

WORLD GOLD COUNCIL

Executive Summary

SAFEGUARDING WORKPLACE AND COMMUNITY HEALTH

How gold mining companies are fighting
HIV/AIDS, tuberculosis and malaria

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Executive summary

Introduction: why gold mining companies strive to tackle health issues

It is difficult to overstate the global threat of HIV/AIDS, tuberculosis (TB) and malaria. Each second, someone in the world becomes newly infected with TB, and the disease claims 1.7 million lives annually. Every day, 7,000 people become infected with HIV, and two million a year die from AIDS. And 94 million people are ill with malaria, with 440 dying daily – 85% of them children.

As well as representing a global tragedy in human and social terms, these three diseases raise severe challenges for businesses – and especially for the gold mining industry. Gold mining operations frequently take place in regions which are among the hardest-hit by these diseases, such as the countries profiled in this report: Ghana, Tanzania, South Africa and Indonesia. In these locations, gold producers can face soaring costs of employee healthcare and training, as well as elevated rates of absenteeism, against a backdrop of sagging employee morale and lower quality of life in surrounding communities. Also, mining operations themselves can have the unintended consequence of exacerbating the spread of disease due to a number of social, environmental and industrial factors.

Supporting the fight against disease

These factors give the world's largest gold mining companies the means and will to support the battle against these major diseases. Their readiness to act is underpinned by their common commitment to the principles of the International Council on Mining and Metals (ICMM), including its Sustainable Development Framework.

In this report, we examine on-the-ground programs by the world's four largest gold mining companies – AngloGold Ashanti, Barrick Gold Corporation, Gold Fields Limited and Newmont Mining Corporation – to tackle the threats of HIV/AIDS, TB and malaria among their workforces and local communities.

To help them do this, organizations such as the ICMM and the International Finance Corporation (IFC) have developed global best practices for disease management. These are applied at each of the major gold producer sites studied, adapted to local needs and challenges.

Gold mining companies have achieved great successes in some areas, while continuing to struggle with disease threats in others. However, the successes do not mean the associated programs are scaled back; sustainable improvements to health require sustained efforts. Given the finite life of any mine, each company is striving to create the legacy of an effective, community-owned and locally-driven healthcare system.

The health challenges facing gold mining companies...

The annual *International Health Report* from the World Health Organization (WHO) shows that HIV/AIDS, TB and malaria collectively present perhaps the most formidable global threat to human health. This threat is especially acute in a handful of countries – in many of which gold mining takes place.

HIV – An estimated 33 million people worldwide are currently living with HIV – more than two-thirds of them in Sub-Saharan Africa. South Africa has the world's largest HIV epidemic, with a prevalence of 18.8% in 2007 corresponding to 5.7 million infected people.

Tuberculosis – TB's lethality rivals that of malaria, with some 9.2 million new cases and 1.7 million deaths in 2006. TB is also the biggest killer of people with AIDS. Indonesia has the third-highest number of TB cases in the world, with 578,000 cases in 2006, and also has 270,000 adults living with HIV.

Malaria – Every year, 500 million people become severely ill with malaria, and more than a million die from it – including a child death every 30 seconds. The disease has a huge economic impact, accounting for 40% of public health spending in the most-affected countries. Over 90% of malaria deaths are in Africa, and it is the leading illness and killer in Tanzania. It is also endemic in Indonesia.

...and the side-effects that gold mining companies need to prevent

As part of their efforts to tackle these disease threats, gold mining companies also need to mitigate the consequences of mining operations that can contribute to the prevalence of diseases.

In-migration of workers and supplies to mines in remote areas can lead to increased **HIV/AIDS**. The demographic resulting from gold mining is a large concentration of workers, mainly men, living together away from their families and communities. This lends itself to a higher frequency of casual sexual relations, including men having sex with men and with commercial sex workers (CSWs).

If HIV increases, it can in turn boost the incidence of **tuberculosis**, the biggest cause of AIDS deaths. Several standalone factors can also contribute to TB, including inhaling silica dust in underground mines. TB risk can be further heightened by the dense housing that frequently accompanies in-migration.

