# TB in the mines: the regional response in Southern Africa

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# Outline

- Where have we come from?
- What do we know about TB in the mines?
- Why a regional response?
- Why is TB in the mines a complex challenge?
- What are we doing?
- What progress have we made?
- What are the preliminary findings of the economic analysis?
- What are the next steps?

# Where have we come from ?

| | |
|---|---|
| **2010** | • Study of available HIV and TB services at small, medium and large mines (WB, NIOH, DMR);<br>• International expert consensus meeting on the elimination of TB and the control of HIV in Mines;<br>• Presentation of findings to Stop TB Partnership Coordinating Board |
| **2011** | • High-level meeting between Ministers of Health of Lesotho and Swaziland with World Bank<br>• Minister of Health of Lesotho put the issue of TB in mines on the agenda of SADC Health Ministers' Annual Meeting |
| **2012** | • SADC stakeholders' Consultation on TB in Mining Sector<br>• Extraordinary Meeting of SADC Health and Labor Ministers called to discuss Declaration on TB in the Mining Sector<br>• Signature of SADC Declaration on TB in the Mining Sector by Heads of State |
| **2013** | • Health leaders signed the Swaziland Statement, committing them to work with SADC countries to achieve the international targets of cutting deaths from TB and HIV-associated TB by half by 2015 |

# What do we know about TB in the mines?

- 41,810 cases of active TB in South African mines every year (8% of national total)
- Highest incidence of TB in any other working population in the world
- 500,000 miners; 230,000 partners and 700,000 children are directly affected (SA mines)
- 20% of partners and children in Lesotho, Mozambique and Swaziland
- 59,400 orphans are currently in care as a result of TB related deaths in mining (plus 144,000 from HIV)
- 9.6 million work days lost each year to TB

# Why a regional response ?

| Year | RSA | Mozambique | Lesotho | Swaziland | % Non-RSA |
|---|---|---|---|---|---|
| 1920 | 74 452 | 77 921 | 10 439 | 3 449 | 57 |
| 1940 | 178 708 | 74 883 | 52 044 | 7 152 | 49 |
| 1960 | 141 406 | 101 733 | 48 824 | 6 623 | 62 |
| 1980 | 233 055 | 39 636 | 96 308 | 5 050 | 44 |
| 1995 | 122 562 | 55 140 | 87 935 | 15 304 | 58 |
| 2000 | 99 575 | 57 034 | 58 224 | 9 360 | 57 |
| 2010* | 152 486 | 35 782 | 35 179 | 5 009 | 34 |

**The majority of migrant mine workers in South Africa come from Lesotho, Mozambique and Swaziland**

# Why is TB in the mines a complex challenge?

- TB is a health issue, and just one of many diseases for the Department of Health
- It is in the mining sector, regulated by the Department of Mineral Resources
- It is private-sector driven and requires industry involvement
- It is a cross border issue, both national and provincial
- Action requires consensus: by multiple governments, multiple sectors (health, minerals, labor, finance), private companies, civil society, labor unions and mine workers themselves

# What do we want to achieve?

- Increase TB Case Detection rate and the cure rate to 85% by 2016 and 95% in 2018
- Ensure HAART is provided to 100% of those eligible, retain 70% in care
- Silica dust exposure reduced
- Isoniazid Preventive Therapy (IPT) provided to 100% of HIV infected and 80% of HIV infected family contacts of miners with TB
- Best practices for screening, diagnosis and treatment adopted by the focus countries

# What are we doing ?

## Key focus areas

- Economic impact of TB in the mining industry and the potentially high return on investments in TB control in the industry.
- Harmonized TB treatment protocols in the sub-region.
- Establishment of a funding mechanism mining companies to finance TB-related services among mineworkers in the sub-region
- Establishment of a cross-border tracking database and referral system for migrant workers.
- Economic  and social analysis to improve living conditions and welfare of mineworkers
- Reduction in the incidence of TB among mineworkers and their families in Lesotho, Mozambique, South Africa and Swaziland.

