



INTERNATIONAL DEVELOPMENT IN FOCUS

Tuberculosis Must Fall!

A Multisector Partnership to Address TB in Southern Africa's Mining Sector

Patrick L. Osewe and Barry Kistnasamy

INTERNATIONAL DEVELOPMENT IN FOCUS

Tuberculosis Must Fall!

A Multisector Partnership to Address TB in Southern Africa's Mining Sector

Patrick L. Osewe and Barry Kistnasamy

© 2018 International Bank for Reconstruction and Development / The World Bank
1818 H Street NW, Washington, DC 20433
Telephone: 202-473-1000; Internet: www.worldbank.org

Some rights reserved

1 2 3 4 21 20 19 18

Books in this series are published to communicate the results of Bank research, analysis, and operational experience with the least possible delay. The extent of language editing varies from book to book.

This work is a product of the staff of The World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent. The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Nothing herein shall constitute or be considered to be a limitation upon or waiver of the privileges and immunities of The World Bank, all of which are specifically reserved.

Rights and Permissions



This work is available under the Creative Commons Attribution 3.0 IGO license (CC BY 3.0 IGO) <http://creativecommons.org/licenses/by/3.0/igo>. Under the Creative Commons Attribution license, you are free to copy, distribute, transmit, and adapt this work, including for commercial purposes, under the following conditions:

Attribution—Please cite the work as follows: Osewe, Patrick L., and Barry Kistnasamy. 2018. *Tuberculosis Must Fall! A Multisector Partnership to Address TB in Southern Africa's Mining Sector*. International Development in Focus. Washington, DC: World Bank. doi:10.1596/978-1-4648-1351-1 License: Creative Commons Attribution CC BY 3.0 IGO

Translations—If you create a translation of this work, please add the following disclaimer along with the attribution: *This translation was not created by The World Bank and should not be considered an official World Bank translation. The World Bank shall not be liable for any content or error in this translation.*

Adaptations—If you create an adaptation of this work, please add the following disclaimer along with the attribution: *This is an adaptation of an original work by The World Bank. Views and opinions expressed in the adaptation are the sole responsibility of the author or authors of the adaptation and are not endorsed by The World Bank.*

Third-party content—The World Bank does not necessarily own each component of the content contained within the work. The World Bank therefore does not warrant that the use of any third-party-owned individual component or part contained in the work will not infringe on the rights of those third parties. The risk of claims resulting from such infringement rests solely with you. If you wish to re-use a component of the work, it is your responsibility to determine whether permission is needed for that re-use and to obtain permission from the copyright owner. Examples of components can include, but are not limited to, tables, figures, or images.

All queries on rights and licenses should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; e-mail: pubrights@worldbank.org.

ISBN: 978-1-4648-1351-1

DOI: 10.1596/978-1-4648-1351-1

Cover photo: © Jonathan Ernst / World Bank. Further permission required for reuse.

Cover design: Debra Naylor / Naylor Design, Inc.

Contents

Foreword *vii*

Acknowledgments *ix*

About the Authors *xi*

Executive Summary *xiii*

Abbreviations *xix*

PART 1: BACKGROUND 1

CHAPTER 1: Introduction 3

Cross-border collaboration for health	4
The role of multisectoral partnerships	5
The Southern Africa TB in the Mining Sector Initiative	6
Notes	8
References	8

CHAPTER 2: Context of TB in the Mining Sector of Southern Africa 11

Global and regional TB/HIV situation	11
The mining sector and TB in southern Africa	13
Historical context of mining in South Africa	14
Occupational health and environmental challenges	15
Health system challenges	16
Note	16
References	16

PART 2: PARTNERSHIPS IN PRACTICE 19

CHAPTER 3: Brokering a High-Level Political Commitment to Drive the TB Agenda Forward 21

Initial situation	21
Key strategies	22
Progress and results	24
Lessons learned	25
Conclusion	26
Note	26

CHAPTER 4: Strengthening Technical Cooperation for Cross-Border TB Management 27

Initial situation	28
Key strategies	28

Results	29
Lessons learned	30
Conclusion	31

CHAPTER 5: Including Beneficiary Voices in the Regional Effort to Address TB in the Mining Sector 33

Initial situation	35
Key strategies	35
Results	37
Lessons learned	39
Conclusion	40
Note	40

CHAPTER 6: Addressing Systemic Barriers to Improving Public-Sector Occupational Health Services Delivery to Mineworkers 41

Initial situation	42
Key strategies	43
Results	45
Lessons learned	46
Conclusion	49
Notes	49
References	50

CHAPTER 7: Developing Strategic Alliances: Engaging the Mining Industry to Accelerate Investments in Mineworkers' Health 51

Initial situation	52
Key strategies	52
Results and progress	54
Lessons learned	55
Conclusion	56
Note	56
References	56

CHAPTER 8: Key Enablers of and Barriers to Implementing a Regional Multisectoral Partnership Initiative 59

Key enablers	59
Key barriers	61
References	62

PART 3: MAINTAINING MOMENTUM 63

CHAPTER 9: Recommendations 65

Recommendation 1: Create a "burning platform"	65
Recommendation 2: Seek political will and commitment at the highest level	65
Recommendation 3: Present a strong business case	66
Recommendation 4: Use existing networks	66
Recommendation 5: Ensure leadership roles for beneficiaries within the partnership model	66
Recommendation 6: Share intelligence	67
Recommendation 7: Strengthen measurement of impact	67

CHAPTER 10: Future Directions 69

Appendix A: SADC Code of Conduct on Tuberculosis (TB) in the Mining Sector 71

Appendix B: Framework for the Harmonized Management of Tuberculosis in the Mining Sector: An Overview 85

Appendix C: TB Treatment Adherence Study: A Summary	89
Appendix D: Human Rights and Gender Barriers Study: A Summary	93
Appendix E: Occupational Health Services Delivery Study: A Summary	97
Appendix F: Innovations in TB Services Delivery Study: A Summary	103
Appendix G: Tuberculosis in the Mining Sector Case Study Interview List	107
Additional Readings	109
Boxes	
2.1 eSwatini	11
2.2 Lesotho	12
2.3 Mozambique	12
2.4 South Africa	13
5.1 Human rights and gender barriers to accessing TB, TB/HIV, occupational lung disease, and compensation services in the mining sector	34
6.1 Occupational health one-stop service centers: Key program details	42
6.2 Innovations in HIV and TB service delivery	47
Table	
2.1 Legislation governing mineworkers' health and safety, South Africa	14

Foreword

The mining sector is a tremendous driver of economic growth in South Africa, contributing some 8 percent in 2016 to the country's gross domestic product (GDP)¹, and significantly to its foreign exchange earnings. However, despite the central role of mining in South Africa's economy for over 100 years, the associated health impacts have had a negative effect on mining communities, with mineworkers in the southern Africa region registering the highest incidence rates of tuberculosis (TB) of any working population in the world. The government of South Africa is committed to supporting a socially inclusive path of growth and development for the country that expands opportunities in the mining sector, reduces inequality and exclusion, and draws on partnerships characterized by a shared vision, collaboration, and trust. Within this context, the government has pursued and maintained a range of innovative partnerships with public and private entities across the region to address the special vulnerability of mineworkers to TB.

After two years of lobbying and advocacy efforts by the ministers of health of eSwatini (formerly Swaziland), Lesotho, and South Africa, and the Southern African Development Community (SADC) Declaration on TB in the Mining Sector was signed in August 2012. It was a landmark pledge by 15 southern African heads of state to combat the TB epidemic in the region's mining sector. Since the signing of the SADC Declaration, the government of South Africa has remained committed to working with a broad range of actors—including other governments, mining companies, civil society, development partners, and former mineworkers—to tackle the persistent crisis of TB in the mining sector. To date, several regional strategies for addressing TB have been implemented successfully.

The Framework for the Harmonized Management of TB in the Mining Sector,² signed in 2014, has supported ministries of health in eSwatini, Lesotho, Mozambique, and South Africa, in aligning their standards through a set of guidelines for disease management. The considerable financial and technical support provided by regional and international stakeholders—including the World Bank Group; the Global Fund to Fight AIDS, Tuberculosis and Malaria (the Global Fund); the Stop TB Partnership; and the U.K. Department for International Development—has enabled the southern Africa region to pioneer

innovative models to reduce high rates of TB in the mining sector. In addition, five gold mining companies, the Chamber of Mines, mining unions, and development partners have been working with South Africa's Departments of Health, Labour, and Mineral Resources over the past two years to address long-standing issues related to compensation and medical care for occupational lung diseases in the mining industry in South Africa. These ongoing commitments not only reflect the encouraging progress and momentum that have been sustained in recent years, but also point to areas requiring additional support if we as a region are to collectively reduce TB in the mining sector in the near future.

In the chapters that follow are five case studies of multisectoral partnerships that have been implemented through a regional initiative to address TB in the mining sector in southern Africa over the last six years. Each case study reflects a unique dimension of the initiative, and, together, the five case studies make a clear case for strengthening and scaling up cross-border and cross-sector partnerships to address a regional crisis of this nature. Recognizing that TB is a disease that is inextricably linked with poverty, this momentum must also be leveraged to tackle the social, economic, and political exclusion that continues to affect mineworkers and mining communities. To this end, further action is needed, including better compliance with occupational health and safety standards by mining companies; stronger community health systems and improved coordination of TB care; greater empowerment and participation of women in the mining sector; and improved tracking and tracing of former mineworkers across borders.

It is our hope that the lessons learned and recommendations highlighted in this book will contribute to a comprehensive long-term solution to TB that will save more lives, strengthen communities and health systems, and support economic growth and prosperity for all in the region.

Godfrey Oliphant

Deputy Minister of Mineral Resources
Republic of South Africa

NOTES

1. Statistics South Africa, http://www.statssa.gov.za/publications/P0441/GDP_presentation_Q3_2016.pdf.
2. "This framework for the harmonized management of tuberculosis in the mining sector was developed by a core team comprising National Tuberculosis Program Managers of Lesotho, Mozambique, South Africa and Swaziland, the World Bank, and the World Health Organization. The World Bank convened the process for development of this framework." See: <https://www.health-e.org.za/wp-content/uploads/2014/04/Hamonization-report.pdf>.

Acknowledgments

This book was written under the auspices of the Southern Africa TB in the Mining Sector Initiative and is a collaborative effort made possible by the generous contributions of many organizations and individuals.

Preparation of the manuscript was undertaken by a World Bank team led by Patrick L. Osewe, global leader, Healthy Societies, and lead health specialist. Core team members were Yvonne Nkrumah, senior operations officer; Okore Okorafor, senior health specialist; and Melusi Ndhlalambi, senior public health specialist. Consultants Nansubuga Nagadya Isdahl and Maria Njambi Ngarachu provided invaluable research assistance throughout the process. Barry Kistnasamy, executive director of South Africa's National Institute for Occupational Health/National Cancer, was coauthor.

We deeply appreciate the inspirational guidance and leadership provided by Olusoji Adeyi, director of the World Bank's Health, Nutrition, and Population Global Practice, at the inception of this project. We are also grateful to Asad Alam, at the time country director overseeing Botswana, eSwatini (formerly Swaziland), Lesotho, Namibia, South Africa, Zambia, and Zimbabwe, for establishing the Knowledge Hub (under which this work was carried out), and for his strategic client engagement and indefatigable internal awareness raising about the strategic importance of the work.

At the World Bank, we would also like to thank Timothy Evans, senior director, and Paul Noumba Um, current country director for Botswana, eSwatini, Lesotho, Namibia, South Africa, Zambia, and Zimbabwe, as well as Magnus Lindelow, practice manager, for their continued encouragement and support and for creating opportunities to share this knowledge. We are also grateful to Paolo Belli, program leader, for his insights, advice, and support toward publishing this book.

Development of the case studies that form the basis of this book benefited greatly from discussions, wide-ranging consultations, and interviews with government officials, nongovernmental and private-sector organizations, academic institutions, and individuals over a number of years. Key among them are Aaron Motsoaledi, minister of health, South Africa; Godfrey Oliphant, deputy minister of mineral resources, South Africa; Eric Gcilitshana, national secretary for health and safety, National Union of Mineworkers, South Africa; Vama Jele, president,

Swaziland Migrant Mineworkers Association; Tumi Legobye, Harmony Gold Mines; Rantso Mantsi, president, Lesotho Mineworkers Association; Lesego Rametsi, Kumba Iron Ore (at the time); and Moises Uamusse, secretary-general, Southern Africa Miners Association.

We would also like to express our appreciation for the cooperation and contributions of the following organizations: Southern African Development Community; Southern Africa Trust; Department of Health, South Africa; Ministry of Health, eSwatini; Ministry of Health, Mozambique; Ministry of Health, Lesotho; Ministry of Labor, Mozambique; Ministry of Labour and Employment, Lesotho; Department of Labour, South Africa; Ministry of Labour and Social Security, eSwatini; Mining Department, eSwatini; Department of Mineral Resources, South Africa; Ministry of Mining, Lesotho; Ministry of Mineral Resources and Energy, Mozambique; National Institute of Occupational Health, South Africa; Mozambican Mineworkers Association; Ex-miners Association of Lesotho; Swaziland Migrant Mineworkers Association; Southern Africa Miners Association; and the Compensation Commission for Occupational Diseases, South Africa.

Thanks also go to Richard Crabbe for steadfastly working with us through various iterations of the manuscript and for editing and preparing the final manuscript for publication.

This book could not have been completed without the generous funding of the U.K. Department for International Development (DFID) and the strong partnership with its representatives Fiona Clark, Chris Wake, Dirk Mueller, and Bob Fryatt, with whom we have worked over the years.

Finally, the authors express continuing gratitude to the countless current and former mineworkers, their families and mining communities, field workers, doctors, nurses, and other tireless advocates whose efforts this book is meant to advance. It has been a rewarding experience to have participated in and coordinated this effort and to have worked with such committed colleagues within and outside the World Bank.

About the Authors

Patrick L. Osewe is a global lead, Healthy Societies, and lead health specialist providing technical assistance and operational support to World Bank teams and the global health community to address public health challenges. These include the emerging threat of noncommunicable diseases, addressing health security as an economic issue, and the challenge of achieving universal health coverage (UHC).

He has worked at the World Bank in several capacities: (i) as a lead health specialist and program leader based in South Africa, where he facilitated high-level dialogue, and multisectoral and public-private engagement; (ii) as a sector leader, where he led a major effort to address the 100-year old challenge of tuberculosis (TB) in the mining sector in southern Africa, working closely with the Bank's Energy and Extractive Global Practice, and with ministers of health, minerals, labor, and finance; mining executives; investors; "Stop TB Partnership"; U.K. Department for International Development; Global Fund; and other development partners; and (iii) as a senior health specialist at the World Bank Institute, where he played a leading role in managing a global program on behalf of the World Bank; UNAIDS; United Nations Development Programme; World Health Organization; United Nations Education, Scientific, and Cultural Organization; and International Labour Organization, that helped to build the capacity of senior policy makers and technical staff from client countries to develop results-based national health strategies and operational plans.

Prior to joining the World Bank, Osewe worked as a senior health advisor for USAID, serving as the principal technical expert for all matters related to U.S. government health programming, policy, implementation, and strategy in southern Africa. He led major innovations in the field of HIV/AIDS in southern Africa, as well. He has also served as a senior medical epidemiologist with the U.S. Centers for Disease Control and Prevention, where on behalf of the city of Atlanta, he introduced public health into the Olympic Games; this practice was incorporated into succeeding Olympic Games. He holds a medical degree from the University of Nairobi, and a master's in public health from the Harvard School of Public Health.

Barry Kistnasamy is a medical doctor with additional training in public, occupational, and environmental health. He has 30 years' experience in health policy, planning, and management in the public, nongovernmental, and private health sectors, as well as in the provision of occupational health, HIV/AIDS, and tuberculosis interventions in South Africa. He has worked with the World Health Organization, International Labour Organization, and World Bank, and has served on numerous national and international boards, committees, and commissions. He was the deputy director-general and head of health, welfare, and environment in the Northern Cape province during the first term of the democratic government in South Africa; dean of the Nelson Mandela School of Medicine in Durban; and executive director of the National Institute for Occupational Health and the National Cancer Registry in Johannesburg. Currently, he heads Occupational Health in South Africa's National Department of Health, and is compensation commissioner for occupational lung diseases in workers and ex-workers in South Africa's mines and works sector.

Kistnasamy trained as a medical doctor and specialist in public health at the University of Natal, and had additional education and training in health economics and planning (University of York), occupational and environmental health (University of Michigan), advanced epidemiology (New England Epidemiology Institute), and health leadership (University of Cambridge). He is an associate fellow of the College of Public Health Medicine of South Africa, and has specialist registration in community health with the Health Professions Council of South Africa.

Executive Summary

The magnitude of the threat posed by new and reemerging infectious diseases—such as the human pandemic influenza (H1N1), the severe acute respiratory syndrome (SARS), and, more recently, the Ebola virus—has been further exacerbated by shifting demographics, climate change, the global movement of people and products, and a limited public health capacity, among other things. These public health crises have demonstrated both the significant social, economic, and political consequences of infectious diseases on a global scale, and the need for greater coordination, collaboration, and cooperation among multiple actors and sectors in order to launch an effective response.

In southern Africa, tuberculosis (TB) remains a major threat, and mineworkers in the region—Lesotho, Mozambique, South Africa, and eSwatini (formerly Swaziland)—have among the highest TB incidence rates in the world. This book highlights the considerable progress and achievements made since 2010 in the effort to develop a regional platform for addressing TB in the mining sector in southern Africa. Drawn from years of multisectoral collaboration, high-level political cooperation, and field implementation, this book provides both policy makers and practitioners—including task team leaders at the World Bank, government ministries, civil society, and project delivery staff—with insights on how to design, plan, implement, and sustain a collaborative platform that involves multiple countries, government departments, sectors, and partners to address a complex regional health issue. It also offers strategies for replicating successes and addressing complex health service delivery interventions in other regions of the world. Furthermore, the efforts described in this book reflect the unified efforts of multiple actors across a broad range of sectors and showcase how they have collectively leveraged resources, commitments, and shared skills to tackle a persistent health issue that has affected the region for over 100 years.

Public health challenges are often inextricably connected to and influenced by conditions or events in neighboring countries. Collaboration among countries, especially those within the same subregion, can be a particularly effective tool for addressing common public health challenges. It can also enable countries to reach shared public health goals, including mitigating the effects of infectious disease outbreaks and improving health outcomes. One promising

way to facilitate cross-border collaboration for health is through multisector partnerships, also known as cross-sector partnerships. Multisector or cross-sector partnerships are defined as “initiatives where public-interest entities, private sector companies and/or civil society organizations enter into an alliance to achieve a common practical purpose, pool core competencies, and share risks, responsibilities, resources, costs and benefits” (Utting and Zamit 2009). Multisector partnerships can take many forms and serve a variety of purposes. They can also operate on multiple scales—local, national, regional, or global.

PURPOSE OF THIS BOOK

Tuberculosis Must Fall! A Multisector Partnership to Address TB in Southern Africa’s Mining Sector presents the key activities, promising practices, and lessons learned to date from the innovative multisectoral, multicountry, public-private Southern Africa TB in the Mining Sector Initiative. This initiative is part of the South Africa Knowledge Hub, formed in April 2013 by the government of South Africa in cooperation with the World Bank. The Hub supports the implementation of development goals by sharing successful examples of service delivery, formulating solutions to prioritized development challenges, and facilitating the scaling up and delivery of solutions and lessons learned.

The collection of five case studies on multisector partnerships from the Southern Africa TB in the Mining Sector Initiative included in this book highlights the considerable progress and achievements made since 2010 in the effort to develop a regional platform for addressing TB in the mining sector in southern Africa. The case studies not only provide an evidence base for practitioners working in TB management in the mining sector, but also offer strategies for replicating successes and addressing complex health service delivery interventions in other regions of the world.

This book examines how a collaborative platform was established and details the processes through which multiple countries, ministries, sectors, and partners have been brought together to address the varied dimensions of the epidemic. The primary focus of the case studies is to demonstrate how these cooperative regional processes—at both the technical and the political level—have been designed, implemented, managed, and sustained through various partnerships. The case studies also explore the key challenges and gaps in the management of TB in the mining sector in order to facilitate better-designed interventions involving cross-border collaboration, regional planning, and implementation to complement country-level efforts. Key guiding questions included:

- How was this broad mandate for regional action by multiple stakeholders developed?
- What approaches have worked and why?
- What were the main obstacles stakeholders faced when establishing a multisectoral dialogue?
- How were different national realities, capacities, and levels of development addressed?
- How were conflicts of interest managed and joint solutions developed?
- What results have been achieved?

- How can this model of regional cooperation and cross-border collaboration be scaled up in these countries or applied to other regional contexts?

The case studies make several contributions to the existing literature on TB in the mining sector by shedding light on the institutional, policy-making, and implementation processes through which regional cooperation has been achieved as well as an unprecedented commitment at the highest possible level by heads of state of all the Southern African Development Community (SADC) countries. The studies also offer recommendations and lessons learned for other countries interested in implementing a harmonized cross-border regional approach to address complex health issues.

Each of the five case studies represents a different dimension of the problem of regional collaboration and includes different models of multisectoral partnership within the unique context of TB in the mining sector in southern Africa. Five broad themes emerged that illustrate good guiding principles, and the evidence for each is presented in the following chapters:

- *Chapter 3: Brokering a high-level political commitment* examines how high-level political commitment—along with multisectoral and cross-country coordination—helped to bring the issue of TB in the mining sector to the forefront and, in doing so, created a paradigm shift in how this challenge has been addressed, most notably through the historic signing in August 2012 of the Southern African Development Community (SADC) Declaration on Tuberculosis in the Mining Sector by all SADC heads of state.
- *Chapter 4: Strengthening technical cooperation* summarizes how the SADC Declaration’s provisions were implemented, including the consultative process to review national TB guidelines from Lesotho, Mozambique, South Africa, and eSwatini and the development of the Framework for the Harmonized Management of Tuberculosis in the Mining Sector. The framework, which was finalized in March 2014, reflects the remarkable technical cooperation between the national tuberculosis programs (NTPs) of the four countries and other national, regional, and international partners.
- *Chapter 5: Including beneficiary voices in the regional effort* describes how current and former mineworkers in southern Africa, through their membership organizations, successfully engaged key policy and decision makers at both the national and regional level and advocated for the inclusion of their voice, perspective, and needs in the development of TB policies and practices.
- *Chapter 6: Addressing systemic barriers* examines the strategies and challenges associated with effectively delivering services in a coordinated and integrated effort to serve a population whose needs cross multiple systems.
- *Chapter 7: Developing strategic alliances* describes the process of developing a strategic alliance/partnership among the mining industry, government, unions, and current and former mineworkers in order to accelerate improvements in mineworkers’ health.

The case studies demonstrate the opportunities and challenges of learning and working with a cross-section of diverse partners to address a complex, multidimensional health issue. They also provide an invaluable opportunity to reflect on the practicalities of regional collaboration in the process of

monitoring, tracking, and sharing health information across borders. Key recommendations for governments, civil society organizations, development partners, and other key stakeholders interested in utilizing multisectoral partnerships to mobilize action for cross-border or regional health interventions are the following:

- *Recommendation 1:* Mobilize stakeholders and resources with a “hot-button” issue that gives them a reason to act immediately.
- *Recommendation 2:* Secure political commitment as a catalyzing force at the very beginning of the process to stimulate action.
- *Recommendation 3:* Support partnerships and interventions with a robust business/economic case that reinforces broader health policy initiatives to enhance the likelihood of success.
- *Recommendation 4:* Establish partnerships by using existing networks and building on previous efforts, particularly in the early stages when ongoing attention, resources, and relationships are required.
- *Recommendation 5:* Determine appropriate mechanisms and resources to ensure that beneficiaries can provide leadership, capacity building and coordination support in designing interventions.
- *Recommendation 6:* Share intelligence with partners in order to support a more coherent strategy.
- *Recommendation 7:* Promote and reinforce a culture of measurement, information use, and continuous process improvement through high-quality research.

Despite the achievements made in the Southern Africa TB in the Mining Sector Initiative and their potential to strengthen TB interventions, critical gaps remain in addressing barriers to access, delivery of quality services, and increased uptake of TB services. Further action is needed, including better compliance by mining companies with occupational health and safety standards; stronger community health systems and improved coordination of TB care; greater empowerment and participation of women in the mining sector; and improved tracking and tracing of former mineworkers across borders.

METHODOLOGY

The primary research methods used in the preparation of this book were (1) a review of key documentation related to TB in the mining sector and (2) interviews and discussions with a number of stakeholders, practitioners, beneficiaries, and experts from government, business, and civil society. The interviews were semistructured and included a standard interview questions guide. However, for each case study flexibility was applied to the question set, depending on the flow and the focus of each discussion. Interview participants were selected on the basis of their knowledge of and involvement in the Southern Africa TB in the Mining Sector Initiative. The interviews were held between April 2015 and June 2016. Each interview was typically two hours in length and was primarily conducted in person. When necessary, interviews were also conducted over the phone via web conference.

This book includes feedback and findings from the case study interviews, as well as from World Bank documents, research, proposals, and project information. Analysis of the interviews yielded the five case studies on multistakeholder

partnership and regional collaboration that highlight the unique aspects of the Southern Africa TB in the Mining Sector Initiative. Although not exhaustive, the selected case studies showcase a diverse range of partner roles, means, strategic influence, and various levels of partnership and collaboration among a range of stakeholders. They also provide a good starting point for analyzing the risks, opportunities, incentives, and contexts of regional health cooperation that involves multiple sectors and stakeholders. Although the issues discussed are relevant to several countries in the southern Africa region (SADC countries), evidence is primarily drawn from Lesotho, Mozambique, South Africa, and eSwatini, the four countries in which the initiative was first implemented.

ORGANIZATION OF THIS BOOK

This is divided into three sections. *Part I: Background* discusses the key concepts and terms within which the book is situated and provides a summary of the country contexts and key challenges associated with TB in the mining sector in southern Africa. *Part II: Partnerships in Practice* presents the five case studies drawn from the Southern Africa TB in the Mining Sector Initiative, based on the five partnership themes identified. *Part III: Maintaining Momentum* discusses the implications of the initiative and provides some recommendations for the way forward. Six appendixes provide supplemental information.

REFERENCE

Utting, P., and Ann Zammit. 2009. "United Nations-Business Partnerships: Good Intentions and Contradictory Agendas." *Journal of Business Ethics* 90 (Suppl. 1): 39. <https://doi.org/10.1007/s10551-008-9917-7>.

Abbreviations

AIDS	acquired immune deficiency syndrome
ART	antiretroviral therapy
BOHS	Basic Occupational Health Services
CCOD	Compensation Commissioner for Occupational Diseases (South Africa)
CHAI	Clinton Health Access Initiative
COIDA	Compensation for Occupational Injuries and Diseases Act (South Africa)
CSO	civil society organization
DFID	Department for International Development (United Kingdom)
DMR	Department of Mineral Resources (South Africa)
DoH	National Department of Health (South Africa)
DoL	Department of Labour (South Africa)
GDP	gross domestic product
GHSA	Global Health Security Agenda
GIS	geographic information system
H1N1	human pandemic influenza
HIV	human immunodeficiency virus
IEC	information, education, and communication
IOM	International Organization for Migration
LGBTI	lesbian, gay, bisexual, transgender, and intersex
MBOD	Medical Bureau for Occupational Diseases (South Africa)
MDA	Mineworkers Development Agency
MDR-TB	multidrug-resistant tuberculosis
MSP	multisector partnership
NGO	nongovernmental organization
NIOH	National Institute for Occupational Health (South Africa)
NTP	national tuberculosis program
ODMWA	Occupational Diseases in Mines and Works Act (South Africa)
OSSC	one-stop service center
PIC	Project Implementation Committee
PYAR	person-year at risk
SADC	Southern African Development Community

SAMA	Southern Africa Miners Association
SARS	severe acute respiratory syndrome
SRH	sexual and reproductive health
TB	tuberculosis
TEBA	The Employment Bureau of Africa
TIMS	Southern Africa TB in the Mining Sector Initiative
WHO	World Health Organization
XDR-TB	extensively drug-resistant tuberculosis

1 Background

1 Introduction

The incidence of emerging and reemerging infectious diseases worldwide has increased in recent years. A disproportionate number of these deaths occur in low-income countries. New threats such as the severe acute respiratory syndrome (SARS) outbreak in 2003 and the human pandemic influenza (H1N1) outbreak in 2009 have demonstrated both how quickly epidemics can cross borders and the significant social, economic, and political implications they have globally. More recently, the rapid spread of the Ebola virus in 2014 in West Africa (Guinea, Liberia, and Sierra Leone) brought renewed attention to the importance of global health security¹ and the capacity of countries and regions to effectively prepare for and respond to infectious disease threats. These public health crises have underscored the well-recognized view that no single country, organization, or sector can address such challenges alone and that an effective response must include coordination, collaboration, and cooperation among multiple actors and sectors.

Global collaboration in infectious disease surveillance is led by the World Health Organization (WHO), chiefly through its revised *International Health Regulations (2005)*, a legal framework that aims to support the global community “to better manage its collective defenses to detect disease events and to respond to public health risks and emergencies that can have devastating impacts on human health and economies” (WHO 2016). More recently, the Global Health Security Agenda (GHSA)² was launched in February 2014 to prevent and mitigate infectious disease threats and elevate global health security as a national and global priority. However, global prevention and control of infectious diseases rely heavily on efforts and actions that take place at the regional, subregional, and, most important, national level. Thus the performance of public health systems at all levels, including both within and across countries, is vitally important.

CROSS-BORDER COLLABORATION FOR HEALTH

Public health challenges are often inextricably connected to and influenced by conditions or events in neighboring countries. Yet cross-border management of disease is often driven by *national* priorities—including national strategic and operational plans for prevention, response, and treatment. As patient mobility and health system interconnectedness increase, cross-border cooperation and collaboration for health becomes even more critical.³ This is particularly true for low-income countries and regions with weak national health systems, already stretched and constrained by limited human and financial resources, and complex health needs. Furthermore, the multitude of public and private actors—each with distinct national or institutional motivations, interests, and values—has prompted demands for a more coherent approach to global health cooperation (Katz and Fischer 2010).

Cross-border collaboration for health refers to countries working together on a bilateral or multilateral basis and includes broad areas of cooperation between health systems and other sectors (Commonwealth Secretariat 2007). Collaboration among countries, especially those within the same region or sub-region can be a particularly effective tool for addressing common public health challenges as well as for reaching shared public health goals, including mitigating the effects of infectious disease outbreaks and improving health outcomes. Regional cooperation also promotes greater efficiencies and harmonization of policies, programs, processes, and systems. Developing and sustaining functional national, regional, and subregional systems and capacities to manage and respond to public health emergencies is critical not only for large-scale events but also for the everyday safeguarding of citizens' health.

Cross-border health initiatives have been implemented in several regions and subregions across the world. Notably, the United States and Mexico have a rich history of collaboration on public health issues, including infectious disease outbreaks and continuity of care for patients with tuberculosis and other key diseases traveling between the two countries (CDC, n.d.). Freedom of movement across the European Union (EU) has necessitated close collaboration among EU member countries on a wide range of health issues, including strengthening health security and minimizing the impact of cross-border health threats.⁴ In the last decade, regional infectious disease surveillance networks have also been organized. Many of these networks were established in the 1990s in an effort to enhance cross-border and national surveillance systems and address similar epidemiological profiles across multiple shared borders (Bond et al. 2013). Literature on the emergence and development of these regional disease surveillance networks, such as the Pacific Public Health Surveillance Network, Mekong Basin Disease Surveillance Network, and East African Integrated Disease Surveillance Network, has demonstrated that the networks can control cross-border disease outbreaks at their source. They also add value to global disease detection and response efforts and support countries seeking to adapt to complex challenges through multisectoral solutions.⁵

Despite the demonstrated value of cross-border collaboration, working across borders poses programmatic and administrative challenges. Collaboration can work to the advantage of each partner, but that is not always the case, especially given the spectrum of motivations, approaches, and outcomes pursued. Finding and maintaining the right governance arrangements among a diverse group of actors, each with different national regulations,

government and institutional capacities, and economic contexts, are perhaps the most complex tasks for cross-border health collaboration (Frenk and Moon 2013). So how can cross-border collaboration be encouraged, and under what circumstances does cross-border collaboration work to the mutual benefit of partners?

THE ROLE OF MULTISECTORAL PARTNERSHIPS

One promising way to facilitate cross-border collaboration for health is through multisector partnerships (MSPs)—also known as cross-sector partnerships or multistakeholder partnerships. Since the 1990s, there has been a dramatic increase in the number of partnerships that span sectors (public, private, and civil society) to address pressing economic, social, and environmental problems (Tulder et al. 2016). Austin (2000) labels this type of cross-sector partnering as the “collaboration paradigm of the 21st century.” Utting and Zamit (2009, 40) define *multisector partnerships* as “initiatives where public-interest entities, private sector companies and/or civil society organizations enter into an alliance to achieve a common practical purpose, pool core competencies, and share risks, responsibilities, resources, costs and benefits.” Hazelwood (2015, 2) notes that “MSPs span a wide and diverse array of institutional arrangements for expanding collaboration between government, business (and other private sector actors), civil society and/or UN and other multilateral agencies to address development challenges.” Multisector partnerships can take many forms and serve a variety of purposes. They can also operate on multiple scales—local, national, regional, or global (Hazelwood 2015).

Along with the exponential growth in the number of multisector partnerships has been the increase in the management and policy literature on these partnerships (Bryson, Crosby, and Stone 2006; Gray and Stites 2013; Hazelwood 2015) and the debates on their roles and effectiveness (Tulder et al. 2016). Studies have suggested that the comparative advantages of partnerships that include business, civil society, and government can lead to improvements in the quality of life of marginalized populations (Pierce 2004). Evidence from the United States suggests that cross-sector health partnerships may be difficult to implement and govern for a number of reasons, including varying time horizons, risk orientations, commitment levels, resources, and decision-making styles among partnering organizations—but it also points to the advantages of these partnerships (Ovseiko et al. 2017). According to Hazelwood (2015), global multistakeholder partnerships, most notably in the health sector, can have benefits, including “advancing more integrated, comprehensive and scalable approaches to poverty eradication and sustainable development; advancing more integrated, efficient and effective approaches to financing; and providing platforms for global advocacy and mobilization of civil society around priority poverty eradication and sustainable development challenges” (Hazelwood 2015, 4). Meanwhile, research on the experiences and lessons of global MSPs has identified a number of partnership qualities and conditions that support effective cross-sectoral collaboration, including having sufficient resources, a common vision and realistic goals, strong leadership and champions, clear structures and processes, a broad array of partners, and relationships marked by mutual trust, respect, and commitment to the cause (Bryson, Crosby, and Stone, 2006; CDC, n.d.; Hazelwood 2015; Zahner, Olivier, and Siemering 2014).

One of the important lessons that has emerged in the wake of the recent Ebola crisis is the need for improved coordination, collaboration, and synchronization among key stakeholders when responding to public health threats (Heymann et al. 2015). Ebola demonstrated acutely that no individual organization, actor, or country had on its own the capacity to stage a comprehensive response. Indeed, the complexity of cross-border health issues requires, among other efforts, engaging the various actors involved, bringing their diverse contributions together through an effective partnership model, and being united around a common vision in order to strengthen health systems, effectively respond to public health threats, and build resilient communities. Key questions in determining how to most effectively build and sustain multisector partnerships are the following:

- What platform is best for engaging with all stakeholders?
- How can the multiplicity of actors and interests be included?
- What tools can be used to bridge divides and overcome barriers to achieve agreement?
- How can trust among communities and decision makers be built and maintained?
- How can differing expectations about what might be a desirable outcome be overcome?

Several ongoing cross-sector, cross-border health initiatives in the southern Africa region are already generating evidence on effective models of collaboration and partnership that address some of these issues.

THE SOUTHERN AFRICA TB IN THE MINING SECTOR INITIATIVE

The mining sector plays a significant role in the economic development of southern Africa. South Africa has the largest mining industry in the region; it consists of over 2,000 mines and contributes about 8 percent of the country's total gross domestic product (GDP). In addition, the mining industry in South Africa employs more than 500,000 mineworkers and has historically relied on migrant workers from rural areas and surrounding countries. Mineworkers in southern African countries—Lesotho, Mozambique, South Africa, and eSwatini (formerly Swaziland)—have among the highest TB incidence rates in the world, with 2,500–3,000 cases reported per 100,000 persons. This incidence is 10 times higher than the WHO threshold for an epidemic. The mining sector in southern Africa has been identified as a major hotspot of high TB transmission.

Although much is known about TB in the mining sector in southern Africa, only recently have stakeholders in the region begun to develop and unite around a robust, evidence-based solution to the problem. For the past six years, the World Bank and its collaborating partners have been part of an innovative broad-based, multisectoral partnership that includes ministries of health and mineral resources, development partners, multilateral agencies, civil society organizations, academia, mining unions, and the mining industry. The partnership is driving efforts to catalyze the reduction of TB in the mining sector in response to a joint call for action from the ministers of health of Lesotho, South Africa, and eSwatini. This effort led to the signing of the Southern African Development Community (SADC) Declaration on TB in the Mining

Sector by the SADC heads of state in August 2012 and helped to raise the profile of the issue in the region.

Through the Southern Africa TB in the Mining Sector Initiative, several significant achievements have been made in the collective effort to tackle TB in the mining sector in the region:

- Mobilization of political support and policy processes leading to the signing of the SADC Declaration on TB in the Mining Sector by 15 heads of state in August 2012
- Successful coordination of key stakeholders ranging from government (health, mines/mineral resources, and labor), private sector, and development partners (U.K. Department for International Development, Global Fund, Stop TB Partnership, International Organization for Migration (IOM), and U.S. Centers for Disease Control and Prevention), to current and former mineworkers and their communities, mining companies, mining unions, and civil society organizations (CSOs). Coordination was carried out through the regional Project Implementation Committee (PIC), which is a unique collaboration that brings on board diverse expertise to address this century-old problem.
- Development of a framework for harmonized management of TB in the mining sector that ensures that TB patients in the mining sector, regardless of the country in which they work, receive the same treatment. Over 130 health care workers have been trained in Lesotho, Mozambique, South Africa, and eSwatini. The framework was also disseminated in Malawi and Zimbabwe.
- Improved targeting of TB services in Lesotho, South Africa, and eSwatini through a detailed geospatial mapping survey
- Development of a regional database for tracking patients and a referral system
- Establishment of one-stop service centers (OSSCs) in South Africa to improve access to much-needed health care and compensation services for those eligible
- Review of mine health legislation to improve workplace conditions to prevent TB and silicosis and improve access to occupational health services (see appendix E for a report on occupational health services delivery).

During 2015–16, efforts to mobilize resources to scale up the response to TB in the mining sector in the southern Africa region gained momentum and resulted in the following:

- The government of South Africa launched a major initiative (US\$100 million) to compensate former mineworkers with compensable lung diseases. A campaign to track and trace former mineworkers intensified, and about 100,000 former mineworkers have been flagged on the database as eligible for compensation.
- The Global Fund provided resources to scale up the regional Southern Africa TB in the Mining Sector Initiative from 6 to 10 countries. As coordinated by the World Bank, 10 countries in the southern Africa region will be able to access US\$30 million from the Global Fund over the next two years. This arrangement is expected to scale up transformative interventions across the SADC region.
- The World Bank is implementing a regional project at a total cost of \$120 million to help strengthen health systems, diagnostic capacity,

policy and legislation, and TB treatment in southern Africa. So far, four countries—Lesotho, Malawi, Mozambique, and Zambia—are participating in this regional project.

- Mining companies in South Africa have increased resources for TB and occupational diseases and launched programs to screen, test, and treat mineworkers. They have also piloted the screening and testing of former mineworkers in selected labor-sending areas.

Building on ongoing national efforts and momentum, the Southern Africa TB in the Mining Sector Initiative has advanced an innovative approach to addressing a century-old challenge. Notable in this approach is the role that multisectoral partnerships have played in bringing together a broad range of stakeholders to develop a common vision, identify areas of opportunity and constraint, bridge divides between sectors and systems, and facilitate the implementation of measures to improve the delivery of TB services to mine-workers across the region. Distilling the lessons learned from this initiative provides an invaluable opportunity to apply them not only to the TB epidemic but also to other global public health threats and broader efforts to strengthen health systems.

NOTES

1. WHO (2007) defines *global health security* as the activities required, both proactive and reactive, to minimize vulnerability to acute public health events that endanger the collective health of populations living across geographical regions and international boundaries.
2. Global Health Security Agenda, <https://www.ghsagenda.org/>.
3. Expert Panel on Effective ways of Investing in Health, https://ec.europa.eu/health/expert_panel/sites/expertpanel/files/009_crossborder_cooperation_en.pdf.
4. European Health Parliament, http://www.healthparliament.eu/documents/10184/0/EHP_papers_CROSSBORDERHEALTHTHREATS.pdf/fd4922e2-011e-489c-8896-de8a7cb39eb7.
5. World Bank, <https://blogs.worldbank.org/health/regional-disease-surveillance-globalized-world>.

REFERENCES

- Austin, J. E. 2000. *The Collaboration Challenge: How Nonprofits and Business Succeed through Strategic Alliances*. San Francisco: Jossey-Bass.
- Bond, Katherine C., Sarah B. Macfarlane, Charlanne Burke, Mumnuan Ungchusak, and Suwit Wibulpolprasert. 2013. “The Evolution and Expansion of Regional Disease Surveillance Networks and Their Role in Mitigating the Threat of Infectious Disease Outbreaks.” *Emerging Health Threats Journal* 6. doi: 10.3402/ehth.v6i0.19913.
- Bryson, J., Barbara C. Crosby, and Melissa Middleton Stone. 2006. “The Design and Implementation of Cross-Sector Collaborations: Propositions from the Literature.” *Public Administration Review* 66 (S1): 44–55.
- CDC (Centers for Disease Control and Prevention). No date. “Technical Guidelines for United States–Mexico Coordination on Public Health Events of Mutual Interest.” Atlanta. <http://www.cdc.gov/usmexicohealth/pdf/us-mexico-guidelines.pdf>.
- Commonwealth Secretariat. 2007. “Commonwealth Heads of Government Meeting.” Book 20, page 51.
- Frenk, Julio, and Suerie Moon. 2013. “Governance Challenges in Global Health.” *New England Journal of Medicine* 368: 936–42. doi: 10.1056/NEJMr1109339.

- Gray, B., and Jenna P. Stites. 2013. "Sustainability through Partnerships: Capitalizing on Collaboration." Network for Business Sustainability. <https://nbs.net/p/sustainability-through-partnerships-a-systematic-revie-e39afcb5-1fe6-4644-90d1-992aaf0918b5>.
- Hazelwood, P. 2015. "Global Multi-stakeholder Partnerships: Scaling Up Public-Private Collective Impact for the SDGs." Background paper 4, World Resources Institute, Washington, DC.
- Heymann, David L., Lincoln Chen, Keizo Takemi, David Fidler, Jordan W. Tappero, Matthew J. Thomas, Thomas A. Kenyon, et al. 2015. "Global Health Security: The Wider Lessons from the West African Ebola Virus Disease Epidemic." *Lancet* 385 (9980): 1884–1901.
- Katz, R., and Julie E. Fischer. 2010. "The Revised International Health Regulations: A Framework for Global Pandemic Response." *Global Health Governance* 3. https://hsrc.himmelfarb.gwu.edu/sphhs_policy_facpubs/411/.
- Ovseiko, Pavel V., Catherine O'Sullivan, Susan C. Powell, Stephen M. Davies, and Alastair M. Buchan. 2017. "Implementation of Collaborative Governance in Cross-Sector Innovation and Education Networks: Evidence from the National Health Service in England." *BMC Health Services Research* 14: 552. <http://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-014-0552-y>.
- Pierce, Steven D. 2004. "Bridging the Social Divide: A Grounded View of Partnership Building in Southeast Asia, Latin America, Southern Africa, and North America." Synergos Institute, New York. <https://www.synergos.org/sites/default/files/media/documents/2004-bl-bridging-the-social-divide.pdf>.
- Tulder, R., M. May Seitanidi, Andrew Crane, and Stephen Brammer. 2016. "Enhancing the Impact of Cross-Sector Partnerships: Four Impact Loops for Channeling Partnership Studies." *Journal of Business Ethics* 135 (1): 1–17. <https://doi.org/10.1007/s10551-015-2756-4>.
- Utting, P., and Ann Zammit. 2009. "United Nations-Business Partnerships: Good Intentions and Contradictory Agendas." *Journal of Business Ethics* 90 (Suppl. 1): 39. <https://doi.org/10.1007/s10551-008-9917-7>.
- WHO (World Health Organization). 2007. *The World Health Report 2007: A Safer Future: Global Public Health Security in the 21st Century*. Geneva: WHO.
- . 2016. *International Health Regulations (2005)*. 3d ed. Geneva: WHO.
- Zahner, S. J., Thomas R. Olivier, and Kirstin Q. Siemering. 2014. "The Mobilizing Action Toward Community Health Partnership Study: Multisector Partnerships in US Counties with Improving Health Metrics." *Preventing Chronic Disease* 11:130103.

2 Context of TB in the Mining Sector of Southern Africa

GLOBAL AND REGIONAL TB/HIV SITUATION

Despite major advances in prevention, diagnosis, and treatment—including a 47 percent reduction in global tuberculosis (TB) mortality since 1990—TB remains a leading cause of death worldwide (WHO 2015). In 2014 alone, more than 1.5 million people died from TB: 890,000 men, 480,000 women, and 140,000 children (WHO 2015). According to UNAIDS (2015), by end of 2014, 36.9 million people worldwide were living with the human immunodeficiency virus (HIV). Although tuberculosis-related deaths in people living with HIV have fallen by 32 percent since 2004, TB remains the leading cause of death among people living with HIV, accounting for around one in three acquired immune deficiency syndrome (AIDS)–related deaths. In 2014 the percentage of identified HIV-positive tuberculosis patients who started or continued antiretroviral therapy (ART) reached 77 percent.

The southern Africa region has a particularly high burden of infectious disease. It has experienced the severest HIV epidemic in the world, and five countries in the Southern African Development Community (SADC) have been identified by the World Health Organization (WHO) as among the 22 global TB high-burden countries (WHO 2015). Boxes 2.1– 2.4 present brief country health profiles for the four countries that have implemented the Southern Africa TB in the Mining Sector Initiative.

BOX 2.1

eSwatini

eSwatini (formerly Swaziland), located in southern Africa, is bordered by South Africa and Mozambique. High poverty rates and high levels of inequality remain formidable challenges to the country’s development,

with an estimated 63 percent of the country’s 1.25 million people living below the poverty line.

Poverty is associated with the country’s high burden of communicable diseases. The severe

continued

Box 2.1, continued

impact of the HIV/AIDS epidemic is a reflection of the country's HIV prevalence rate of 31 percent, which is the highest in the world, and its low life expectancy of approximately 49 years. In addition, eSwatini has one of the highest per capita burdens of TB globally. WHO's *Global Tuberculosis Report 2014* estimated TB incidence at 1,382 per 100,000

persons, with 80 percent of TB patients coinfecting with HIV. HIV and TB together account for a third of deaths in the country. In 2010 TB was declared an emergency in eSwatini. Although the notification rates for drug-susceptible TB have been on the decline since 2010, multidrug-resistant TB is on the rise.

Sources: World Bank Statistics (Swaziland Country Profile); WHO Statistics, <http://www.who.int/countries/swz/en/>; WHO 2014; Ministry of Health, Swaziland 2015.

BOX 2.2**Lesotho**

Lesotho is a small mountainous country with a population of about 2 million people. It is landlocked by South Africa. Although the country enjoys a relatively stable multiparty democracy, it is economically resource-poor and experiences high levels of poverty.

Lesotho faces extraordinary public health challenges, including recent increases in the burden of noncommunicable diseases and a high burden of communicable diseases. HIV has taken its toll, with HIV prevalence remaining persistently high at over 23 percent of the adult population. The country's HIV/AIDS epidemic is presumably the leading cause of the low life expectancy

(50 years). Lesotho also has a growing epidemic of MDR-TB, with a TB incidence estimated at 788 cases per 100,000 persons, and high TB/HIV coinfection rates.

Addressing the impact of these dual epidemics has put a considerable strain on the health care system, and coverage of essential public health services is low. Major barriers to effective scale-up and delivery of health services—and HIV/AIDS and TB interventions in particular—include limited infrastructure, an acute shortage of health staff, weak public health institutions, outdated health legislation, weak health systems, inequalities and inequities in service delivery, and a difficult terrain with locational disadvantages of health facilities.

Sources: World Bank Statistics (Lesotho Country Profile); WHO Statistics, <http://www.who.int/countries/lso/en/>.

BOX 2.3**Mozambique**

Mozambique is a predominantly rural country of approximately 28 million people (2016). This southern African country is one of the poorest in the world, ranking 180 out of 188 countries in level of development according to the Human Development Index. Over 60 percent of Mozambique's population lives in

rural areas with limited access to health services. National HIV prevalence is 11.5 percent, with a significant variation across regions ranging from 25.1 percent in southern provinces to 3.7 percent in northern provinces. With an estimated incidence rate of 551 per 100,000 persons in 2017 and a prevalence of

continued

Box 2.3, continued

546 per 100,000 persons in 2015, Mozambique is one of the world's 22 high TB burden countries. Like other countries in the region, HIV infection has been a major driver of the increase in TB notifications, and mobile and migrant workers such as mineworkers and agricultural workers and truck drivers operating

between ports in Mozambique and neighboring countries are among the most vulnerable populations for both HIV and TB transmission. Key health system weaknesses include a severe shortage of health workers and limited funding and infrastructure across the health sector.

Sources: UNDP (2015); World Bank Statistics (Mozambique Country Profile); Lebina et al. (2013); WHO (2017); WHO Statistics, <http://www.who.int/countries/moz/en/>; <http://www.tbfacts.org/tb-statistics/>.

BOX 2.4**South Africa**

South Africa is a middle-income country of approximately 54 million people. Despite its middle-income status (high level of economic stability) and high health expenditure, South Africa has a substantial burden of disease, and the country's health outcomes remain persistently poor. After a dramatic fall from 62 years in 1992 to 53 years in 2010, life expectancy recovered to 62 years in 2014 largely because of the rapid expansion of the national ART program.

Key health challenges include HIV/AIDS, TB, poverty-related illnesses, and a growing burden of noncommunicable diseases. The major challenge of health inequality has left the poor particularly vulnerable, and the country's high HIV/AIDS and TB infection rates have severely strained an already complex and fragmented health system. WHO estimates

indicate that South Africa's TB burden is the third-highest in the world (0.4–0.59 million), after India (2.0–2.5 million) and China (0.9–1.2 million). In South Africa, certain populations, notably migrants and mobile workers, experience higher levels of infection. HIV is driving the TB epidemic, with more than 70 percent of TB patients also living with HIV. The TB epidemic is further compounded by the emergence of multidrug-resistant TB (MDR-TB) and extensively drug-resistant TB (XDR-TB).

Other key challenges in the health care system include inadequate health infrastructure, insufficient human resources, uneven public service delivery, lack of access to basic services, and high levels of economic inequality, gender inequality, and marginalization.

Sources: World Bank Statistics (South Africa Country Profile); SANAC (n.d.).

THE MINING SECTOR AND TB IN SOUTHERN AFRICA

Migrant populations are among the most vulnerable to emerging and reemerging infectious diseases (Knobler et al. 2006, 22). In southern Africa, migrant mining workers face an extraordinary burden of risk for silicosis, TB, and HIV/AIDS (Rosenstock, Cullen, and Fingerhut 2006). Both the HIV and TB epidemics in the southern Africa region have been amplified by the mining sector and the large-scale cross-border movement of mineworkers to and from labor-sending areas and their home communities (Stuckler, Basu, and McKee 2010). Consequently, in countries such as South Africa, the half a million mineworkers employed in 2,000 mines and quarries across the country—approximately 40 percent of whom are from eSwatini, Lesotho, and Mozambique—have the

highest TB incidence in the world: an estimated 2,500–3,000 per 100,000 persons are infected, compared with 834 per 100,000 persons in the general population (Lebina et al. 2013). This situation is further complicated by the emergence of drug-resistant strains of TB, including multidrug-resistant and extensively drug-resistant TB in the subregion. In part because of the high incidence of TB in the mines, South Africa accounts for 30 percent of the estimated global number of incident cases of TB/HIV coinfection—approximately 71 percent of the country’s HIV patients, many of them in mining communities, are coinfecting with TB. These astonishingly high rates of disease found among mineworkers in southern Africa are linked to a number of social and economic determinants.

HISTORICAL CONTEXT OF MINING IN SOUTH AFRICA

Dating back to the late 19th century, South Africa’s long history of mining has supported the country’s economic growth and development. But the mining sector has also contributed significantly to the incidence of silicosis and tuberculosis among mineworkers. Working environments characterized by poor ventilation, high levels of silica exposure, overcrowded housing, and lack of access to appropriate health services have created a breeding ground for communicable diseases and facilitated the spread of tuberculosis, especially among black mineworkers (Stuckler, Basu, and McKee 2010). These circumstances have been compounded by a legacy of racial differentiation in workers’ rights and benefits (Ehrlich 2012). Compensation for mineworkers with occupational lung disease was first legislated through the Miner’s Phthisis Allowance Act of 1911. Subsequent legislation (table 2.1) reflected the ongoing racial inequities, including differences in medical examinations whereby white mineworkers accessed examinations at the Medical Bureau for Occupational Diseases (MBOD) in central Johannesburg or at one of the sub-bureaus (Welkom and Witbank) located near the gold mines and coal mines, whereas black mineworkers were examined at the Employment Bureau of Africa (TEBA) offices or mines, where many diseases were missed or not routinely reported to the MBOD.

There was also a 12:1 gap in the amount of compensation paid white and black mineworkers, and different forms of compensation were paid to mineworkers suffering from occupational disease—that is, pension payments for white claimants versus differentiated lump sum payments for black claimants (Ehrlich 2012; Nelson 2013). Furthermore, a dual and uneven system of occupational

TABLE 2.1 Legislation governing mineworkers’ health and safety, South Africa

LEGISLATION	FUNCTION	ENFORCEMENT AGENCY
Occupational Health and Safety Act (OHSA), 1993	Ensures a healthy and safe environment in all workplaces other than mining	Department of Labour
Compensation for Occupational Injuries and Diseases Act (COIDA), 1993	Provides for medical coverage and compensation for occupational injuries or diseases in all workplaces, but excludes lung diseases from mining	Department of Labour
Mine Health and Safety Act (MHSA), 1996	Ensures a healthy and safe environment in the mining sector	Department of Mineral Resources
Occupational Diseases in Mines and Works Act (ODMWA), 1973	Provides for compensation of occupational lung diseases in controlled mines and quarries	Department of Health

Source: Adapted from Elloker et al. (2012, 71).

compensation evolved in South Africa—one for mineworkers’ lung diseases under the Occupational Diseases in Mines and Works Act, 1973, and one for all other injuries and diseases in all occupations under the Compensation for Occupational Injuries and Diseases Act (COIDA), 1993 (Naidoo 2013). This complex system, which essentially created differential benefits for the same occupational lung disease such as silicosis, depending on whether it was acquired through mining or industrial work, has resulted in inferior compensation and benefits for mineworkers (Ehrlich 2012; Naidoo 2013). Meanwhile, the system remains complex and difficult to navigate for mineworkers, and for many it has been a significant barrier to accessing compensation (Naidoo 2013). As a result of these challenges, many observers argue that the high disease burden produced within the context of South Africa’s mining industry has been a preventable and neglected epidemic (Roberts 2009).

OCCUPATIONAL HEALTH AND ENVIRONMENTAL CHALLENGES

Despite significant research on the effects of exposure to silica and the fact that silicosis is preventable, the disease remains a serious threat to mineworkers around the world. This threat is especially evident in developing countries, where job safety and health regulations can be difficult to enforce and poor occupational health standards expose workers to work-related sickness, disease, and injury. TB rates in the mining sector in southern Africa are particularly high because of a convergence of occupational, environmental, and lifestyle-related risk factors. These include:

- *Exposure to silica dust.* This exposure increases the risk of pulmonary TB and silicosis, particularly among gold mineworkers. Between 18 percent and 31 percent of gold mineworkers in South Africa and Botswana have scarring lesions characteristic of silicosis, which means that such mineworkers have a threefold higher risk of pulmonary TB than those without silicosis (Basu et al. 2009).
- *Living conditions.* Most mineworkers in South Africa live in congested hostels, although conditions have been improving since 1994. Cramped living conditions are highly conducive to TB infection as well as recurrent TB. A survey of a cohort of 600 gold and platinum mineworkers in South Africa found a rate of recurrent TB of about 8 per 100 person-years compared with half this rate or less in the general population. Sixty-nine percent of the recurrent cases were attributable to reinfection rather than relapse (Charalambous et al. 2008).
- *Migration and HIV.* Because of lifestyles brought on by long absences from home, mineworkers and their families are highly vulnerable to HIV infection (Corno and de Walque 2012), which leads in turn to higher levels of TB/HIV comorbidity among mineworkers. For example, a retrospective cohort study in four mines in South Africa found that the incidence rates of new pulmonary TB among male mineworkers were 0.75 cases per 100 person-years at risk (PYAR) in HIV-negative males and 3.7 cases per 100 PYAR in HIV-positive males (Glynn et al. 2008).
- *Mobility and TB.* The TB risk in mines also affects families because mineworkers with TB risk can transmit the disease to their family members. Furthermore, the migration of mineworkers across borders, within a country,

and across countries has turned TB in the mining sector into a complex regional problem. High rates of TB have been reported among former mineworkers living in eSwatini, Lesotho, and Mozambique. A recent tracking survey in eSwatini found that of 251 former mineworkers, 38 showed symptoms of TB and 12 were found to have active TB. The study also revealed that former mineworkers had high rates of MDR-TB and XDR-TB.¹

HEALTH SYSTEM CHALLENGES

Southern African countries—eSwatini, Lesotho, Mozambique, and South Africa in particular—face substantial challenges in the systems that deliver health services to mineworkers. Health services in the mining sector are provided by mining companies and the public health system. The mining companies, which are mainly in South Africa, provide their employees with coverage for TB and HIV. However, mineworkers in small and medium mines, contract mineworkers, former mineworkers, families of current and former mineworkers, and communities around the mines and those in labor-sending areas generally do not have access to mine health facilities. They must access both TB and HIV services in public health systems, which are ill-equipped to deal with the complex needs of these special groups.

In South Africa, regulations require that former mineworkers be screened for TB, silicosis, and other occupational health diseases every other year, and those found positive are expected to be linked to the mineworkers' compensation scheme. However, only a few health facilities have the capacity to do this, and the number of trained occupational health professionals in the region is very low. It is therefore difficult to provide current and former mineworkers in the region with comprehensive occupational health interventions. The families of current and former mineworkers are further exposed to TB infection because mineworkers may be reluctant to reveal their TB status. Control of TB transmission in southern Africa is also constrained by limited data on current and former mineworkers and the limited capacities of individual country health systems to effectively prevent, monitor, detect, and rapidly respond to cross-border transmission of the disease.

NOTE

1. Tracking survey conducted by Swaziland's Ministry of Health and URC Swaziland (Dr. Themba Dlamini and Dr. Marianne Calnan), June 7, 2013.

REFERENCES

- Basu, S., David Stuckler, Gregg Gonsalves, and Mark Lurie. 2009. "The Production of Consumption: Addressing the Impact of Mineral Mining on Tuberculosis in Southern Africa." *Globalization and Health* 5 (11). <https://doi.org/10.1186/1744-8603-5-11>.
- Charalambous, S., A. D. Grant, V. Moloj, R. Warren, J. H. Day, P. van Helden, R. J. Hayes, et al. 2008. "Contribution of Re-infection to Recurrent Tuberculosis in South Africa." *International Journal of Tuberculosis and Lung Disease* 12 (8): 942–48.
- Corno, L., and Damien de Walque. 2012. "Mines, Migration and HIV/AIDS in Southern Africa." Policy Research Working Paper 5966, World Bank, Washington, DC.

- Ehrlich, R. 2012. "A Century of Miners' Compensation in South Africa." *American Journal of Industrial Medicine* 55: 560–69.
- Elloker, S., P. Olckers, L. Gilson, and U. Lehmann. 2012. "Crises, Routines and Innovations: The Complexities and Possibilities of Sub-district Management." *South African Health Review* 2012/13: 161–73.
- Glynn, M., Jill Murray, Andre Bester, Gill Nelson, Stuart Shearer, and Pam Sonnenberg. 2008. "Effects of Duration of HIV Infection and Secondary Tuberculosis Transmission on Tuberculosis Incidence in the South African Gold Mines." *AIDS* 22 (14): 1859–67. doi:10.1097/QAD.0b013e3283097cfa.
- Knobler, S., Adel Mahmoud, Stanley Lemon, and Leslie Pray, eds. 2006. "The Impact of Globalization on Infectious Disease Emergence and Control: Exploring the Consequences and Opportunities." Workshop summary, Washington, DC.
- Lebina, L., N. Martinson, M. Milovanovic, and A. Kinghorn. 2013. *TB, HIV and Silicosis in Miners: Epidemiological Data on Tuberculosis, Multi-Drug Resistant TB, Silicosis and HIV among Miners and Ex-Miners in Southern Africa*.
- Ministry of Health, Swaziland. 2015. *Annual National Tuberculosis Control (NCTP) Program Report 2015*. Mbabane.
- Naidoo, R. N. 2013. "Mining: South Africa's Legacy and Burden in the Context of Occupational Respiratory Diseases." *Global Health Action* 6: 20512. <http://dx.doi.org/10.3402/gha.v6i0.20512>.
- Nelson, G. 2013. "Occupational Respiratory Diseases in the South African Mining Industry." *Global Health Action* 6. <http://doi.org/10.3402/gha.v6i0.19520>.
- Roberts, J. 2009. *The Hidden Epidemic amongst Former Miners: Silicosis, Tuberculosis and the Occupational Diseases in Mines and Works Act in the Eastern Cape, South Africa*. Durban: Health Systems Trust.
- Rosenstock, Linda, Mark Cullen, and Marilyn Fingerhut. 2006. "Occupational Health." In *Disease Control Priorities in Developing Countries*, 2d ed., edited by D. T. Jamison et al. Washington, DC: World Bank; New York: Oxford University Press.
- SANAC (South African National AIDS Council). No date. The National Strategic Plan (NSP) for HIV and AIDS, TB and STIs. Johannesburg.
- Stuckler, D., Sanjay Basu, and Martin McKee. 2010. "Governance of Mining, HIV, and Tuberculosis in Southern Africa." *Global Health Governance* 4 (1). http://www.ghgj.org/Stuckler_final.pdf.
- UNAIDS (Joint United Nations Programme on HIV/AIDS). 2015. *AIDS by the Numbers 2015*. Geneva: UNAIDS.
- UNDP (United Nations Development Programme). 2015. *Human Development Report 2015*. New York: UNDP.
- WHO (World Health Organization). 2014. *Global Tuberculosis Report 2014*. Geneva: WHO.
- . 2015. *Global Tuberculosis Report 2015*. Geneva: WHO.
- . 2017. *Global Tuberculosis Report 2017*. Geneva: WHO.

2 Partnerships in Practice

The following case studies result from a comprehensive effort to identify good practices in cross-border (regional) collaboration within the unique context of tuberculosis (TB) in the mining sector of southern Africa. Although all the case studies are drawn from a single initiative to address TB in the mining sector in southern Africa, each represents a different dimension of the problem and includes a different model of partnership. The case studies presented also provide overarching lessons learned to date and some cross-cutting recommendations for strengthening regional health collaboration through multisectoral partnerships.

During a review of these case studies, five broad themes emerged that illustrate good guiding principles, and the evidence for each is presented in the following chapters:

- Brokering high-level political commitment
- Strengthening technical cooperation
- Building inclusive engagement platforms
- Addressing systemic barriers
- Developing strategic alliances.

3 Brokering a High-Level Political Commitment to Drive the TB Agenda Forward

The issue of tuberculosis (TB) in the mining sector of southern Africa has persisted for over 100 years. However, recent efforts to develop and sustain an effective response through innovative and dynamic partnerships have marked a fundamental shift in the management of TB in the mining sector, a key driver of economic growth in the region. Through the South Africa Knowledge Hub, the World Bank has played a catalytic role in convening key stakeholders among the public, private, and civil society sectors in eSwatini (formerly Swaziland), Lesotho, Mozambique, and South Africa to ensure that a framework is in place to drive the TB agenda forward.

How were the necessary political and policy processes mobilized to achieve and sustain this momentum? How much and what type of engagement were needed? What were the outcomes of this engagement? This case study summarizes how a high-level political commitment—along with multisectoral and cross-country coordination—has helped to bring the issue of TB in the mining sector to the forefront and in so doing has created a paradigm shift in how this challenge has been addressed.

INITIAL SITUATION

Because of the magnitude and complexity of factors associated with TB in the mining sector in southern Africa, no organization or actor working alone is equipped to address the issue effectively. A cross-border response to TB involves policy, programmatic, and service delivery considerations, and the success of these efforts largely depends on establishing effective coordination and implementation mechanisms (partnerships) among mines, communities, and countries, including departments and ministries of health, mineral resources, finance, and labor; mining companies; civil society organizations; and development partners.

A major shortcoming in the management of TB in the mining sector in the southern Africa region was the lack of effective coordination and collaboration among key actors, including the governments of the mineworkers' various

countries of origin, the mining sector, mineworkers' associations, and donors. A coordinated and comprehensive regional strategy to ensure TB prevention, diagnosis, treatment, and care across the four countries was not in place. Limited collaboration, coupled with tensions about the roles and responsibilities of South Africa's Department of Mineral Resources (DMR), National Department of Health (DoH), and mining sector stalled the implementation of a harmonized response. In addition, limited access to information and knowledge about the availability and quality of TB services in mineworkers' countries of origin and the lack of tracking and tracing across borders resulted in fragmented service provision. Consequently, the complex cross-border dimensions of the disease remained largely unaddressed.

KEY STRATEGIES

The Southern Africa TB in the Mining Sector Initiative was launched in 2010 with a World Bank-supported study that examined the scope of TB prevalence in South Africa. This study, initially developed to gain more insight into the country's key health challenges, revealed the disproportionate impact of TB on the mining sector, where current and former mineworkers and peri-mining communities appeared to be the most heavily affected. At the request of the South African government, the World Bank initiated a process to better understand the drivers of TB in the mining sector and to explore ways in which it could leverage its comparative advantages to give new impetus to an issue that had persisted for over a century. Descriptions of the key strategies follow.

Building the evidence base

A 2010 study commissioned by South Africa's Department of Mineral Resources and conducted by South Africa's National Institute of Occupational Health (NIOH), with support from the World Bank, highlighted the burden of TB and TB/HIV (human immunodeficiency virus) in the mining sector in Botswana, eSwatini, Lesotho, and Namibia. The study revealed TB hotspots in mining communities across the four countries and identified huge disparities in the provision of industry health services. Within this context, the World Bank, working with the Stop TB Partnership and other partners, initiated a comprehensive effort to develop an effective regional solution, with the goal of reversing the rise of TB rates.

Gaining an expert consensus

In September 2010, the World Bank and South Africa's Departments of Health and Mineral Resources held the International Expert Consensus Meeting on TB in the Mining Sector to share findings from the NIOH study, synthesize existing evidence about the extent of the problem, and define a list of evidence-based interventions and best practice examples from around the world. The conclusions were presented to the Stop TB Partnership Coordinating Board in Johannesburg in October 2010, resulting in a joint call for action on TB in the mining sector by the health ministers of eSwatini, Lesotho, and South Africa.

By bringing together national and international TB/HIV experts and practitioners, policy makers, implementing agencies, donors, and governments,

the expert meeting provided an opportunity to talk openly about the current status of the dual epidemic in the mining sector, review national and international guidelines and policies, and reach a consensus on the best strategies for effectively scaling up comprehensive, integrated HIV and TB services in the mining sector. The meeting also stimulated dialogue among representatives of the public and private spheres, civil society, and national stakeholders working on TB and laid the groundwork for joint commitment and action.

Facilitating high-level political dialogue

The World Bank leveraged its convening power and relationships to facilitate negotiations and deliberations at the highest levels of government. The priority given to TB in the mining sector by the health ministers of eSwatini, Lesotho, Mozambique, and South Africa led to discussions at the Southern African Development Community (SADC) health ministers' meeting in November 2011. At that meeting, the SADC Secretariat decided to hold an extraordinary meeting of SADC health and labor ministers in 2012 to formulate a draft Declaration on TB in the Mining Sector. The draft document was developed with technical support from the World Bank, Stop TB Partnership, International Organization for Migration (IOM), and representatives of eSwatini, Lesotho, Mozambique, and South Africa. The mobilization of these political and policy processes culminated in the historic signing of the SADC Declaration on TB in the Mining Sector by all SADC heads of state in August 2012. The declaration recognized the special vulnerability of mineworkers and their communities to TB and identified the important steps needed to reduce risks and improve services.

Establishing a framework for stakeholder engagement and implementing a regional action plan

Establishing a cooperation framework for joint planning, information sharing, policy development, and service provision was a key strategy for building cross-sector capacity and networks and pooling the resources and expertise required to deal effectively with both country-specific and regional issues. The World Bank supported the establishment of a regional mechanism to operationalize the TB in the mining sector agenda in the four countries. A Project Implementation Committee (PIC) was established in 2013, composed of technical representatives of each country's ministry of health, representatives of the departments of mineral resources and labor in all four countries, development partners—the World Bank, U.K. Department for International Development, International Organization for Migration, and Stop TB Partnership—and civil society (international nongovernmental organizations, research institutions, labor unions, and mineworkers' associations). As noted, PIC was established to operationalize the efforts to combat TB in the mining sector in the four countries. Its main role was to provide technical coordination and ensure effective networking and sharing of information and knowledge about TB in the mining sector. In addition, a TB service delivery model was developed in 2013 to provide a platform for coordinating multiple actors addressing TB in the mining sector across the four countries. PIC hosted policy dialogue meetings that brought together the multiple stakeholders.

PROGRESS AND RESULTS

In the collective effort to tackle TB in the mining sector in the region, partnerships, especially among institutional partners such as departments of mineral resources, labor, and health, have been strengthened and consolidated. The increased visibility of the issue has not only led to better cooperation among key actors, but also has increased the pool of funding available for the implementation of critical TB interventions. The key achievements are the following:

Increased funding opportunities

- Development Grant Facility of US\$6 million from 2014 to 2016
- Preparation of a \$120 million World Bank Group regional project to scale up TB prevention and treatment in the mining sector in four SADC countries: eSwatini, Lesotho, and Malawi, and Mozambique
- A US\$30 million Global Fund two-year pilot grant, with increased funding over time, to scale up the TB response in 10 countries: Botswana, eSwatini, Lesotho, Malawi, Mozambique, Namibia, South Africa, Tanzania, Zambia, and Zimbabwe
- A £2 million grant from the U.K. Department for International Development to support the regional response to TB in the mining sector

Enhanced political, policy, and technical-level partnerships and collaboration

- A multicountry and multisector political consensus was achieved for the first time in August 2012 in the ground-breaking declaration by the heads of state of the Southern African Development Community. The declaration emphasized the urgent need to eradicate TB in the mining sector. The declaration also set the stage for policy changes at the national level and greater collaboration among countries and sectors, all of which are essential to take the fight against TB to the next level.
- Consultations with technical experts led to the development of the Framework for the Harmonized Management of Tuberculosis in the Mining Sector, which was signed in March 2014. The framework harmonizes treatment, prevention, diagnosis, and referral across countries.
- Private sector engagement has been enhanced through a collaborative initiative launched by five mining companies aimed at finding a comprehensive, fair, and sustainable solution to the problem of occupational lung disease in the gold mining industry in South Africa.

Increased knowledge generation

- An economic analysis of TB in the mining sector was funded by the World Bank in 2013. It has provided data on the economic benefits of TB control, estimated the return on investment, and recommended high-impact interventions that maximize investment in TB control in the mining sector in eSwatini, Lesotho, Mozambique, and South Africa. This study was one of the key data sources that informed the development of the TB service delivery model.
- Geospatial mapping of current and former mineworkers and their families in eSwatini, Lesotho, and South Africa was conducted in 2014, and it has provided data on the size and distribution of the key populations as well as the availability of health facilities in those areas.

LESSONS LEARNED

Enlarge the political space to create greater demand for collaborative action

One of the key success factors of this initiative was the World Bank's ability to convene high-level political leadership and provide technical guidance. Through various forums for high-level multistakeholder political and policy dialogue,¹ the Bank played a significant leadership role in ensuring that TB in the mining sector gained a prominent position on the regional (SADC) agenda. Launching a focused and robust agenda that included multiple opportunities for participation, feedback, and reflection created greater demand for action and led to significant political responses, most notably through the signing of the historic SADC Declaration.

Utilize partnerships to build bridges between diverse stakeholders and address gaps in governance, participation, and implementation

Multistakeholder partnerships can do much to advance the development of a holistic and cohesive cooperation framework—one that will harness partners' synergies and produce more transformative outcomes. By exerting its influence as a partnership broker, the World Bank was able to convene a wide range of institutional actors at both the national and regional level, including government departments, international nongovernmental organizations, international experts, the private sector, and civil society. Multistakeholder platforms such as PIC provide an opportunity for connecting and cross-fertilizing the various sectors, increasing access to international knowledge and expertise, and strengthening coordination and collaboration. These opportunities have served as a starting point for discussion and reflection around the current state of TB in the mining sector across the four countries and have been instrumental in building momentum and sustaining investments.

Develop a unified strategic approach

The complexity and magnitude of trying to harmonize approaches and standards across countries, health systems, and sectors cannot be underestimated. A key challenge in this initiative was integrating multiple country priorities and expectations. Another challenge was managing varying levels of commitment and capacity among partners. The World Bank fostered a shared sense of purpose and trust among partners by using a structured strategic approach that included frequent national- and regional-level consultations, open discussions, regular opportunities to address and reframe conflicts, and mechanisms for making, tracking, and keeping stakeholder commitments such as PIC. This approach resulted in

- More clearly defined roles and responsibilities and effective regional management of TB in the mining sector
- Better problem resolution among key stakeholders
- Greater access to experts and resources
- Greater political support and commitment.

CONCLUSION

Within a relatively short time frame, the Southern Africa TB in the Mining Sector Initiative has made significant contributions to addressing the persistent challenge of TB in the mining sector and has paved the way for an innovative approach to regional health interventions. Focusing on action by consensus, the initiative has showcased the successes and challenges of building and sustaining multisectoral, multicountry, public-private partnerships and developing a truly regional approach to cross-border disease management. Alongside the ultimate goal of reducing the burden of TB in mining communities, a lasting legacy of the initiative will be the synergies that have been created among multiple governments, multiple sectors—health, mineral, labor, finance, private sector, civil society—and mineworking communities. These achievements, and the learning that has been applied throughout the initiative, are a sound basis for continued action and commitment. Continuity of effort and sustained investment in the regional partnership are needed to build on the gains that have been made over the past five years and to meet the needs of mineworkers over the long term.

NOTE

1. Examples are the International Expert Consensus Meeting; the high-level meetings between the ministers of health of Lesotho and eSwatini, and the World Bank; the SADC Stakeholders' Consultation on TB in Mining Sector; and the extraordinary meeting of SADC health and labor ministers.

4 Strengthening Technical Cooperation for Cross-Border TB Management

As described in chapter 3, in August 2012 the heads of state of the Southern Africa Development Community (SADC) countries signed the SADC Declaration on TB in the Mining Sector. The declaration recognized the elevated risk of tuberculosis (TB) among mineworkers in the region and established SADC's commitment to "moving towards a vision of zero new infections, zero stigma and discrimination, and zero deaths resulting from TB, HIV, Silicosis, and other occupational respiratory diseases." Following the signing of the declaration, the governments of eSwatini, Lesotho, Mozambique, and South Africa requested support from the World Bank and the World Health Organization (WHO) to facilitate implementation of the declaration's provisions, including the development of a TB management framework that would harmonize treatment, prevention, diagnosis, and referral services across the four countries.

In 2013 the World Bank initiated a consultative process to review the national TB guidelines of eSwatini, Lesotho, Mozambique, and South Africa, and to develop a set of harmonized management guidelines to standardize TB treatment, care, and service provision for mineworkers. This process resulted in development of the Framework for the Harmonized Management of Tuberculosis in the Mining Sector, which was finalized in March 2014 (see the overview in appendix B). The framework reflects a remarkable process of technical cooperation between the national tuberculosis programs (NTPs) of the four countries and other national, regional, and international partners.

Developed through extensive consultation and interagency review, the framework is intended to complement the various national TB management guidelines and tools of eSwatini, Lesotho, Mozambique, and South Africa, and facilitate increased collaboration that complies with WHO-recommended minimum standards for TB care. Specifically, the harmonized management framework:

- Complements national TB strategic plans
- Addresses TB management for current and former mineworkers, communities around mines, and labor-sending communities

- Highlights the roles and responsibilities of key stakeholders in TB management
- Outlines a mechanism for coordination of institutions in the relevant countries.

What does it take to build greater synergies across and within national borders, drive technical cooperation forward, and effectively harmonize approaches for the management of a complex regional health intervention? This case study summarizes how technical cooperation was successfully leveraged to support and address the planning, development, and delivery of TB services across the four partner countries.

INITIAL SITUATION

Weaknesses in treatment, case management, infection control, diagnostic capacities, and overall health systems are some of the key challenges in addressing TB in mineworkers in the southern Africa region. The frequent movement of mineworkers both across and within national borders increases the risk of poor adherence to treatment, interrupted treatment, loss to follow-up, and treatment failure. Meanwhile, the absence of policies to specifically address the unique dynamics of highly mobile populations has resulted in fragmented TB service delivery. Mineworkers who start treatment in one country often struggle to continue care at their destination point, particularly if the interventions prescribed by physicians in these contexts vary from that of the countries where the mineworkers initiated treatment. Although the TB treatment guidelines of the four countries are in compliance with WHO recommendations, there is no mechanism for cross-border management and referral. Also, linkages and referral systems between national tuberculosis programs in the region are limited. Consequently, a framework for the harmonized prevention, diagnosis, treatment, and care of TB and related conditions was a requisite in enhancing the delivery of essential services to mineworkers within countries and particularly across borders.

KEY STRATEGIES

In order to address some of the fundamental challenges in provision of TB health services to mineworkers—particularly high treatment default rates, low cure rates, and development of resistant strains of TB—the World Bank and WHO launched a joint program aimed at harmonizing the management of TB among current and former mineworkers and affected communities from the four high-risk countries: Lesotho, Mozambique, South Africa, and eSwatini. The process of preparing the harmonized management framework was participatory and inclusive and involved extended consultations validated by key stakeholders. The key strategies involved in reaching a technical consensus and creating the framework for harmonized cross-border TB management are described in the sections that follow.

Evaluating existing models through consultations with international health experts, WHO, and the World Bank

In February 2013, the World Bank (WB) convened a team of international health experts who produced a draft of the framework for harmonized management of TB.

The WB/WHO Technical Working Group (TWG) on Harmonization of TB Management was composed of WHO TB focal points from Lesotho, Mozambique, South Africa, and eSwatini; regional WHO TB representatives from Harare and Brazzaville; and the Royal Netherlands TB Association (KNCV) TB in Mines regional representative. The TWG met with the World Bank team in Pretoria, South Africa, to initiate the process of harmonizing treatment protocols for the management of TB in the mining sector in South Africa and its main labor-sending neighbors. To gain a clear picture of current practices and to develop a uniform approach, the group undertook a comparative analysis of national TB treatment protocols and a review of the policies of mining companies and other service providers. Substantive and technical input and feedback to the various drafts of the framework were provided by a range of technical agencies working on TB, including the NTPs in each country, national health institutions, WHO (Geneva), and other partners.

Building greater synergies across national tuberculosis programs

The leaders of the national health institutions and NTPs in each of the four countries were quickly engaged through country consultative meetings designed to elicit their buy-in and technical inputs. The NTPs planned the national workshops, and engaging them was an essential first step in securing strong champions and country ownership with support from the World Bank, WHO, and other country partners. The workshops were held to share and receive feedback from the NTPs and key national stakeholders on similarities, differences, or gaps in the draft framework and to formulate recommendations on the priority areas and process for harmonization. The initial draft was revised on the basis of these country consultations, and the revisions were then presented at a regional workshop to gain a consensus on the final framework and to elaborate dissemination activities.

Gaining high-level technical and political endorsement of the harmonized management framework

The impressive progress made in the development and finalization of the framework was marked by a landmark event that served as a forum for ministerial endorsement of the document, which was also endorsed by WHO. In March 2014, a ministerial meeting hosted by South Africa's deputy president and sponsored by the World Bank, Stop TB Partnership, and the Global Fund to Fight AIDS, TB and Malaria, brought together the ministers of health, labor, and mineral resources/mining from 10 SADC countries; the heads of mission of development partners; the CEOs of mining companies; and high-level representation from labor unions, former mineworkers' associations, and key nongovernmental organizations. The meeting provided a rare opportunity to secure ministerial endorsement for the effective coordination of governments and partners in support of this regional effort to implement the provisions of the SADC Declaration in priority countries.

RESULTS

The efforts of the World Bank and its partners to invest time and resources in multiple country consultations, gain technical consensus, and secure high-level

political commitment have paved the way for the implementation of a coordinated response to TB in the region and resulted in the adoption of the harmonized management framework. The adoption was a major step forward in implementation of the SADC Declaration on TB in the Mining Sector and will be used to standardize the management of TB across countries and by mining companies.

The framework has been used to inform national TB strategies in Lesotho, Mozambique, South Africa, and eSwatini, and it was rolled out in the training of health care workers in the four countries. It also was used to develop the World Bank-funded Southern Africa TB and Health Systems Support Project and the concept note for the two-year US\$30 million Global Fund pilot grant commitment, which will use innovative approaches to address TB among mine-workers in 10 countries: Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, eSwatini, Tanzania, Zambia, and Zimbabwe.

LESSONS LEARNED

Leverage stakeholders' comparative advantages

Leveraging the comparative advantages of the various stakeholders involved in the framework encouraged a renewed sense of commitment and partnership and increased synergies and efficiencies throughout the process. As the primary beneficiaries of the harmonized management framework, mineworkers' and former mineworkers' associations in the four countries were appropriately placed to highlight their needs and the barriers they faced, particularly around the referral process. As custodians of the framework, the ministries of health of the four countries successfully created an enabling environment and led in the development of the framework. WHO's endorsement of the harmonized management framework assured stakeholders that the document met national, regional, and international standards. Finally, the World Bank's convening role and the involvement of other development partners—the Global Fund, International Organization for Migration, U.S. Centers for Disease Control and Prevention, and U.S. Agency for International Development—generated increased donor interest in funding the Southern Africa TB in the Mining Sector Initiative and also brought on board additional technical expertise and knowledge on how to strategically align priorities around funding gaps to achieve the greatest impact.

Focus on a win-win strategy

A significant challenge in the technical cooperation process was the different policies, implementation approaches, and capacities of the four countries. How to identify the priority areas for harmonization given each country's unique needs was therefore a key question guiding discussions. Open and constructive dialogue during the national and regional consultations resulted in greater appreciation of the differences in protocols in the four countries, soothed debates, and facilitated compromise around what was and was not possible. In some instances, particularly around the more contentious points, setting certain requirements at a "higher level" instead of being prescriptive allowed much-needed flexibility and enabled partners to find the best middle ground.

For example, rather than stipulating the specific drugs to be used for treatment, the recommendation was to harmonize the families of drugs included in treatment regimens. This approach of developing a win-win strategy enabled countries to stay focused on framework development and cooperation.

Bring the beneficiaries' voices into the boardroom

The participation of target populations in development initiatives can strengthen projects and enhance sustainability. In the development of the harmonized management framework, current and former mineworkers were able to share their unique insights, knowledge, and perspective through their representatives. Inclusion of the beneficiaries' voice led to greater openness, helped to generate trust, and improved feedback channels. By integrating current and former mine-workers' views into the policy development process, the framework represents and reflects the ideas and specific needs of those most affected by its implementation.

Maximize the capacity of national programs in regional projects

Although countries may have divergent views and processes, leveraging the experiences and resources of national TB programs and tailoring new approaches to individual countries, which the country consultations facilitated, were useful. Although the overarching guidelines and principles of the harmonized management framework may have been agreed on at the regional and global level, the partners' commitment and capacity to harmonize had to be firmly anchored in national mechanisms. Therefore, for the framework to be operational at the local level, it had to closely align with national program and priorities. Extensive engagement with the national TB program of each country strengthened operational responsibility and authority for coordination, supervision, and support of the Southern Africa TB in the Mining Sector Initiative.

Ensure that adequate human resources are available to adopt and operationalize strategies and plans

Inadequate human resource capacity has delayed actual implementation of the harmonized management framework. After the framework was signed, a plan for its dissemination among the four countries included the development of training modules and the training of trainers for key health personnel. However, the capacity and practicability of operationalizing the framework require further discussion among the key stakeholders, who may wish to consider prioritizing rapid implementation and expanding human resources so that the momentum and spirit of cooperation are not lost.

CONCLUSION

The signing of the Framework for the Harmonized Management of Tuberculosis in the Mining Sector in March 2014 was a historic and unprecedented achievement in the fight against TB in the mining sector in southern Africa. The framework itself was unparalleled in many ways. Although it built on existing

SADC initiatives to support improvements in service provision for mobile populations, the document was a first step toward harmonized disease management in the subregion. These efforts and results suggest that moving from declaration to action and achieving a truly harmonized approach in which all partners—public, private, multilateral, and bilateral—are aligned around a single coordinated framework is possible within a relatively short time frame. Moreover, with strong support and continued commitment from national and regional stakeholders, countries have the potential to substantially extend the reach of critical TB services to current and former mineworkers, as well as their families and communities.

5 Including Beneficiary Voices in the Regional Effort to Address TB in the Mining Sector

National associations representing current and former mineworkers in Lesotho, Mozambique, South Africa, and eSwatini have played a critical role in raising awareness among their members and mining communities of the risk factors for and impact of tuberculosis (TB) infection. As representatives of mineworkers, these associations have a unique and valuable perspective on issues that are important to their members, and they are well equipped to offer specific guidance on the key challenges they face. Recently, these associations expanded their efforts by joining forces through a regional body. Together, they have provided significant input into the design and delivery of the Southern Africa TB in the Mining Sector Initiative. The national associations of Lesotho, Mozambique, South Africa, and eSwatini officially formed the first regional mineworkers' association, the Southern Africa Miners Association (SAMA), in October 2011. SAMA is a coalition aimed at addressing the challenges faced by current and former mineworkers in the region and building their capacity to address a broader mandate.

Both the national associations and SAMA have been closely involved in the Southern Africa TB in the Mining Sector Initiative, advocating for the signing of the Southern African Development Community (SADC) Declaration on TB in the Mining Sector in 2012, providing inputs in the development of the Framework for Harmonized Management of Tuberculosis in the Mining Sector in 2013, and participating in the Project Implementation Committee (PIC), which oversees the initiative's activities. One of the most significant achievements resulting from their participation in the initiative is the increased recognition that mineworkers, especially former mineworkers, have received at both the national and regional level. Such recognition has led to several studies that aim to identify and explore barriers that prevent mineworkers from accessing care (see box 5.1). The associations' contributions to this effort have reaffirmed the power of collective voice and have demonstrated how ideas that have been harnessed from beneficiaries can be successfully shaped into concrete policy actions.

How were current and former mineworkers' views and experiences incorporated in the regional Southern African TB in the Mining Sector Initiative? How were more meaningful opportunities to engage—for example, in the areas of

agenda setting and the development of policy frameworks—facilitated? This case study summarizes how current and former mineworkers in southern Africa, through their membership organizations, have successfully engaged key policy and decision making at both the national and regional level and have advocated for the inclusion of their voice, perspective, and needs in the development of TB policies and practices.

BOX 5.1

Human rights and gender barriers to accessing TB, TB/HIV, occupational lung disease, and compensation services in the mining sector

In 2016, the World Bank funded a survey on accessing TB, TB/HIV, occupational lung disease, and compensation services in the mining sector and the mapping of civil society actors in 10 countries in southern Africa. The overall objective of the survey, implemented by the African Comprehensive HIV/AIDS Partnerships (ACHAP), was to identify the human rights and gender barriers faced by mineworkers, former mineworkers, and their families and communities in accessing TB/HIV, occupational health services, and compensation.

Key findings of the study included:

- