

Governance of Mining, HIV and Tuberculosis in Southern Africa

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Mining in southern Africa has amplified HIV and tuberculosis (TB) epidemics across the continent through social, political, and biological risks posed to miners and their communities. Aware of these risks for decades, policymakers have done little to regulate the mining sector's remarkable impact on Africa's two largest epidemics. Here, we analyze the governance of mining in southern Africa to evaluate the sources of ineffective responses and identify mechanisms for ensuring effective cross-border care and global norms of responsible mining. We argue that action is needed by international agencies to spur the development of effective governance systems currently being constrained by domestic vested interests.

INTRODUCTION

If TB and HIV are a snake in Southern Africa, the head of the snake is here in South Africa. People come from all over the Southern African Development Community to work in our mines and export TB and HIV, along with their earnings. If we want to kill a snake, we need to hit it on its head.

— Dr Aaron Motsoaledi, South African Health Minister, June 2010

Few industries have been so consistently and powerfully related to disease as mining, especially in southern Africa. Since its colonial origins in the nineteenth century, mining in this region has exposed its workers to substantial risks of developing lung disease from inhaling asbestos and silica dust¹ in working environments characterised by poor ventilation that facilitated the spread of tuberculosis (TB). Cyclic waves of gonorrhoea and sexually-transmitted diseases were associated with mining, as migration laws prevented rights of permanent residence or family entry for miners, while mine administrators procured alcohol and sex workers for mineworkers as a strategy to reduce the risks of unionization or revolt.²

Very little has changed over the past several decades. Recent autopsies of Black miners in South Africa reveal very high rates of silicosis and TB that remained undetected and untreated or poorly-treated during life, rising from about 5 percent active pulmonary TB at autopsy in 1975 to 40 percent in 2008³. Official data on prevalence of silicosis in South Africa in 2008 also showed that one-quarter of all miners were affected--about the same as those recorded one century ago.⁴

In the 1980s, the situation deteriorated further as the HIV epidemic spread rapidly, with transmission facilitated by the system of circular migration to and from the mines and rural homelands.⁵ Men travel long distances from rural labor-supplying communities, not only in South Africa but also in Lesotho, Swaziland, Botswana, Mozambique, and Zimbabwe, living away from their families for extended periods (as the continuation of South African apartheid-era laws prevent families from establishing residence across borders in mining towns). In the shantytowns that cater to miners, alcohol and drugs,⁶ as well as the sex-industry (a target for sex traffickers),⁷ confer the risk of HIV,⁸ which itself increases the risk of developing active TB.⁹ This resulted in the emergence of an HIV-TB co-epidemic in the 1990s,¹⁰

and recent research has shown how intensity of mining activity and rates of TB are highly correlated.¹¹

Why is the policy response to these avoidable risks of infectious disease so weak? Over the past two decades, there has been an enormous growth of advocacy and funding for action against HIV and TB. Yet, despite a century of health research and awareness about the impact of mining, there is little attention to the policies that lead to these adverse health consequences. For example, to our knowledge, none of the recent UNAIDS, the World Health Organization (WHO), or World Bank documents on these diseases mention the risks of TB and HIV associated with the mining sector. Even chapters of the recent UNAIDS yearly reports, which explicitly aim to address “societal causes of HIV risk and vulnerability,”¹² fail to mention the impact of the mining sector, instead maintaining a focus on individual risks of HIV such as low socio-economic status or migration. However, the situation in southern Africa is not inevitable. Mining industries operate in the Australasia region and North America without the secondary impact on lung disease and sexually-transmitted disease observed in Africa. Southern Africa is, however, different because of the scale of international migration of mine workers involved, with mines in South Africa employing large numbers of workers from Botswana, Lesotho, Mozambique, Swaziland, and Zimbabwe.

In this paper, we examine why the response to mining-related risks to HIV and TB continues to be insufficient. We focus specifically on South Africa because it is the main mining country in the region, and because of its political and economic dominance of Southern Africa. The rest of the paper is as follows: first, we evaluate existing theories of governance and draw on a model of adaptive governance. Then, using this framework, we evaluate the main institutions involved in the governance of mining in this region to identify barriers to risk reduction. We conclude with a series of proposals that can help align the incentives of mining companies, miners’ representatives, and state institutions with improved management of joint HIV and TB risks of mining activity.

