TB treatment in 2002 and stopped in 2003. I have TB again now.

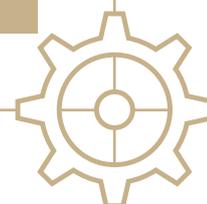
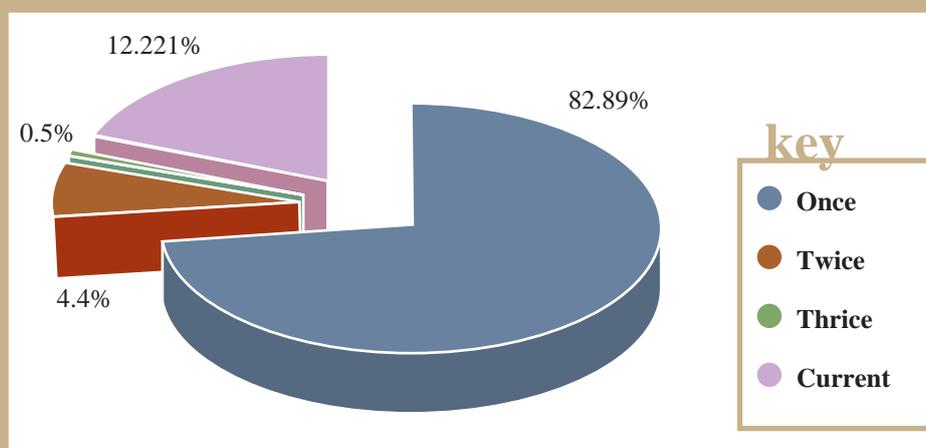
- Former Miner (52), TB identified shortly after leaving mine service

As some of the men indicated that they had been diagnosed and treated for TB more than once since leaving mine service, the number of episodes of TB was recorded. It is important to note that the number of episodes of TB was recorded as the number of episodes since leaving mine service. Clearly, if TB during mine service was included herewith the numbers of repeat TB cases would be considerably higher.

The findings are shown in the pie chart of Figure 11.3, along with graphic representation of those who were currently undergoing TB treatment. Those who were currently on TB treatment comprised 12.21% of the sample of former miners. It must be noted that some of the current TB cases do fall under the category of having had TB diagnosis and treatment “once”. Those who had had TB twice comprised 4.4%, and those who had had TB thrice since leaving mine service, comprised 0.5%. These numbers for “TB twice” and “TB thrice” would be considerably higher if “TB in Mine service” was included in this TB count.

There are, however, those amongst the group of former miners currently on TB treatment who have been on TB treatment for longer than 6 months, and in some cases, as they described it, for many years. If these former miners reported that they had only had TB “once”, they were counted as having had TB only once. It would appear that their TB is not being cured; some noted that the health services had been treating their TB for “*many years*”, and some reported that they had been on TB treatment since leaving the mines up to four (4) years previously. This raises important questions such as whether they are being diagnosed as tuberculous on x-ray examination when a more accurate diagnosis could be silicosis, and it also raises the question of whether they have MDR TB. A key question is thus raised over the possibility of mis-diagnosis of TB via x-ray examination. Are many silicotics being diagnosed with TB, put on treatment, not cured, and put on treatment again, while the cause of their lung disease is silicosis?

Figure 11.3 Number of Episodes of TB since Leaving Mine Service



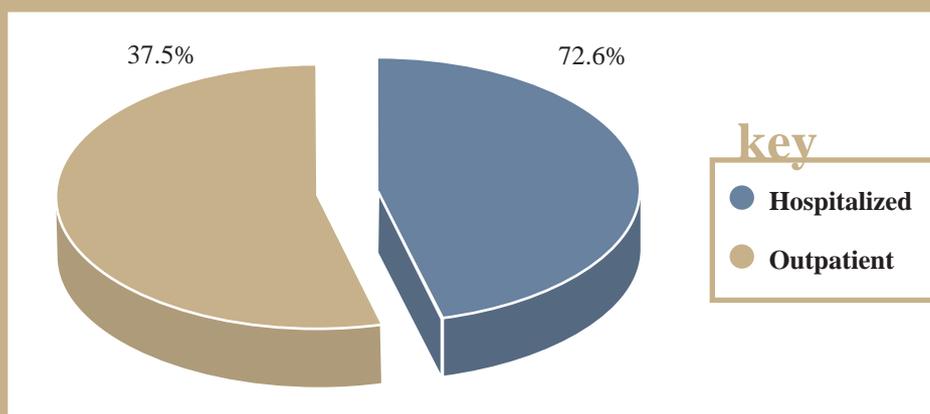
11.3 Tuberculosis Treatment through Local Health Services

In order to assess severity of TB, as well as the burden placed on the public health sector hospitals, an inquiry was undertaken as to whether the former miners had been hospitalized or treated as an outpatient for their TB. Clearly, some of the TB cases had been both admitted to TB wards as well as starting or continuing TB treatment as outpatients. These findings are presented in Figure 11.4, 32.1% of the full sample of former miners had been hospitalized for TB treatment since leaving mine service.

Of the sub-sample of former miners who had had TB since leaving the mines, those who had been hospitalized for treatment comprised 62.3%. Only 37.7% of the sub-sample of former miners who had had TB since departing mine service had not been hospitalized as a result of their TB.

These percentages are exceedingly high and reflect a heavy burden on hospitals.

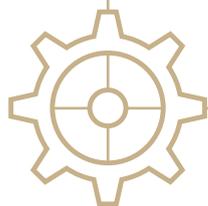
Figure 11.4 Whether Hospitalized or Treated as an Outpatient for TB since Leaving Mine Service



A former miner aged fifty-two (52) had recently been hospitalized for six months in his local hospital. He had had TB while in mine service where he was admitted for 6 months and then sent back underground. He was a Team Leader and had a total of 30 years service with twenty of these years at the last mine he worked out. He described his situation:

I left in 2004. I was suffering from tuberculosis and the doctor sent me home. I was told that I must go to my nearest clinic. I was very sick when I left the mine... I can no longer walk uphill and coughing is my main problem. I cough very badly and it is dry. I have a very agonizing pain in my chest and arms and my joints are always cold. The doctor told me that compensation is no longer given to TB sufferers. I have lost too much weight. I think this disease was caused by working underground, exposure to dust and bad living conditions in the hostels..... I need people to assist me with most things; my children do the work when they get back from school. I can no longer do anything. I just sit here until the sun goes down.

- Former Miner (50), Team Leader, TB on Mines and TB at home

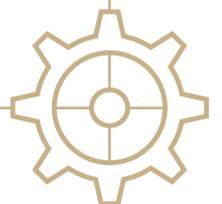
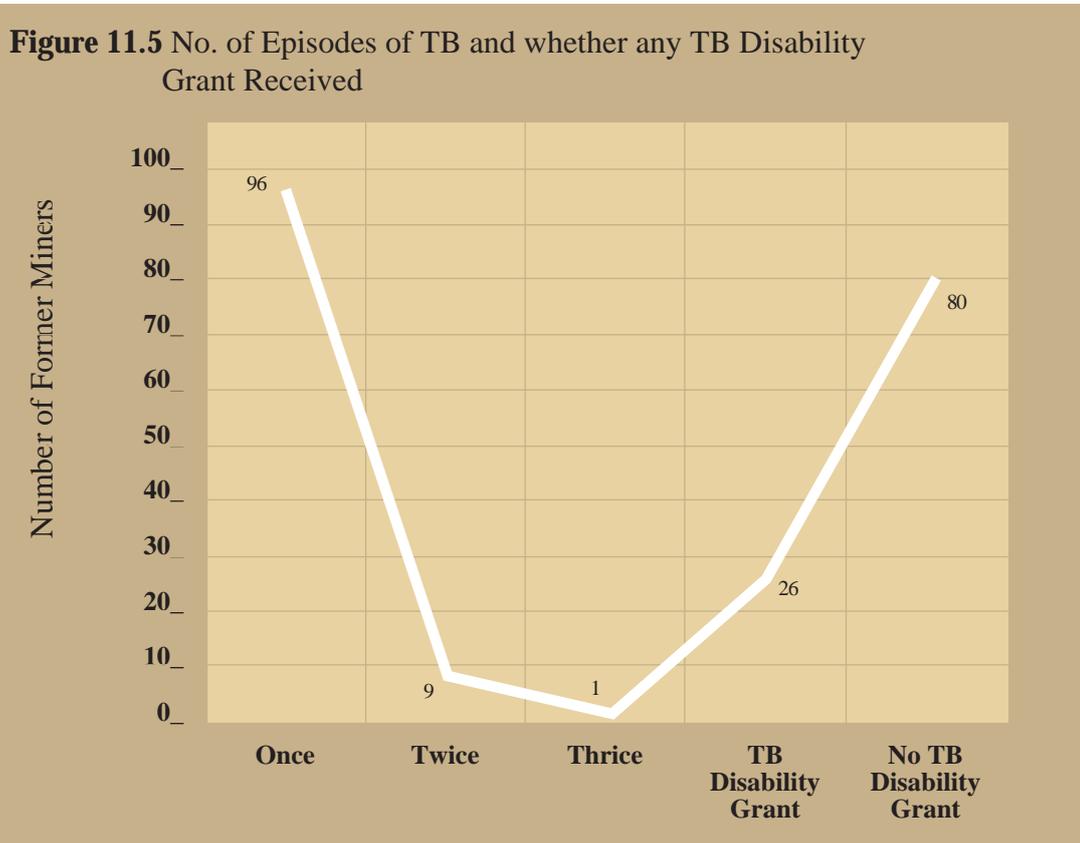


A former miner who had not had TB while in mine service but who was currently on TB treatment said:

My life revolves around this tuberculosis. And I know it will win one day soon; even the doctors have told me that this phthisis can't be cured.

- Former Miner (68), TB in-patient for 7 months, currently continuing treatment

Further inquiry was undertaken as to whether any Department of Social Development Disability Grants were received, or whether any specific TB support grants were received. Only short-term TB support grants had been received. This is illustrated in Figure 11.5. A small percentage, 24.5% of those who had had TB since leaving the mines, had received TB grants. Figure 11.5 starkly illustrates the two contrasting columns: those who had had TB “Once” contrasted with the column showing that “No TB Disability Grant” had been received.



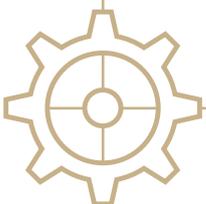
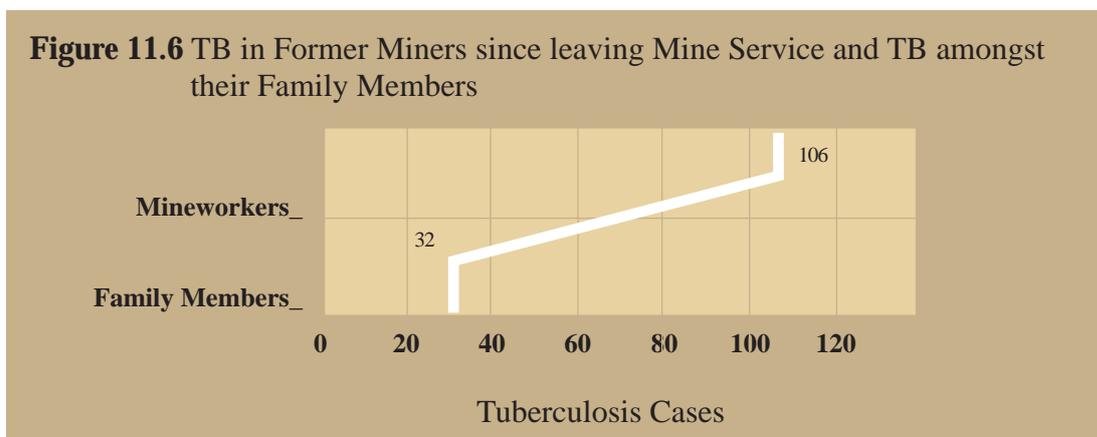
A former miner (57) had had TB twice while in mine service, and once subsequent to leaving his last mining company in 2006. He worked in the kitchens for 10 years, and then worked as a Driller from 1980 to 2006 at one mine. He has nine children and receives one CSG. He said:

We worked because we had to otherwise, if it wasn't for the wife and children, we wouldn't. It's very hard there and you have to pave your way through. Now there are also women there in the mines and I feel pity for them because they work hard there. There's a lot of hazardous dust. They gave us nose mouth and nose masks but they didn't help. I was inside the mine from 1980 and I worked until I got sick. There was no other way.... I had TB first time and they gave me treatment. The second time I was admitted. I continued taking the pills after. I was admitted in the mine hospital a third time. They sent me home. People were dying in Johannesburg.....I have had TB again since leaving and I was treated here for 9 months. The doctor here told me that I have TB; he called it chronic TB with sores in the lungs.

- Former Miner (57), Driller for 26 years, had TB three times

11.4 Tuberculosis in Families

To assess TB more generally, it was checked whether family members had had any TB over time. These findings were notable in that less than a third of the former miners who had had TB since leaving mine work reported that any other family member, at any time, had had TB. Amongst those who had had TB since leaving mine service, only 30.1% reported that there had been TB amongst other family members – this is reflected in Figure 11.6. As some of the former miners reported that it was their late father, who was then discovered to have also been a miner, these percentages are actually lower as in the data capture process any reporting of TB amongst family members was recorded as “TB in family”. This contrasting scenario is illustrated in the following figure.



A former miner who had not had TB while in mine service but who had had TB since leaving mine service, treatment of which required being admitted for two (2) months to his local hospital, and who had been given a letter by the attending doctor in order to apply for a TB grant and which he had unfortunately lost on the day of his discharge from the hospital, said:

In my family only my father has had TB. He also worked on the mines.

- Former Miner (46), “Timber Boy”, left in 1992 after 7 years service

Another former miner said:

Only my late father had TB. He was a miner,

- Former Miner (68), TB in-patient for 6 months at local hospital and currently continuing TB treatment as out-patient.

A former miner who had worked for thirty-three years (33), firstly as a Stoper and later as a Driller, who left in 2000 without having ever had TB while in mine service and who had not had TB subsequent to leaving, said in relation to TB within his family:

My father had it [TB]. He received compensation.

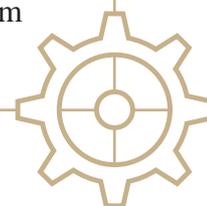
- Former Miner (68), Stoper and Driller, no TB in service and no TB in the 8 years since leaving

11.5 Miners with Multi-Drug Resistant Tuberculosis in a Dedicated TB Hospital

A sub-section of the research was undertaken at a dedicated TB hospital. Interviews were undertaken with a sample of fourteen (14) former underground gold miners with MDR TB who were found in this 200 bed dedicated TB hospital. It was estimated by health personnel at this facility that at least 30% of the men in the adult male TB wards were former miners.

This was a separate and distinct section of the research and these 14 former miners do not form part of the findings, presented in the main body of the report, which refer to the 205 former miners interviewed in their homes. Questions were asked on their occupational history, their history of TB, both in service and subsequently, their receipt of BMEs, their interactions with their local health services and their current situation. Information on the sample of 14 former miners with MDR TB is presented separately in this section in the form of short biographical descriptions. All these former miners were repeat TB treatment patients who were being treated for MDR TB at the time of the interviews. These interviews were undertaken in the hospital by the principal investigator.

None of these former miners being treated for MDR TB had any knowledge of the ODMWA. There was, however, awareness that their ill-health was caused by or related to their years in the gold mines as they had with them in the hospital, accompanying them, worn and folded and in plastic bags, a variety of items of documentation from



their mine service years. The principal investigator was thus able to assess these records where available, record information and link it to the verbal reports.

It is notable that a high proportion of these men are in their forties. It is also notable that the legal requirements of the Mine Health and Safety Act and the legal requirements of the ODMWA were not fulfilled for many of these men. It is additionally notable that none of these former miners had had BMEs since leaving mine service.

Miner 1: a 60 year old man who had served a full 28 years, in one shaft of one gold mine, as a Stoper and then Loco Driver. He had had TB while in mine service in 1990, was treated at the mine hospital and resumed underground work. In 2005, his service was terminated on medical grounds. He had official documentation from Anglo Gold Health Services stating “Second Degree Pneumoconiosis”. He had a further letter confirming a cheque for R18 000.00 (eighteen thousand rand) which was stated as “Medical Incapacitation Benefits”. He was then sent home. There was no referral to the MBOD and no further interaction with the statutory surveillance and compensation authorities. He had no knowledge of the ODMWA.

Miner 2: a 47 year old man who started his working life as a miner in 1979 at the age of 18 years. He served 28 years as a Driller. In 2006, he was diagnosed with TB through the mine health services and treated. He was told he had early stage silicosis and was moved to surface work. This surface work lasted for six (6) months whereafter he was told there “*was no longer a lighter job*” and he was retrenched in 2007. He had a letter confirming R10 000.00 (ten thousand rand) “compensation for medication” and he was dispatched home. He was not referred to the statutory surveillance and compensation authorities. It appears that he did not receive his formal Exit Medical Examination. In 2008 he was x-rayed at his local district hospital and referred to the dedicated TB hospital where he was admitted. He had no knowledge of the ODMWA. His youngest child is 2 years old. He had been surviving through “piece jobs”.