The incidence of **malaria** is heightened by the standing bodies of water that can result from mining activities. This provides breeding areas for the malaria-carrying *Anopheles* mosquito.

Best practices and policies in disease prevention and treatment

The ICMM *Good Practice Guidance on HIV/AIDS, Tuberculosis and Malaria*, published in 2008, represents current best practice for mining companies. Incorporating the work of academics, policymakers and practitioners, its recommendations are applied by gold mining companies as the basis for their programs.

- **Company policy and alignment with national and international protocols**

Mining companies need to have a policy on the management of all three of the diseases where they impact company activities. To help formulate the policy, management can refer to many local, regional, national and international organizations with frameworks to combat these diseases. By aligning their policies and strategies with these programs, mining companies can avoid ‘reinventing the wheel’.

- **Partnerships**

When possible, companies should avoid ‘going it alone’ in their workplace and community public health programs. Planning and implementing programs with partner organizations is both easier and more effective, and creates more sustainable improvements. Partners can include local or international non-governmental organizations (NGO), local and national government health authorities, multilateral financing institutions, specialized healthcare contractors and even other mining companies. Partnership can boost programs’ reach and response, make better use of the partners’ respective skills, improve access to local communities, and create better support and services for those affected by disease. Perhaps most importantly, partnerships can build capacity within partner organizations and communities to drive sustainable improvements in public health.

- **Sustainability in community health**

Sustainability is one of the greatest challenges for mining companies in their community health programs. Every mine will ultimately close down, so at some point many of its initiatives will

Case study 1 Gold Fields at Tarkwa, Ghana: Tackling HIV through outreach



Courtesy of Gold Fields Ghana

Gold Fields HIV Coordinator Charity Tuffour-Kwarteng addresses an induction meeting for new employees.

Gold Fields is tackling HIV around its Tarkwa operation in Ghana through a combined program of employee and community outreach. At the core of the program are 120 trained volunteer peer educators working with employees and a further 30 working in the local community, holding discussions on safe sex and promoting the company’s voluntary counseling and testing (VCT) offering.

Before the launch of the program in 2005, only 13% of employees were getting tested for HIV. Today, 88% of employees and 30% of contract workers have undergone testing, and the company provides counseling and support to the small proportion (less than 1%) testing positive.

The program, which includes a weekly radio program, is run in partnership with community groups, labor unions, and non-governmental organizations (NGOs) including the International Labour Organization (ILO). Another NGO involved is Family Health International, who provided hospital equipment that helped the site obtain anti-retroviral (ART) accreditation.

A 47-year-old HIV-positive Gold Fields Ghana employee comments: “I now feel very fit and I am going about my activities normally... The HIV coordinator calls me to find out how I am doing all the time. I thank her very much for the good work she is doing.”

Case study 2

Barrick in Tanzania: Partnering to promote community health

Courtesy of AMREF



An AMREF worker in Tanzania dips mosquito netting in insect repellent as part of a program to control the spread of malaria.

In Tanzania, Barrick Gold Corporation has teamed up with public and private sector groups to drive sustainable improvements in community health.

Since 2005 the company has been partnering with the African Medical Research Foundation (AMREF) at the North Mara mine, offering peer education and VCT to promote healthy behaviors among employees and the community, prevent the spread of HIV/AIDS, sexually-transmitted infections (STIs), TB and malaria, and facilitate community participation in prevention and care. In the first three years some 800 mine workers and 3,805 community members have been tested for HIV, and over 60,000 condoms distributed.

Barrick has also been strengthening Tanzania's healthcare infrastructure, including opening a specialist HIV/AIDS wing at the clinic at its Bulyanhulu mine in 2006, and funding a two-week health intervention by medical students, targeting 10 remote villages. The company's anti-malaria program includes eliminating mosquito breeding sites, providing insecticide-treated bed nets, and monitoring blood samples.