Theory of Governance

There is little consensus about the meaning and measure of governance. As Mueller notes, “there is no accepted theory of governance,”¹³ and Carver points out that not everyone agrees that such a framework is possible.¹⁴ Paradigms draw from political economy, network analysis, legal, gender, and cultural theories, to name a few. Often, governance is invoked in pluralist terms, as the ‘actions to steer decision-making procedures, rules and authority.’ For example, Rosenau writes that “governance can be defined as the process whereby an organization or society steers itself,”¹⁵ and Fidler claims “[health] governance refers to how societies structure responses to the [health] challenges they face.”¹⁶

As a theoretical framework, governance gained prominence as sovereignty began to wane in the context of global market integration. Governance theory provided tools for analyzing what governments do, governing, without the previous necessity of involving the government.¹⁷ The increasing prominence of private sector funding and involvement in global health (‘privatization of global health governance’) over the past two decades has in part contributed to the demand for the conceptual development of global-health governance theory to legitimate current forms of governing.¹⁸ With it there has been a growth of analysis of non-state actors, market-driven forms of governance, and the promotion of private-public partnerships as a governance framework.¹⁹ As Foucault notes, the selection and reproduction of

knowledge is driven by powerful groups and vested interests, at times in unobserved ways.²⁰

While a coherent and general theory of governance is lacking, several papers have begun moving toward more integrated theories in separate domains, including global health priority-setting, corporate board practices, and environmental management. One is by Stuckler and colleagues,²¹ using an 'input-output' model to evaluate governance success and failure. The model is constructed analogous to the notion in public economics of market failure, which assesses success and failure based on the clearance of supply and demand forces. An advantage of this framework is that it separates the usual focus on the ends of governance, often evaluated in terms of values and norms of 'good governance' (usually meant to imply non-corrupt democratic outcomes), from the means of governance. Another contribution is by Carver, the Policy Governance model, which seeks to reach a set of universal concepts and principles to inform an analysis of corporate board performance.²²

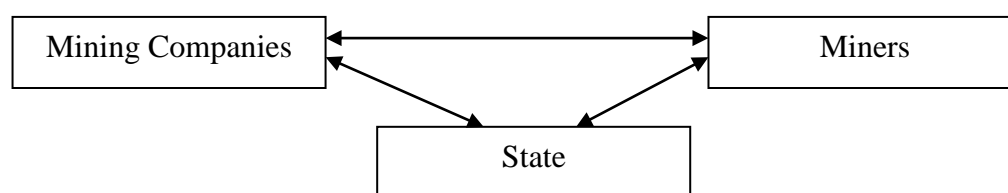
A third, drawn from environmental science literature, referred to as 'adaptive governance,' expands on the theory of Brunner, Steelman, and colleagues.²³ This paradigm analyzes the organizational features of governance systems (such as their centralization) and ways in which they evolve. The notion of adaptive governance refers to how scientific and policy communities emerge from the bottom-up to influence regulation not through formalized legislative means but by creating a complex network of informal policies and practices more widely conceived that interpret and reinterpret law and concepts of fact, enforcement, and government and corporate responsibilities. This has similarities to 'common law' systems, which are not fixed by a set of transcendental principles but evolve in relation to social pressures, attitudes, and legal 'outlier' cases which stimulate governance adaptation.

The principles of adaptive governance form the basis of our analysis. The governance of mining involves the set of relationships between actors who are or are not active (based on Bourdieu's notions of field). The relationships between these actors are sustained through flows of capital (scientific, symbolic, economic, political, and organizational, among others). Consistent with the principles of adaptive governance, the actions by one actor react back on the other, creating a 'double-movement'²⁴ and thereby determining the successive reform of the entire system of governing.

Institutional Analysis

We identified three main institutions with a potential interest in the health of miners in South Africa, including the mining companies, miners' representatives (mineworker and ex-mineworker unions, academics, and non-governmental organizations) and the state (including the ministries of health and mineral resources departments, as well as international agencies) (see figure 1). We used a political economy perspective to look at the power structures and incentives involved.²⁵ By political economy, we refer to the structural and systemic factors that influence the decisions and policies that are substantively or formally rational for people and organizations. To understand the power structures we draw on Lukes' three dimensions of power,²⁶ which considers the decisions that are made, the decisions that do not reach the agenda, and the ideology that is created, which can cause people to act in ways that are against their best interests (variously referred to by theorists as 'soft power,' or creating 'a false consciousness').

Figure 1: The Deadly Mineral Triangle of Infectious Disease



MINING COMPANIES AND THEIR REPRESENTATIVES

In the first instance, it is incumbent on the mining companies to achieve levels of HIV and TB risks for their workers that are as low as reasonably achievable. However, mining companies have long interfered with efforts to establish effective compensation for occupational risks of disease. The industry profits by externalizing the costs of mining onto rural-labor supplying communities.

While it is often held that mining companies have an incentive to lower transmission rates and to have workers living with HIV on treatment, as it is expensive to have sick and dying workers, in reality the current economic system gives mining companies little incentive to invest in preventative measures for employees. There is a large pool of surplus labor from rural supplying communities, where there is a high background rate of unemployment (of more than 70 percent in some regions among young, working-age men). Mining is a relatively low-skill job, reducing the costs to the employers of a high turnover. While newer and more sophisticated mining practices have increased skill demands and productivity, they have also led to significant downsizing. As one doctor from the South African Department of Mineral Resources summarized the situation: “These miners are expendable. Skills are easy to acquire. Much cheaper to have high turnover than keep employees... profit margins are huge.”

In the early twentieth century, mining companies built trauma hospitals (basically large emergency rooms to manage blunt injuries), within which TB treatment was shoehorned to provide acute diagnosis and treatment, but not the continuing care needed to manage the disease effectively.²⁷ These systems of care created for miners remained largely unchanged throughout the apartheid era. As one doctor treating South African miners explained, “mine hospitals are mostly for injuries ... Companies make promises to handle injuries.”

When HIV became recognized as a major health issue after the end of apartheid, mining companies began to add HIV testing and antiretroviral (ARV) pilot programs to their hospital system, in response to pressure from international activist groups. Mining companies were among the first institutions to provide comprehensive ARV treatment to their employees.

As the burden of TB has increased, with a growing proportion of drug-resistant cases, mining companies have expanded their activities, especially for ex-miners and their families in rural areas. Anglo American states it is “working with unions, government and industry to find practical solutions to the problems former miners in rural areas find in accessing medical care.”²⁸

However, industry reports also reveal that while it publicizes its treatment programs, workers who develop clinical illness are often dismissed. Interviews with doctors and former miners indicated that this often happens under the guise of being sent home to recover. One former mine worker from Lesotho who attended a 2010 conference about TB in Durban revealed how, after contracting TB in 2001, he was quickly dismissed as were many of his colleagues.²⁹

The industry's main lobby group in South Africa is the Chamber of Mines. The mining companies also provide banking services and recruit workers through The Employment Bureau of Africa. Founded in 1894 by the mining companies, Rand Mutual Assurance Company was established to provide workers' insurance in South Africa.³⁰ In 1993, the Workmen's Compensation Act was replaced by the Compensation for Occupational Injuries and Disease Act, when Rand expanded coverage to include accident-related insurance.³¹ Rand Mutual currently insures 94 percent of the mining industry.³²

Following early mining disasters, a dual system of occupational compensation was created, one for miners, and one for all other occupations. The system remains complex and unequal even in the post-apartheid era, being characterized by miners as so difficult to navigate that it prevents many valid compensation claims from being registered or completed.

Additionally, there is confusion about the duties and responsibilities of the various institutions involved in mining and health to compensate workers, complicated by the international origins of the workforce. Currently, experts estimate that 280,000 men in Southern Africa are eligible for occupational health compensation,³³ representing a total amount of more than US\$ 6 billion if compensation were to be granted at the same level as for other occupational pulmonary diseases. A study of former miners in Eastern Cape with compensable silicosis found only 2 percent had received compensation.³⁴

Part of the problem is that the Compensation Fund is insolvent. A 2005 audit by Deloitte, a major international auditing firm,³⁵ found that mining companies' levies to the Compensation Fund due to the occupational risks for developing TB in the mining sector would need to be increased substantially in order to cover the deficit.³⁶ Over the audit's 21-month period, only 400 of the 28,000 (less than 1.5 percent) claims submitted were paid out.³⁷

One strategy to cope with costs of HIV has been to create complex financial derivatives to hedge risk, as described in an industry-funded report, entitled "Cutting and Trading Away the Cost of HIV/AIDS."³⁸ Consultants strongly recommended that the prevailing approach, "a policy of dismissing workers will not work," given the large number of infected employees.³⁹ The derivatives that bet against the health of their workers, providing compensation in case the epidemics threatened their bottom line (similar to how the corporate giant Walmart takes-out life insurance policies on its employees, retaining the payouts itself).⁴⁰ As described in the Harvard Business Review by a senior executive in charge of finance at HarmonyGold (a mining company in Johannesburg):