Miner 3: a 46 year old man who had worked for 20 years as a Stoper and Winch Driver. In 2004, he received an Exit Medical Examination for which he had the Exit Certificate. There was no diagnosis, however, on this certificate. His first TB occurred in 2003. After leaving mine service he consulted a private medical practitioner who had diagnosed “Persisting fibrosis with cavities”. He had the documents relating to this. This private sector doctor did not inform him of the ODMWA but provided a recommendation for a state Disability Grant which he had to date not yet received. He had no knowledge of the ODMWA other than something about autopsy that he had overheard nurses talking about. He commented: “*Why wait until we are dead?*”. His TB recurred in January 2008 and he completed a six month course of treatment although he was not cured. He was admitted at the end of July 2008 to the dedicated TB hospital for a further 8 months TB treatment. His family survives on two (2) Child Support Grants.

Miner 4: a 42 year old man who had served 12 years divided almost equally between working as a Driller and as a Winch Driver. In 1997, he was told he had TB and sent home. He was not given an Exit Medical Examination. His TB recurred in 2008 and he was referred from his local district hospital to the dedicated TB hospital. He has two



children of 5 and 8 years, and is dependent on the support of his mother and her state Old Age Pension.

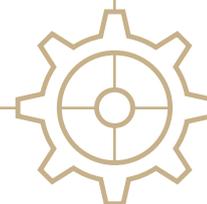
Miner 5: a 48 year old man who had served 23 years as a “Lasher Boy”. He had TB while in mine service in 1996, and was treated through the mine health services. His TB recurred in 2002 and he was retrenched. At the time of departure he was given an exit BME but was told only that he had TB. He was not referred to the statutory compensation authorities, and he did not receive any compensation for his TB at the time of leaving mine service. He had no knowledge of the ODMWA. Shortly after arrival home in 2002, he was admitted to the TB ward of his district hospital, and was admitted and discharged from his local hospital five times (5x) in the course of 2002. In 2005, he consulted a private sector medical practitioner who said to him that he “*was highly affected by dust*”. He applied for and accessed a Disability Grant which has supported his family since then; his youngest child is three years old. In 2008 he was admitted to the dedicated TB hospital for longer term treatment.

Miner 6: A 44 year old man who had started on the gold mines in 1984 and had completed 14 years mine service as a Loco driver and Machine Operator. He was retrenched in 2004 and left without receiving an Exit Medical Examination. He was diagnosed with TB in 2006 through his local health services. He has four children under eighteen with the youngest child being 5 years old, and he survives through the support of his mother’s Old Age Pension. He had no knowledge of the ODMWA.

Miner 7: a 53 year old man who had been in mine service for 20 years as a Driller. In 1996 he was ill and was told that he “*must go back where you came from*”. He was ill with apparent TB but had no diagnosis and no treatment until he got back home where he was admitted to his local district hospital TB ward. He did not receive any TB compensation. He was re-admitted in August 2008 and thereafter referred to the dedicated TB hospital. He no knowledge of the ODMWA.

Miner 8: a 50 year old miner who had worked on the gold mines for 13 years. He was a Winch Driver until his employment changed in 1981 to surface work. He was diagnosed with TB in his first year of mine service in 1978 and treated in the mine hospital for 4 months. In 1981 he was x-rayed on return from his annual leave and told that he could no longer work underground. He was moved to surface work until 1991 when he was retrenched. He returned home. In 1997 he was admitted to the TB ward of the dedicated TB hospital. He was admitted again to this same hospital for his third TB treatment in 2008. He had accessed a Disability Grant and his family, the youngest child being 6 years old, survives through this as well as two (2) Child Support Grants.

Miner 9: a 62 year old miner who had served 31 years. For the vast majority of these years he had worked as a Loader or, as he put it, as a “Boesman”, and later became a Team Leader. He was diagnosed with TB in 2006 and treated through the mine health services. He left mine employment in 2007 when he was given an Exit Medical Examination. However, he was given no documents relating to this medical examination and was not told any details of the examination findings. He had no knowledge of the ODMWA. In 2008, he was diagnosed with TB at his local district hospital and was



then referred to the dedicated TB hospital. At the end of the interview when the ODMWA was explained to him, he commented: *“It is the first time I am hearing of this”*.

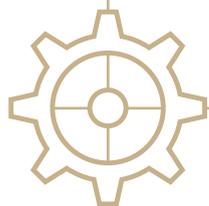
Miner 10: a 45 year old miner who had served 19 years, mostly as a Loader. He was retrenched in 1997 but was not given an Exit Medical Examination. He was diagnosed in 1998 with TB through his district hospital. He did not receive compensation for this TB; TB that was diagnosed within 12 months of leaving mine service. He completed treatment and seemingly recovered. However, in 2008, he was diagnosed with TB again and referred to the dedicated TB hospital. He had no knowledge whatsoever of the ODMWA.

Miner 11: a 39 year old former miner who had worked for 7 years as, what he described as, a “Machine Boy”. He did not have TB while in mine service. His first TB occurred in 2007 and he was treated for six months. His second diagnosis came in 2008 when he was referred to the dedicated TB hospital. He had no knowledge of the ODMWA. He and his family which includes 5 children under 16 years of age with the youngest being 4 years, survive through the income of three (3) Child Support Grants and through the “piece “ jobs he was able to get prior to his hospitalisation. He also suffered from hearing loss.

Miner 12: a 43 year old miner who had worked from age 18 and for 7 years as a Stoper. He became ill with respiratory problems in 1990 and was dispatched home. He was not diagnosed with TB by the mine health services. A TB diagnosis only came in 1995 at his local clinic and he was thereafter admitted to the TB ward of his district hospital. He seemingly recovered in the intervening years but became ill again in 2008 when he was once more diagnosed with TB and referred to the dedicated TB hospital. He had no knowledge of the ODMWA.

Miner 13: a 63 year old miner who had served 28 years with the majority of these as a Winch Operator. He did not have TB while in Mine Service. He was retrenched in 2003 and did not receive an Exit Medical Examination. He had no knowledge of the ODMWA.

Miner 14: a 78 year old miner who had worked on the gold mines for 25 years with fifteen of these at one gold mine. He described himself as having *“twenty-five tickets”*, and that he had been a Loco Driver underground. He had TB twice while in mine service and was treated through the mine health services. His current TB was thus his third. He had no knowledge of the ODMWA. He is in receipt of a state Old Age Pension.





chapter 12

Socio-Economic Status

The fruits of their sacrifice can still be seen in the massive wealth accumulated by a tiny minority who came from foreign parts and enslaved the whole nation.

In the hundred years since gold was discovered in our land, class battles have raged continually between those who own nothing but their power to labour and those who exploit their labour because they own everything.

- A Distant Clap of Thunder (A Salute by the SACP to the Mine Strike of 1946)

12.1 Receipt of Social Security Grants

The marginal safety net of social security grants was an important part of the assessment of socio-economic status as there is little employment in such deep rural areas. Information was gathered on receipt of state Old Age Pensions, Child Support Grants, and Disability Grants. The latter was disaggregated into permanent disability grants and short-term disability grants which are linked to TB treatment.

12.1.1 State Old Age Pensions

Data on the receipt of state Old Age Pensions is presented alongside demographic information on the age range of the former miners as it was presented Chapter Six. It is repeated here to complete the picture of the range of available social security grants showing to what extent they are accessed. It is clearly expected that all former miners over the age of 65 would be in receipt of state Old Age Pensions. There was also a slight possibility that with the reduction in the age criteria, to 63 years as of 2008, that those who were 63 would be eligible. It appeared, however, that this change in eligibility criteria had not yet filtered through to the areas in which we were working as no men under sixty-five (65) years of age were in receipt of state Old Age Pensions.

As will be seen in Figure 12.1, 82 of the sample of 205 former miners were receiving a state Old Age Pension. This translates to forty percent (40%) of the sample and reflects a large number over the age of 65 who are being supported by the state. Perhaps these men could be considered to be the fortunate ones, who upon reaching the qualifying age for men were able to feed themselves, and help feed their families, through the state Old Age Pension.

Sixty percent of the sample had not yet reached the age of qualification for the state Old Age Pension. Figure 12.1 illustrates the distribution of receipt of Old Age Pensions.

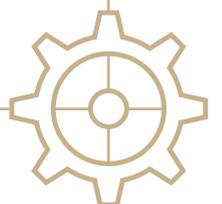
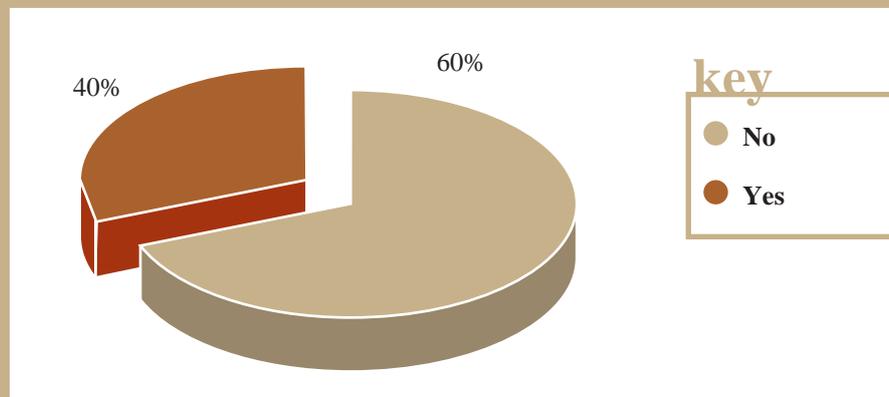


Figure 12.1 Receipt of State Old Age Pension



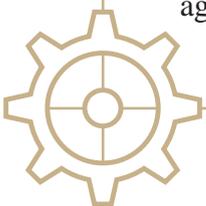
12.1.2 Deaths of Former Miners During the Course of Research Fieldwork

Perhaps those men in receipt of state Old Age Pensions could be considered to be the fortunate ones who in reaching the qualifying age for men were able to feed themselves, and help feed their families, through the state old age pension. Those over 65 years certainly appeared to be a survivor group of miners; particularly in view of five (5) deaths in the course of the research fieldwork. These five (5) deaths comprised two men in their forties, and two men who were both aged sixty-one (61) years when they died. Thus there were four deaths within the six months of the research fieldwork amongst former miners who had not yet reached state pensionable age. There was a fifth death of a research participant before fieldwork was completed. He was a former miner aged sixty-six (66) and who had thus been receiving his Old Age Pension for one year before his death.

Further detail on the two men who died in their forties, one aged 48 and the second aged 46, is provided in an Appendix in an article that appeared in the *Mail and Guardian* of 3rd to 9th July 2009.

The third of the former miners who died before completion of the research fieldwork died at age sixty-one (61), a few years short of applying for his state Old Age Pensions. He had served forty (40) years as a Driller in the gold mines, starting at age 18 and being retrenched, in 2005, at age 58. He had thus given over his entire adult life's labour to the quest for gold. Although given an Exit Medical Examination he described this as merely being given an x-ray. He said, "***I was only given an x-ray***". He was told nothing of the medical findings and was told nothing of the ODMWA. He thus had three years post-retrenchment without any source of income before his life came to a premature end. The high levels of illness and premature death highlight and raise many questions about illness, consequent disability and forms of social security in the event of being unable to provide for oneself.

The fourth miner who died was sixty-four (64) years old; just one year short of qualifying for his state Old Age Pension. He had worked for over twenty-eight years starting at age 21 in 1965, as a Stoper for three (3) years, and continuing for a further twenty-five



(25) years as a Driller. He was retrenched in 1990 and had retained his full record of employment documentation. He had had no BME examinations whatsoever in the eighteen (18) years since he left his last mine. Of the health services he said: ***“They never tell you anything; they ask you what is bothering you”***. Although having never had TB while in mine service, nor after, he had had a dry cough for the last three years, wheezed at night and had pain in his chest. At the time he died he still had three dependent children of his own in the household: a child of 12 years and twins of 14 years. He described his father as a miner who had died of TB. When asked how he thought former miners could be assisted he said ***“It could be better if we can get pension and getting a clinic nearby.”***

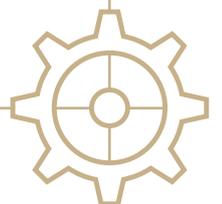
The fifth miner who died before the research fieldwork was completed was only one year into receipt of his state Old Age Pension. He died at age sixty-six (66). He had spent 10 years as a Machine Operator in the gold mines and was retrenched in 1997. He did not receive an Exit Medical Examination and had not had one BME in the 11 years since leaving the mining industry. He should have received a BME annually from 1998 until 2002, whereafter this should have occurred biennially. He was not aware of this entitlement and fundamental right in terms of the legislation covering this.

Of the five (5) deaths during the course of the fieldwork, four were buried before the question of autopsy could be raised and discussed with their families. The man who died at age 46 had strongly emphasized his preference for autopsy in saying, in the course of an interview: ***“They just say I have TB. Nothing can help me. But I agree with autopsy. I have no objection to that. I want this autopsy”***. The timing of awareness of his death allowed for an active intervention in discussion with his family and, thereafter, the hiring of the services of a private sector medical practitioner to remove his cardio-respiratory organs for collection by the National Institute for Occupational Health Pathology Division. His autopsy report noted “There is silicosis” and “Regional Glands: Dust Deposition”. At the time of writing, this autopsy report has been forwarded to the MBOD and should be processed for review by the MBOD Certification Committee. His destitute widow and five dependent children await this outcome, and await, thereafter, the forwarding of certification findings to themselves and to the CCOD.

12.1.3 Disability Grants

A very small percentage of the miners at 11.7% (24 men) had accessed Disability Grants. Those former miners with current TB numbered 25 (12.2%) and it was these men who reported being currently in receipt of TB Disability Grants. Importantly, it must be remembered that these are short-term grants for support during TB treatment and are discontinued after six months. Only one of the former miners in the sample was receiving a general and ongoing Disability Grant. This sixty-one (61) year old man had left the mines in 2003 after 30 years service underground, mostly as a Driller. He said:

I cannot complain for now since I'm receiving Disability Grant yet it is not easy. I want to renovate my kraal but I can't because I am not able to dig. I was injured on the mines. I broke my right arm and they put a metal pin inside, and my one kidney was removed. It is the same amount as the pension. The doctor gave me



a letter and when I came home I submitted it to the magistrate and they approved it. I still have the letter.

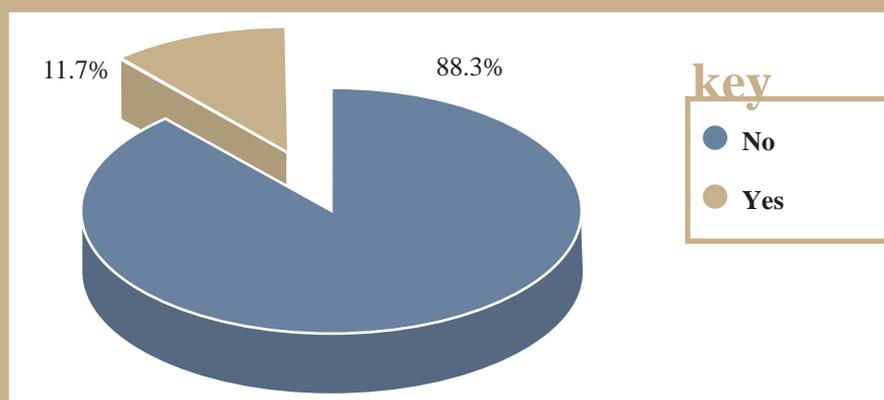
- Former Miner (61), sent with mine doctor's letter to access Disability Grant

This man seemed puzzled as to why he had never had what he called “phthisis” and TB either on the mines or subsequently. He said:

My eldest brother had phthisis, and my middle brother was diagnosed with TB. He ran away from working at the mines and returned home until he passed on. I find it hard to believe that I don't have TB because whites were diagnosed with TB every time and compensated after spending a few minutes underground.

- Former Miner (61), 30 years underground, accessing disability grant for injuries sustained on the mines.

