

**SOUTHERN
AFRICA**
TB AND HEALTH SYSTEMS SUPPORT
(SATBHSS)
PROJECT

POLICY Briefs

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Acronyms

AACGIH-TLV	American Conference of Industrial Hygienist's Threshold Limit Value
ASMs	Artisanal Small scale Miners
AU	African Union
AUDA-NEPAD	African Union Development Agency
CDC	Centre for Diseases Control
CoE	Centre of Excellence
COP	Codes of Practice
CSCPs	Community sputum collection points
DHOs	District health offices
HCW	Health Care Workers
HEG	Homogenous Exposure Groups
HIRA	Hazard Identification and Risk Assessment
HSA	Community Health Workers
ILO	International Labour Organisation
FBO	Faith-Based Organisation
ECSA-HC	East, Central and Southern Africa Health Community
EPI	Epidemic Preparedness Index
ETU	Ebola Treatment Unit
IDSR	Integrated Disease Surveillance Response
MDR-TB	Multi Drug Resistant Tuberculosis
MOH-NLTP	Ministry of Health, National TB/Leprosy Control program
NGO	Non-Governmental Organisation
NIOSH-REL	National Institute for Occupational Safety and Health's Recommended Exposure Limit
NTP	National TB Control Programs
OHS	Occupational Health and Safety
OHSI	Occupational Health and Safety Institute
OSH	Occupational Safety and Health
OEL	Occupational Exposure Limit
OLD	Occupational Lung disease
RA	Risk Assessment
REL	Recommended Exposure Limit
RPDs	Respiratory protective devices
RSA	Republic of South Africa
SADC	Southern African Development Community
SADC NTP	Southern African Development Community-National TB Programs
SATBHSS	Southern Africa TB Health Systems Strengthening
SA-OEL	South African Occupational Exposure Limit
SIMEX	Simulation Exercises
SDGs	Sustainable Development Goals
SPSS	Statistical package for social sciences
TIMS	Tuberculosis in the Mining Sector
TLV	Threshold Limit Value
TB	Tuberculosis
TLV	Threshold Limit Value
TWA	Time Weighted Average
PPE	Personal Protective Equipment
UN	United Nations
WHO	World Health Organization

LESOTHO



Tuberculosis Impoverishes the Mountain Kingdom

Executive Summary

Lesotho is one of 30 countries with the highest TB burden in the world, treatment coverage and success rates are largely influenced by accessibility factors including direct charges for medical and non-medical services. According to the World Health Organisation (WHO), direct charges often constitute a major access barrier to health care and contribute to high out-of-pocket payments (OOPE) pushing families into extreme poverty and fuelling the burden of disease even further.

Introduction

In 2018, the TB incidence rate in Lesotho was estimated to be 611 per 100,000 population with about 7,000 cases being notified every year.

65%

TB-HIV co-infection rate among new TB cases

76%

Treatment success rate recorded for drug susceptible TB (DS-TB)

77%

Treatment success rate recorded for Multi-drug resistant TB (MDR-TB)

56%

of patients diagnosed with TB are in the economically active age-group (20 to 44 years) and the male to female ratio is 1.82

It has been found that Lesotho is missing about 45% of TB cases. Costs incurred by patients to access care remain one of the factors resulting in low TB case detection.

The World Health Organisation (WHO) defines OOPE as direct payments made by individuals at the time of health service use and if these exceed 20 percent (%) of household income, they are said to be catastrophic. Majority of medical costs related to TB diagnosis and treatment are covered by Lesotho government (GOL). However, TB patients still incur appalling non-medical costs to access these services. The non-medical costs include food, transport, nutrition supplementation and accommodation.

In order to achieve the goal of universal health coverage (UHC), GOL must ensure that the whole population has access to the correct health services without suffering financial hardship when paying for them. Documenting levels and determinants of out-of-pocket health expenditures can help inform policy regarding TB control in Lesotho.

Approach and Results

The Ministry of Health (MOH) conducted a study to determine the catastrophic health expenditure for TB patients and the factors resulting in these expenditures.

Catastrophic health expenditure and factors: On average, 20% of TB patients and their households suffer catastrophic costs, while 100% of MDR-TB patients experienced catastrophic costs. Categories of patients who were found to suffer more catastrophic expenditure for TB services (table 2) include females, those coming from the poorest income quintile, MDR-TB patients and those with extra-pulmonary TB.

Table 1: Overall Out-Of-Pocket Expenditure for

TB services

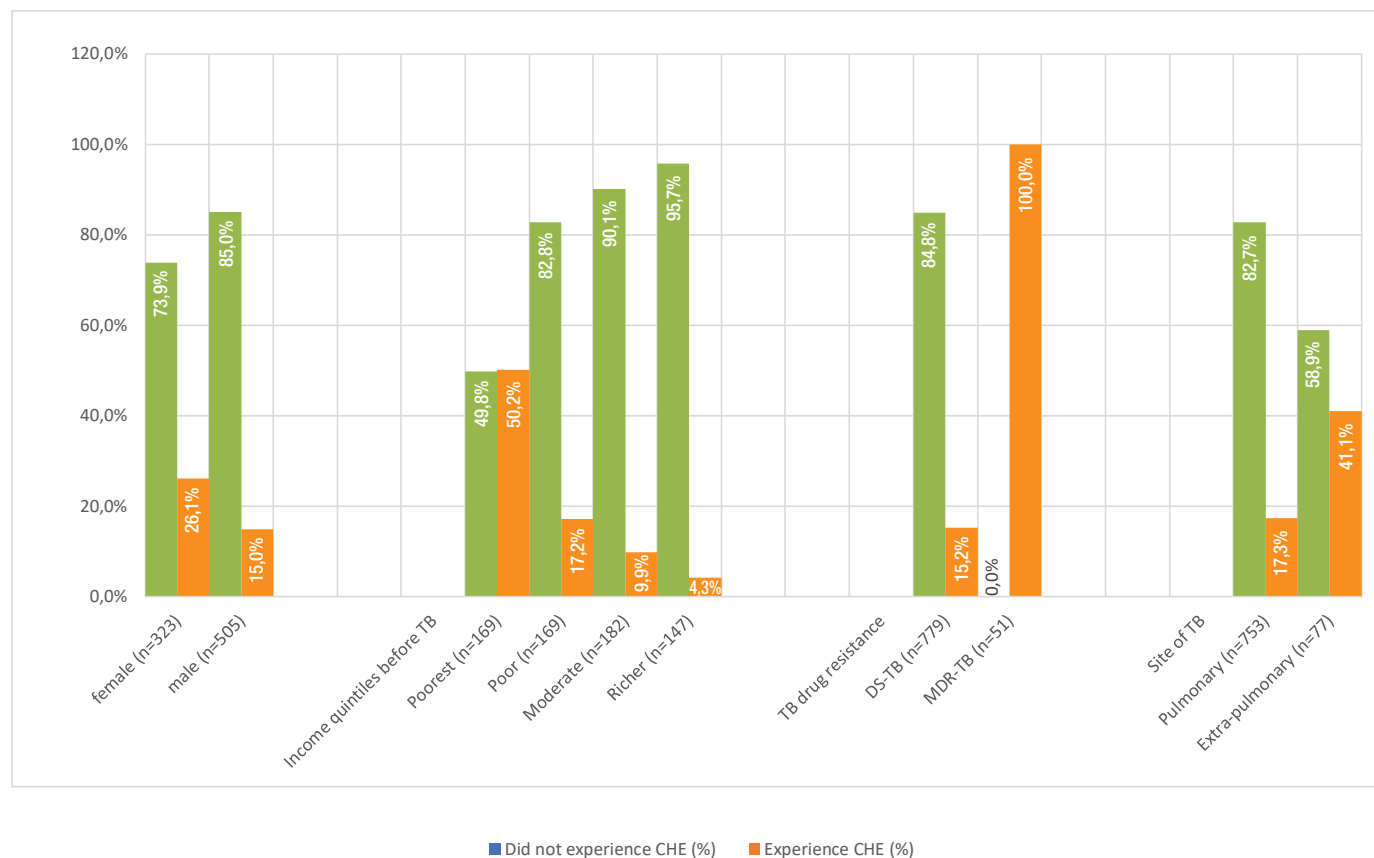
Out of pocket expenditures: On average a TB patient

Variable	Mean DS-TB Costs (LsL)	Mean MDR-TB Costs (LsL)	Total Mean Costs (LsL)
Direct costs			
Medical costs	154	188	155
Non-medical costs			
Travel	465	3,341	541
Food	602	41,546	1,684
Accommodation and other costs	13	0	13
Nutritional supplements	169	115	167
Total direct costs	1,403	45,082	2,558
Indirect costs	802	1,971	833
Total Out-of-pocket expenditure	2,205	47,053	3,391

spends about LsL3,391 from their pockets to access TB Services. Only LsL 155 is paid at health facility to see the doctor and for laboratory and other diagnostic tests indicating that GOL absorbs more costs. The rest are non-medical costs, of which 70% is used to buy food during the visits to health facilities. Most costs are encountered during the treatment period because of the duration of the treatment which may range from 8 months for DS-TB and 24 months for MDR-TB patients. Unemployment also increased from 35% to 57% for patients with DS-TB, and from 18% to 67% for MDR-TB after falling sick with TB. This pushes the patients into financial hardship even further as a higher percentage will be used to pay for TB services from the patient’s household.