...we created instruments for trading risk. We devised a health derivative – in a sense, a sort of insurance contract – that an investment firm could sell to mining companies to buffer them against the potential productivity losses due to HIV. The contract states that if HIV-related absenteeism and injury were to affect productivity in specific ways, the investment firm – which receives a premium from the covered company – would pay the mining company a predetermined amount. If productivity is not affected, the investment firm would retain the premium as income. In essence, the contract allows the mining companies to shift the cost risk of HIV from themselves to a speculator (the investment firm).⁴¹

In other words, innovative financial instruments create a group whose profit depends on the spread of HIV.

MINERS AND THEIR REPRESENTATIVES

In view of the failure of mining companies to adequately establish governance systems to respond to the risks of TB and HIV associated with mining, the next major group to seek change is the miners themselves and their representative unions. Their response, however, is limited by a low level of awareness among Black South African miners about the role played by mining in the development of lung disease, opportunities for treatment, and rights to compensation. One recent report quoted a miner as saying “they hide things like that from us.”⁴² Instead, the more salient threat is the immediate risk of accidents or injury. Mine managers often lack information about pulmonary diseases or strategies for preventing them. Miners are often illiterate and, at the mines, speak many different languages.

The main organization that provides a voice for Black miners is the National Union of Mineworkers, representing about 500,000 current miners, and the Ex-Mineworkers Union, covering at least several million miners. These bodies are weak for several reasons. One is because their constituents are dispersed across geographic regions, which makes it difficult to organize. Another is the xenophobia of South African miners to foreigners, as manifested in recent riots, whereby miners may fight among themselves rather than pursue a unified vision, highlighting the complexity created by an international workforce. A third, often asserted albeit unproven, is that union heads have been co-opted by the promotion process (and there are revolving doors between union leaders and the boards of mining companies and compensation bodies). Related to this failure to represent the full set of miners’ HIV and TB health issues, there is too much power and historical focus by the union leaders on injuries, which garner population media attention. Fourth, the lack of support by miners unions for action on lung disease may reflect fears that increasing in compensation that will further reduce employment levels or wages.

An additional problem is the delay between exposure to risk on the mines and development of silicosis. The most proactive group has been the ex-miners union, reflecting the belated awareness of miners. Silicosis can take from ten to thirty years to develop after exposure, a large proportion of miners only develop silicosis and TB after they have left the mines and returned to their communities, often in a different country. This has led to a much greater degree of awareness and concern among institutions representing ex-miners than current ones. However, the ex-miners union, who lobby for greater compensation, is often in dispute with the National Union of Mineworkers, in part a legacy of an historical split over a 1987 mineworkers’ strike which led to the formation of the ex-miners union.

STATE INSTITUTIONS

When voluntary self-regulation of the mining companies and pressure from organized labor fails to address infectious disease risks, it is necessary for the state to intervene. Thus far, however, governments in southern Africa have been unable to mitigate mining-related risks. A central challenge is the cross-border flow of miners and risks. Even if South Africa could establish an effective system of care for TB, the frequent migration of miners to Lesotho, Swaziland, Mozambique, and other sources of labor would risk disruptions to care and the development of drug-resistance unless there was a coordinated cross-border system of infectious disease prevention, treatment, and care. Second, corruption is widespread in southern Africa (i.e., ‘privatising the public’s wealth’), and there are recurring problems of state capture by the mining companies. This is at least one part of the failure to respond. As but one

example, documents revealed in disclosure during litigation show that the South African Department of Health, along with the Department of Mines and Energy, knew about the hazardous conditions in mines but did nothing for years.⁴³