Figure 12.2 Receipt of Tuberculosis Disability Grant



12.1.4 Child Support Grants

Child Support Grants, received for the children of the former miners, was also assessed. This information was gathered through discussion with both the husband and wife. Just over fifty-nine percent (59%) of the households were not in receipt of any Child Support Grants. The remaining 84 households or just over forty percent (40%) were in receipt of Child Support Grants. As will be seen in Figure 12.3, the number of grants per household ranged from one CSG (23.9%), two CSGs (6.8%), three CSGs (7.8%), four CSGs (1.9%) and five CSGs (0.48%)

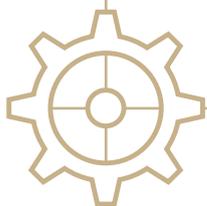
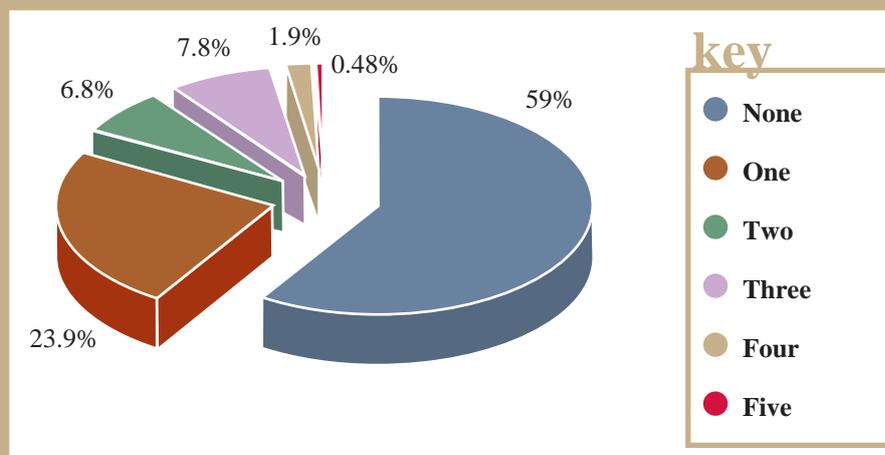


Figure 12.3 Wives of Former Miners Receiving Child Support Grants



The number of dependent children (children under 18 years of age) is a very important consideration and this is shown again in the pie chart of Figure 12.4. This data was shown in graph format within the demographic information of Chapter Six but is re-presented herein for the purposes of easier comparison to the pie chart of Figure 12.3 above on CSGs, and for the purpose of placing in context what might, initially, seem to be a high number of CSGs.

It will be seen that only 67 (32.6%) of the former miners did not have dependent children. This leaves 138 (67.3%) households with dependent children. Only 84 (40.9%) households were in receipt of CSGs. Effectively 54 (26.3%) households with dependent children were not in receipt of CSGs.

Within the sample of 138 former miner's households there resided a total of 449 school-going children who were the miner's own dependent children. A total of 144 CSGs were being received. Thus 305 dependent children were not receiving CSGs. Obviously this could be because the children are older and do not qualify according to the age limit criteria. However, they remain dependent children with all the needs of shelter, food, clothing, transport and schooling. One household was in receipt of a Disability Grant for a disabled child.

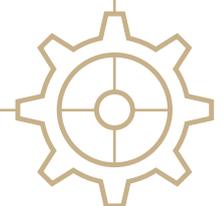
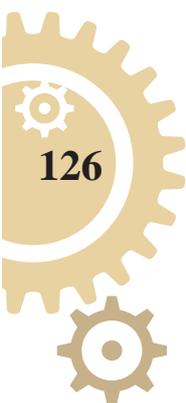
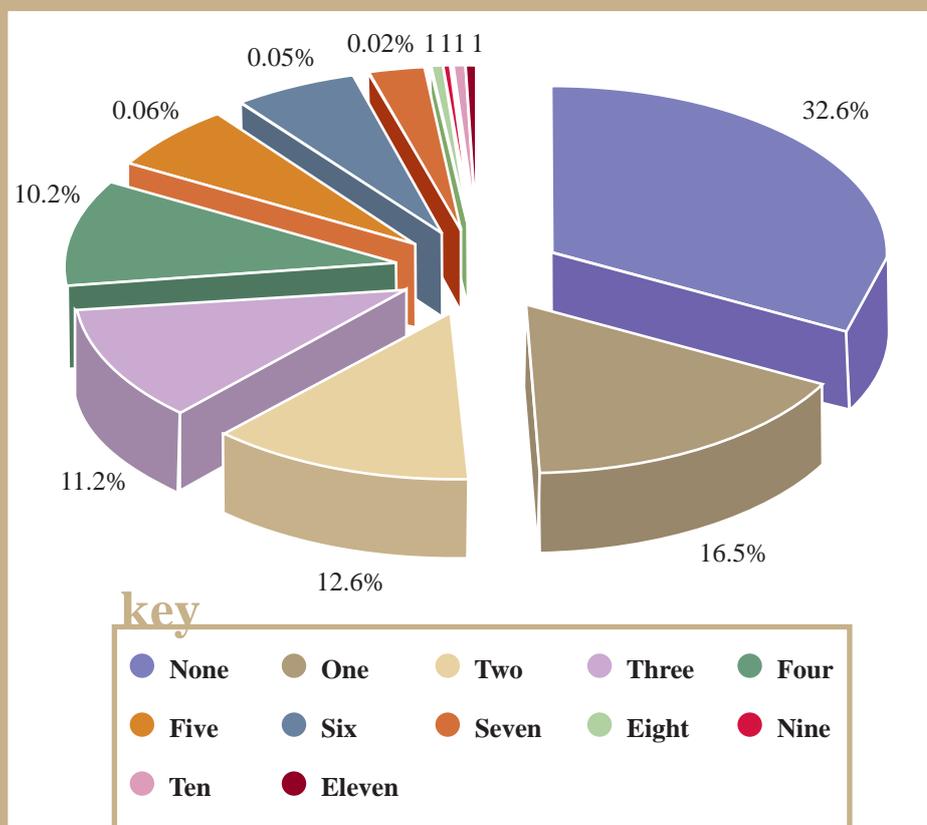


Figure 12.4 Number of Former Miner’s Own Dependent Children



12.2 Other Sources of Income

General inquiries were made regarding other sources of income in the form of formal employment, informal employment and any income generating activities. None of the former miners was formally employed. Figure 12.5 shows that seventy-eight percent (78%) of the former miners had no other source of income in the form of informal employment or other income generating activities. These men are thus entirely dependent, outside of the social grants that might be being received, on subsistence agriculture. The close to twenty-two percent (21.9%) of miners who reported some informal employment or income generating activities revealed that these were marginal income generating activities in the form of making and repairing ploughs, making yokes, tending cattle, collecting and selling wood, although this is generally a woman’s activity, doing fencing, and house building and maintenance. They generated very low amounts of income, as did any income generated from agricultural activities.

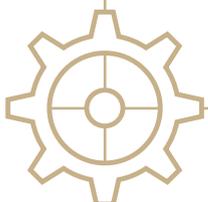
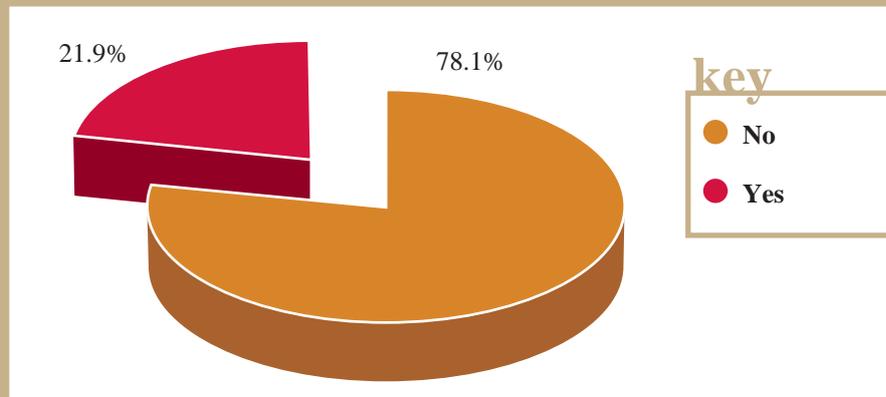


Figure 12.5 Any Other Source of Income

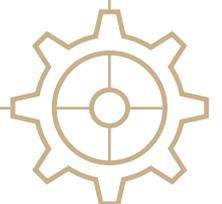


One former miner (41), with four dependent children of his own as well as two other dependent children in the household, relied on his father's Old Age Pension to help support the family, as well as on the three CSGs received. He was dismissed from his job as a Driller in 2006 and, although planning and hoping to return to mine work, commented on the support services for farming that former miners need in their home areas:

*Firstly, we would like to be trained to be independent and be able, for instance, training us how to do proper farming and ploughing. They might think that we already know all those things but we don't know the good and proper way of doing them. For example, ploughing. I might not know proper fertilizers and how do I go about cultivating the crops and the vital season for certain crops. Lastly we would like to be trained on how to use tools, given guidelines for the full agriculture. I'm able to do ploughing and hoeing but my fencing is not proper. I'm very good at looking after cattle; if there were certificates awarded I would be the first to get one. I don't have an income. We have mining certificates and we cannot look for employment anywhere except on the mines. I'm depending on my cattle. **My future life is in the shadow.** If I can't find a job then I'll need the training I was telling you about. Moreover, projects such as growing chicks and taking care of them till they become chickens. We need full knowledge of agriculture. This research must convey the messages to the target groups.*

- Former Miner (41)

Another former miner, aged fifty-six (56), who had worked for a total of 16 years and left in 1998, was generating income to support his wife and four dependent school-going children through "making yokes". He had left mine work through choice by 'exceeding his leave', although he subsequently tried to return. He did not receive an exit examination and said: *I was not informed and I only found out when I returned home that I have a hearing problem.* He had not had TB while in service, nor subsequently and although describing himself as experiencing chest pains when he coughed, he said:



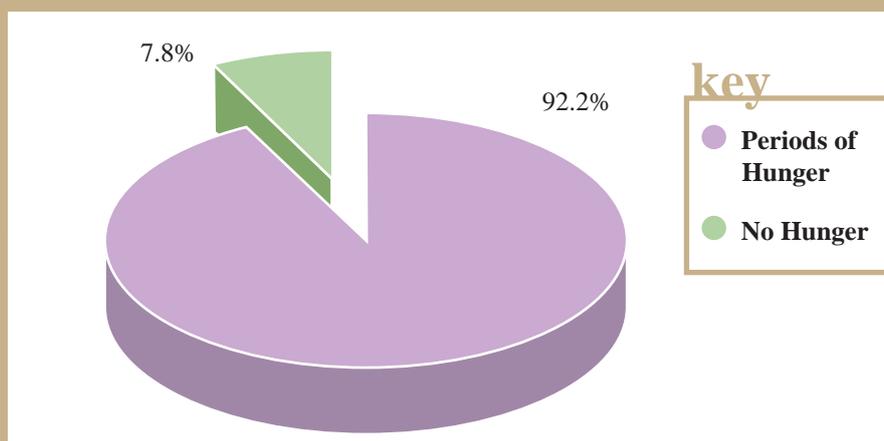
Apart from chest pains, I never suffered from lung disease.....I left on 23rd December 1998. I was on leave and decided to stay home. I tried to go back but they told me to come with a doctor's certificate...I don't have any income money except the money I get from making yokes. Poughing maize is very helpful.

- Former Miner (56), left after “exceeding his leave”, Machine Operator for 16 years

12.3 Hunger and Deprivation

Only sixteen (16) men, and 16 households, reported that they did not experience periods of not having food or hunger on a monthly basis. This is a very low less than eight percent (7.8%) of the former miners and their households. The other one hundred and eighty-nine (189) former miners, and their households, reported periods of no food and hunger on a monthly basis. This is 92.2% of the sample. Hunger prevails.

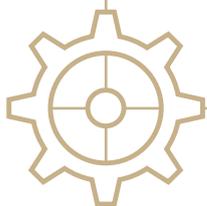
Figure 12.6 Whether Periods of Hunger Are Experienced on a Monthly Basis



A former miner, aged sixty-one (61) years, and who still had one school-going child, along with a young grandchild as well as dependent adult children in the household, commented:

I only got sick when I was back here. I was told I'm old and that old people must leave the mines. It has changed me. I receive no money, I am very hungry. There are many times we go hungry. We had only samp and beans last week, and mielie meal. I plant cabbages and spinach and I sell some. My sickness has destroyed my way of life. I'm not able to perform the jobs that I was able to do before. If I'm not well, my wife does the planting.

- Former Miner (61), departed mines in 1998 at age 51 after 23 years service underground, had TB treatment at home



“Those who have them [horses] use them” - Horse Transport.

Over thirty percent (30%) of the former miners transport themselves to clinics and hospitals on their horses. Horses can always be seen tethered outside health facilities. The answer given below was a common one:

Interviewer: Do you have money for transport?

Former Miner: No, I use my horse.

These stoic animals, of hardy breed, reproduce themselves (often a mare that is being ridden will have her foal moving along close beside her), and they manage to feed themselves, albeit somewhat marginally depending on the season. Yet where there is extreme deprivation amongst people, there will be deprivation for their livestock as well.

Levels of disease amongst the horses is high reminding one of the old adage that wherever one needs a doctor, a vet is needed as well. A local vet who does much community work estimates that 60% of the horses have Dourine, a sexually transmitted protozoal disease¹¹⁷. Sarcoid, a cancerous growth caused by ticks, a disease that is lengthy and expensive to treat, and epizootic lymphangitis which manifests in abscesses, is prevalent too. “Roars”, a paralysis of the laryngeal muscles caused by a flu-like condition affecting the central nervous system, is also prevalent amongst the horses. As would be expected, Mange and worms, particularly ringworm, is rife. There are quick and easy solutions to some of these conditions: there is a de-wormer, Ivermectin, that simultaneously cures mange but at a price that although it might seem modest to some is far beyond the means of these horse owners. Then the thinness of the horses leads to saddle-sores; and lacerations, bruises, and broken bones are common due to the foreign objects such as zinc sheets and other metal that is lying around, as well as the hard terrain.

Although an essential means of transport, as well as being used for ploughing in some instances and often used for moving heavier objects, there is not the means amongst the former miners to keep their working horses in better working condition.

The horse provides a means of transportation easier than walking for those in poor health, and for those without cash for transport. One former miner said:

I don't have money for transport to the hospital. I use my horse.

- Former Miner, on current TB treatment

The importance of horses for transport were reflected in the following words from separate former miners:

It is eight kilometers to the hospital and I use a horse to get to the hospital since I can't walk due to my problematic leg injury and I have no money for transport.

- Former Miner, leg injury during mine service

117 Personal Communication with Dr M. Galliers.



The clinic is very far; almost 2 hours ride on a horse. Also visitors come here by horse as the bakkies cannot reach our areas.

- Former Miner , owns 2 horses
-

I don't have a horse anymore but I would like to have one.

- Former Miner whose horse died
-

I ride my horse though it is exhausting. I have one so I must use it. There is no money for transport to the hospital.

- Former Miner with severe dyspnoea
-

There is no transport to the clinic. We just walk. If I had a horse I would ride it but I don't have a horse.

- Former Miner (62), currently on TB treatment.
-

Riding, however, still requires certain strength and some former miners had horses but described themselves as no longer able to ride, or as able to ride only “for short distances” and at a slower pace.

One 41 year old former miner, who had worked 20 years as a driller before being dismissed, said:

Riding horses is quite strenuous, my body gets strained whenever I ride a horse.

- Former Miner (41)
-

Another former miner said:

I have to ride slowly and not everyday. My big brother has it and I borrow the horse.

- Former Miner (57)
-

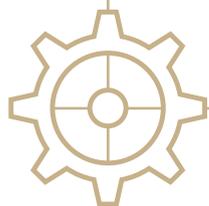
One former miner seemed to feel the need to explain this reliable method of transportation:

I use a horse. What I am about to say might sound perverse and not relevant but white people from the farms also use horses and I am only speaking what I know, not rubbish. We use horses all the time across the Umzimvubu river.

- Former Miner reliant on his horse for most of his transportation needs
-

12.4 Concluding Remarks from Former Miners

Many issues arose during the course of interviews. There was the issue of not receiving unemployment benefits, the question of death and funeral benefits which were deducted while in service and which former miners felt should be returned to them, the issue of other deductions from paylips, and the issue of Provident Funds.



In response to questions on what the mining companies should be doing the answers mostly related to money, deductions and benefits. A former miner aged 47, who was retrenched from mine service in 1990, said:

The mines owe us. I hope I'm not out of order saying this.

- Former Miner (47)
-

Another former miner with many young children, and who had had TB three times, twice on the mines and once since leaving in 2006, without any TB compensation and without any knowledge of the ODMWA, said:

There are so many things we need, my sister. I have children to look after. I need to educate them, clothe them and support them with food. We worked hard for the mining companies but we have nothing.

- Former Miner (57), 26 years as a Driller on one mine.
-

A fifty-seven (57) year old former miner who had worked for 29 years said:

I think if someone can help investigate about our money, with that money we can be able to help support our families. Because a lot of money was left in Gauteng in the mines due to the fact that we are not educated.

- Former Miner (57), who knew nothing of what his salary deductions were for

Another former miner, also aged 57, said, when asked what the mining companies should be doing to assist:

*They can't help, besides giving back our monies **that they ate**; they know our names and numbers.*

- Former Miner (57), referring to mine and TEBA employment records
-

Another said in relation to deductions:

The mining companies should pay the money they deducted from our salaries because we are not dead. We worked very hard for them.

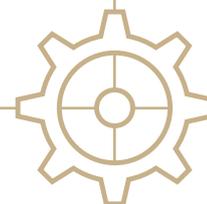
- Former Miner (59)
-

A seventy-seven year (77) old man who worked for 41 years, mostly as an “umalayisha” (Loader) said:

If they can give us back all that money they were deducting from our salaries saying it is for insurance. We need that money now to help ourselves get better.

- Former Miner (77), 41 years service
-

A forty-five (45) year old former miner who was retrenched after 13 years as a Machine Operator, said:



The mining companies should be assisting the miners by giving them their money. I lost my death benefit and blue card money from the mine. Most of us were not given our benefits when we left the mines.

