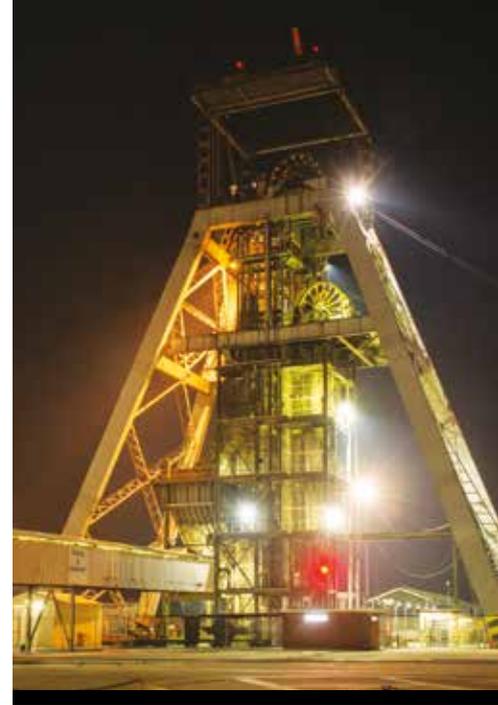


# TUBERCULOSIS IN SOUTH AFRICA



## CONTEXT

Tuberculosis (TB) is a significant public health challenge in South Africa. The World Health Organization (WHO) estimated an incidence of 450,000 cases of active TB in South Africa in 2013. So, almost 1% of South Africa's population of about 50 million people develops active TB each year, or 860 per 100,000 to use the conventional measure – one of the highest in the world.

[Source: [www.tbfacts.org/tb-statistics-south-africa](http://www.tbfacts.org/tb-statistics-south-africa)].

TB is usually spread from person-to-person through the air when a person with pulmonary or laryngeal TB coughs, sneezes or talks. Individuals with latent TB are not infectious, but once the infection occurs it is highly infectious.

Because of this epidemiology, TB is most pervasive under certain social conditions, many of which are present in South Africa. An article in the American Journal of Public Health, drawing on the WHO Commission on Social Determinants of Health, concludes that:

“Key structural determinants of TB epidemiology include global socioeconomic inequalities, high levels of population mobility, and rapid urbanisation and population growth. These conditions give rise to unequal distributions of key social determinants of TB, including food insecurity and malnutrition, poor housing and environmental conditions, and financial, geographic, and cultural barriers to health care access. In turn, the population distribution of TB reflects the distribution of these social determinants, which influence the 4 stages of TB pathogenesis: exposure to infection, progression to disease, late or inappropriate diagnosis and treatment, and poor treatment adherence and success.

“These social determinants are among the key risk factors for TB. For example, poor ventilation and overcrowding in homes, workplaces and communities increase the likelihood of uninfected individuals being exposed to TB infection. Poverty, malnutrition, and hunger may increase susceptibility to infection, disease and severity of clinical outcome. Individuals with TB symptoms such as a persistent cough often face significant social and economic barriers that delay their contact with health systems in which an appropriate diagnosis might be made, including difficulties in transport to health facilities, fear of stigmatisation if they seek a TB diagnosis, and lack of social support to seek care when they fall sick.”

[Source: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3052350/>].

## FACT SHEET 2016

# 80%

It is estimated that about 80% of the population of South Africa is infected with TB bacteria, the vast majority of whom have latent TB rather than active TB disease. The highest prevalence of latent TB, estimated at 88% has been found among people in the age group 30-39 years old living in townships and informal settlements.

In South Africa, the high incidence of TB is also due, at least partly, to HIV incidence – also extremely high by international standards – which peaked during the mid-2000s.

*“People with silicosis have a significantly increased risk of developing active tuberculosis.”*

### **TB, HIV AND OTHER DISEASES**

People with suppressed immunity are more likely to develop active TB than those with normal immunity; around 50 to 60% of untreated HIV-positive people with a latent TB infection will go on to develop the active disease. The annual risk of TB in an untreated HIV positive person is 10%, compared to a lifetime risk of 10% in a healthy individual. Immunosuppressive conditions such as silicosis, diabetes mellitus, and prolonged use of corticosteroids and other immunosuppressive drugs also increase the risk of progression to active TB.

### **TB AND SMOKING**

The risk of developing TB is higher in children who are exposed to passive smoking. Continued smoking by persons with active TB is significantly associated with recurrent TB, following initial treatment, and ultimately death due to the disease.

### **TB AND SILICOSIS**

Silicosis is an occupational lung disease caused by the inhalation of silicon dioxide in crystalline forms such as quartz, cristobalite or tridymite. Workers at greatest risk are those who blast rock and sand such as miners, quarry workers and stone cutters. People with silicosis have a significantly increased risk of developing active tuberculosis. One report found that that mineworkers with silicosis are 2.5 times more likely to develop active TB than those without, and mineworkers with both silicosis and HIV are fifteen times more likely to develop active TB.

*(Source: [http://journals.lww.com/aidsonline/Fulltext/2000/12010/HIV\\_infection\\_and\\_silicosis\\_the\\_impact\\_of\\_two.16.aspx](http://journals.lww.com/aidsonline/Fulltext/2000/12010/HIV_infection_and_silicosis_the_impact_of_two.16.aspx))*



### **CLINICAL PRESENTATION OF TB**

The main symptoms of pulmonary TB are a persistent cough for more than two weeks, or a cough of any duration if HIV positive; coughing blood; fever for more than two weeks; drenching night sweats; and/or unexplained weight loss (more than 1.5 kg in a month).