Third, the bureaucratic capacity of state institutions is weak. As well as being compromised by the failure to separate the office from the officeholder (described above), the state mandate for addressing mining-health risks is fragmented. Agencies with involvement in managing mining-related health risks include the Departments of Mineral Resources, Health and Labour. Their agendas differ. The Department of Mineral Resources (formerly the Department of Minerals and Energy) is “responsible for formulating and promoting mineral policies that will encourage investment in the mining and mineral industry, and will make South Africa attractive to investors.”⁴⁴ Historically a finance-focused department, more recently its leaders have actively supported regulation such as the Mining Charter of 2004, which includes reforms such as to ‘establish measures for improving the standard of housing including the upgrading of hostels, conversion of hostels to family units and the promotion of home ownership options for mine employees’ and ‘establish measures for improving of nutrition of mine employees,’ (although recently the architect of this Charter was reputedly forced into retirement after clashing with mining companies).⁴⁵ Within the Department of Health, the National Institute for Occupational Health plays a role in monitoring mortality among current and former mineworkers, as part of compensation procedures for widows and surviving family members. To do this, the National Health Laboratory Service is meant to examine the lungs and hearts of deceased active and former miners on behalf of the Medical Bureau of Occupational Disease. A necessary step in the compensation process, in practice these organs are rarely shipped, in part because people find it culturally objectionable. The Service is small and weakened by shortage of personnel. One indication of its failure is a recent estimate by epidemiologists (cited above) that less than 2 percent of cases of occupational lung disease eligible for compensation are actually processed by the National Health Laboratory Service.⁴⁶

BREAKING THE TRIANGLE: THE ROLE OF ACADEMICS, NON-GOVERNMENTAL ORGANIZATIONS AND INTERNATIONAL AGENCIES

Collusion between state and industry, as well as the international nature of the workforce, creates an opportunity for regional and global agencies to exert pressure. The intervention of international agencies could strengthen the hands of those advocating improved conditions for current and former miners and, potentially, facilitate the international collaboration required to address this regional problem. Yet while such institutions have previously attempted to spur reform, the results are discouraging.

The Southern African Development Community (SADC) should be the natural focal point for action, and its framework for population mobility could offer a means to improve miners’ working and living conditions. SADC has negotiated a Protocol on Mining, with goals similar to South Africa’s domestic Mining Charter, and issues Fact Sheets about HIV risk on the mines, which note that “HIV and AIDS may undermine the objectives of the SADC Protocol on Mining,” in part because “mineworkers who become sick with HIV and AIDS related illnesses may have their contracts terminated leading to a loss of income for the affected family.”⁴⁷ However, the protocol is voluntary and has been implemented to only a limited extent.

In 1998, the International Labour Organization (ILO), the WHO, and the South African government established a Committee to eliminate silicosis by 2013.⁴⁸

The Committee included the National Union of Mineworkers, the Chamber of Mines, and the Departments of Health and Mineral Resources. Yet, progress is less than halfway to the target dust level that was voluntarily agreed upon.

One member of WHO's TB unit, Brian Williams, has written about mining. However, based on our review of reports available at the time of this writing, and consultation with the National Institute of Occupational Health in South Africa, it appears that the WHO and UNAIDS have done relatively little to address the risks of TB and HIV related to mining activity in the region. More recently, under Michel Sidibe's leadership, UNAIDS has adopted joint TB-HIV control as one of its ten corporate priorities—and has set the goal of halving TB deaths among peopling living with HIV by 2015.⁴⁹ UNAIDS is working with ILO and WHO on workplace guidelines on joint TB-HIV, of which the mining sector is one industry covered. UNAIDS' focal TB person is involved with initiatives on mining and TB, including with World Business Forum, Stop TB Global Partnership Forum, and has inputted extensively to the ICMM code of practice.

Several non-governmental organizations have also been involved in mining-related issues in the past. Most focus on South Africa, although a few have mission statements that include a regional scope. Notable examples are Jubilee, which focused on water contamination, and Action8, which focused on environmental degradation. The main health-related activity has come from AIDS and Rights Alliance South Africa. Interest within the AIDS and Rights Alliance stemmed from HIV activism and increasing concerns about drug-resistant TB.

Experts can support the implementation of regional standards by providing independent monitoring and evaluation of them (a form of non-state certification governance, as applied in environmental sectors). However, at present, very few experts work in the field of occupational lung disease in this region. Most are in South Africa. Research is also lacking, as it is difficult to secure grant money or build academic careers by engaging in mining-related health issues. In the past, industry has applied pressure to suppress or, less directly, divert research on the health effects of asbestos, and similar forces may be stymying a response from researchers to HIV, TB, and silicosis risks.⁵⁰

CONCLUSIONS

Mining in southern Africa is significantly contributing to the epidemics of HIV and TB in southern Africa.⁵¹ Very high risks of HIV and TB in the mines have been recognized by policymakers since the 1980s, but little is being done. Neither voluntary, self-regulation by mining companies, nor pressure from miners' representatives have been sufficient to establish systems of governance that effectively respond to mining-related risks of HIV and TB. The ability of states to address these risks is undermined by the cross-border flows of miners, vested interests, and dispersion of responsibility across state institutions. To spur adaptations of the mining governance system, we argue that international and regional agencies, together with academics and NGOs, have a crucial role to play in monitoring progress, setting norms, and establishing cross-border treatment protocols—and should focus on four priority actions.