- Former Miner (45) who had taken his UIF card to Mthatha and never got it back
-

A fifty (50) year old former miner, who started on the mines at the age of 19 and who was retrenched from his job as a Driller in 2005 after 28 years service, said:

The mining companies are very irresponsible. They can use you until you are ineffective and throw you away like trash. We were not informed about anything else except for Union. My days are numbered because of lung disease. Maybe the hospital can assist me by finding a way to ease up my sickness.

- Former Miner (50), Driller retrenched in 2005
-

In answers to questions on the current research a former miner aged fifty-five (55), with 23 years service as a Stoper Team Leader and who was retrenched in 2001 without a procedural Exit Medical Examination, said:

I would just wish that this work that is being done to trace miners can go on and help all miners receive their compensation, before we all die due to diseases contracted from the mines. We need money to go to doctors and food to get healthy.

- Former Miner (55)
-

A sixty-three (63) year old man with 30 years service, and who left in 1996 being given an x-ray on departure but being told nothing about this medical examination nor anything about the ODMWA, said:

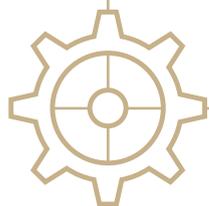
The mining companies must bring money to pay us. We lost our lives working for them. I would like to say that authorities should talk with the mining companies we used to work for to pay us because we contributed a lot in the wealth of this country. They must not forget us and leave us in poverty. They need to thank us by giving us pension for our contribution to their wealth. We are no longer employable. Sick miners must be compensated and given pension to feed themselves and their families.

- Former Miner (63), on compensation for illnesses.
-

A former miner aged fifty (50) and who had worked for 30 years before leaving as a result of illness, said:

I would like to say that the National Union of Mineworkers should also assist us in this crisis because we were and some of us still are members, and the department of health should play a role in forcing these mines to pay compensation.

- Former Miner (50), Team Leader, service of 30 years
-



Others simply expressed a need for what is already their fundamental right under the ODMWA:

We need proper examination. The research managers should assist these people with doctors. This research has to be truthful to the people.

- Former Miner on the need for medical examinations
-

A former miner, forty-five (45) years old, remarked:

The mining companies should pay us. They should not just let your ODMWA project to deal with us alone since we were working for the mines and not for the Department of Health. I have been treating this TB for the past four (4) years but it is not cured even now.

- Former Miner, ongoing TB, on how former miners should not be the responsibility of the DoH
-

A former miner aged forty-two (42) years commented:

Health services need to provide relevant treatment for their patients. I believe that others die before time.

- Former Miner (42), on x-rays and those dying without ever receiving proper medicals
-

Another former miner, aged sixty-five (65), said:

I would be glad for any assistance from doctors. But they have to make it quick because I can die anytime from now.

- Former Miner (65), on the urgency of the need for medical examinations and x-rays
-

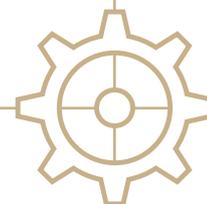
While others simply expressed their appreciation of the interest shown in them and said:

I have nothing to say except thanking this research for its efforts.

- Former Miner (46)
-

I don't know what to say except encouraging you to continue with this research. You must continue and do not be discouraged.

- Former Miner (47)
-





chapter 13

Health Sector Services

When a doctor visits a working-class home he should be content to sit on a three-legged stool, if there isn't a gilded chair, and he should take time for his examination; and to the question recommended by Hippocrates, he should add one more - what is your occupation?'

- Bernardino Ramazzini, the “father of occupational medicine”, late 17th century ¹¹⁸

There were two sections to the health sector component of the research. The first component comprised in-depth interviews with health personnel in the form of facility managers and nurses in nine (9) clinics and one (1) district hospital in the immediate and wider area in which the former miners who were interviewed reside. The findings of this first, and larger, component of the research are presented in sections 13.1, 13.2, 13.3 and 13.4 of this chapter. The district hospital was the closest district hospital and was used by all the former miners in the sample. The second component of the health sector research comprised medical managers and doctors in district and regional hospitals spread over a far larger area of the Eastern Cape. These were undertaken through the course of 2008, and some detail on these is presented in section 13.5.

13.1 Health Facilities Experience of the Presentation of Former Miners

Interviews were undertaken in August and September 2008 with facility managers and nursing staff in nine (9) clinics and one (1) district hospital. The first clinics interviewed were those that serve the immediate areas in which the interviewed former miners live. The research then extended to those clinics in a wider range and further afield within the same district. Quantitative data, presented in this chapter, was extracted from the transcripts of these in-depth qualitative interviews. In the first instance facility managers (n:10) were interviewed. Thereafter additional nursing staff in the facilities, where available, were also interviewed. The intention was to assess knowledge and practice in relation to the ODMWA, to assess numbers of former miners seen at the facility, to find out what health problems the former miners present with and their treatment, and to seek the insights of health personnel regarding problems encountered with ill former miners and the implementation of the ODMWA, and their suggested solutions to these problems.

Health personnel were asked to estimate the number of former miners seen per week at their facility. Most readily estimated this and the results are presented below in Figure

13.1. The numbers ranged from seventy (70) seen per week at the District Hospital, to twenty-seven (27) per week at one clinic, twenty (20) per week at another clinic, and only one (1) at another clinic. One Staff Nurse commented:

Yes they do come here, and a lot of them. Most people in this area used to work in the mines back then. I can say almost half the area works in the mines.

- Staff Nurse, Clinic

However, in answer to the question of whether they always inquired about the occupational or labour history of patients, only half of the health personnel interviewed said that they did inquire regarding occupational history. This is illustrated in Figure 13.2 and indicates that the estimate of former miners seen at their facilities is most likely an under-estimate. It is possible that there are more former miners amongst their patients than the health personnel are aware of. The question of whether specifically TB patients were asked about their occupational history was also part of the inquiry. This elicited similar responses with half of the respondents saying that they did ask TB patients if they had worked on the mines. This is of particular concern in the context of those who have left mine service less than twelve (12) months previously as they are entitled to compensation through the ODMWA if presenting with TB within twelve (12) months of leaving mine service.

An Operational Manager who had been at the District Hospital for twenty years, some of these as a Professional Nurse as well as once being appointed the Occupational Health & Safety Nurse, commented in reply to the question of whether it was common, particularly in relation to male patients, to inquire as to occupational history:

Sometimes, in certain cases. But nobody every time is thinking about asking those questions, except if the patient himself reveals that he once had those particular symptoms while working in the mines.

- Operational Manager, District Hospital

Since I am in a ward I do not ask them in the ward; maybe in the outpatient department they are asking those questions. But we don't have that information in their files.

- Professional Nurse, TB ward, District Hospital

They do not mention it. If they do it is always regarded as a long time ago; as a forgotten story.

- Senior Professional Nurse, Clinic

Figure 13.1 shows the estimated number of former miners seen weekly at facilities. Figure 13.2 shows that half the health personnel reported that they do inquire regarding occupational history but that half do not inquire as to labour history.

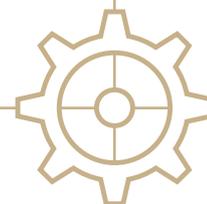


Figure 13.1 Estimated No. of Former Miners Seen Per Week

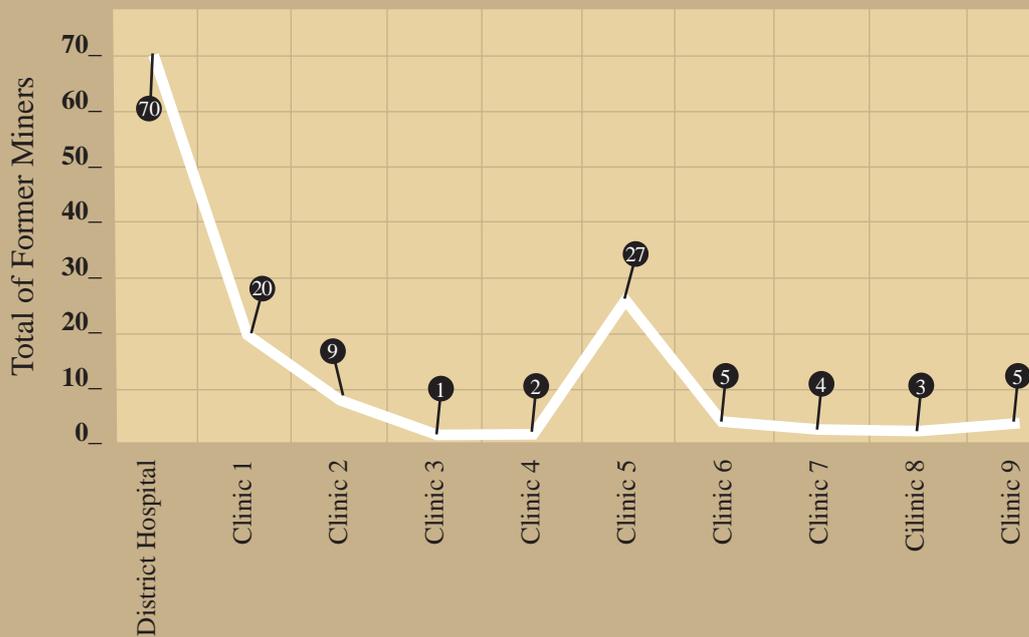
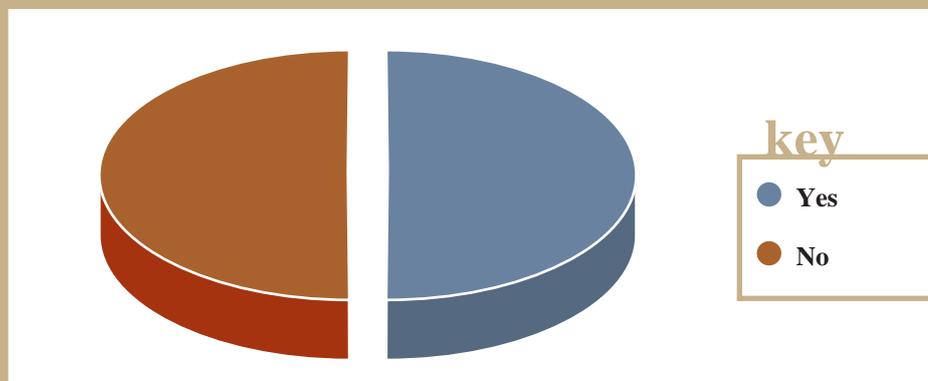


Figure 13.2 Whether Health Personnel Inquire about Occupational History

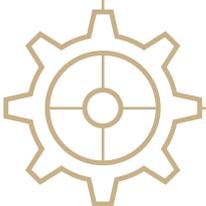


13.2 Health Problems that Former Miners Present With

The general question “what kinds of health problems do former miners present with” was asked, and health personnel, without exception, noted that it is respiratory problems that the former miners present with. Two (2) added “hearing impairment” in addition to “respiratory problems”. These responses are graphically illustrated in Figure 13.3.

They come here with dyspnoea, coughing and chest pains.

- Chief Professional Nurse



They have upper respiratory tract infections, tuberculosis and impaired hearing.

- Senior Professional Nurse

It is always Chronic pulmonary diseases and impaired hearing.

- Chief Professional Nurse

The miners come with upper respiratory tract infections, pneumonia, pulmonary TB and chronic obstructive airways diseases.

- Senior Professional Nurse

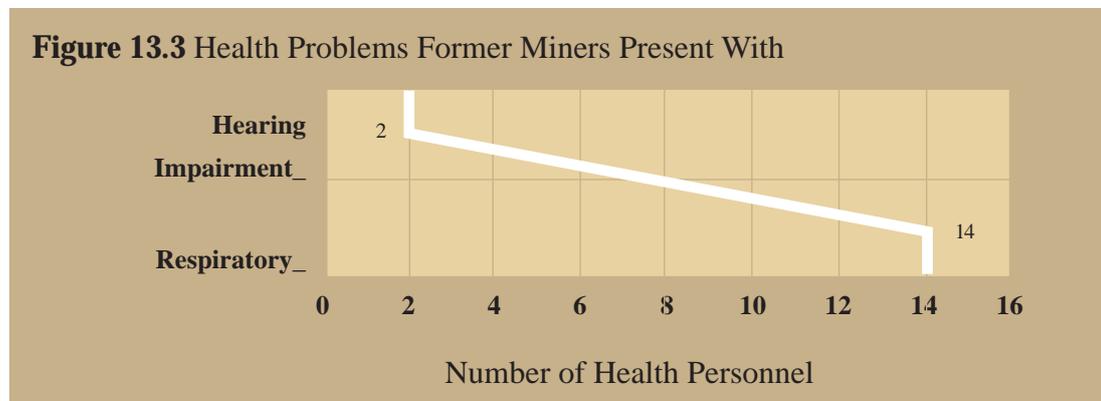
It is always chest problems. They usually complain about chest pains. And some complain about sweating for more than two weeks.

- Professional Nurse

It is pulmonary problems, ear problems, and persistent dry cough. And Tuberculosis.

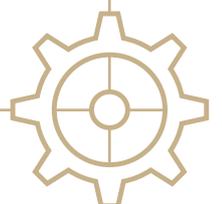
- Chief Professional Nurse

Figure 13.3 shows the stark division of health problems the former miners present with into the two categories of respiratory illness and hearing impairment.



In the absence of record keeping of occupational or labour history it was not possible to ascertain accurate numbers for either TB patients who are former miners or accurate numbers for repeat TB patients who are former miners. A heavy burden of TB, however, was described by many of the health personnel. The estimated number of TB patients seen monthly who are former miners is depicted in Figure 13.4.

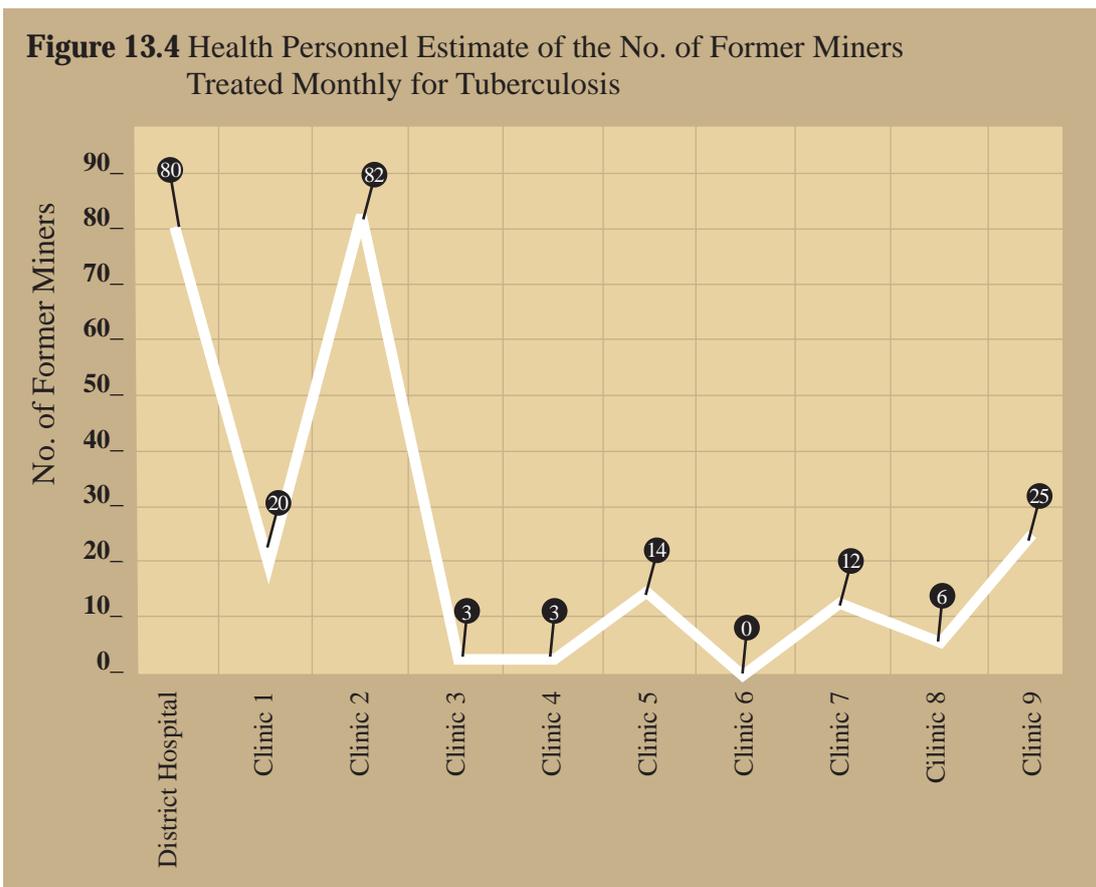
The Operational Manager at the District Hospital, estimated that at least 40% of the patients in the male TB Ward were former miners. A “head count” in the male TB ward, during a subsequent visit to the District Hospital, of TB patients who are former miners confirmed the estimated percentage made by the Operational Manager. A Chief Professional Nurse when asked to assess the number of former miners seen at her clinic who are diagnosed with TB said:



There are many, most of them, almost 80% have TB.