Figure 1: Catastrophic health expenditure and

characteristics of the most affected



Coping strategies: About 21% of the patients cope by borrowing money from family and friends and mostly these are loans which makes the patients even poorer. Majority with MDR-TB (80%) receive support mainly in the form of food from family members. Some patients resort to selling their assets to prioritise accessing health services rather than paying for their children's education thus impacting on the economy in the long term.

Conclusion

1 out of 5 TB patients and their households suffer catastrophic health expenditure. MDR-TB patients and the poorest households are hit most, followed by patients with extra pulmonary TB and females. This forces TB patients to embark on other coping strategies which put them in financial risk.

RECOMMENDATION

Introduction of a Social Grant for TB Patients

» Although majority of patients with MDR-TB receive monthly food packages, this is still not sufficient. The government of Lesotho through the Ministry of Social Development and in collaboration with the MOH should introduce a social grant for all patients during MDR-TB treatment to alleviate their burden. Currently about 200 to 300 patients with MDR-TB are registered annually, which may not be very expensive when considering the cost that the country may have to incur if those patients default treatment and continue to spread the drug-resistant TB. The MOH should also extend the current food packages for patients with MDR-TB to cover their clinic visits. A vulnerability assessment should also be developed and used to assess the need for social support for patients with drug-susceptible TB.

Assessment and development of an optimised clear pathway for TB patient diagnosis and treatment follow-up

» Over 50% of TB patients have to visit a health facility more than twice to access TB diagnosis and treatment. The treatment is physically draining, which requires that the patients be accompanied by a treatment supporter, this pushes the costs higher to pay for food and transport during the multiple visits to health facilities. The government through the MOH has to assess and design a clear pathway for TB diagnosis and treatment follow-up. Pathways should address issues of 1) missed cases in the facilities, community based follow-up, diagnosis and treatment; 2) revise and implement hospitalisation policies to reduce the number of patients missed to care; 3) monitor expenditure for patients needing frequent follow-up. The MOH should also expand the zero-fee policy to all medical services necessary for TB investigations.



MOZAMBIQUE



Untreated TB - a Barrier to Eliminate TB in Mozambique

Executive summary

As estimated by The World Health Organization (WHO), 162,000 people developed TB in Mozambique in 2018. Despite of this high number of patients, approximately half of them were not treated, therefore, continuing the transmission chain in the community. Part of these patients are lost due to gaps and weaknesses of the referral system from secondary and tertiary hospitals to primary health facilities. In order to overcome these challenges, there is a need to strengthen community engagement through expansion of community-based organizations, in order to track TB patients diagnosed in hospitals and link them to care and treatment to reduce the loss to follow up.

Background

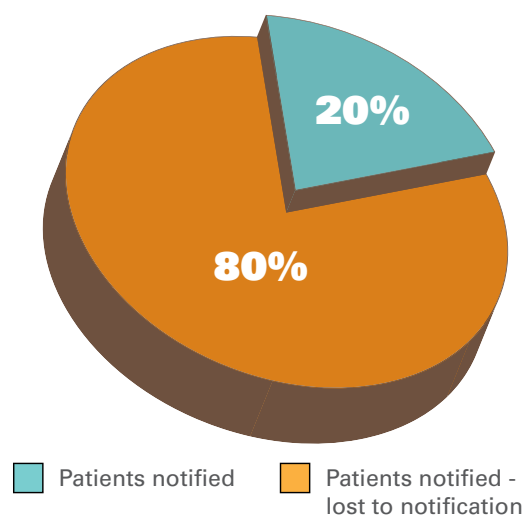
In Mozambique, only half of the people who develop TB are diagnosed and receive treatment in the primary health facilities. WHO estimates that, in 2018, 76,485 people with TB were not treated, a portion of them were diagnosed but were not successfully referred to the primary health facilities for treatment and notification. This is due to the fact that the current referral system is unable to track and link the patients to care. Untreated TB patients are the major focus of transmission of the disease in the community. Reducing untreated people with TB will prevent new TB cases, and minimizing the socioeconomic burden for families and to the country. In low- and middle-income countries, like Mozambique, when a person gets ill with TB, they lose half or more of their income with costs of seeking and/or staying in care.

Approach

This was a descriptive cross-sectional study on all of the TB cases diagnosed at the Xai-Xai Provincial Hospital (tertiary HF), registered from January 2016 to Dec 2017. The data analysis was then restricted to those patients who were resident in Xai-Xai City and were referred from the Xai-Xai provincial hospital to the local primary health facilities for treatment and notification.