# Economic impact of TB in the mining industry

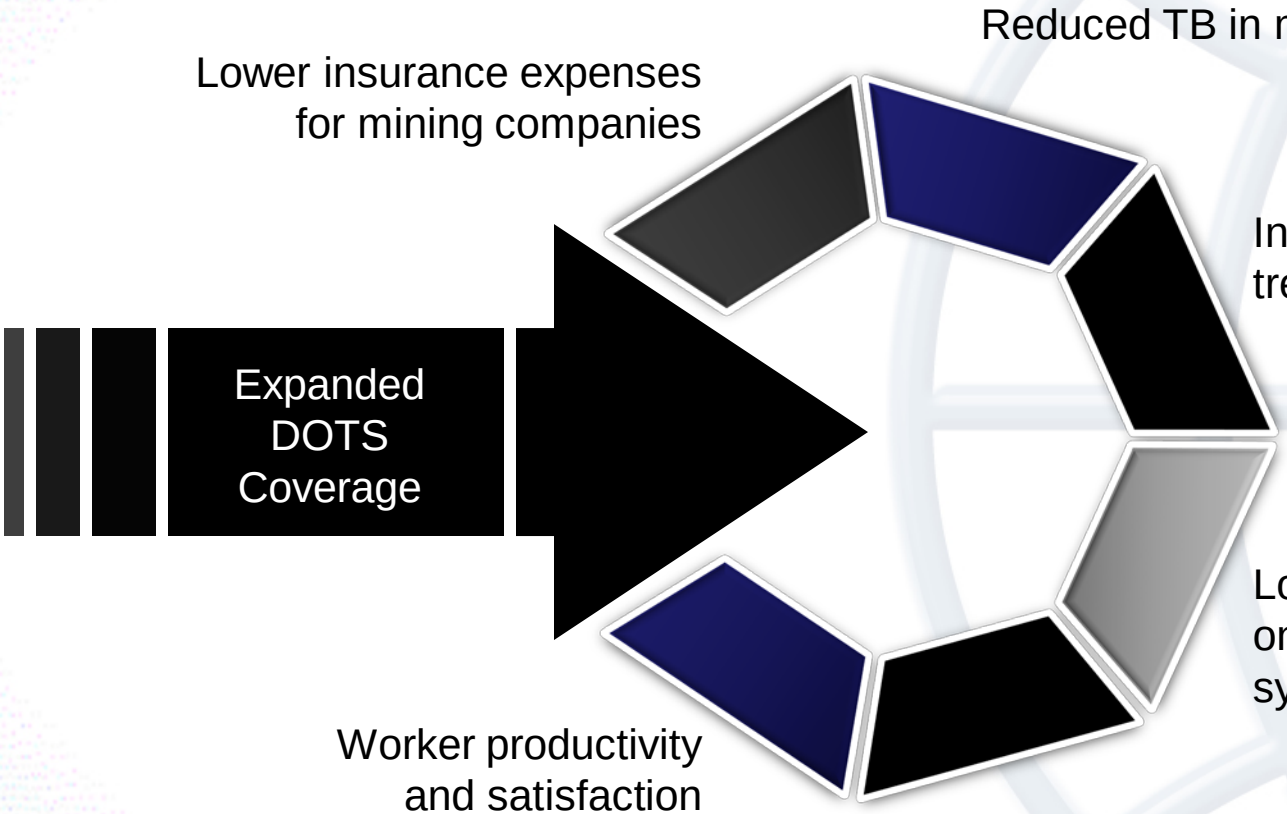
## Objectives

- Estimate the economic benefits and costs of investment in TB control for mineworkers and their communities in 4 countries
- Estimate (at a high level) the incremental resource requirements for various intervention scenarios for full treatment of TB cases for the whole population and the mining industry
- Estimate the economic benefits of investments in improving the living conditions of miners

# Progress: Economic analysis

| | |
|---|---|
| March 2013 | **First phase of data collection**<br>• Data collection from mining companies, SA chamber of mines, NDoH, DMR, NIOH, TEBA, USAID, URC and others<br>• Data collected: TB drug costs, pathology costs, cost per patient for PTB, and MDRTB, screening costs, mobile clinic costs, etc. |
| June 2013 | **Second phase of data collection**<br>• Country visits to Lesotho, Mozambique and Swaziland<br>• Ministries of Health, URC, TEBA, WHO, IOM, SWAMMIWA, AMMIMO, PIH |
| June 2013 | **Presentation of preliminary findings of economic analysis**<br>• Feedback and input from National TB program & partners |
| August 2013 | **First draft report of economic analysis** |
| September 2013 | **Economic analysis of the benefits of investments for improving the living conditions of mine workers**<br>• Initiate process to recruit consultant and undertake data collection |
| November 2013 | **Presentation of 1st phase Economic Analysis findings**<br>• Present report to SADC Ministerial meeting and BRICS Health Ministers meeting |
| February 2014 | **Final 1st phase economic analysis report (February 2014)**<br>• Present final report at 2014 Mining Indaba |

# Broader consequences of TB treatment for miners



# Per-patient cost of TB for DOTS and MDR-TB

| | DOTS cost per patient | MDR-TB cost per MDR-TB patient |
|---|---|---|
| South Africa | $860[1] | $17164[4] or $6772[5] |
| Swaziland | $710[2] | $5400[2] |
| Lesotho | | $11016[6] |
| Mozambique | $184[3] | $4083[3] |

Source:


1 World Health Organization (WHO). South Africa TB Finance Profile. , 2013.

2 World Health Organization (WHO). Swaziland TB Finance Profile. , 2013.

3 World Health Organization (WHO). Mozambique TB Finance Profile. , 2013.

4 Schnippel K, Rosen S, Shearer K, et al. Costs of inpatient treatment for multi-drug-resistant tuberculosis in South Africa. Tropical medicine & international health : TM & IH 2013; 18: 109–16.

5 Pooran A, Pieterson E, Davids M, Theron G, Dheda K. What is the cost of diagnosis and management of drug resistant tuberculosis in South Africa? PloS one 2013; 8: e54587.

6 Partners in Health. Confronting MDR-TB and HIV in Lesotho with community-based treatment.


Notes:

DOTS cost per patient (for SA, Swaziland and Mozambique) and MDR-TB cost for Swaziland and Mozambique are derived from graphs in TB Finance Profiles for the countries by digitizing the image.

Two sources were found for MDR-TB cost per patient in South Africa:

The first cost estimate (17,164) is based on actual costs of 121 patients in Klerksdorp/Tshepong Hospital Complex in North West Province, SA (Schnippel, et al., 2013). The cost breakdown is as follows: cost of MDR-TB drugs+lab tests (including drug susceptibility testing)=$616 with the rest bulk of the cost were hospitalization costs. The second cost estimate ($6772) was a cost-analysis of diagnosis and 24 month of treatment for MDR-TB, assuming full adherence to the national DR-TB management guidelines. In this estimate, 71% of the costs were associated with lab costs and drug costs (Pooran, et al., 2013).

# Estimated MDR-TB rates in 2011

| | Percentage of new TB cases with MDR-TB | Number of MDR-TB cases among new pulmonary TB cases | Percentage of previously treated TB cases with MDR-TB | Number of MDR-TB cases among previously treated TB cases | Number of MDR-TB cases among all notified pulmonary TB cases |
|---|---|---|---|---|---|
| South Africa | 1.8 [1.4—2.3] | 5000 [4000—6300] | 6.7 [5.5—8.1] | 3100 [2500—3700] | 8100 [6900—9400] |
| Swaziland | 7.7 [4.8—11] | 510 [320—700] | 34 [28—39] | 390 [330—450] | 900 [700—1100] |
| Lesotho | 0.91 [0.19—2.6] | 81 [17—240] | 5.7 [1.2—16] | 98 [20—270] | 180 [38—320] |
| Mozambique | 3.5 [2.2—4.8] | 1300 [830—1800] | 12 [0—25] | 510 [0—1100] | 1800 [1200—2500] |