- Chief Professional Nurse, Clinic

Figure 13.4 shows the health personnel estimate of the numbers of former miners treated monthly for TB in the District Hospital and surrounding clinics. These estimated numbers ranged from eighty (80) at the District Hospital, eighty-two (82) at one clinic, and above twenty (20) at two other clinics. Only one clinic said that they were currently not treating any former miners for TB.



Only two (2) facilities said that they were not treating any former miners currently for repeat cases of TB. Twelve (12) facilities stated that they were treating former miners for repeat cases of TB. This is illustrated in the pie chart of Figure 13.5.

A Professional Nurse at the District Hospital estimated that “a large number, at least 20%”, of the former miners were repeat TB cases. A Senior Enrolled Nursing Assistant said that they were many repeat cases of TB amongst ex-miners: “Yes, they form a huge number of the repeat TB cases.”

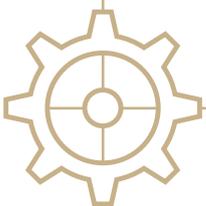
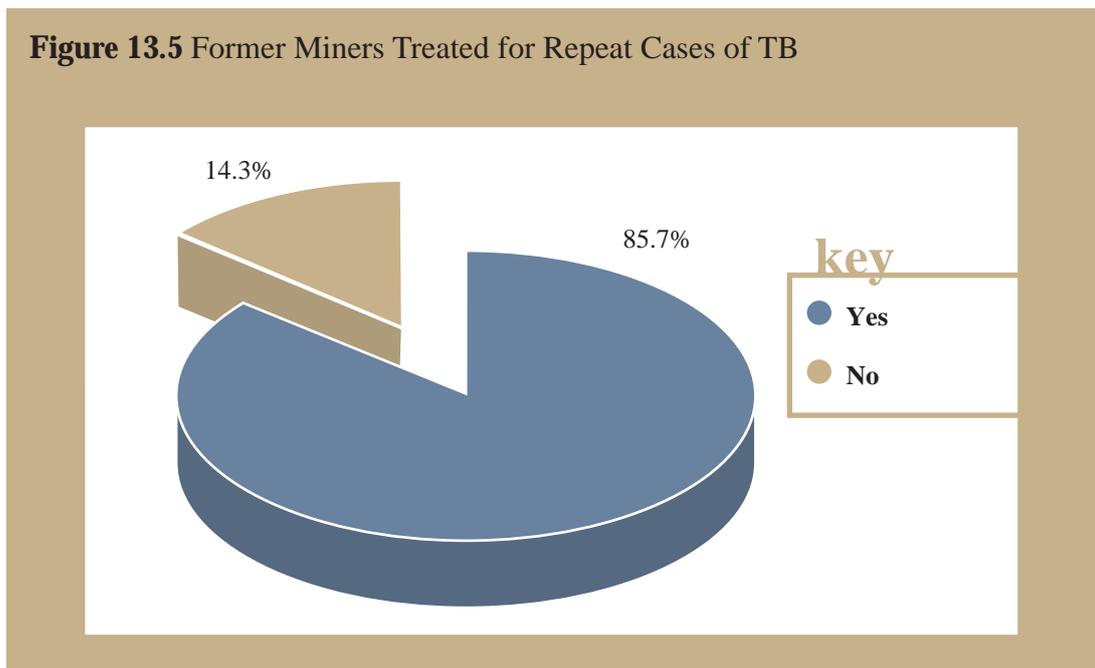


Figure 13.5 Former Miners Treated for Repeat Cases of TB



13.3 Health Personnel Knowledge of Silicosis

Knowledge of silicosis amongst health personnel was assessed. Some knowledge of silicosis was revealed in only four (4) who although stating that they knew what silicosis was, acknowledged limits to their knowledge, as well as having never seen silicosis diagnosed.

Unfortunately with silico-tuberculosis I have never seen a doctor diagnosing silico-tuberculosis. It is usually only TB that is diagnosed.

- Operational Manager, District Hospital

A Senior Professional Nurse stated:

I don't know anything about this, I only know that there is a thing called Silicosis. We know nothing about the disease.

- Senior Professional Nurse, Clinic

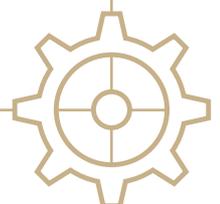
The only nurse who had some knowledge of the ODMWA said:

We refer them to a doctor due to the fact that TB- Silicosis can't be detected from a sputum examination; only an x-ray can diagnose silico-tuberculosis.

- Senior Professional Nurse, Clinic

A Professional Nurse with some knowledge of silicosis stated:

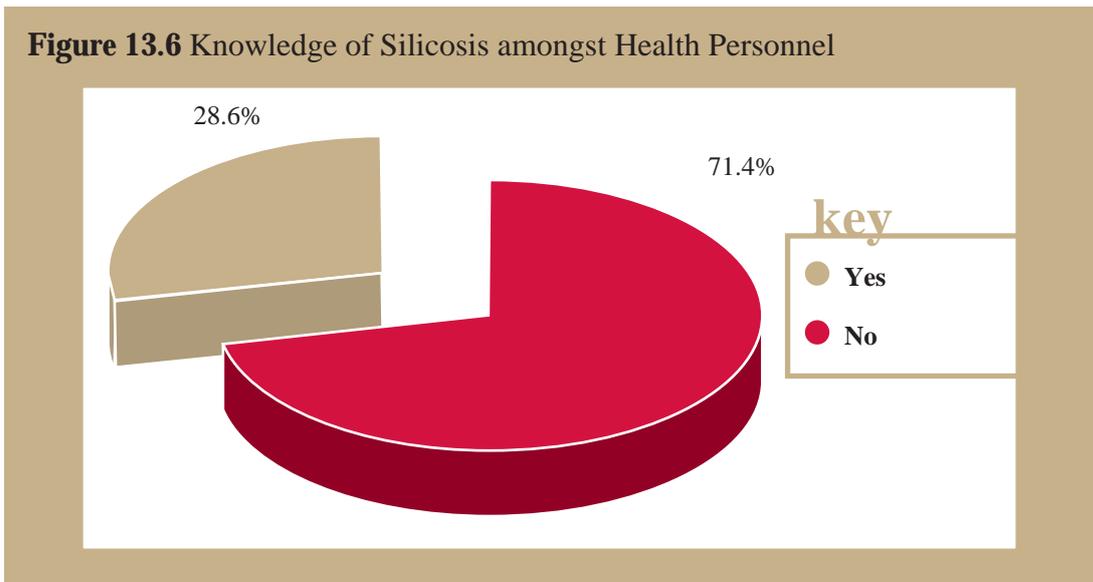
Yes, I have heard about silicosis. It is a disease that is found from working in the mines, caused by exposure to silica dust during blasting and mining operations. But the patients do not present with silicosis. They present with tuberculosis when



they arrive at the clinic. I don't know details about silicosis; what I know is that people with silicosis cough constantly.

- Professional Nurse, Clinic

All the other nurses interviewed had no knowledge of silicosis, most saying that they knew “nothing” about silicosis. These findings are illustrated in Figure 13.6



13.4 Health Personnel Knowledge of the Occupational Diseases in Mines and Works Act

Only one (1) nurse had some knowledge of the ODMWA. All others had never heard of the Act. The quantified findings of the inquiry into levels of knowledge about the ODMWA are shown in Figure 13.7. Common answers from respondents were:

No. I have never heard of that Act.

- Chief Professional Nurse, Clinic

I have no idea of that.

- Staff Nurse, Clinic

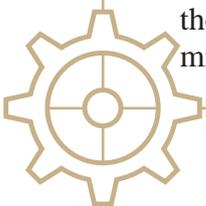
I have never heard of it. This is the first time I hear about such an Act, from you.

- Senior Professional Nurse, Clinic

I know nothing of that.

- Professional Nurse, Clinic

The following response, from a Senior Professional Nurse, revealed some awareness of COIDA in mentioning safety issues and injuries, and thereby lack of knowledge of the ODMWA as the separate and relevant legislation pertaining to diseases in former miners:



I know very little; only that they have to wear hard hats, gloves and overalls, and according to this Act you get compensation if you are injured. There was a name that they used to call this.....Workmen's Compensation.

- Senior Professional Nurse, Clinic

This same SPN, however, was aware of silicosis, and had a clear understanding of what occupationally related disease is and what needs to be done:

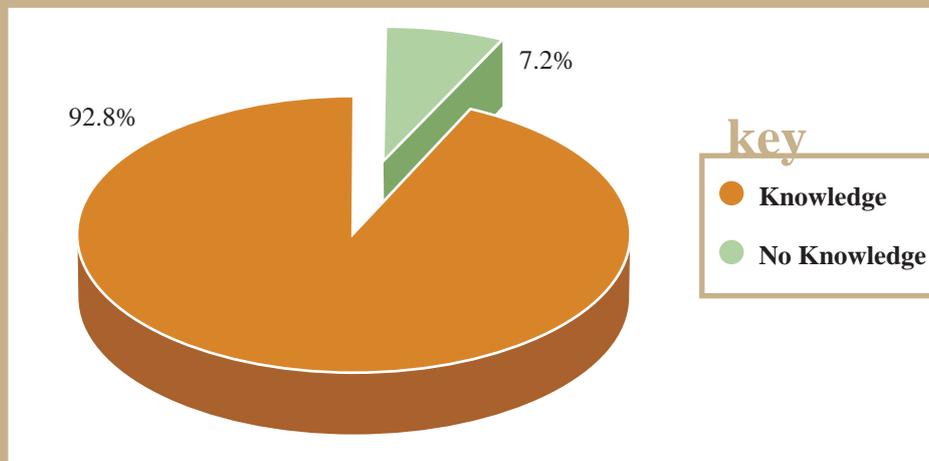
*What I know is that silicosis is caused by the dust that the miners are exposed to during their working in the mines. TB combined with silicosis is called silico-tuberculosis, and silicosis can cause lung cancer. I think these people contracted these diseases from mine work. Their employers should look after them through payment, and they should be given referral letters to the public hospitals so that they can be helped in time. I think the department has doctors who should check these people after they come back from the mines so that they can be compensated. The diagnosis of the mine doctors as well as that of public health practitioners will be enough to verify if the particular miner has a compensable disease. And they must recommend them for disability grants as most of them can no longer work to support their families. They are sick. They have worked and their situation is caused by work, it is not their fault. They must be fully compensated. **I have never met anyone who has received the compensation.***

- Senior Professional Nurse, Clinic



Figure 13.7 illustrates the limited knowledge of the ODMWA. It must be noted, however, that although there is an indication that a very small proportion of health personnel had some “knowledge” of the ODMWA, this was not strictly of the actual provisions of the ODMWA but was knowledge of a right to compensation and was knowledge that was somewhat confused with knowledge of COIDA. It would not be inaccurate to conclude that knowledge of the ODMWA was non-existent amongst the health personnel interviewed.

Figure 13.7 Health Personnel Knowledge of the ODMWA



None of the staff at the District Hospital had heard of the ODMWA. Only one nurse, a Chief Professional Nurse at a clinic, had knowledge of the ODMWA. She had files from training that she had received as an Occupational Health Nurse. She was aware of the forms that need to be filled in, saying: *“Only a doctor can assess. We refer them to a doctor as only an x-ray can diagnose silico-tuberculosis.”* However, she was not aware of the entitlement on the part of former miners to biennial Benefit Medical Examinations under the ODMWA, and confused ODMWA BME’s with doctor’s reports for disability grant applications submitted to or collected by the EC Department of Social Development.

Information presented in the following three figures 13.8, 13.9 and 13.10 on training on the ODMWA, availability of protocols on the ODMWA and the supply of information and co-ordination from the EC Provincial Department of Health on the ODMWA, reflect the findings of the questions that followed the initial inquiry regarding any knowledge of the ODMWA. Only the one nurse who knew of the ODMWA had received some training. Her statement that there were protocols was a misunderstanding of what an actual ODMWA protocol would be; she was referring to her knowledge of the MBOD application forms which are signed off by doctors rather than an actual protocol on the implementation of the ODMWA. She also saw the collection of disability grant application forms by the Department of Social Development as co-ordination from the provincial offices but had not had any experience of direct co-ordination and information for the ODMWA from the provincial offices or from the national Department of Health or MBOD.

Thus although presented herein as having had training on the ODMWA, and stating that there were protocols for the ODMWA as well as there being co-ordination from the provincial department of health offices, caution must be exercised in viewing these graphic illustrations of answers to the applicable questions. It would be more accurate to have shown graphically that there was no training on the ODMWA amongst the health personnel interviewed, no availability of ODMWA protocols and no co-ordination of implementation from the provincial offices. In the light of such overwhelmingly negative responses to these inquiries, minimal or even misinformed knowledge has been presented as an answer in the affirmative. As is to be expected, with all the other health personnel interviews revealing no knowledge whatsoever of the ODMWA, replies to the questions on training, protocols and provincial level supply of information and co-ordination were in the negative. These areas of inquiry – training on the ODMWA, availability of protocols for the implementation of the ODMWA, and co-ordination of implementation from the Provincial Department of Health – are starkly shown in the following pie charts of Figures 13.8, 13.9 and 13.10

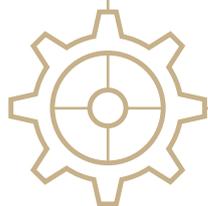


Figure 13.8 Health Personnel Training on the ODMWA

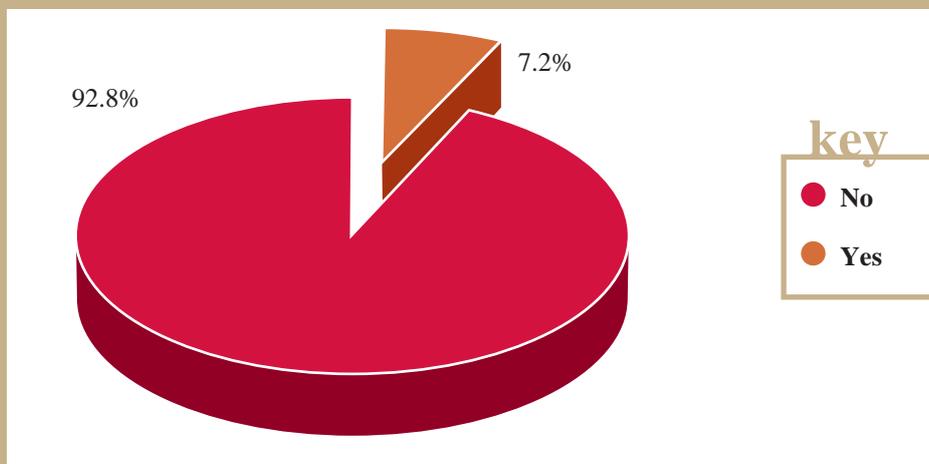


Figure 13.9 Availability of Protocols on the ODMWA

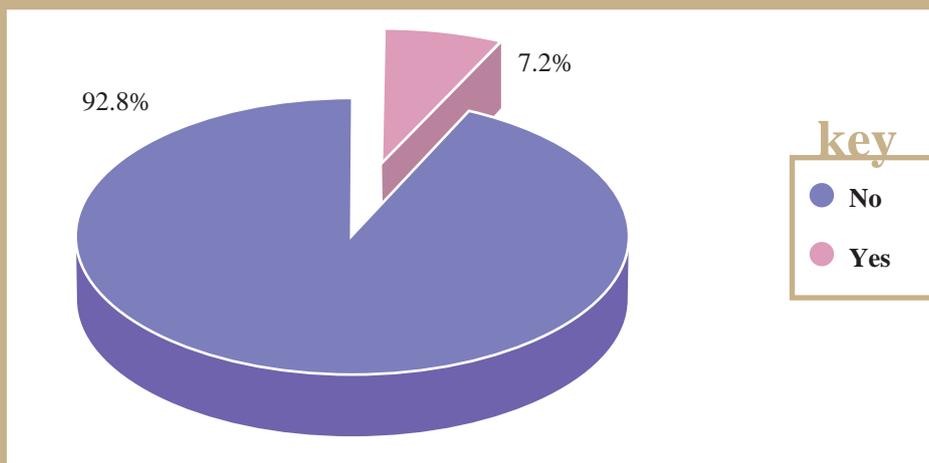
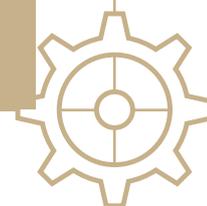
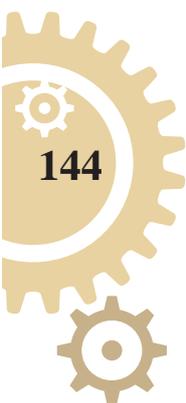
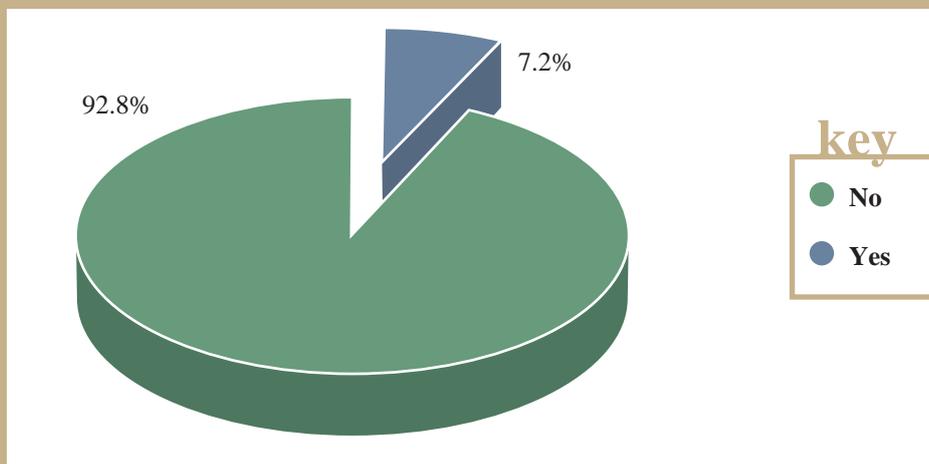