TB is normally diagnosed when a person displaying the symptoms of TB presents to a doctor or clinic and these symptoms are then investigated. In the high prevalence situation facing South Africa, active case finding is necessary. At mines and increasingly at public health facilities all patients, regardless of the reason for presenting to the doctor or clinic, are given a TB symptoms questionnaire. All patients who display the symptoms must be tested for TB, and every patient who tests positive for one of the screenings is thoroughly investigated. Not all those with TB will have a cough and a high level of caution is required, particularly with people who are HIV positive as they may only have one of these symptoms. A history of contact with a person with pulmonary TB increases the likelihood of a TB diagnosis.

### **TB IN MINING**

There was a significant increase in TB case notification rates in the mining industry from the mid-1990s. This is closely linked to the rise in the HIV pandemic.

In 2002 gold mining companies introduced anti-retroviral therapy for miners. TB rates have declined since around 2008, as the benefits of ART took effect. In the early 2000s, gold mining companies also introduced digital and mobile screening facilities and increased contact tracing efforts.

It was recognised some years ago that a particular challenge was a less effective healthcare regime afforded to contractors in the industry. In 2014 the Chamber of Mines declared this a priority issue for companies to address.



## PREVENTION AND TREATMENT OF TB ON MINES

Prevention of TB requires a multi-sectoral, multi-disciplinary approach. Improvements to housing and living conditions have been championed on mines and targets were set (and have largely been met) in the Mining Charter for the conversion of single-sex dormitory style accommodation to single quarters and family units.

All underground workers are screened at least once a year for TB and their lungs x-rayed twice a year. Where deemed appropriate, workers are screened even more often. Some companies screen for TB symptoms at every contact with the mines' medical service.

Where TB is suspected, miners are referred for investigation through sputum testing. They are admitted to hospital for treatment, and are released only once non-infectious. The industry's TB programme is in line with best practice as developed by the WHO, and high cure rates are typically achieved.

### 2013 TB data

Indicator	Outcome	Percentage
Screened for TB	308 403	73%*
Diagnosed with TB	3 593	1%*
TB treatment	3 483	97%*
Co-infected with HIV and TB	2 905	81%*
Diagnosed with MDR-TB	149	4%*
Diagnosed with extremely drug resistant TB (XDR-TB)	11	0.3%*

Source - MHSC

The mining industry's TB disease management programmes are based on the "National Tuberculosis Control Program (NTBCP) Guidelines" issued by the National Department of Health and recommendations emanating from a "Guidance Note for the Management of Employees with Pulmonary Tuberculosis on Mines" published by the Mine Occupational Health Advisory Council.

The mining companies' health services maintain a good working relationship with the public health sector in their respective areas of operation. This includes:

- Statutory notification;
- Referral of multi-drug resistant cases to public health facilities; and
- Receipt of a subsidy or access to public sector drugs for the treatment of TB.

TB is recognised as being one of the biggest public health threats within the mining industry and South Africa. The industry is committed to render effective TB screening and management programmes and is committed to the MHSC milestone of reducing the TB incidence rate to the national TB incidence rate by December 2024.

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## OCCUPATIONAL HEALTH IN THE SOUTH AFRICAN MINING INDUSTRY

*“Compensation for TB is regulated by the Department of Health (DoH) under the Occupational Diseases in Mines and Works Act (ODMWA).”*

*Under ODMWA, a person who works or has worked on a mine has a lifelong right to biennial medical examinations to determine whether they have an occupational lung disease. This service is provided by the DoH.*

### COMPENSATION FOR TB IN MINING

Compensation for TB is regulated by the Department of Health (DoH) under the Occupational Diseases in Mines and Works Act (ODMWA). Under ODMWA, TB is a compensable disease when, “in the opinion of the certification committee, it was contracted while the person concerned was performing risk work, or ...was already affected at any time within the twelve months immediately following the date on which that person performed such work for the last time.”

Miners who suffer from TB are compensable in two instances. First, where they lose earnings and, second, where there is permanent impairment of lung function. In all instances, cases of occupational TB should be submitted to the Medical Bureau for Occupational Diseases (MBOD).

Under ODMWA, a person who works or has worked on a mine has a lifelong right to biennial medical examinations to determine whether they have an occupational lung disease. This service is provided by the DoH.

ODMWA also provides for medical practitioners to remove the cardio-respiratory organs of any miner who dies from any cause, including from TB. This removal of organs is only with the consent of the family and the organs are submitted to the MBOD for examination and possible referral for compensation.

Compensation for loss of earnings under the ODMWA was originally based on a treatment regimen that required 18 months of treatment and prolonged periods away from work. The introduction of the modern short course treatment (only lasting 6 months) and the policy of return to work as soon as the person is non-infectious and fit, drastically reduced the need for compensation for loss of earnings. Further, the gold sector's collective bargaining agreement of 2007 provided for extensive additional paid sick leave for employees undergoing treatment for TB – of up to six months at a time. Thus, any compensation due to mineworkers needs to be considered in light of the fact that limited earnings loss would be accrued.