Source: WHO MDR-TB burden estimates for 2011

# Preliminary Findings I

- None of the countries has specific programs targeted at ex-mineworkers but there is significant interest
- Growing population of ex-miners, in countries without universal DOTS coverage, and mining families that are affected by TB
- Strong, consistent relationship between mining production and TB (after controlling for poverty and urbanization), especially as epicenters for MDR and XDR TB
- Ex-mineworkers face significant challenges in processing (poor awareness of process) and receiving MBOD claim funds (unclear payment mechanisms) and amounts are often lower than the costs incurred to process claims
- Current MBOD claims of 172,000, 31% have been diagnosed with TB

# Preliminary Findings II

- Swaziland (URC) recently conducted a tracking survey of 251 ex-miners that found 38 showed symptoms of TB and 12 were found to have active TB.
- 30-40% of MDR-TB patients are mineworkers and a high rate for XDR TB
- Cost of follow-up treatment for current mineworkers
- Treatment resources are not the primary challenge but identifying, tracking and treating mineworkers
- Resource needs for MDR-TB diagnosis and treatment and laboratory facilities are significant

# Progress: Harmonization

**Regional meeting between World Bank and WHO (February 2013)**:

- TB coordinators from Lesotho, Swaziland, Mozambique and South Africa with regional WHO representatives from Harare (East and Southern Africa office) and Brazzaville (Regional Head office)
- Roadmap for developing harmonized guidelines

**Drafting of Harmonized Guidelines (March – June)**

- WHO developed first draft harmonized guidelines for management
- WB hired expert consultant to support WHO in drafting the technical guidelines
- Letters to Ministers of Health signed by WB Country Director to engage countries prior to country consultations

**Country consultations and Regional consultations (August – October)**

- Country consultations to give feedback on draft harmonized guidelines
- Regional consultation workshop to finalize harmonized guidelines

**Publishing, Adoption and implementation of guidelines (November 2013 – June 2014)**

# Plan: Establishment of a system for tracking and referring mine workers

- WB to hire database expert to develop a customized tracking and referral system
- Situational analysis of health information systems in the mining industry in Lesotho, Mozambique, SA and Swaziland
- Design of customized tracking and referral system by database expert
- Pilot tracking and referral system by database expert using 1labor-sending, 1 labor-receiving and 1 mining community area

# Plan: Expand testing, screening and treatment of TB in the sub-region using the latest diagnostic technology

- DGF Grant and DFID Partnership Funding
- Partnership with CEOs of mining companies to establish a multi-donor trust fund for expansion of testing, screening and treatment of mine workers
- Partnership with Anglo American to develop an effective model of providing health services to mine workers, ex-mine workers, surrounding communities
- Develop and pilot a customized Electronic Medical Records system for TB patients to be used sub-regionally
- Pilot adapted community service delivery model for treatment of TB and management of MDR-TB in the mines and mining communities

# Sub-Regional Summit on TB in the mines

- Provide support to the National Department of Health and the Presidency in organizing a sub-regional summit on TB in the mines
- Hosted by the Deputy President of South Africa
- Brings together Ministers of Health, Mineral Resources, Finance and Labor to discuss a coordinated effort across the sub-region
- During or prior to the February 2014 Mining Indaba in Cape Town, SA
- Present implementation progress on activities under the WB sub-regional program on TB in the mines

# World Bank Role

- Engaging the best international experts to provide targeted support
- Coalition of multiple stakeholder  to share the same objectives.
- Providing implementation support using a combination of international and national experts
- A focus on results with quarterly milestones reported to the Project Implementation Committee
- **Working closely with national governments, mining companies, association of ex and current miner workers and labor unions.**
- **Collaboration with Stop TB Partnership.**

# Next steps

- Finalize DGF Recipient contracting process
- Present the economic analysis findings and recommendations to the Chamber of Mines and the Mining Indaba to inform financing of TB services by mining companies
- Circulate draft harmonized guidelines to country TB programs and stakeholders
- Conduct country consultations and Regional consultation on draft harmonized guidelines
- Develop TORs for consultant to undertake economic and social welfare analysis of miners' living conditions
- Develop TORs for consultant to design and develop customized tracking and referral database
- Develop TORs for consultant to adapt and design customized EMR system for sub-region

# THANK YOU