Drawing on the theory of adaptive governance, we can identify a number of barriers to change. The ability of states to address these risks is undermined by the cross-border flows of miners, vested interests, and dispersion of responsibility across state institutions. There is a combination of multiple actors favouring effective action but beset by duplication of functions and an absence of leadership, coinciding with

the presence of other actors opposing some changes and distinctly unenthusiastic about others, leading to stalemate. This situation has continued for at least a century, in spite of remarkable social and political changes in Southern Africa and widespread awareness of the need for action. Breaking the 'deadly triangle' leading to such a stalemate can occur by either tilting the power to one actor decisively (which, as it has not occurred during the past century of social, economic, and political changes, seems unlikely), or intervention by a new actor. We believe that it is only with the involvement of the international community, working with academics and NGOs, that a new system of governance, adapted to the present community needs, can emerge to monitor progress, set norms, and establish cross-border treatment protocols. These actors should focus on the following four priority actions:

Establish Systems of Cross-border Care

There is an immediate need to improve standards of cross-border care for miners. This is needed to avoid the development of drug-resistance, as well as to curb the spread of TB and HIV to neighboring countries. A number of simple measures would help. One is to give miners paper-based medical charts, which contain the miner's medical history and current treatment, to facilitate continuity of care. An additional option is to provide health insurance that would provide coverage for miners and former miners when they receive care from providers in neighboring countries, working through the SADC consortium in the same way that cross-border care is facilitated by the European Union.

Require Mining Companies to Internalize the Health Costs of Mining

In South Africa, the prevailing system of compensation is confusing and inequitable, and does not adequately cover employees who return to labor-supplying communities abroad. At present, the economic incentives of reducing costs of compensation is inadequate to spurring the implementation of low-cost and effective prevention strategies. Similarly, an assumption that miners should take individual responsibility has proven insufficient to address their environmentally determined risks and their spread to families and community members. Lack of awareness is an issue, but miners also do not have sufficient agency to demand improved workplace conditions. In many labor-supplying communities unemployment rates are in some cases greater than half of the workforce, and there are few employment choices other than the mines. Thus, international institutions and regional bodies can play an important role by convening governments, employers, and trade unions to explore the establishment of a harmonized compensation system available to all miners and ex-miners, irrespective of their place of residence. This could be a role for the International Labour Organization.

Monitor the Health and Disease Management of Miners

There is a general lack of data on miners' health and the impacts of their migration on their communities. Surveillance is needed to identify the main sites of failures to provide cross-border care and attain, where necessary, compensation for occupational disease. Those international institutions focusing on HIV and TB would be well-served to convene the relevant agencies and support activities that focus on the highly mobile group of miners who have the greatest recorded risk of TB of all occupational groups.

Reform Living Environments in Mines

In the long-term, mining environments need to be reformed to radically reduce new HIV and TB infections. The costs of insurance would provide incentives to mining companies to act on the structural drivers of these diseases. Preventive initiatives by improving mining conditions should also include permitting more family housing to reduce risky sexual activity on the mines. Standards vary considerably across countries and within them, despite mining activities often being operated by the same transnational company. This raises issues that are analogous to those facing international companies producing consumer goods such as food and clothing, where production takes place in low-income countries. Western consumer organizations have put them under pressure to ensure acceptable working standards for their workers. Similarly, popular pressure has forced the diamond industry to confront the issue of “blood diamonds.” Mining companies have yet to face the same pressure, even though there is, at least in relation to gold, platinum, and diamond mining, a huge gulf between the image conveyed by the marketing of their products and the reality for those who produce them. This pressure is likely to gain traction and international agencies can provide monitoring of living standards to ensure that miners have access to fair and safe housing and communities.

Ultimately, as with all global health issues, the required change to reduce the avoidable risks of HIV and TB on the mines is a political process. This paper has attempted to analyze the complex and rapidly changing politics of the mining system, with a focus on mining in the Republic of South Africa given its historical and economic centrality to the mining sector in southern Africa generally, and its position as a political leader in the region. We hope that our paper helps inform the judgment and priorities of policymakers in the region and can spur attention from international institutions about the devastating human toll of mining-related HIV and TB.

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