Justus Nkwabi, an AMREF Peer Health Educator at Barrick's North Mara mine, says: "The mine health program is having a significant impact on the health of employees and the wider community... I am proud of our work. Mine workers are now openly discussing the importance of practicing safe sex and leading healthier lives."

stop. If the necessary skills, practices and structures have not been embedded into the community, those who rely on these programs will suffer. With HIV/AIDS in particular, a sustained effort is needed to boost the long-term quality of life. A partnership approach has the best chance of doing this.

- **Integrated Disease Management**

In areas where HIV/AIDS, TB and/or malaria are prevalent, integrated control of these diseases is usually the best approach. This involves collaboration between the disease-specific programs for detection and treatment, as well as community and workforce outreach and education. Since TB and HIV/AIDS are more closely linked with one another than with malaria, integrated programs focus predominantly on those two diseases.

- **Disease-Specific Programs**

HIV/AIDS

The human immunodeficiency virus, or HIV, attacks the immune system. It is transmitted through the exchange of bodily fluids. The acquired immune deficiency syndrome, or AIDS, occurs when HIV has sufficiently damaged the immune system. Untreated AIDS kills within two years.

An HIV/AIDS program involves both prevention and treatment, and many elements work in both areas, such as voluntary counseling and testing (VCT) and community outreach. Prevention includes educating employees and community members, and especially high-risk groups such as CSWs and men who have sex with men. Other elements include promoting circumcision, distributing condoms, training supervisors, preventing mother-to-child transmission, and encouraging people to know their HIV status.

Peer education

Programs must reach beyond the boundaries of the mining property, since high disease prevalence 'outside the fence' will quickly translate to high rates inside, and vice versa. Peer education is an effective

tool for doing this. Peer educators impart knowledge across the spectrum of HIV/AIDS management, encouraging everyone to change their behaviour and learn their HIV status through VCT, and helping infected people enroll in wellness programs and get anti-retroviral therapy (ART).

Voluntary counseling and testing (VCT)

Many people with HIV are unaware they are infected, so all employees should be encouraged to know their HIV status. VCT is an area where partnerships are particularly effective, promoting prevention among those who test negative, and helping to channel people testing positive into treatment and support programs.

De-stigmatizing the Disease

Many people are reluctant to take an HIV test because they fear repercussions from being found HIV-positive, such as losing their job or being ostracized. Companies can tackle this discrimination by dispelling myths and irrational fears about HIV and/or AIDS. These efforts can be reinforced by workplace anti-discrimination policies.

Treatment and Care

Treatment and care of people living with HIV and/or AIDS includes post-test clubs, wellness programs and ART. Use of ART must be carefully managed to prevent ART-resistant strains. Some companies provide home-based care for patients in the later stages, sometimes including job training for family members.

TUBERCULOSIS

TB is spread when people with the active disease cough and droplets of the bacilli are inhaled by others. However, a healthy person inhaling the bacilli, thereby getting a latent infection, will not necessarily become ill with active TB. TB is particularly problematic in mines because of silica dust inhalation, as well as tobacco smoking and the prevalence of HIV. Many people with active TB become infectious before showing any symptoms, so undiagnosed TB is a major source of infections.

Prevention

TB can be prevented at two points in the disease cycle: first, by preventing transmission of the bacillus from infected people to healthy ones; and second, by preventing people with latent infection from developing active TB. For the first of these, education of the workforce on TB is essential. People diagnosed with TB should follow the WHO-supported directly-observed therapy short course (DOTS), where each dose is seen to be swallowed. At the second point in the cycle, the focus in mining is on controlling two risk factors for active TB – silicosis (via silica dust exposure) and HIV infection. Adequate housing and nutrition also reduce cross-infection and boost overall health.

Screening of employees

‘Active’ screening of employees, recommended in high-prevalence areas, means regularly testing all current and prospective employees at risk of TB. ‘Passive’ screening involves people presenting themselves if they have TB symptoms.

Protecting healthcare staff

Measures to prevent healthcare workers from getting infected include ongoing medical checks, separate gathering areas for TB cases, improved ventilation in waiting rooms and wards, and educating staff about TB transmission and symptoms.