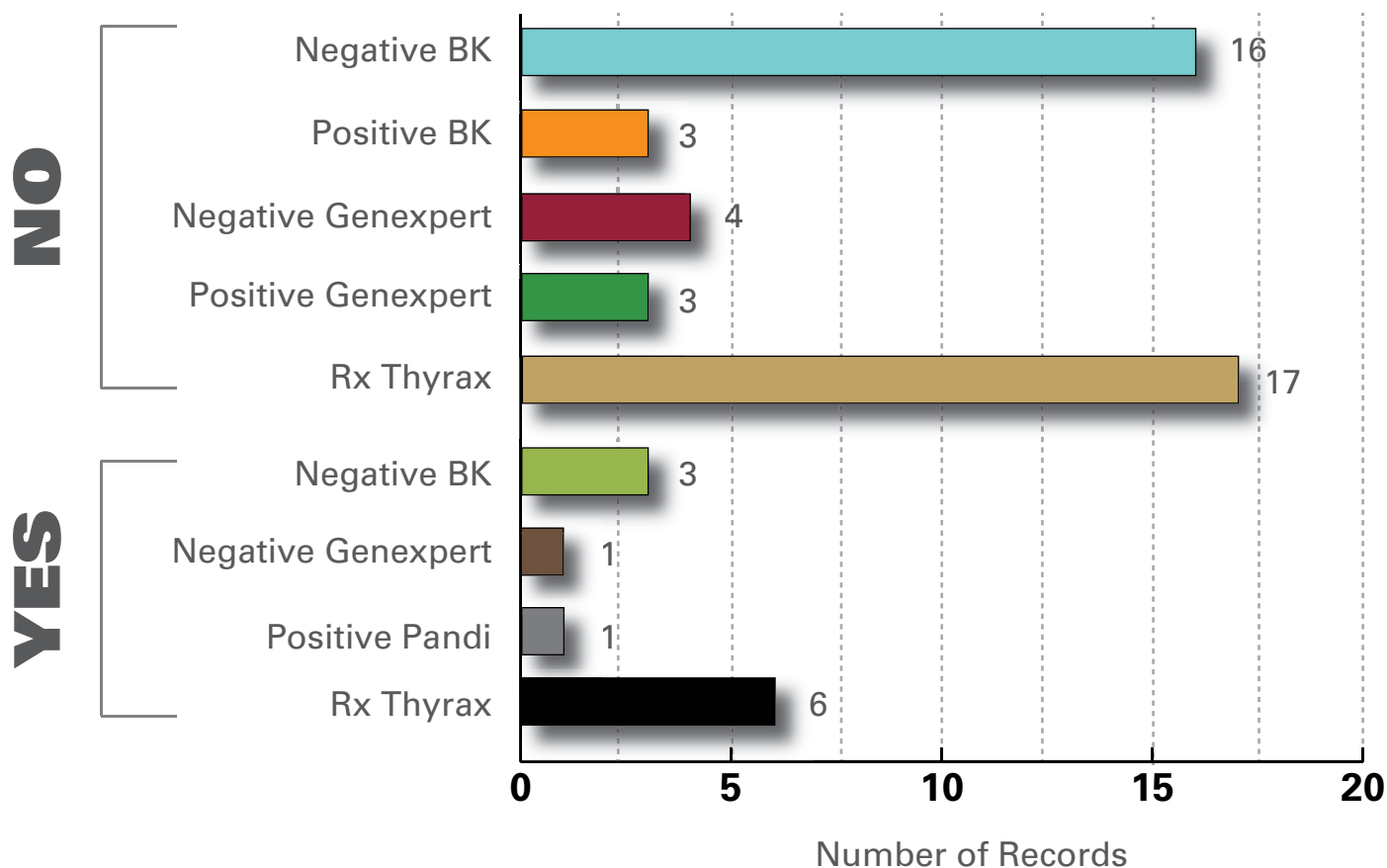
Results

Proportion of TB cases lost to follow up



- Out of 64 diagnosed in Xai-Xai provincial hospital, 51 (80%) were not notified. Out of the 51 not notified 36 (71%) were male
- 63 % of the non-notified TB patients were co-infected with HIV
- Most of the patients were negative for TB smear microscopy and MTB/Rif tests
- We did not identify Demographic or clinical characteristic related with increased probability of TB patient not being notified

Tests Submitted



Conclusion

- There is a significant leak of TB patients in the referral system between Xai-Xai provincial hospital (tertiary health facility) and the Xai-Xai City primary health facilities for continuum of care and notification.

RECOMMENDATIONS

- » The Community based organizations (CBOs) should expand their scope of work to include tracking TB patients diagnosed at secondary and tertiary hospitals and link to TB services at primary health facilities;
- » The CBOs should coordinate the process of tracking TB patients tracking with nurse-in-chief, District and primary health facilities TB supervisors.
- » There is a need to assess the characteristic of the patients who are lost to follow up in order to understand the risk factors;
- » Ministry of Health should introduce unique identifier for all patients.

MALAWI



E-Health systems improves Community TB Control in Malawi

Executive Summary

The e-health system is a digital innovation designed upon an open source operating system. It is aimed to track movement of TB patient samples and laboratory results from the community to the health facility, as well as the transmission of results back to prospective patients. This system has tracked the examination of 13,945 presumptive TB cases and has notified 534 TB cases across five districts and 20 health facilities within a period of 21 months.

Context

The National TB control Program and Ministries Departments and Agencies (MDAs) through the Southern African Tuberculosis and Health Systems Support Project (SATBHSS), implemented the Centre of Excellence (CoE) for Community TB and Integrated Disease Surveillance and Response (IDSR). This is a strategy to align and coordinate all community-based TB interventions such as community-based screening in rural and urban areas; community sputum collection points (CSCPs); house to house screening; and sample results tracking and transmission. The strategy was developed to help reduce the burden of TB in the country which was 151/100,000, by identifying missing cases within different settings as well as ensuring a flow of information from community to health facilities and back. It is a digital platform/solution which was initially paired with the community sputum collection points with the aim of ensuring timely TB information generation and feedback to improve patient care.

Approach and Results

The initial system to monitor community TB interventions was paper based. In response an electronic system with a web interface and mobile application was developed and installed throughout every level of the health system i.e. National, District, Primary Health facility and the Community level through the community health volunteers. The community health volunteers utilize the mobile application to register presumptive TB cases and their samples. The system introduced barcodes to uniquely identify patients and track samples. Automated SMS facility delivers results, appointments, medication and clinic visit reminders to patients (See Figure 1 below).

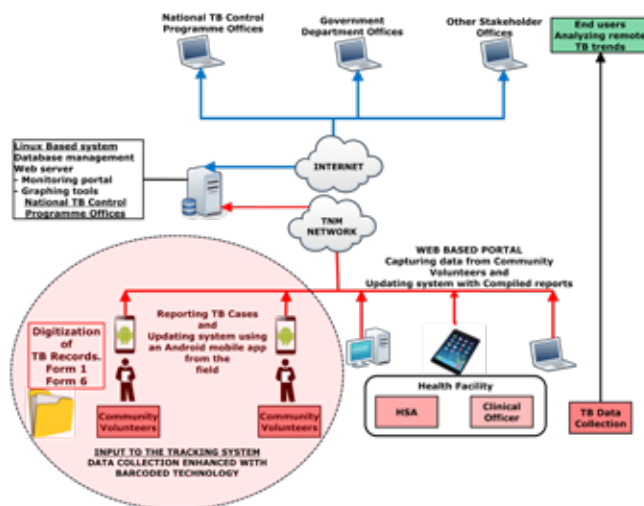
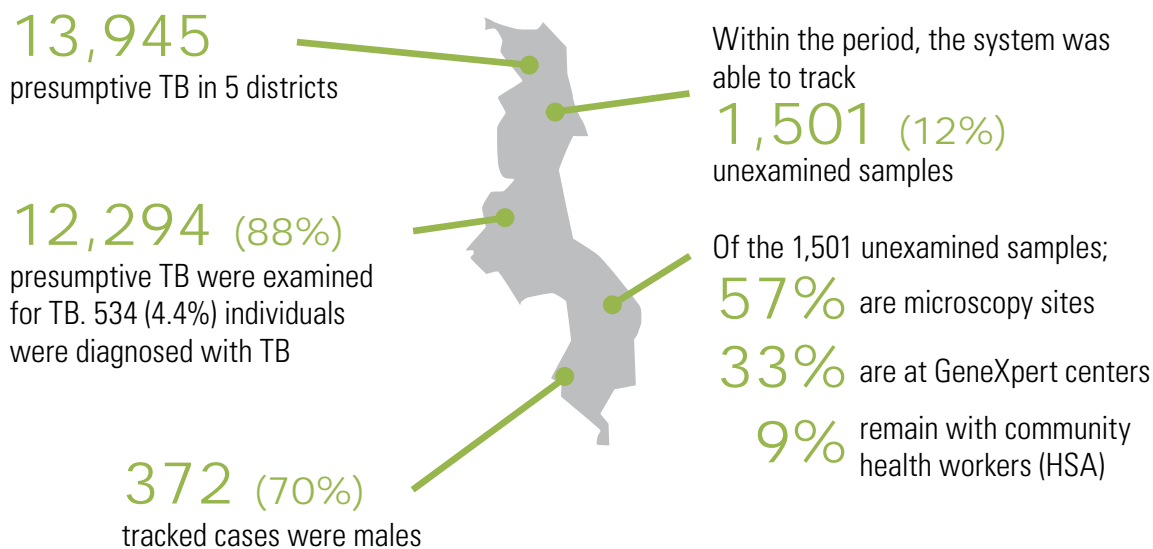


Figure 1: Schematic of e-Health System

- Community: registration of presumptive client and sample, using android application which generates message of an alert of a person who has signs and symptoms of TB that is sent to the upper levels including laboratories and national level
- At the laboratories the samples are received and scanned to confirm the client details, test the samples and enter results into system. A message is sent to the community health volunteer and the National level. Information used to improve service delivery
- At the District and the National level, they receive alerts from lower levels and collates and aggregates data automatically to generate districts and national reports and analysis.

Results

In January 2018 to October 2019, the system registered



This information is used to trigger service delivery improvements e.g. additional staff or censuring staff. Many of the cases of the cases are from Lilongwe district.



Figure 2: e-health dashboard from January 2018- October 2018

What are the system benefits?

- The system is able to provide timely feedback of information to the patient
- Real-time tracking of sample status
- Improved patient management, automatically sending of SMS's to patients reminding them of their medication
- Automated report generation
- Elimination of duplicate entries, patients are tracked using unique barcodes
- Improved decision making by management since information is available in real-time

Where are the system limitations?