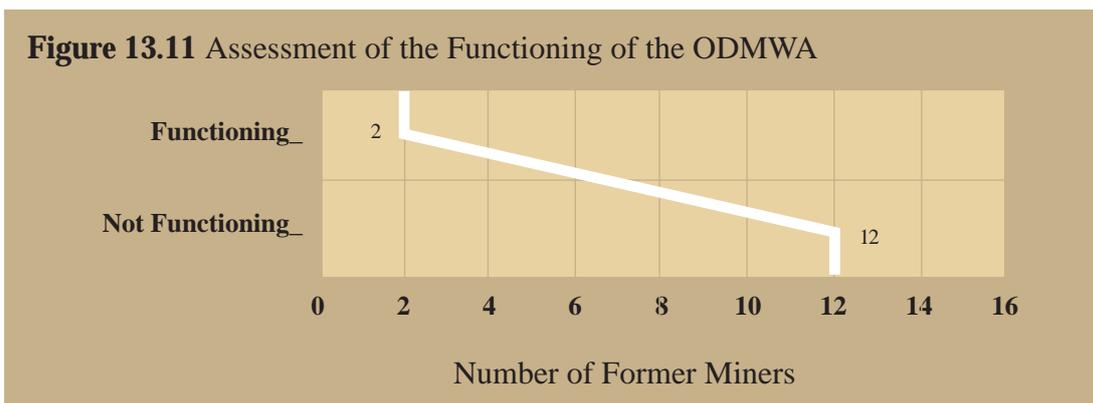
Figure 13.10 Co-ordination and Information from ECDoH



Assessment of the functioning of the ODMWA did not align with the findings on knowledge of the ODMWA as two nurses commented that it was working. This can be seen in Figure 13.11. These two answers did not include those of the chief professional nurse who had had training on the ODMWA as she stated:

I'm not sure because it has never been implemented in the rural areas.

- Chief Professional Nurse



Health personnel were asked, at the end of the interview process, for their suggestions as to what needs to be done to improve the implementation and functioning of the ODMWA in their facilities and areas. This elicited a wide range of suggested assistance and solutions which are presented in Figure 13.12.

The need for the training of health personnel was the most common, and strongly emphasized and recommended, solution. The need for more doctors, more nurses, more facilities, and bigger clinics were the next most common answers. The need for compensation for former miners was also strongly noted with the implication being that there is a need for proper medical surveillance to confirm the presence of occupationally related disease. The need for “regular check-ups” was noted and, aligned to this, the need to record the work history of patients. The need for more equipment, medicines and improved ambulance services was also noted. Other more basic difficulties and hardships such as the need for electricity, for improved roads, security at clinics and assistance with food gardens were also mentioned.

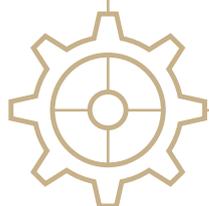
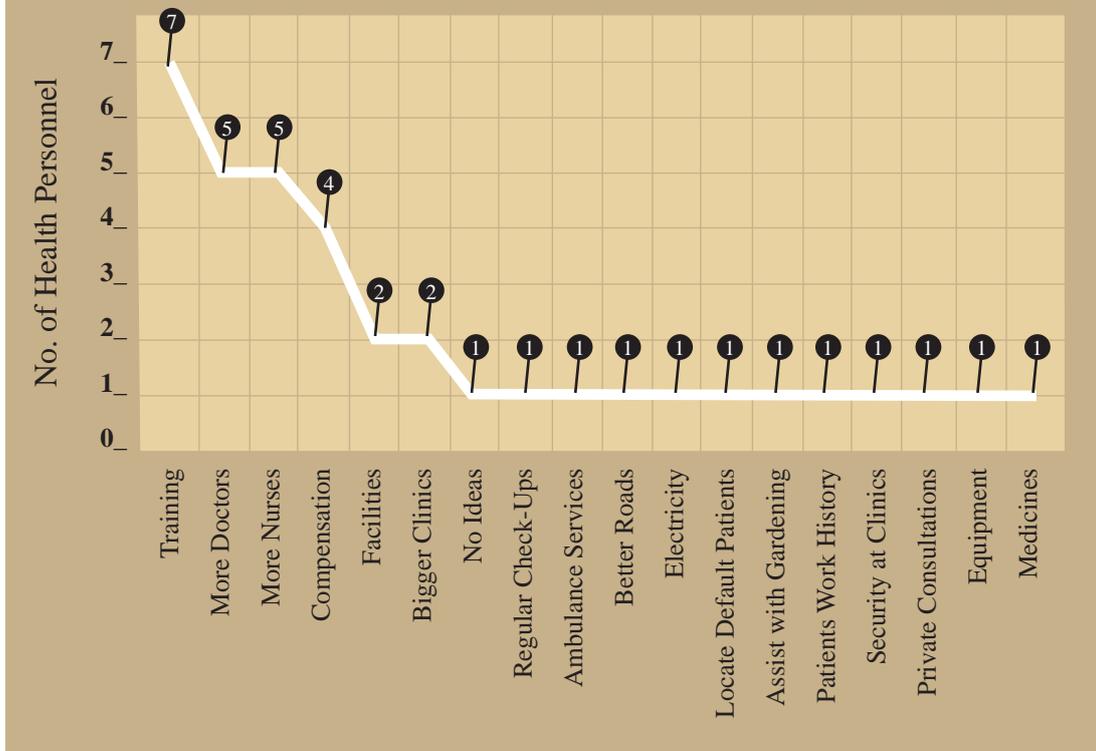
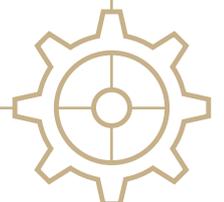


Figure 13.12 Health Personnel Suggested Solutions to Problems with the ODMWA



13.5 Knowledge of the ODMWA Amongst Doctors

The first of the specific interviews with medical personnel was with the Medical Superintendent of a Regional Hospital. Although this doctor was aware of silicosis, he was not aware of the ODMWA. In the course of discussion, the EC DoH report with the latest available data on leading causes of admission to EC hospitals (for 2004) was reviewed together with the principal investigator. Mortality data was also presented in this report and showed that respiratory tract infections and PTB were leading causes of death in the EC at 10.94% for lower respiratory tract infections and 6.96% for PTB. In terms of admissions, PTB accounted for 4.16% of admissions while the next highest cause of admission was diarrhea at 4.14%. Pneumonia accounted for 3.95% of admissions, lower respiratory tract infections accounted for 2.30% of admissions and asthma for 0.82% of admissions. Thus the total for these respiratory related admissions was 11.23%. Unspecified HIV related infections was only 3.68% of all admissions. This Medical Superintendent commented that “*respiratory related disease is the leading cause of morbidity and mortality in the EC*”. He additionally commented that the occupational health nurses were mostly focused on attending to the occupational health needs of the regional hospital employees with there being extremely limited capacity for implementation of the ODMWA, and that it was largely due to this human resource limitation that the hospital was not diagnosing and “*not seeing such high rates of silicosis*”.



The medical superintendent of the district hospital closest to this regional hospital, a doctor who had been at this hospital for over twenty years, was aware of the provisions of the ODMWA but commented that his hospital was “*overburdened with all other priorities*” and that they were “*unable to investigate further*” with those patients who were former miners. He also commented that they do not refer former miners as “*there is nowhere to refer to*”. He said that this was happening “*province wide*”. He added a comment that a protocol should be developed for the ODMWA as this “*was not beyond the capacity of the Department of Health.*”

A second district hospital had two doctors, one of which was the designated “medical manager”, and both of whom were Community Service doctors. Both knew of silicosis but had never diagnosed it. Neither knew of the ODMWA, nor anything of the provisions of the Act or the role of the MBOD’s Certification Committee.

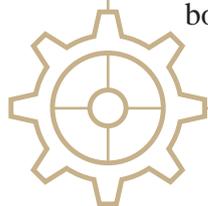
A third district hospital was visited and the CEO, Medical Manager, Principal Medical Officer, Quality Assurance Manager, TB Co-Ordinator and OHS Officer were met with. None of the doctors at this district hospital knew of the ODMWA and how it is supposed to function. Both the Medical Manager and Principal Medical Officer were of foreign birth and training, were relatively new to South Africa, and, not unexpectedly, knew nothing of the provisions or processes of the ODMWA. Only the OHS Officer at this district hospital knew how the ODMWA functioned as she had, many years previously, filled in MBOD application forms. She was not, however, aware of the entitlement on the part of former miners to biennial BMEs, nor that TB is compensable.

A fourth district hospital revealed the same situation amongst doctors, as well as the medical manager, of knowledge of what silicosis is but no knowledge whatsoever of the ODMWA. This hospital was charging former miners who requested x-rays. The hospital, however, had no knowledge of MBOD application forms and no system in place to process these.

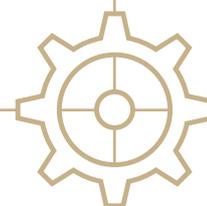
Knowledge of the requirement for autopsy for all former miners if not certified to second degree pneumoconiosis while alive, was additionally not known by any of the doctors in the five (5) hospitals that were visited. Many of the interviews with medical personnel, once conducted, became discussion and information sharing sessions about the provisions of the ODMWA, and the processes that should be happening in order to improve medical surveillance.

It became abundantly clear that there are extremely low levels of knowledge of this separate occupational disease legislation, and intended surveillance system, amongst doctors, despite the ODMWA being in existence for many decades, and that the considerable gap in knowledge is a consequence of gaps in the medical training curricula.

Once the research had ascertained these low levels of information about the ODMWA, the meetings quickly moved to being an information dissemination activity in the sharing of knowledge and detail on the provisions and processes of the ODMWA. Leaflets developed by the MBOD and titled *THE GUIDELINES ON ODMWA* were distributed post-interview throughout the research process, along with copies of MBOD application forms. Contact details for key roleplayers within the Department of Health, both provincially and nationally, were also provided. Information was additionally



shared on the specific role and function of the NIOH pathology division, linked to the MBOD, in the context of autopsy surveillance. A further development has been discussion with those NIOH roleplayers who are involved in attempting to improve access to autopsy, and, particularly, the co-ordination of transport of the cardio-respiratory organs to Braamfontein. This latter initiative has resulted in the NIOH Pathology Division planning visits and training workshops in these particular areas. Thus the research process, having completed the research interviews, both individually and with institutions, became immediately thereafter a form of action research in that necessary information, where lacking, was shared in detail, leaflets and forms provided, and certain initiatives to improve access were developed.





chapter 14

Conclusions

The health system based on more or less free access to curative care fosters the illusion that illnesses are accidents to be repaired by individual treatment...keeping the labour force in working order and preventing premature losses, while boosting the legitimacy and stability of the Welfare State, was only the initial function of a state benefit scheme. Its symbolic role quickly replaced the protective one: it puts 'healing on show for the benefit of the healthy', a show which 'becomes the constituent element of individual consumption'. In other words, it convinces everyone that illness has its source in the victim's body and can be treated individually. Healing, and indeed health itself, become commodities like any other: to be sold retail by professionals and wholesale by the makers of pharmaceuticals and hospital technology. State benefits resolve the only remaining problem – how to afford them. The social causes of diseases are ignored, even when their epidemiology has been understood for generations, and their elimination is clearly possible.

- Andre Gorz, *Paths To Paradise. On the Liberation From Work.*

A strongly resonating description “*we ate the mines and now the mines are eating us*” was used by a former miner who left employment in the gold mines in 2002 after twenty (20) years working underground:

We risked our lives in mines however, they couldn't pay us deservedly. We ate the mines and now the mines are eating us. It is a pity I should say.

- Former Miner (46) departed mine service in 2002 due to injury, after 20 years underground

This expression resonates with the title of a 1993 book by Columbia University Professor June Nash on the tin miners of Bolivia, a book most unlikely to be known by South African underground gold miners. The title of this book is *We eat the mines and the mines eat us. Dependency and Exploitation in Bolivian Tin Mines*¹¹⁹, ostensibly a subject far removed from our land of gold and diamonds, and an expression that was used by a miner on another continent. The essence of this expression is so close to realities in South Africa and, as cited herein, it was said by a former miner in the hills of deep rural Eastern Cape in 2008. There is also a Sotho miner's song which translates as: “*The mines eat men. Even when you have left them the mines may be eating you*”. It would be interesting for historians to trace the first use of such startlingly evocative and descriptive phrases. The reality it expresses is seemingly universal, perhaps with a difference in the extent of the dust-related disease epidemics. As Professor Neil White

of the Lung Institute of Groote Schuur Hospital said, “*The South African gold mining associated silicosis and tuberculosis epidemic is without parallel in human history, when its extent in terms of duration, intensity and magnitude are all taken into account*”¹²⁰.

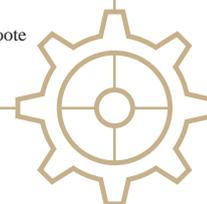
The findings from the 100% sample (n=205) of former miners over ten village settlements in the region of Ntabankulu, Eastern Cape is generalisable to all the other high recruitment and labour-sending rural areas of the Eastern Cape, as well as to other provinces in South Africa. The findings from this research would most certainly be replicated over and over if similar research was undertaken in other areas of the former “bantustans” of Transkei and Ciskei. These areas can well be described as the “field hospitals” for the externalization of occupationally acquired disease, a process of “exporting” disease, through the migrant labour system, back to rural areas where it has largely remained hidden. It is in these rural areas that the real costs of occupationally acquired disease are borne by the former miners themselves; borne in pain and suffering, in wasting away in a slow suffocation and susceptibility to all manner of respiratory infections, in the inability to work even in subsistence agriculture to generate support for their families, and in premature death.

The actual hospitals, within what is being referred to herein as the larger “field hospital” of mine diseases, those areas which are the miner’s home areas from which they were recruited and to which they return, have limited resources. The district hospital closest to the study participants had two doctors both of whom were community service doctors. The next closest district hospital was 55kms away and, although it is a new, larger and better resourced hospital, transport costs for the former miners of over R70 per trip are prohibitive. Clearly this is not a distance that can be walked, nor can it be travelled within one day on horseback.

Close to twenty percent (18.5%) of the sample of former miners were men under fifty years of age. A further 27.3% were between fifty and sixty years of age. This means that there is no state provided social security net for 45.8% of the sample. The remainder of the sample were over sixty (60) years of age and clearly a survivor group. Most of these older men commented that they had known many other former miners from their own home areas but that these men had died. It is also noteworthy that five (5) men died before the completion, in January 2009, of the research fieldwork. Two of the men who died were in their mid-forties, two were in their early sixties, and one had been receiving his state Old Age Pension for one year when he died. Thus the sample as a whole could be regarded as a “healthier” survivor group.

Length of mine service ranged from under five (5) years to over forty (40) years, with 19% having between 6 and 10 years underground, and 15.1% having had between 16 to 20 years underground. Between 11 and 15 years underground had been served by 12.6% of the sample, and between 21 to 25 years had been served underground by a further 12.6% of the sample. These are substantial mine service periods. Mine service documentation had been retained by over seventy percent (70.7%) of the former miners and this documentation confirmed the self-reported mine service descriptions initially provided through detailed conversations on mine labour history.

120 White, N. (2004) *Silicosis. What is to be done?* Theme Paper, Division of Occupational Medicine, University of Cape Town and Groote Schuur Hospital.



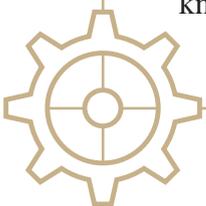
Although the majority of the former miners (77.5%) reported that they had been informed of the dangers of respirable dust while in service, it is of great concern that 22.4% reported that they had not been informed. Additionally, the quality of information conveyed to those who reported that they had been informed is suspect as a large proportion of those men who did confirm knowledge of the dangers of dust subsequently revealed that this knowledge, that they initially had indicated was on the dangers of dust, was actually only on safety issues and matters relevant to potential accidents.

