November 2012 Background Sheet 1:

TB and Mining and 'They Go to Die'

medsin GLOBAL HEALTH • LOCAL ISSUE

RESULTS the power to end poverty

TB in the mining industry

Tuberculosis in the mining industry in Southern Africa is a major public health crisis that is fuelling regional and global TB epidemics. Mine workers in South Africa, particularly those working in gold mines, have the highest rates of TB in the world; in 2011 11% of South African gold miners were infected with TB compared to an industry average of 5%. This rate of infection is twenty eight times higher than the rate declared an emergency by the World Health Organisation.

Many miners are migrant workers, coming from all over Southern Africa. When these miners contract TB and return to their communities it is estimated that each one can spread the disease to a further 10-15 people per year. As a result, mining is responsible for a third of all TB cases in Southern Africa; that's around 760,000 new cases of TB every year. And that's a staggering 8% of the total global TB burden, all coming from this one source. Many miners return to their homes in rural areas in countries with poor or non-existent healthcare services, and this, combined with high rates of HIV infection among miners means contracting TB is often a death sentence.

In addition to the human toll, the mining sector incurs huge healthcare costs and significant losses to productivity as a result of TB. The World Bank estimates that the current TB epidemic costs the mining industry $886 million per year.

Why is the problem so acute in the mining industry?

In the South African gold mining industry, physical, biological and social factors combine to create a situation that has been dubbed 'a perfect storm of disease.' Exposure to silica dust, HIV infection, difficult working conditions and poverty come together to create the highest TB infection rates in the world.

Around 90% of all the miners working in the South African gold mines migrate from rural areas or from neighbouring countries. High levels of poverty and unemployment mean a job in the mines is often the only work available. These men stay in cramped, single-sex hostel-style accommodation which leads to high risk of HIV infection. Being infected with HIV and the resulting weakening of the immune system makes a person 20-30 times more likely to develop TB.

In the mines themselves, the cramped, hot working conditions are highly conducive to the spread of airborne TB bacteria. Miners are provided with protective masks but their size, and the heat of the mines, means they are often taken off, leaving miners exposed to silica dust and TB bacteria.

A miner working without protective apparatus exposes himself to silica dust. Silica dust is found in gold mines and is easily inhaled. Once in the body the lungs cannot remove it and it can lead to a disease called silicosis, where lung function is impaired and has a variety of harmful effects. One of these is that silicosis damages the lungs and renders an individual around three times more likely to contract TB.

What is the impact of miners returning home?

Around 15 years ago, miners would return home perhaps once or twice a year; today it is more like once or twice a month, creating a pattern of regular circular migration from village to mine and back again. In Lesotho alone, over 50,000 men migrate to work in South Africa every year. This pattern of circular migration exposes rural populations with a typically low prevalence of both TB and HIV to these diseases.

In rural areas miners and their families have a significant lack of healthcare and are unable to obtain critical medicines needed to treat and cure the diseases. This migration pattern also creates serious complications with diagnosis, continuation of care and referrals for those mineworkers infected with TB.

Tackling the Problem

Several of the larger mining companies in the region are taking meaningful steps to deal with the issue. However, many of the smaller mining companies do not adhere to these standards and much more needs to be done to bring the broader industry into line and working together, cross border, to address the problem.

In some smaller mines, men are not provided with any health insurance and once their contracts expire, if they are found to have TB, they are simply sent back to their communities. Because they are travelling across borders there is no joined-up record of their healthcare needs and they are often unable to access care. In

many cases this effectively equates to a death sentence, expedited particularly quickly for those co infected with HIV.

They Go to Die

Epidemiologist Jonathan Smith from Yale University, has produced a film following the lives of four miners from South Africa and Swaziland who contracted drug-resistant TB and HIV while working at a gold mine.

After failing to improve their TB status at the mine's hospital, the men are sent home to their rural communities where vital healthcare is non-existent. Leading health officials refer to this practice as "sending them home to die." At present, mining companies are not responsible for the health of these men once they are no longer employed at the mine.

From living with the four miners and their families in rural Southern Africa, Smith quickly discovers that their lives are far more complex than numbers on the page of an academic journal. The documentary explores the lives of the miners and their daily struggle with their health and family life.

As such, They Go to Die takes a different approach to documenting a disease through film, producing something far more powerful. The aim of the documentary is to put the human face back into academic research, to turn the epidemic into an emotion and to motivate change. Smith states that

'*…there is no need to traditionally further investigate this century old situation; mineworkers are "used as guinea pigs" according to researchers… But where is the emergency? Where is the action? Given the history of this subject, there is little reason to believe that traditional research will translate into any action."*

They Go to Die explores the epidemics in the broader context of human life, instead of through only a narrow context of their disease. It portrays the life of the individual as a whole, not solely the disease by which they are affected. By not focusing on death but rather on the lives that are taken away the film paints a common picture of humanity.

Visually and thematically moving, the strength of the film is both its academic credibility and the team behind its production. It is therefore suitable for varied audiences of both policy makers from the academic field and the general public.

Smith is a strong advocate for research to go beyond the pages of a journal and believes that as an epidemiologist he has a responsibility to ensure action is taken. Therefore his intention with this documentary is to make academic findings more accessible to the public and promote a dialogue on the issue leading to increased accountability for all sectors involved.

For more information about the film and its director and to watch the trailer please go to www.theygotodie.com.