- The system is not able to provide the numbers that were screened for TB in order for the programme to estimate TB rates in the communities.
- The system was not able to capture the total number of people within the given communities.

What can be improved?

The e-health management system should be able to use smartphone internal GPS in order to have precise location detection to aid in determining Clusters of TB. The system should map high-density areas in cities or districts contributing 60% of TB notifications in aid of TB cluster determination. An addition of GPS machines to better determine urban poor areas producing the best results. Other requirements include buying of high-resolution maps from specialize agents is also required.

RECOMMENDATIONS

The following modifications should be made to the system;

- » An addition of GIS functionality; addition of an MDR treatment monitoring module; and integration with other digital systems including but not limited to DHIS 2, facility-based TB EMR, LIS and Radiology Information systems.
- » Integrate multiple identification means including National Identification Cards and other official ID e.g. driving license, voter ID, Passports, other barcode systems from other similar systems
- » Scale up the system to other services including prisons, child TB, IPT, contact investigation, mobile diagnostic units.
- » Migrate the system to the government fibre network platform to eliminate internet costs.
- » Scale up to 200 facilities according to subnational estimates of TB burden.
- » Continue training and mentoring health workers

Conclusion

The e-health management system is promising. It should be scaled up and linked with existing electronic monitoring and patient management systems. The management information system can strengthen and support the implementation of community TB care through strengthening screening and diagnostic services at country level.



ZAMBIA



Challenges of linkage to care of miners and ex-miners with TB

Executive Statement

Tuberculosis (TB) remains a major cause of mortality in Zambia. Miners are at risk of developing TB due to exposure to silica & other dust particles. The aim of this policy brief is to share findings on the challenges of linkage to care of miners and ex-miners screened for TB at Occupational Health and Safety Institute (OHSI) in Zambia. Of the 572 patients referred by OHSI to public health facilities for initiation of treatment, 236 (41%) were not traced and needed linkage to continuum of care. The findings have provided evidence for the need to strengthen linkage to care of miners and ex-miners.

Introduction

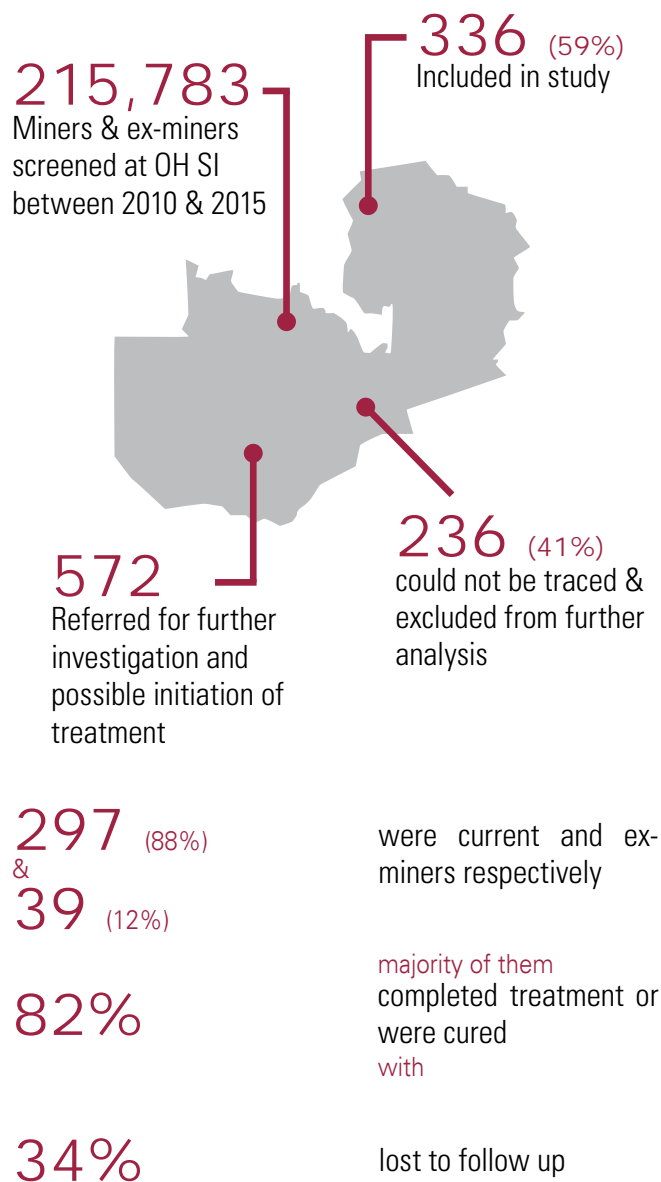
Mining is the main economic activity in the country and it predisposes the miners to the risk of developing TB due to exposure to silica and other dust particles which compromises the lung immunity hence the increased predisposition. An association has been found between increased TB prevalence and cumulative exposure to respirable silica dust among miners in Zambia. Since mining is the major contributor to the gross domestic product (GDP), the country has undertaken bold steps to address occupational diseases in this sector. The OHSI was established to perform pre-employment and annual screening of miners and ex-miners for various occupational disease including TB.

The incidence of Pulmonary TB (PTB) among miners in Zambia is 288 per 100,000 population, though it has been decreasing since 2005. There remains limited information on the status of treatment initiation and treatment outcomes among miners and ex-miners in Zambia.

Approach and Results

The retrospective study reviewed pre-employment and annual records of miners and ex-miners screened at the OHSI between 2010 to 2015. Treatment outcomes (favourable and unfavourable) and factors associated with unsuccessful treatment were determined from records at health centres where they were referred for treatment.

Results



The favourable treatment outcome of **82%** fell below the national target of 85%.

Conclusion

There is no established referral system between OHSI and TB treatment centres leading to high loss to follow up of miners and ex-miners TB patients. There is poor linkage to continuum of care between OHSI and treatment centres.

RECOMMENDATIONS

- » Establishment of referral system between OHSI and TB treatment centres leading to high loss to follow up of miners and ex-miners TB patients: Ministry of Health NTP to establish a functional referral system to ensure linkage to continuum of care for miners and examiners between OHSI and TB treatment centres





Crystalline Silica Dust Exposure Management In Southern Africa

Summary

Workers are exposed to a high concentration of crystalline silica dust, and are therefore at high risk of developing silicosis which increases the risk of pulmonary tuberculosis. Urgent policy decision needs to be made to formulate risk assessment and occupational exposure limit guidelines. Further research is needed to investigate the use of effective primary prevention and engineering control measures.

Background

Mining is an important contributor to the SADC GDP, however, mining is associated with occupational accidents, injuries and diseases. Prolonged exposure to crystalline silica dust results in silicosis which predisposes workers to tuberculosis. Silicosis is an irreversible, fibrotic pulmonary disease with a long latency period that may develop following the inhalation of crystalline silica-containing dust. Exposure to crystalline silica dust causes multiple diseases with silicosis and silica dust associated tuberculosis (TB). The results of the respirable silica dust concentrations were compared to (i) The South African Occupational Exposure Limit (SA-OEL) of 0.1 mg/m³ (OEL1), (ii) The National Institute for Occupational Safety and Health's Recommended Exposure Limit (NIOSH-REL) of 0.05 mg/m³ (OEL2), and (iii) The American Conference of Industrial Hygienist's Threshold Limit Value (ACGIH-TLV) of 0.025 mg/m³ (OEL3). The objectives of the study were to determine workers' exposure to crystalline silica dust, assessment of the workplace monitoring and control measures.

Methodology

A purposive, quantitative and qualitative sampling approach was employed. The study considered mines under SATBHSS project sites, they were further divided into large, medium, small scale and artisanal small-scale mines. Each category was sub-divided into a commodity, sampling sites to ensure that each major commodity is well represented in the samples. Homogenous exposure group (HEG) was used to identify the group of employees exposed to agent similar enough that monitoring the agent exposures of any worker in the group provides useful data representing exposure of the rest of workforce doing similar activities. A total of 396 silica dust samples were collected and analysed from May-August 2019, using the MDHS101.