Medical examinations on entry and on return from annual leave are comprehensive as only 11.2% reported that they had not consistently received such in-service medical examinations. The inverse scenario pertains to exit medicals as 85.3% did not receive a medical examination on departure from mine service. Only 14.6% did receive such exit medicals. Of those who left due to illness (21.9% of the total sample) only 13.3%, or precisely six (6) men of the 45 who left as a consequence of what was mostly respiratory related illness, received exit medical examinations. Of those who left from 1996 onwards, 32.6% of the total sample, only 40.2% had received Exit Medical Examinations, a legal requirement of the Mine Health and Safety Act since 1996. There was thus violation of the law in the cases of forty (40) men or 59.7% of those who had departed mine service since 1996.

It can be concluded that knowledge of the ODMWA is non-existent. Two (1%) former miners had heard of the ODMWA but had limited information which extended only to awareness that this Act did exist and that it was for the purpose of compensation for lung disease. These two men were not aware that they were entitled to biennial medical examinations free of charge, nor were they aware that autopsy could be the pathology surveillance of last resort in order to address the failures in medical surveillance while alive. Additionally, they had no knowledge of the MBOD or CCOD or that the Department of Health was the implementing and responsible agency for the fulfillment of the requirements of the ODMWA. The knowledge of the two men recorded as having “knowledge of the ODMWA” was thus vague and minimal. The overwhelming majority of the former miners (99%) knew nothing of the Occupational Diseases in Mines and Works Act 78 of 1973 as Amended.

These findings are a shocking indictment of the failure on the part of mining companies to provide information to their employees on the ODMWA, and to provide some detail of the established and institutionalized system that exists to cover lifelong medical surveillance, diagnosis, and compensation in the event of certification of an occupationally acquired disease. This legislation, and how the system works, is something that should be taught before a miner steps into the first shaft lift that takes him underground. It is legislation that is applicable while in mine service, and it is legislation that applies to all miners for the full duration of their lives subsequent to mine service.

If the miner has not been fully informed at the beginning of, or during the course of his employment, the Exit Medical Examination would be the last window of opportunity to ensure that full information about the ODMWA is imparted and taken away with him. This latter opportunity is not being utilized either. Those twenty-seven (27) men who had received Exit Medical Examinations departed mine service without any knowledge whatsoever of the ODMWA. It would seem that where Exit Medical



Examinations do occur, these are perfunctory and not properly used to fully inform miners of the findings on their state of health, nor are they used to inform miners that they are entitled, under the ODMWA, to further BMEs every two years until they die, and that they are entitled to an autopsy, which in the event of certifiable disease being found would compensate their families. This group of former miners was told nothing of legislation that is close to 100 years old. It is, additionally, legislation that is a no-fault ‘trade-off’ which, it is claimed, “guarantees” their lifelong medical surveillance and care. Such “guarantees” are hollow claims with no basis in fact. The “guarantee” is *de jure* and not *de facto*. Knowledge is the starting point of accessing rights; without knowledge there is no awareness of the right or of the legal entitlement that applies.

None of the 205 former miners had had BMEs since leaving mine service. Relevant to this fact is the substantial length of time for many of the former miners that had passed since they had departed their mine employment. Between eleven (11) and fifteen (15) years had passed for 18.6%, between sixteen (16) to twenty (20) years had passed for 16.1%, and between twenty-one (21) and twenty-five (25) years had passed since their last risk shift for 14.1%. In these passing years not one of these former miners had accessed a BME subsequent to leaving mine employment, as is their right under the ODMWA. While over half (55.5%) of the former miners had had an x-ray through their local health services, these x-rays were routine TB related x-rays which did not comprise an x-ray examination within the ambit of the ODMWA.

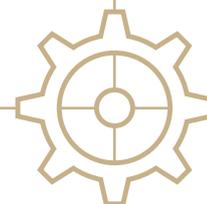
One former miner described his experience of x-ray examination at his local hospital, expressing that it is only TB damage that is read on x-ray and that the “hazardous” illness is “hidden behind the TB”:

I had TB on the mines. Yes, that is what they told me. They are hiding the hazardous illness behind TB.

- Former Miner (70)

Extremely high levels of respiratory illness were found amongst the former miners. Although just over thirty-one percent (31.2%) reported that they did not have lung disease on their own assessment, when clinical signs and symptoms were recorded 95.6% were coughing, 71.2% experienced dyspnoea, 82.4% fever, 80.9% pain and 83.4% had experienced weight loss. It would not be inaccurate to describe the majority of these former miners as “pulmonary cripples”. A very high number had dug deep into their pockets to consult private sector physicians; close to fifty-two percent (51.7%) had paid private sector rates for a consultation with a doctor, and many of these men had consulted privately more than once. It is also notable that these private sector physicians did not inform the former miners of the ODMWA; most likely a consequence of their own lack of knowledge of the Act.

Rates of tuberculosis are exceedingly high. Those who had had TB while in mine service comprised 26.3 percent of the sample of former miners. However, those who had had TB since leaving mine service comprised more than half the former miners at 51.7%. Those who were currently on TB treatment at the time of the research comprised 12.21%, and 4.4% reported having had TB twice since leaving mine service.



For some of this latter category it would have been their third TB diagnosis and treatment as they had also had TB while in mine service. A very high number had been hospitalized for their TB treatment. Of those former miners who had had TB since leaving mine service 62.3% had been admitted to their local hospital for periods ranging from 2 months to six months. This places a substantial burden on public sector facilities. Only 37.7% of the former miners diagnosed and treated for TB through their local health services had been treated as out-patients either through the district hospital or through their local clinic. Additionally, a number of former miners had been dispatched home after TB diagnosis in-service with a referral letter, or verbal recommendation, to report to their local public sector health facilities for treatment of their TB.

A low close to a quarter (24.5%) of those who had had TB post mine employment had received temporary state provided TB disability grants. There was no one in receipt of an ongoing general state provided Disability Grant. The state provided grants that stood in many instances between the former miners and their families and starvation were CSGs and Old Age Pensions. The latter in some instances were not the former miner's own pension as he was too young to qualify but the Old Age Pension of one of his parents. Marginal local income generating activities, which in most instances were small and relatively insignificant in terms of the income generated, along with subsistence agriculture, were the only other means through which the former miners lived. Hunger on a monthly basis was prevalent with only 7.8% reporting that they did not experience hunger and food shortages on a monthly basis. Animal protein consumption is extremely rare with most diets being consistently that of samp, mielie-meal, beans and some vegetables. As many of the former miners reported, they only had meat when there was a funeral.

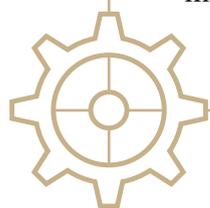
Health personnel confirmed the large numbers of former miners accessing health facilities, and described the health problems that they present with as overwhelmingly respiratory in nature. The only other health problem amongst former miners that was noted by health personnel was that of hearing loss. Knowledge of silicosis was extremely low amongst nurses, and only one nurse, a Chief Professional Nurse, had heard of the ODMWA. However, as she stated, "...it [the ODMWA] has never been implemented in the rural areas". Doctors, although aware of silicosis, were unaware of the ODMWA.

The former miners, their families and their communities have borne part of the cost of gold production in taking their ill-health elsewhere, back to the rural areas where it is largely out of sight of mainstream mining production. However, occupationally related disease is the responsibility of the employer. One former miner placed responsibility squarely at the door of the mining companies. He stated:

The mining companies should be held responsible and TEBA. Excuse me if I'm wrong. TEBA must solve these problems because TEBA sent us to those mines.

- Former Miner (49)

This is a simple truth. The state, through the Department of Health, is not ultimately responsible for resolving occupational diseases and should not be responsible for all medical surveillance and palliative care. Such displacement of responsibility becomes



a subsidy to the mining industry when public funds are used to diagnose and treat those diseases and ill-health, caused by the mining companies, once they have been shifted onto the rural home areas of the miners. It seems that the ODMWA is a system designed to systematically displace the responsibility for former miners onto the state so that the deprivation and destitution experienced by them is then addressed through a variety of state social security grants and DoH services. Of course, there might be some ODMWA compensation amounts to add to this state funded support if a former miner is “fortunate” and unusual enough, to access the “guaranteed” surveillance and compensation system. The current research was unable to assess the possible advantages and benefits of ODMWA compensation for particular households as no diagnosis and compensation had been received by any of the former miners in the sample.

In the light of the extremely low levels of knowledge of the ODMWA amongst former miners, the issue becomes a human rights issue. It appears to be more than simply weak bureaucratic systems which undermine the implementation of the ODMWA and result in systemic failures. All the former miners can easily be found. The failures of the ODMWA appears rather to be a systemic orientation made possible by the migrant labour system. As Sampie Terreblanche in his *A History of Inequality in South Africa* has described it:

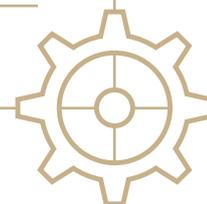
For the greatest part of the last 150 years, most members of the black labour force have been powerless, impoverished, proletarianised, uneducated, unskilled, and subject to repressive labour patterns. In this highly imperfect labour ‘market’ the Chamber of Mines was granted a monopsonistic right to exploit African migrant workers – not only in South Africa but also in southern Africa – and to keep wages at exceptionally low levels.¹²¹

Surely that is a historical problem many might say. However, the over-arching question post-1994 is whether the patterns of exploitation have changed. A considerable improvement in the implementation of the ODMWA is but one aspect of such to-be-expected, and not unreasonably so, changes in exploitative practices. The current research, however, found no improvement in post-employment surveillance under the ODMWA, and found evidence of violations of the new 1996 legislation regarding the minimum requirement for full Exit Medical Examinations for all miners as they leave mine employment. A large number of the current sample had left the mines since 1994.

We need to go back to 1997 and re-assess a part of The Truth and Reconciliation Commission (TRC) which held business hearings that were brief in the extreme. During the course of the two years of the TRC hearings only three days were devoted to the business hearings. These have been accurately and eloquently described by Professor Sampie Terreblanche, and will thus be cited quite extensively.

In 1997 almost all the representatives of the corporate sector who testified at the business hearings of the Truth and Reconciliation Commission (TRC) claimed that their corporations had not benefited from apartheid, because apartheid had raised the cost of doing business; they argued that business had really been a ‘victim’ and not a partner of, collaborator with, or beneficiary of the system.

121 Terreblanche, Sampie (2002) *A History of Inequality in South Africa 1652 – 2002*. University of Natal Press, Pietermaritzburg p. 59



*This claim is simply not true – at least not for the first three quarters of the twentieth century. The corporate sector based its arguments mainly on what had happened from 1960 to 1994 – and in some cases only from 1974 to 1994 – and concentrated only on the cost increasing effect of discriminatory labour patterns, while ignoring almost completely the more important repressive labour patterns and their cost-decreasing effect.*¹²²

*The commission failed dismally to devote any attention to the long history and exploitative nature of the black labour system. What is astonishing about the TRC's superficial reconstruction of South Africa's economic and labour history is that it did not even distinguish between labour repressive measures (with cost decreasing effects) and labour discriminatory measures (with cash-increasing effects), and simply accepted the argument of business that apartheid was a cost-increasing system.*¹²³

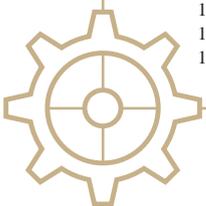
The ODMWA has certainly had a “cost-decreasing effect” and the failure to guarantee medical surveillance and diagnostic services is a large part of the “repressive labour pattern” experienced by migrant miners. It could be added, to the comment by Terreblanche that “*the migrant labour system made it possible for the mining industry to justify average wages below the bare subsistence level on the grounds that jobs in white areas were merely supplementing Africans' basic economic life in the 'native reserves'*”¹²⁴, that the migrant labour system also facilitated and enabled the “hiding” of occupational lung disease.

However, Sampie Terreblanche describes how neither the CM nor Anglo American Corporation (AAC) even acknowledged basic labour exploitation in their submission to the TRC:

*In their submissions to and testimonies before the TRC, neither the CM nor Anglo American Corporation (AAC) was prepared to even acknowledge that African mine workers had been exploited and degraded. This deliberate disinclination to acknowledge their role in constructing racial capitalism and African workers is deplorable. The TRC was justifiably rather critical of both these organizations in its 1998 report, and referred to the CM's 'significant formative impact on the apartheid political economy'. According to the TRC, 'the shameful history of sub-human compound conditions, brutal suppression of striking workers, racist practices and meager wages [in the gold mining industry] is central to understanding the origins and nature of apartheid'. It came to the damning conclusion that 'the failure of the Chamber of Mines to address [its apartheid record] squarely and to grapple with its moral implications is regrettable and not constructive'*¹²⁵

One very large omission from these comments made in the TRC report on aspects such

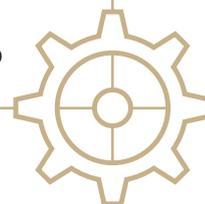
122 Terreblanche, Sampie (2002) *A History of Inequality in South Africa 1652 – 2002*. University of Natal Press, Pietermaritzburg p. 66
123 Terreblanche, Sampie (2002) *A History of Inequality in South Africa 1652 – 2002*. University of Natal Press, Pietermaritzburg p. 130
124 Terreblanche, Sampie (2002) *A History of Inequality in South Africa 1652 – 2002*. University of Natal Press, Pietermaritzburg p. 262
125 Terreblanche, Sampie (2002) *A History of Inequality in South Africa 1652 – 2002*. University of Natal Press, Pietermaritzburg p. 67



as the mine hostels, limitation of union activity and suppression of strikes, racist practices and low wages, is that of the externalization of occupational disease. Clearly the heavy toll of silicosis and tuberculosis amongst miners was not mentioned during the TRC hearings. That there has been, and still is, an epidemic of silicosis has always been denied by the CM and the mining companies. The history of silicosis and tuberculosis should have been taken into account as well and commented upon by the TRC as “not a single word was said about this” by the CM or the mining companies. As Terreblanche describes it there has been a “twisting of the truth”:

*The TRC described the AAC’s submission as ‘flawed’ and ‘misleading’, and noted that ‘its most glaring failure was to sidestep the African wage issue’. (TRC 1998: vol 4,34) The submissions of the CM and AAC are prime examples of how prominent private sector institutions twist the truth in order to create an image of themselves which is more acceptable than the ugly reality of systemic exploitation.*¹²⁶

There was a strong call at the time of publication of the TRC report that a Justice Commission be established. This call needs to be made again with a specific focus on mining-related occupational lung disease in South Africa. Millions of men have passed through the South African mines. For those still alive today, full medical surveillance, diagnosis, and compensation in the event of certification with a compensable disease, would go some way towards redressing the failures of the past and current system. It cannot continue that former miners and their communities bear a large part of the costs of the production of gold through the devastation of occupational lung disease.





chapter 15

Recommendations

Although we set out primarily to study reality, it does not follow that we do not wish to improve it; we should judge our researches to have no worth at all if they were to have only speculative interest. If we separate carefully the theoretical from the practical problems, it is not to the neglect of the latter, but on the contrary, to be in a better position to solve them.

- Emile Durkheim, *The Division of Labour*

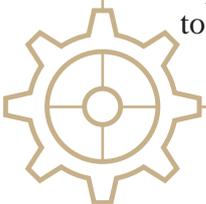
Recommendations, emanating from the findings of the research and listed below, are for both immediate and longer term action. The immediate recommendations work within the current framework of the ODMWA, while longer term action could suggest alternatives to the current legislative framework.

1. Addressing Current Violations of Legislation

Any improvement in medical surveillance, and compensation for occupational disease, would be substantial in the light of the dire historical and current situation. Biennial BMEs must be guaranteed and accessible. Besides improvement in access to surveillance and diagnosis as an imperative to address the current violation of miner's legal and fundamental rights under the ODMWA, improvement in medical screening that results in compensation payments for occupational disease can contribute towards immediate poverty alleviation for former miners. In other words, getting the ODMWA to work could be seen as a poverty alleviation strategy. This latter point, however, must not be confused with development aid or be seen as a form of social security or 'goodwill'. It must be kept in mind that the ODMWA is a legislated occupational disease surveillance and compensation system through which the miner is guaranteed medical surveillance and fixed amount compensation in the event of occupational disease. The ODMWA is a legal entitlement.

2. Demonstration Unit (Action Research) Providing Medical Surveillance

An immediate and urgent priority is to establish a demonstration unit at the District Hospital close to this research site. The aim of this demonstration unit would be, firstly, to provide medical surveillance for the former miners of this area, a matter of extreme urgency, and, secondly, to serve as a pilot unit which in working with the Provincial Department of Health (ECDoH) could provide a best practice model that could be replicated in all other districts of the Eastern Cape. The demonstration unit would aim to develop a model for similar units in at least one hospital in every district.



The intention of such a stand-alone demonstration unit would be dedicated provision of BMEs in the form of x-rays, lung function tests, and collation of mine service documentation. This work would inherently lend itself to being simultaneously a full silicosis prevalence study. Such a unit requires minimal resources in needing only a consultant doctor or occupational health registrar to be available to read x-rays, a nurse who has been trained in the provisions and requirements of the ODMWA and who would be able to complete MBOD forms, and project staff from the Health Systems Trust to facilitate logistical arrangements. The costs of such a demonstration unit are low.

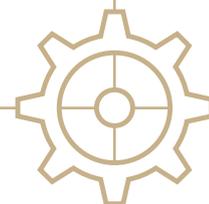
All BMEs undertaken by this demonstration unit would then be forwarded to the MBOD for certification. These MBOD submissions would be monitored for outcomes in terms of certification of compensable disease or not, and monitored for processing through the CCOD. This monitoring of submissions to the MBOD would enable assessment of the processes of the MBOD and CCOD for further recommendations regarding improvement of certification and compensation payment procedures.

The demonstration unit should also develop a prototype mobile unit which is able to travel to other district hospitals as well as to clinics, to undertake the same medical screening processes for former miners in all the labour-sending areas of the Eastern Cape. The mobile unit would thus provide ongoing surveillance. The ideal equipment for such a mobile unit would be digital x-ray equipment which is superbly portable, and whose x-rays can be transferred electronically and read by experienced pulmonologists who might be some distance away. A mobile unit is the best way of identifying former miners and providing mobile BMEs.

An additional way of identifying former miners could be the use of Community Health Workers (CHWs). It is clear that issues of masculinity see many men suffering without complaint and often not recognizing clear signs of illness which their wives do readily recognize. These men tend to present to health facilities very late in their illnesses. CHWs, trained in these occupational diseases, could assist in identification, and could upwardly refer former miners for proper pulmonary care.

3. Re-Assessing Disability through the Demonstration Unit

It is recommended that an additional, and very, important aspect of this demonstration unit should be further assessment of lung impairment through a newly developed standardized test assessing physical ability on exertion. This would be a functional assessment of pulmonary disability which could be correlated with x-ray diagnosis of lung impairment. In other words, a new and experimental test would correlate lung disability with physical disability. With a high reliance on their physical labour as the only thing they have to sell or to use in their own agricultural and other income generating activities, it is particularly important to re-assess the biomedical model of disability. The biomedical model of disability fails to recognize the socio-economic context which affects the extent of disability. There is an extremely high dependency amongst miners on good health and physical strength for their survival. A healthy body is often their only asset, and the context of their lives needs to be taken in account in



any assessment of respiratory disability. A purely medical determination of respiratory impairment is wholly inadequate as it does not assess the role of this incapacitation in the loss of earnings. The development of a new test to correlate physical disability with respiratory disability would be a fairer and more accurate measure of disability.

4. Decentralisation from National DoH/MBOD to Provincial DoH

The demonstration unit, described in Section 1, would be working closely with the Occupational Health Unit in ECDoH. The Occupational Health Unit in the ECDoH currently falls under the Directorate Non-Personal Primary Health Care and the majority of its work entails seeing to the occupational health care needs of ECDoH employees. It is strongly recommended that a Directorate for Occupational Health is established. This Directorate should have two sections. The first would maintain the current focus on the occupational health needs of ECDoH employees, while the second section should be dedicated to services related to occupational diseases including, importantly, ensuring that the ODMWA and other legislation is implemented.

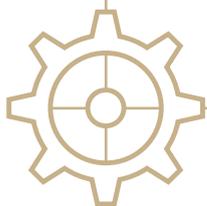
It is necessary to designate centres and facilities that would need to be made available. At least one hospital per district is required, and provincial level co-ordination, rather than the current 'add on' or 'ad hoc' system, is needed for this. The Provincial Department of Health needs to spearhead the development of dedicated ODMWA services. A master trainer could assist in the setting up of such ODMWA units in the district hospitals.

Further decentralization of MBOD certification functions is also an urgent priority. The current system does not provide economies of scale, and it would be far more efficient to have a certification office, in, for example, East London, where x-rays, clinical records and mine service documentation could be reviewed. A provincially based MBOD is essential.

5. Immediate Training on the ODMWA for all Health Personnel

Neither doctors nor nurses are informed of the ODMWA legislation. There is an urgent need to develop learning and training materials on the ODMWA for all health personnel. This needs to encompass nursing staff, doctors, hospital managers, and private sector doctors. There is enormous potential in the use of private sector doctors to facilitate bringing BMEs to the people who need them. Importantly, the legal rights of patients need to be known by health personnel. Training courses need to be developed to teach the legislation and the policies to all health personnel. These training courses could obviously be undertaken more strategically, in the beginning, in targeting those health personnel in areas of high mine recruitment and areas of high labour-sending. An additional high priority is the inclusion of teaching on the ODMWA in all undergraduate courses, and as part of the continuing professional education of doctors through the South African Medical Association.

A specific focus on TB and silicosis is also an urgent need for health personnel. It has been shown that there is possibly considerable mismanagement, and possible misdiagnosis through use of x-ray only rather than sputum testing, of the silicosis that underlies



tuberculosis. Training is needed so that lung abnormalities are properly read. Key to this imperative is that a high index of suspicion for silicosis needs to be developed.

6. Immediate Action from the Department of Mineral Resources in Monitoring Exit Medical Examinations

The mining companies need to demonstrate that they are discharging people following the proper procedures. This requires full examination on exit with any pathology shown being immediately addressed through the proper legal channels. There is a legal liability to do this. The medical records of those who have left mine service need to be checked by Mine Inspectors. Government has the right to monitor and check for full compliance and for information on the results of Exit Medical Examinations. Checks need to be put in place to monitor acquisition of knowledge of the ODMWA, particularly the right of miners to subsequent lifelong BMEs. Monitoring of the implementation of the Mine Health and Safety Act needs to be strengthened, particularly in relation to Exit Medical Examinations.

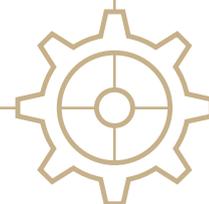
7. NUM and other Unions Information Campaign and Monitoring

NUM and all other Unions need to fully inform their members of the details of the ODMWA. A simple brochure in all languages needs to be disseminated, and training workshops for shop stewards and others on the ODMWA need to be developed. All miners need to be fully informed of the legislation applicable to occupational diseases in mining and risks works. It is, however, not essentially the responsibility of the unions to train their members in all occupational health requirements as this is the responsibility of the mining companies themselves. However, the unions could play a useful role in monitoring adherence by mining companies to legal requirements, and in generally informing all miners.

8. Chamber of Mines and Mining Companies: Training In-Service on the ODMWA

Miners lack information about causes of silicosis, there is confusion between ‘phthisis’ and silicosis, and many do not know that TB is compensable post-employment. Miners have no knowledge of the legal act and legal mechanisms that cover them as they have not participated in understanding the legal framework. They need to know the process, and mining companies are in breach of the law if they are not informing miners of the ODMWA.

There is clearly a huge gap in the receipt of information on ODMWA while in mine service. Receipt of such information needs to be properly informative, factual and accessible, in the preferred language of the miner, and the receipt of such information needs to be signed for both on entrance and on exit. The relevant records of the formal imparting of such information should be open for inspection. Most importantly, however, the adequacy of such training needs to be verified through ongoing assessment to ensure that miners do in fact have the required level of understanding.



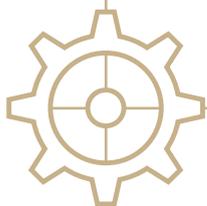
9. Completion of the COIDA/ODMWA Review

The current technical committee reviewing the possible merging of COIDA and the ODMWA needs to complete its work and make final recommendations. A particular area of concern should be the amounts of compensation provided by the ODMWA. Most importantly, the fact that mining companies are perversely incentivized not to report accurately on silicosis as the prevalence of silicosis is directly linked to the mine dust levies that become payable needs urgent review.

10. A Justice Commission for the Occupational Diseases of Mining

A “Justice Commission” for the occupational diseases of mining needs to be established. This could be preceded by a Silicosis Summit, similar to the Asbestos Summit of 1998, for input from all relevant stakeholders. The stakeholders for such a Silicosis Summit would include the National Department of Health, the National Institute for Occupational Health, the MBOD, the Provincial Departments of Health, specialist occupational health medical practitioners and academics, the Department of Minerals, Treasury, the recently established Parliamentary Ex-Mineworkers Committee, Unions, Non-governmental Organizations, and the Chamber of Mines and mining companies.

The main question for a “Justice Commission” would be the redress of the legacy of mining related occupational disease, and assessing restitution for all those former miners suffering from occupational diseases. There is no doubt that poverty in many parts of the country is structurally linked to mining. Ill-health, and the poverty that follows ill-health, is a consequence of factors that were wholly beyond the miner’s control. There is a need to move beyond the strangely and deeply embedded idea in South Africa that somehow people are deserving of their poverty, and to look more closely at the consequences of occupational disease.



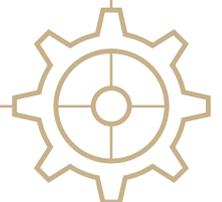
Appendix 1

Excerpt from AngloGold Ashanti's Report to Society 2006

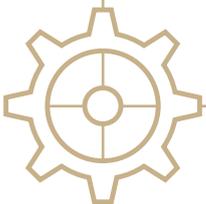
www.AngloGoldAshanti.com

In Memoriam: the names and details of those who died at work during 2006

| Name | Mine | Country | Date | Cause | Occupation |
|-------------------------|---------------|---------|-----------|------------------|------------------------|
| Phulankana Qhelane | Great Noligwa | SA | 03.01.06 | Rolling Rock | Multi-skilled |
| Whitey Timtim Nabo | Mponeng | SA | 06.01.06 | Fall of Ground | Miner's assistant |
| Sello Daniel Nkopane | Tau Tona | SA | 10 .10.06 | Fall of Ground | Team leader |
| Kokoyi Mathandanako | | | | | Stope driller |
| Monyane Elliot Letho | | | | | Stope multi-task crew |
| Charles Owusu-Baah | Obuasi | Ghana | 30.01.06 | Chemicals | Plant mechanic |
| Michael Sekake | Moab Khotsong | SA | 31.01.06 | Inundation | Underground assistant |
| Mareka Khomolishoele | TauTona | SA | 03.02.06 | Fall of Ground | Stope driller |
| Thembinkosi Mjongi | | SA | 03.02.06 | | Stope driller |
| Nteme Siteti | Great Noligwa | SA | 25.02.06 | Fall of Ground | Machine driller |
| Kennedy Botwe | Obuasi | Ghana | 25.03.06 | Machinery | Long hole driller |
| Alson Mbasha Maseko | TauTona | SA | 23.03.06 | Fall of Ground | Stope multi-task crew |
| Nhlanhla S Magagula | Mponeng | SA | 27.03.06 | Inundation | Winch operator |
| Simon Tirelo Mothobi | Great Noligwa | SA | 10.04.06 | Fall of ground | Mining team member |
| Leneha Lekhotso | TauTona | SA | 12.04.06 | Fall of ground | Stope multi-task crew |
| Fusi Mangoejane | Tau Lekoa | SA | 13.04.06 | Fall of ground | Water jet operator |
| Julio Chauque | Kopanang | SA | 28.06.06 | Fall of ground | Scraper winch operator |
| Zeth Khumalo | Mponeng | SA | 11.07.06 | Fall of ground | Scraper winch operator |
| Manuel Alfiodo Masive | TauTona | SA | 02.08.06 | Fall of ground | Grouting assistant |
| Thomas Khaufa Koele | Great Noligwa | SA | 07.08.06 | Tools,equipment | Scraper winch operator |
| Samson B Dube | TauTona | SA | 24.08.06 | Fall of ground | Stope driller |
| Nicolaas Rademeyer | TauTona | SA | 27.08.06 | Electrocution | Winder Electrician |
| Tsepo Eliacer Mokoena | TauTona | SA | 03.09.06 | Trucks, tramming | Loco driver |
| Yanga Benya | Mponeng | SA | 08.09.06 | Fall of ground | Mining team member |
| Ernesto Papel Machavane | Great Noligwa | SA | 11.09.06 | Inundation | Loco driver |
| Kwence Mhlanga | Kopanang | SA | 23.10.06 | Fall of ground | Scraper winch operator |
| Abiel Koali Nteko | Tau Tona | SA | 23.10.06 | Fall of ground | Mining team member |



| | | | | | |
|-------------------------|---------------|--------|----------|-----------------|------------------------------|
| Jaime Auxilio Sambane | | | | | Stope driller |
| Daniel Siteo | | | | | Stope driller |
| Jeremiah Songeso Dubeni | | | | | Mining team member |
| Lwandile Mgwenye | | | | | Stope multi task crew |
| Ishmael Mokete Mofana | Great Noligwa | SA | 01.11.06 | Fall of ground | Stope driller |
| Thabo Andreas Nonyana | Moab Khotsong | SA | 02.12.06 | Fall of ground | Stope driller |
| Ibrahima Traore | Siguiri | Guinea | 10.12.06 | Heavy equipment | Drill-rig junior foreman |
| Oumar Keita | | | | | Assistant drill-rig operator |
| Shale Simon Nkhooa | Great Noligwa | SA | 18.12.06 | Fall of ground | Stope driller |
| Hamidou Sissoko | Yatela | Mali | 26.12.06 | Machinery | Conveyor belt attendant |



Appendix 2

Mail & Guardian, July 3rd to 9th 2009

30 Mail & Guardian July 3 to 9 2009

Monitor

A barometer of governance and development

Failed by the system

Comment

Jaine Roberts

Thandile Qwalela died in the tuberculosis ward of his Eastern Cape district hospital at the age of 48. He was an underground miner from age 20 who served 17 years as a stoper and winch driver on the gold mines.

Qwalela was diagnosed with TB while in mine service in 1997 and was dispatched to his home in the Eastern Cape. There he started wasting away, while remaining convinced that he would recover.

His modest expectation was that his community could be helped with agricultural development. "We want to do ploughing as a project," he said. "After I've recovered I'll be able."

He knew nothing of the Occupational Diseases in Mines and Works Act 78 of 1973 – or that he was entitled, until the amendment of 2002, to annual "benefit medical examinations", free of charge, and thereafter to free examinations every second year.

In the more than 10 years since leaving mine employment he never received medical checks for dust-related respiratory disease.

While employed, he was not told about the legislation or informed of his statutory rights by his local health services.

When the legislation was explained to him, he thought it was new. In fact it embodies an occupational disease compensation system that is almost a century old. It guarantees miners not just medical examinations for life, but also compensation for an occupationally related lung disease. It also requires that when they die, the bodies of all former miners must be autopsied.

Did Qwalela have silicosis, a disease that predisposes a person to TB? No one will ever know, because he was buried before the possibility



of an autopsy could be raised with his widow. He died and was buried without undergoing an X-ray while he was alive to test for the presence of silicosis and without a post-mortem examination.

He left a widow who now survives and feeds three schoolgoing children by collecting and selling bundles

of wood.

Former miner Machule Mapasa also died in the rural Eastern Cape this year while undergoing TB treatment, at the age of 46. Beginning work on the gold mines in 1981, he was employed for more than 23 years, first as a "timber boy" and then as a machine operator.



Thandile Qwalela (left), a miner for 17 years, was unaware he was entitled to medical benefits under the Occupational Diseases in Mines and Works Act. He died of tuberculosis and went to his grave in the Eastern Cape (top) without the autopsy that legislation requires

When Mapasa was retrenched in 2004, he was given an exit X-ray, but was told nothing about the results of the examination or his rights under occupational disease legislation.

In 2006 he was admitted to his local district hospital for TB treatment and in 2007 was readmitted to the ward. He died on January 24 this year.

He told this researcher: "They just say I have TB. Nothing can help me. But I agree with autopsy. I have no objection to that. I want this autopsy."

Mapasa's clinical signs – relentless coughing, severe pain in his left arm and legs, extreme breathlessness on exertion and pitting oedema – all pointed to chronic lung disease.

Local health workers did not know of the autopsy requirement for all

ex-miners. He received this right as a result of external intervention, discussions with his family and the hiring of a private doctor to remove his heart and lungs. The organs were collected by the National Institute for Occupational Health.

Mapasa's autopsy report, in May this year, found that "there is silicosis" as well as dust deposition in regional glands.

The report has now been forwarded to the certification committee of the Medical Bureau for Occupational Disease.

His destitute widow and five schoolgoing children await the certification and compensation outcome.

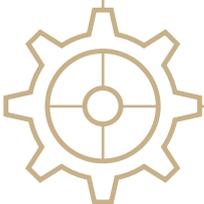
Thousands of former miners like Mapasa and Qwalela live in South Africa's labour-providing rural areas.

Will they continue to die and be buried as TB or pneumonia victims without any possibility of being diagnosed with mining-related respiratory disease?

What is happening is a travesty of their rights under occupational disease legislation.

Jaine Roberts is deputy director of research at the Health Systems Trust

"While employed, he was not told about the legislation or informed of his statutory rights by his local health services."



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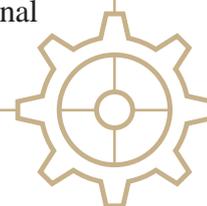
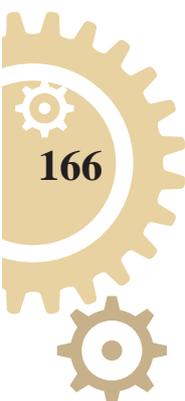
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