TB in the mines: the regional response in Southern Africa

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World Bank
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);
- International expert consensus meeting on the elimination of TB and the control of HIV in Mines;
- Presentation of findings to Stop TB Partnership Coordinating Board

**2011**
- High-level meeting between Ministers of Health of Lesotho and Swaziland with World Bank
- 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
- Extraordinary Meeting of SADC Health and Labor Ministers called to discuss Declaration on TB in the Mining Sector
- 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?

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

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

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

- Lower insurance expenses for mining companies
- Reduced TB in miner families
- Increased returns to HIV treatment
- Lower burden on national healthcare systems
- Broader economic benefits of mining stability and productivity
- Worker productivity and satisfaction
- Expanded DOTS Coverage
<table>
<thead>
<tr>
<th>Country</th>
<th>DOTS cost per patient</th>
<th>MDR-TB cost per MDR-TB patient</th>
</tr>
</thead>
<tbody>
<tr>
<td>South Africa</td>
<td>$860\textsuperscript{1}</td>
<td>$17164\textsuperscript{4} or $6772\textsuperscript{5}</td>
</tr>
<tr>
<td>Swaziland</td>
<td>$710\textsuperscript{2}</td>
<td>$5400\textsuperscript{2}</td>
</tr>
<tr>
<td>Lesotho</td>
<td></td>
<td>$11016\textsuperscript{6}</td>
</tr>
<tr>
<td>Mozambique</td>
<td>$184\textsuperscript{3}</td>
<td>$4083\textsuperscript{3}</td>
</tr>
</tbody>
</table>

Source:

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

<table>
<thead>
<tr>
<th>Country</th>
<th>Percentage of new TB cases with MDR-TB [min—max]</th>
<th>Number of MDR-TB cases among new pulmonary TB cases [min—max]</th>
<th>Percentage of previously treated TB cases with MDR-TB [min—max]</th>
<th>Number of MDR-TB cases among previously treated TB cases [min—max]</th>
<th>Number of MDR-TB cases among all notified pulmonary TB cases [min—max]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lesotho</td>
<td>0.91 [0.19—2.6]</td>
<td>81 [17—240]</td>
<td>5.7 [1.2—16]</td>
<td>98 [20—270]</td>
<td>180 [38—320]</td>
</tr>
</tbody>
</table>

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 1 labor-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 stakeholders 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