Results and discussion

A total of (n) 396 samples were collected in Lesotho, Malawi, Mozambique and Zambia. To obtain sample representation the samples were spread across all sizes of mines and commodities. There was a mix of large, medium, small-scale and artisanal small-scale mines mining gold, coal, copper, diamonds, ruby, limestones, rock aggregates, cement factories, etc. A total of 14.4% of the total samples exceeded the South African occupational exposure limit of 0.1mg/m³. 8.8% were >0.05mg/m³ exceeded the NIOSH Permissible Exposure Limits, 26.3% exceeded the ACGIH Threshold Limit Values and a total of 49.2% were below the analytical detection limits. If the sample is below detection limit it simply means that the amount of crystalline silica dust could not be detected by the analysis method used. There are a number of factors that could have contributed to this, being the low content of silica in the rock, and damp soil. The exposure levels can increase when the earth is dry and as the mining activity progresses. Malawi recorded the highest (30.6%) percentage of samples that exceeded the South African OEL of 0.1mg/m³, followed by Zambia at 14.6%, Lesotho at 12.6% and Mozambique with 0% of samples above 0.1mg/m³. However, Mozambique still had several samples which were above the NIOSH and ACGIH limits.

Respiratory protective devices (RPHs) were the primary control measure, however, the selection of the RPDs was not informed by a proper risk assessment. The protection factors and approval of the RPDs were not specified, poorly maintained and not frequently used.

Table 1: Respirable crystalline silica dust Time-

Weighted Average Concentrations

Country	n	Below Detection Limits (BDL)		0.025 ^a mg/m ³		0.05 ^b mg/m ³		0.1 ^c mg/m ³	
		Count	Percentage	Count	Percentage	Count	Percentage	Count	Percentage
Lesotho	87	62	71.3%	7	8.1%	7	8.1%	11	12.6%
Malawi	85	35	41.2%	11	12.9%	13	15.3%	26	30.6%
Mozambique	87	77	88.5%	5	5.8%	5	5.8%	0	0%
Zambia	137	69	50.4%	36	26.3%	12	8.8%	20	14.6%
TOTAL	396	195	49.2%	59	15%	37	9.3%	57	14.4%

Note: ^aACGIH TLV, ^bNIOSH PEL, ^cRSA OEL

Conclusion

A total of 51% of the samples collected were above the ACGIH, NIOSH and the South African occupational exposure standards for respirable crystalline silica. It can be concluded that workers working in these mines are at high risk of developing silicosis and 6 times at risk of pulmonary tuberculosis. Of greater concern is Malawi sample exposure of 59.8% that exceeded the ACGIH, NIOSH and the RSA OEL. Malawi included several artisanal small-scale mines such as germ stone and aggregate quarrying. There was a prevalence of inadequate control measures.

RECOMMENDATIONS:

- » Develop occupational exposure limits guidelines, consider developing a regional occupational exposure limit guideline similar to SADC Global harmonisation system policy. Considering that it takes time to develop in-country guidelines especially when there is limited expertise.
- » Ensure the risk assessment (RA) is mandatory by developing guidelines and ensuring that RA is a fundamental right in the OHS law.
- » Assist countries to develop occupational health and safety programmes such as occupational hygiene, medical surveillance, hearing conservation, PPE programmes
- » Conduct a further study to ascertain the exposures that were below detection limit during the dry season using the bulk sampling technique, gravimetric sampling, particle size distribution and lung surface deposition methodology.



Involving Private Sector in the Fight against Tuberculosis

Executive statement

Private health care providers are a key component of any health care system and the first point of contact for a significant number of patients. The increased focus on fighting tuberculosis as a major public health challenge globally enhances the role that private sector needs to play to reduce the number of TB patients that are missed in the health system. This policy brief examines the level of engagement of private sector on TB control Lesotho, Malawi, Mozambique and Zambia. Private sector engagement in the four countries is still at infancy stage with different models being used. There is stronger engagement with faith-based organisations while engagement with for-profit private sector is not effective. Some of the key challenges noted include weak regulations and enforcement capacity; limited capacity for engagement, monitoring and evaluation; and inadequate incentives and enablers.

Context

The private sector plays an important role in health care worldwide. Private healthcare providers are diverse, and they function outside the direct control of the state. They include not-for profit healthcare providers such as faith-based and non-governmental organisations; and for-profit health care providers that are large hospitals, clinics, individual doctor practices (solo practices), pharmacies and stand-alone laboratories. Furthermore, traditional healers also form part of informal private healthcare providers.

Tuberculosis remains a public health challenge globally as one of the top 10 causes of death. In 2018, the World Health Organisation (WHO) estimated that 10.0 million people fell ill of TB of which 1.5 million people died. With the global target of ending TB by 2030, the need to involve all care providers has never been more urgent. The End TB Strategy emphasises “engaging all care givers” as a Bold policy in order to find and treat case of TB that are being missed in the public health care system given that that patients seek services from all providers. A substantial number of TB patients uses the private health care providers as their first point of contact which, in most cases, delays TB diagnosis leading to poor treatment outcomes. The need to engage, build capacity

and monitor and evaluate TB care in the private sector can therefore not be overemphasised.

Approach and Results

A study was conducted in Lesotho, Malawi, Mozambique and Zambia to assess the level of engagement of private sector, NGO’s, Faith Based clinics and hospitals, and public-private collaboration in SADC countries on TB control. The study aimed at identifying opportunities, risks, challenges and key strategic priorities to further expand private sector support to TB prevention and care. Additionally, the study provided recommendations on the development of a regional strategy for private sector engagement in TB control based on identified opportunities and lessons learnt. The study involved a review of relevant documents to get lessons in engaging private healthcare providers globally and understand country specific approaches to private health sector engagement in TB control. This was complemented with focus group discussions, interviews with key informants and quantitative data collection.

Study results, conclusions



Regulatory environment: TB related regulations in Lesotho, Malawi, Mozambique and Zambia are clearly set out in the TB guidelines. However, there is limited capacity for enforcement by the NTPs which prioritise monitoring the public and FBO/NGO facilities than for-profit private healthcare providers.



Modes of engagement: Modes of engagement with for-profit private care providers are not well established in all four countries. Governments have signed MoUs with few large private for-profit organisations and are providing free drugs, diagnostic equipment, or paying for TB services.



Incentives and enablers: Incentives for FBO are well established in the four countries including both financial and non-financial. For-profit private sector incentives and enabler schemes have not yet been established in all the countries.



Financing: Patient seeking services from private healthcare providers cover their costs using two main sources – Out of pocket and Private Insurance. Governments also subsidize certain services provided by private health care providers though at a limited scale.



Capacity building: The Governments in the four countries comprehensively supports capacity building for FBOs. However, capacity building in for-profit is only done in those engaged by NTP. Capacity building for pharmacies is not yet established in all the countries.



Risks: No major risks were noted in engaging private healthcare providers in the four countries. A few low risks identified include the potential of private healthcare providers receiving free TB drugs and charging patients and non-reporting.

RECOMMENDATIONS

- » Governments should strengthen regulatory environment that will facilitate effective engagement of the private sector in tuberculosis control with focus on review/adoption of regulations for private healthcare providers including traditional healers
- » Governments and partners should increase financial and technical support to National TB programmes for development/updating, implementation and monitoring PPM action plans
- » Partners should provide technical support to Government efforts in the development of social insurance schemes that will increase access to services
- » Government in collaboration with partners should establish a regional knowledge exchange forum for good practices in engagement followed by country prioritization of one or two models

Status of Occupational Health and Safety Regulatory Framework in Southern Africa

Executive Summary

Occupational health and safety (OHS) is a fundamental human rights, therefore OHS laws ensures that workers' rights are afforded. The regulatory framework in Southern Africa are outdated, fragmented and lacked precision to be enforceable which requires an urgent intervention.

Background

Mining contributes substantially to the growth of African economies, however mining has been associated with high rates of occupational accidents, tuberculosis and other occupational lung diseases. Although mining contributes to the creation of employment for many of the continent's citizens, there is still inadequate OHS legislations. The study sought to assess the regulatory framework for OHS in mines including policies, legislation, standards, codes of practice and protocols in project countries (Lesotho, Malawi, Mozambique and Zambia).

Methodology

The study conducted a desk review of key regulatory frameworks sourced from various sources including project countries, online publication, web repository and a self-assessment tool shared with countries was undertaken from January to June 2019.

Results and discussion

Analysis of the laws identified deficiencies across the four project countries including lack of provisions for employees' rights to leave dangerous work and a compilation of accidents and incidents reports. All legislation analysed did not make provisions for female workers in mining and were silent on the issues of artisanal and small-scale miners. One of the other major deficiency is that hazard identification and risk assessment relating to occupational health is not mandatory (except for Mozambique). It is imperative for the government to mandate employers to undertake risk assessments and have a risk-based management system for occupational safety and health. This will encourage the operations to use occupational hygiene as the 'eyes and ears' of occupational health. Mining companies

should be required to utilize qualified and international recognized occupational hygienists, ventilation engineers, medical doctors and nurses for the primary prevention. Some have not ratified key ILO convention (see table 2).

There is also huge gap in the promulgation of regulations to support the implementation of available laws on health and safety in the mines in all the countries. None of the countries has introduced all the identified mandatory Codes of Practice (COP) addressing the prevention and management of occupational lung diseases due to harmful dust exposures. Concrete guidelines are missing altogether in all the countries. The occupational exposure limits (OEL) for most of the physical and chemical hazards do not meet international standards and best practices and hence need to be updated. Only Lesotho and Mozambique have OEL. However, the Mozambican OEL standard falls short of meeting international best practices and Lesotho is under the spray-painting regulations, which is not enforced by the Ministry of Mines Inspectorate.

Constitution: Grounding legal and democratic principles that the government is obliged to uphold. The constitution is considered the supreme law in a country to which all other laws must adhere

Statutes (Acts, Proclamations): Law enacted by a legislature to govern society. Its authority is derived from the constitution or founding document of a country

Conventions or treaties:

Agreements between two or more countries, defining international rules or standards by which the involved parties agree to abide.

Public policies:

Declared State objectives relating to the health, morals, and well-being of the citizenry.

Regulations: Issues under the authority of a statute by a division of the government or by a special body. Regulations are sometimes referred to as "delegated" legislation, and they provide administrative and technical detail to carry out the purpose of the statute

Guidelines/Code of Conduct:

Describe the required steps necessary to complete a process and are generally written by an administrative body to ensure that the law and regulations are applied consistently and fairly to all parties



Status of ratification by project countries

Convention	Status of ratification by project countries			
	Lesotho	Malawi	Mozambique	Zambia
Fundamentals				
<i>Convention 029 (Forced Labour)</i>	✓	✓	✓	✓
<i>Convention 105 (Abolition of forced labour)</i>	✓	✓	✓	✓
<i>Convention 182 (Worst form of child labour)</i>	✓	✓	✓	✓
Governance (Priority)				
<i>Convention 81 (Labour Inspection)</i>	✓	✓	✓	✓
<i>Convention 144 (Tripartite Consultation)</i>	✓	✓	✓	✓
Technical				
<i>Convention 17 (Workman's Compensation-Accidents)</i>	✗	✗	✓	✓
<i>Convention 18 (Workman's Compensation-Occupational Diseases)</i>	✗	✗	✓	✓
<i>Convention 19 (Equal treatment, accident compensation)</i>	✓	✓	✗	✓
<i>Convention 42 (Workmen Compensation)</i>	✗	✗	✗	✗
<i>Convention 45 (Underground work (woman))</i>	✓	✓	✗	
<i>Convention 155 (OSH, 1981)</i>	✓		✗	✓
<i>Convention 159 (Vocational Rehabilitation and employment Disabled Persons)</i>	✗	✓	✗	✓
<i>Convention 161 (OH Services)</i>	✗	✗	✗	✗
<i>Convention 162 (Asbestos Convention)</i>	✗	✗	✗	✗
<i>Convention 167 (Safety and Health: Construction)</i>	✓	✗	✗	✗
<i>Convention 170 (Chemicals)</i>	✗	✗	✗	✗
<i>Convention 171 (Night work)</i>	✗	✗	✗	✗
<i>Convention 176 (OSH: Mines)</i>	✗	✗	✓	✓
<i>Convention 187 (Promotional Framework for OSH)</i>	✗	✗	✗	✓

Conclusion

All project countries have legislation addressing occupational health and safety and provide a certain level of protection for mineworkers. These legal frameworks are administered by various Ministries (environment, health, labour, and mining). However, existing laws and regulations are in large parts outdated, fragmented and lacked precision to be enforceable.

RECOMMENDATIONS

Outdated

- » Review of national laws on OHS in order to meet international standards and best practices.
- » Update and adopt occupational exposure limits that meet international standards and best practices.

Fregmented

- » Countries have too many OHS laws, which are not well coordinated. The ideal situation would be to have a single act coordinated by all ministries with clear sections mandating each ministry to develop regulations, establish inspectorate, etc.

Precisions

- » Finalise OHS profiles and adopt up to date policies and programmes with clear deliverables and targets.
- » Development and adopt the identified regulations and guidelines that will support countries to implement OHS laws.

Additional

- » Support strengthening of occupational health program (occupational hygiene and medical surveillance) to support early diagnosis of diseases and primary prevention for occupational lung diseases (OLDs), which is a major gap in all the study countries.
- » Support the centre of excellence to strengthen the regional capacity for occupational hygiene monitoring, analysis, and controls





Ending cross-border TB in SADC region

Executive Summary

Tuberculosis (TB) is an air-borne disease that spreads with people's movements, mining and associated cross-border migration are fuelling the spreading of the disease in SADC region. Ending TB by 2030, in line with Sustainable Development Goals (SDG) requires coordinated efforts amongst countries. Currently, there is vibrant political commitment and partner support to tackle TB in the mines and cross-border TB. Challenges remain in service delivery level and cross-border surveillance. Lack of TB care standards, capacity building and harmonised reporting systems compromise the quality of care and risk amplification of drug resistant TB. In order to end TB by 2030, the region is called for coordinated action in timely evaluation and strategic interventions.

Introduction

Tuberculosis is an air-borne communicable disease and the leading cause of death from infection diseases (ranking above HIV/AIDS).



Globally, an estimated
10.0 million
people fell ill with TB in 2018

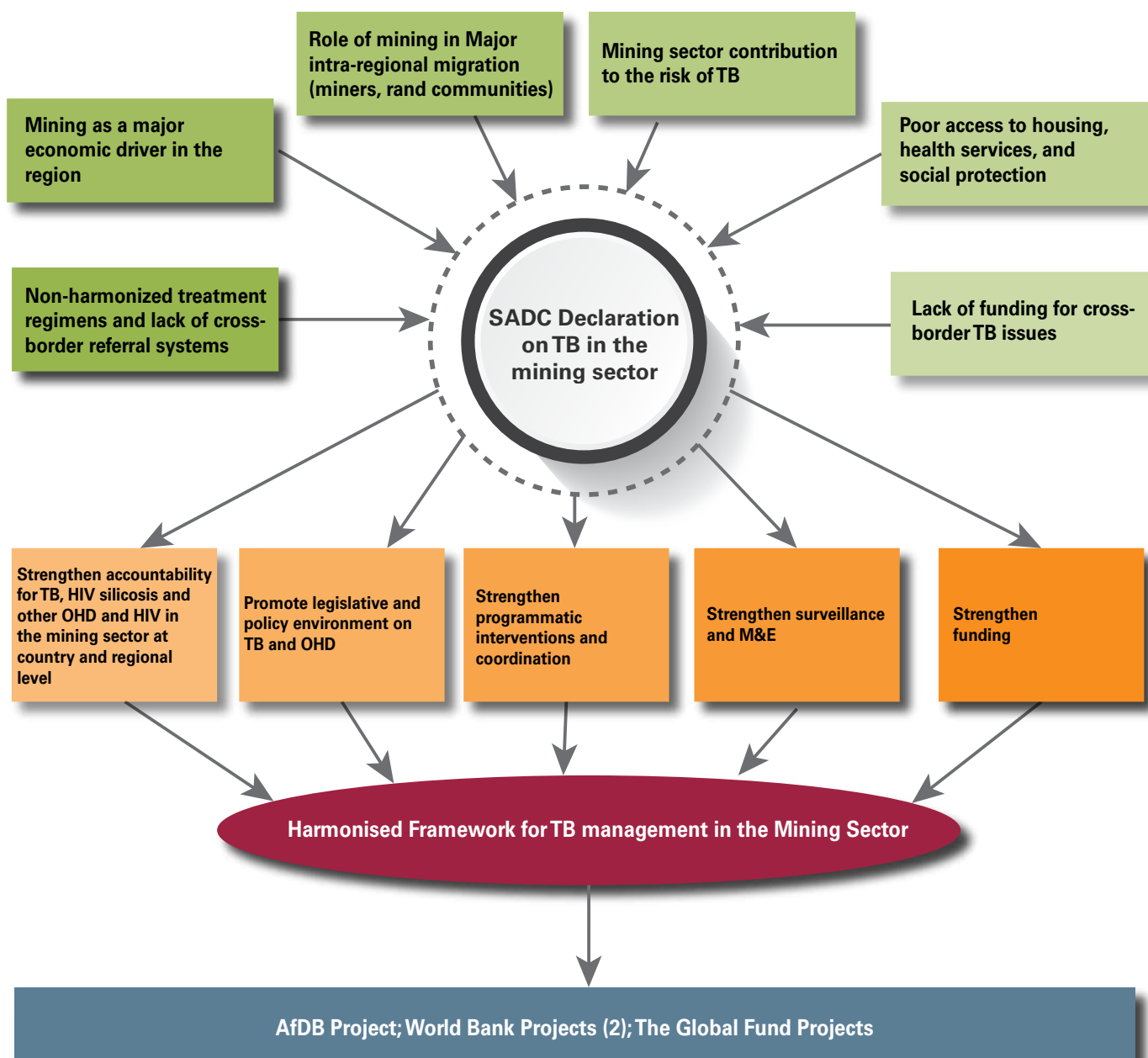


Southern Africa has the highest TB incidence in the world, around
400 cases per 100 thousand
persons (against a global average of 132)

Mining is a major economic sector and a major driver in the burden of TB and occupational health disease (OHD). Miners bear 5 to 10 times more TB than the general population, with poor treatment outcomes. There are more than 2 million miners and ex-miners from South Africa mines, of which 500 thousand migrant workers, and more than 150 thousand recorded with TB and occupational health diseases. TB spreads beyond borders with people movements, cross-border migration of miners, ex-miners and undocumented migrants, together with lack of continuity of care, fuelled transmission of TB and MDR-TB in Southern Africa Development Community (SADC) countries. In response, SADC members states endorsed and committed to domesticate the SADC declaration for TB in the mining sector (2012) and the harmonised framework for TB management (2014), aiming to accelerate efforts to end TB. In the first-ever United Nations (UN) high-level meeting on TB (2018) heads of state reaffirmed commitments to end the TB epidemic by 2030, in line with SDGs and WHO's End TB Strategy.

Approach

In the last decade, there has been substantial partner support and stakeholder engagement to support implementation of regional commitments to end TB in the mines and stop cross-border spread. During the inception of Southern Africa TB and Health System Support (SATBHSSP), countries conducted an assessment to ascertain the status of domestication of SADC regional harmonized policy frameworks at all levels of health care, aiming to shed light to additional actions and synergies required to strengthen regional efforts to tackle cross-border spread of the disease. A qualitative assessment was carried out, and findings compared to standards endorsed in the regional policy frameworks. Results and recommendations were discussed by the four the SATBHSSP countries and three other SADC countries.



Study results and conclusions

TB in the mines and cross-border TB are clearly identified as a major driver for TB in the region, there is vibrant political commitment and partner support, but service delivery, cross-border TB surveillance and collaboration remained a major gap. SADC frameworks for cross-border TB are centered on TB in the mines, but current challenges are beyond the mines.

At governance level, vibrant political commitment and partner support translated into establishment of cross-border agreements for disease surveillance, and awareness of staff at central level. However, there was insufficient

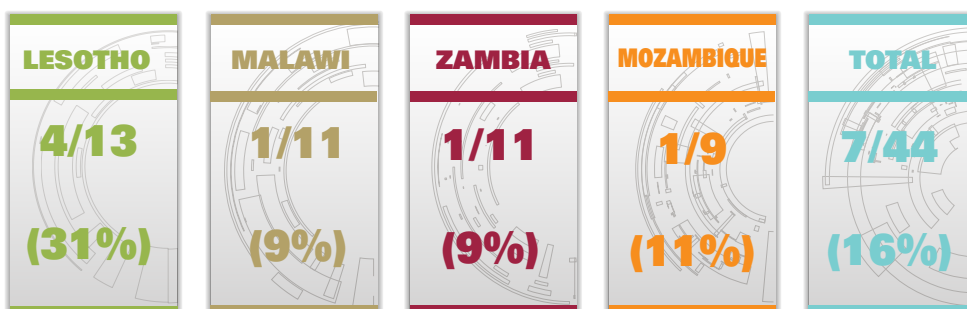
translation into country operational guidance and insufficient dissemination at service delivery level. Lack of day-by-day formal channels for cross-border communication, legal frameworks and care provisions for undocumented migrants, and scarce domestic funding remain challenging.

At service delivery level, TB and occupation health disease screening for cross-border miners and ex-miners is established in specialized centres, However continuum of care across borders remained in an infancy stage and lack of standardised channels for referrals, slow integration in cross-border committees

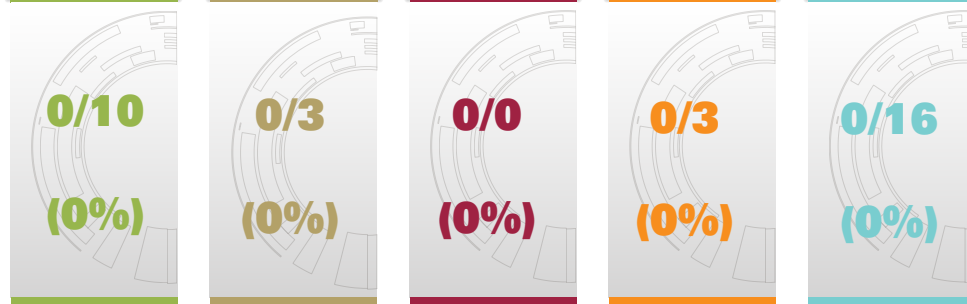
established through SATBHSS played an important role. Management of patients transferred across countries is not standardized within and across countries, lack of documentation impact quality of care, risking amplification of drug resistance (treatment interruptions) and compromising patients' quality of life - different and exhaustive treatment regimens; and catastrophic out-of-pocket expenditure due to preference for treatment from their home countries. Insufficient capacity building on occupational health disease in general health facilities lead to unnecessary TB treatment and delayed access to adequate treatment.

Cross-border surveillance and M&E is minimal, paper-based systems are not harmonised, and language is a major barrier to patient referral. Upcoming electronic system (under TIMS project) universal coverage of digital technology to fully function.

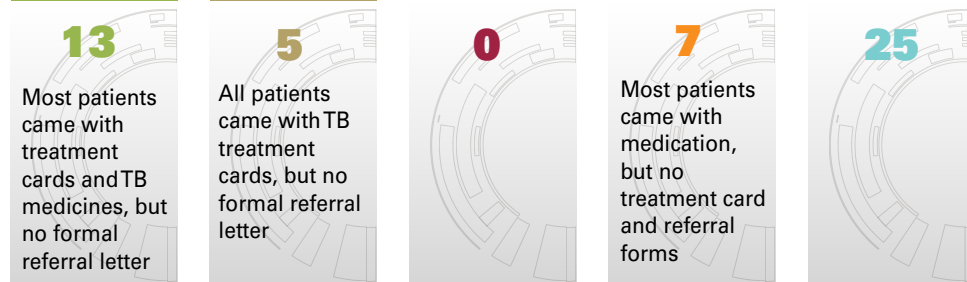
Staff with knowledge of regional policy frameworks at service delivery level



Number of TB patients transferred outside the county with feedback



Number of TB received from another country



There is no standard approach for continuum of care within and across countries

- Patients who come with medicines and no written evidence of TB treatment are either restarted or continued on treatment
- Patients with written evidence of TB treatment are continued on treatment either with or without a test for drug resistance before treatment
- Patients on 8th month of treatment of short MDR TB (without injections) are restarted on 24 months with injections or restarted on country treatment regimen – continuum of care for MDR-TB was not observed

RECOMMENDATIONS

- » Monitoring and evaluation of regional policy frameworks at regional and country level:
- » Eight years elapsed since the signing of the declaration on TB in the mining sector evaluation of its implementation noted substantial gaps at service delivery level, and the various stakeholders supporting this agenda, are at risk of duplicating efforts and allocation of resources. **At SADC secretariat level**, call for action to develop monitoring and evaluation frameworks for regional commitments, and progress addressed at ministers and NTP level. Cross-border TB agenda should rank high, and addressed within IDSR. **At country level**, annual evaluation should be reported to the Minister level.
- » Establish regional minimum standards for cross-border TB management: Domestication of regional policy frameworks for TB at service delivery level was hampered by lack of guidance, and continuous collaboration. Regional health organizations and SADC member states should develop, endorse and divulge operational guidelines and tools to harmonise standards of care. Standards should address quality continuity of care, cross-border referrals, and language barriers, and be widely divulged to health providers and patients, through training, education materials, and integration in call centres.
- » Integrate and harmonise electronic and paper-based health information systems: Surveillance and management of cross-border TB has been hampered by lack of timely and accurate data, and channels for communication. Cross-border surveillance tools are not standardised or integrated into current systems, and electronic systems are in pilot stage. Regional organizations and country teams should expedite rollout of electronic cross-border systems, develop and implement complimentary paper-based systems for use, while awaiting universal coverage of digital technologies; and use affordable digital communication channels to optimise cross-border collaborations.



Cross-Border Collaborations to Tackle Public Health Threats

Summary

The weak disease surveillance systems between countries require establishment of harmonized consensus-based collaborations and implementation of cross-border surveillance approaches. Under the Southern Africa TB Health Systems Strengthening (SATBHSS) project, Lesotho, Malawi, Mozambique and Zambia have collaborated in strengthening regional capacity for disease surveillance, emergency preparedness and response through establishment of cross-border zones among themselves and their neighbours.

Context

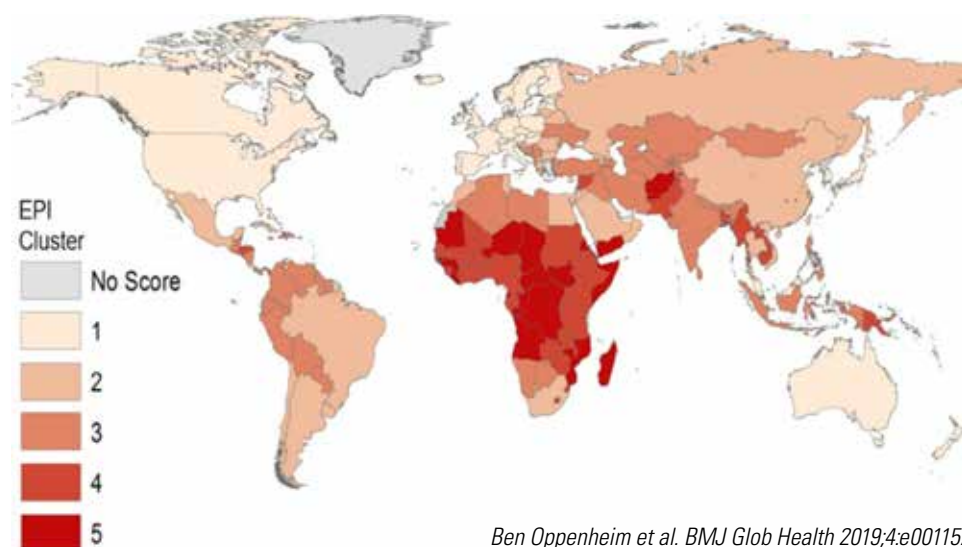
The threat of infectious diseases has always been present with first recorded pandemic of Influenza that infected an estimated 500 million people is dated as far back as 1918. Globalisation of trade and greater

interconnectedness between countries has made the situation even more difficult to manage. In response, tangible global commitments have been made to assist countries build systems to combat and minimize the effect of global threats.

However, implementation of global commitments has been slow because of lack of funding by governments. For example, by 2018, only 12 Member States globally had conducted training in Integrated Disease Surveillance (IDSR) training with national coverage of 90% of its health workers; 42% do not have verifiable data on the implementation coverage of their surveillance systems .

According to the Epidemic Preparedness Index (EPI), the least prepared countries are in Africa. The 2013–2016 West Africa Ebola epidemic was worsened by the limited local capacity for public health surveillance and outbreak response.

Global Distribution of Epidemic Preparedness Index



1 = most prepared, 5 = least prepared

Weak disease surveillance systems between countries require establishment of harmonized consensus-based collaborations and implementation of cross-border surveillance approaches. The SATBHSS project in partnership with the World Bank, is strengthening regional capacity for cross-border disease surveillance and response. Key to this initiative is the establishment of cross-border zones.

“We have no idea what the next deadly emerging infectious disease will be, or where it will come from. But it is absolutely clear that the world cannot let the progress that has been made in fighting localized outbreaks lull us into thinking we are prepared for a global pandemic” - Gabrielle Fitzgerald, 2018

Approach

A total of 25 cross-border zones were identified among the four project countries and their non-project neighbours such as Democratic Republic of Congo (DRC), Eswatini, South Africa, Tanzania and Zimbabwe using a defined criterion that included length of the border, availability of a hospital and movement of people and animals. The zones are made up of neighbouring districts from either side, led by a multi-sectoral cross-border committee comprising of human and animal health, agriculture, immigration, customs, security and local community representatives like chiefs and church leaders. The committees coordinate the cross-border disease surveillance and other health disasters, develop and lead implementation of annual joint work plans, organize routine and emergency meetings and oversee cross-border response.

Progress

Over the 3 project years (2017-2019), 13 (52%) of the zones are operational and are providing a formal and organised platform for effective response. During the 2019 Anthrax outbreak in Lesotho, the Maseru (Lesotho) and Ladybrand (South Africa) cross-border zone led the joint response by coordinating emergency meetings, joint community engagements and mobilization and deployment of needed resources. Similarly, Chipata (Zambia) and Mchinji (Malawi) jointly responded to Foot and Mouth Disease outbreak, Milanje (Mozambique) – Nsanje (Lesotho), Kyela (Tanzania) – Karonga (Malawi) jointly responded to Cholera, among many other outbreaks and emergencies including Cyclone IDAI. The growth of these joint responses prevented spill over of diseases to the next country.

The zones have established formal and informal information sharing platforms with the WhatsApp groups being the most active. Exchanges on rumours, alerts and updates on current outbreaks are shared among the zones, an effective mechanism that never existed before.

Members also practiced using protective gear used for handling highly infectious agents like Ebola. Border areas that did not have adequate protective gear were identified and arrangements made for supplies from Ministry of Health headquarters.



Zonal members practising using protective gear

Two Field Simulation Exercises (SIMEX) on Ebola were conducted in the districts of Chitipa and Karonga (Malawi) that border Tanzania and Leribe (Lesotho) that border South Africa which tested the entire response system from immigration, port health, case management at the Ebola Treatment Unit (ETU), collection and management of specimens.

The simulation demonstrated strengths in preparedness and response. However, there were noted areas for improvement including increasing human resource capacity at port of entry, practice and enforcement of infection control measures, need for alternative means for communication to alleviate network challenges in border areas.



There were noted areas for improvement including increasing human resource at ports of entry, practice and enforcement of infection control, dissemination of simplified Standard Operating Procedures and inclusion of psychosocial support experts in the case management teams.

Conclusion

Cross –border zones led by multi-sectorial cross-border committees is one effective way of ensuring heightened preparedness and response to epidemics and events of public health concern at the local level.

RECOMMENDATION

- » For sustainability, respective governments, including no-project countries of Angola, DRC, Eswatini, South Africa, Tanzania and Zimbabwe must recognize and mobilize resources internally and from partners, to support the cross-border zones in their implementation of agreed joint work plans.



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