Detection

Detection of TB first involves screening for active cases, reflecting local factors such as TB/HIV prevalence and age distribution. Screening includes symptom checks, weight measurement, chest radiographs, and laboratory culture of sputum.

MALARIA

Malaria is a parasitic infection transmitted by the female *Anopheles* mosquito – the ‘transmission vector’. It can be managed through environmental, chemical, and personal protective measures.

Environmental and chemical prevention

Good environmental management includes preventing standing water where mosquitoes breed, and locating workers’ housing at least a mile (1.6 km) from breeding areas and villages with endemic malaria. Breeding habitats can be suppressed through environmental modification such as land-filling and drainage, or through manipulation such as salination, flushing, or introducing predators. Trained staff can manage adult mosquitoes safely and effectively through chemical measures such as indoor and space spraying and issuing long-lasting insecticide-treated bed-nets.

Personal protective measures

Personal protective measures include educating the workforce and community, screening windows and doors on housing and offices, and chemical measures.

Diagnosis and treatment

Prompt and accurate diagnosis of infection is crucial to prevent malaria from spreading. This requires trained healthcare workers, anti-malarial drugs and access to healthcare facilities. Diagnostic tools include quick tests similar to home pregnancy tests, and microscopic examination of blood smears. A common treatment is a short-acting drug based on the Chinese plant *Artemisia annua* along with the long-acting artemisinin combination therapy (ACT).

Pitfalls to avoid

In the fight against infectious diseases, there are some important pitfalls that mining companies need to avoid.

One of the most common is ‘stovepiping’ – the channeling of aid into narrowly-defined, single-disease programs. This can result in governments receiving aid earmarked for one aspect of a disease, but unable to address other equally important priorities. An example is an ART distribution program for mothers and children, where HIV-positive mothers receive drugs to hold their infection at bay and prevent transmission to their babies, but cannot get basic obstetric and gynecological care or infant immunizations. Integrated disease management can help to avoid such problems.

A further error that can undermine the effectiveness of programs is exclusion and

neglect of the local healthcare system. Building local healthcare capacity is vital for improving the sustainability of community health. A good example is the inclusion of local caregivers and institutions in all the company programs profiled in this report. The opposite of this is where international aid agencies actually deplete the local healthcare infrastructure by hiring away already scarce trained professionals.

A related pitfall is focusing too much on short-term results. When organizations set goals and metrics for assessing progress, they need to be aware of the limitations of short-term numerical targets such as VCT uptake, condom distribution, ART provision, bed-nets distributed and peer educators recruited. While valuable in themselves, such standalone measures do not necessarily reflect an improvement in

overall community health, which can take generations and sustained efforts.

International Aid

Funding for the fight against infectious disease has increased dramatically in recent years, mostly via international aid from individual governments and from multilateral and intergovernmental organizations. In 2007, the United States provided one-fifth of global AIDS financing from all sources — governments, international aid groups and the private sector. In July 2008, US Congress re-authorized and broadened the President’s Emergency Plan for AIDS Relief (PEPFAR), approving a five-year, US\$48 billion plan including US\$5 billion for malaria and US\$4 billion for tuberculosis.

All the other OECD nations also increased their overseas development assistance for public health between 2001 and 2005. In 2002, the Global Fund to Fight AIDS, Tuberculosis, and Malaria was established, a program independent of governments and of the UN. By 2007 the Fund had approved US\$6.6 billion in proposals and dispersed US\$2.9 billion. The new US PEPFAR bill includes US\$2 billion for the Global Fund in 2009, and a meeting of donor countries in September 2008 resulted in a US\$97 million replenishment over three years.

The World Bank is another major source. In May 2008 it announced a five-year agenda for HIV/AIDS in Africa, including US\$250 million per year for health, education and transportation. The Bank, along with the IMF, OECD and G-8, has also forgiven the debts of several poor nations severely affected by AIDS and other diseases, provided the repayments are reallocated to public services including health.

Charitable giving has seen similar growth. In its first six years the Bill and Melinda Gates Foundation gave away US\$6.6 billion for global health programs, including almost US\$2 billion to programs for TB, HIV/AIDS and STIs. Between 1995 and 2005, total giving by US charitable foundations tripled.

Case study 3 Newmont in Indonesia – integrated HIV/AIDS, TB and malaria program

Courtesy of Newmont Mining Corporation



*Mamik Caturiyati,
Senior HIV
Educator at Batu
Hijau.*

Newmont runs an integrated HIV, TB and malaria program at its Batu Hijau mine in West Sumbawa, Indonesia. Having launched the program during the mine’s construction phase, Newmont is now approaching divestment under its contract. So it is focusing on creating sustainable improvements in community health to ensure the fight continues after it has left.

One challenge for the HIV aspects of the program is that, in West Sumbawa,

discussions of sexual behavior are regarded as appropriate only within married couples. So Newmont partnered with International SOS at the start of the program to build trust and cooperation among local mosque and community leaders for outreach efforts.

Under the program, mine workers are educated at induction about HIV/TB and STIs. Regular employee surveys are conducted on HIV, and voluntary community advisers have been trained to work on prevention and detection.

The integrated malaria management plan targets both prevention and treatment, on and off the Batu Hijau site. In 1999, malaria had a prevalence of 47% among local schoolchildren during the wet season. By 2007 this was down to 1.5%. Malaria incidence in the facility’s mine workforce has also plummeted, from 53 per 1,000 in 1998 to five per 1,000 in 2007.

Future goals and aspirations

National Government Expenditures

Individual governments' spending on their own battles against infectious disease varies widely. National funds spent by governments on HIV/AIDS dwarf those for TB and malaria. Among the countries studied in this report, South Africa ranks highest with US\$480.5 million spent on HIV/AIDS in 2007.

Many national budgets for TB programs have increased enormously. South Africa's budget for 2008 was US\$352 million, more than four times its level in 2002, while Tanzania's was US\$52 million, up eight-fold from 2002.

Malaria is not a significant health threat in every country studied – South Africa, for example, is not a high-burden country for malaria. Ghana's national spending on malaria in 2006 was US\$24.8 million, and Indonesia's was US\$17.9 million.

Throughout the HIV/AIDS, TB and malaria programs profiled in this report, the gold producers share three aims:

- minimize or eradicate disease among their workforce and communities;
- destigmatize people living with HIV/AIDS; and
- boost the sustainable development of local healthcare capacity.

Each company has its own strategy for moving toward these goals, reflecting local needs and conditions.

AngloGold Ashanti at Obuasi, Ghana, plans to strengthen its partnerships, including creating a joint venture in 2009 with the Ghana Chamber of Mines. The company is also planning to roll out the

Obuasi model in another 40 Districts in Ghana, and at the Geita mine in Tanzania and the Sadiola mine in Mali. In South Africa, the company is collaborating on research into a cure for drug-resistant TB with the University of Stellenbosch.

Gold Fields Ghana plans to extend its existing programs to encourage employees to take a holistic approach to their health, including routine testing for cholesterol, diabetes and hypertension. The company will also launch a campaign to foster greater acceptance of employees living with HIV/AIDS. Employees also will be encouraged to be tested for HIV as part of their regular medical examinations.

In Ghana, **Newmont's** goals over the next five years include the training of CSWs to

Case study 4

AngloGold Ashanti at Obuasi, Ghana: A model for malaria control

AngloGold Ashanti's malaria control program at its Obuasi mine in Ghana has received widespread international recognition, including a commendation from the Global Business Coalition on HIV/AIDS, Tuberculosis and Malaria as an example of global excellence.

Before the Obuasi program was launched in January 2005, 20% of the workforce was absent due to malaria at any given time, and infection rates were similar in the local community. At launch, the company set an ambitious target of a 50% reduction in malaria incidence in two years. By September 2007, it had achieved a 73% reduction.

While developing the anti-malaria campaign, AngloGold Ashanti brought in a world authority in insecticide resistance, who found that the two dominant species of mosquito showed complete or partial resistance to three standard WHO-endorsed insecticides. However, both species were susceptible to a organophosphates.

This knowledge provided the basis for a highly successful spraying program, supported by extensive community interaction efforts including a weekly slot on local radio and the creation in 2007 of the Obuasi Community Volunteer Advocate corps. The results have prompted AngloGold Ashanti to prepare plans to roll the Obuasi model out in other areas of Ghana and at mines in Tanzania and Mali.



AngloGold Ashanti Obuasi spray operators participate in the World Malaria Day parade in Accra, Ghana.

Courtesy of AngloGold Ashanti

act as peer educators, outreach to schools, and the launch of a weekly radio program. In West Sumbawa, Indonesia, Newmont is committed to helping local government agencies and authorities take a more proactive role in health management by imparting skills and knowledge to local healthcare personnel, and empowering surrounding communities in health maintenance.

Through its partnership with AMREF, Barrick will see the Nyamongo center at its North Mara operation become a test site for Tanzania's national VCT campaign. Separately, it is to launch mobile VCT services at the mine, and an outreach to an additional 1,000 local residents. Further plans include life skills training for high-risk women, and further integration of the AMREF project with existing community-based groups. At North Mara, Barrick also plans to extend AIDS treatment and care to nearby Nyamongo. In the Lake Zone of Tanzania, Barrick is leading a cooperative community health program in partnership with other private sector companies, government entities and NGOs.

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Conclusion

In summary, gold mining companies are particularly affected by the triple disease threat of HIV/AIDS, TB and malaria. It is hard to think of any other industry that faces a situation where 30% of its employees in certain locations are infected with a fatal disease such as HIV, or where a similar percentage of the surrounding community may be infected with a serious illness such as malaria. Furthermore, some of the unintended consequences of mining activities can make the fight against disease an uphill battle.

Great strides

The four companies profiled in this report, in four different countries, have tackled these diseases in line with international best practices including those of the ICMM, and continue to do so. They have made great strides in many areas. Highlights of the progress detailed in this report include:

- In Ghana, Newmont has seen new HIV infections decline from an average of four per month in 2005-2006 to two per month January-September 2008, accompanied by a 40% reduction in malaria infections in the past year.
- Gold Fields in Ghana has seen 88% of its employees undergo testing, with a prevalence rate of less than 1%, well below Ghana's national average.
- The success of Barrick's VCT center in Nyamongo, Tanzania, has seen it selected as a national testing site for the country's recently-launched national VCT campaign.
- In January 2005, when AngloGold Ashanti launched a malaria control program at its Obuasi mine in Ghana, it set an ambitious target of a 50% reduction in malaria in two years. By September 2007, it had achieved a 73% reduction.

Funding the fight: prevention without cure?

Such successes both reflect and stimulate rising financial backing for these efforts, with international aid for HIV in particular reaching unprecedented levels in recent years. However, while these funds support valuable preventative, care and treatment

programs around the world, some public health experts have expressed alarm at the lack of resources being put forward to fund the search for a cure. As Laurie Garrett, Senior Fellow for Global Health at the Council on Foreign Relations, pointed out recently:

"...it is troubling that formerly militant activists, United Nations agency leaders, government health officials, the American foreign policy establishment, religious leaders, scientists and physicians fail to see AIDS treatment for what it is: a stop-gap measure to tide humanity over until we can collectively reach what ought to be our real goal – stopping HIV's spread, entirely. On an individual basis living with AIDS is a proper goal; on a population basis it is catastrophic."¹

What companies *can* do

Clearly, individual companies or even industries cannot take responsibility for finding a cure for HIV – but the Global Fund and other organizations and networks can act as coordinators and fundraisers for this vital aspect of the battle.

What gold companies can do is continue to prevent new infections and treat disease among their workers and in surrounding communities, through the various tactics outlined in this report. In addition, the companies can continue their commitment to treatment and care programs for those who are already suffering from the diseases. Each community and region has its own circumstances requiring targeted programs and continual monitoring and program evaluation, which are built into each of the profiled programs.

¹ "The wrong way to fight AIDS; A dangerous shift," Laurie Garrett, *International Herald Tribune*, July 31, 2008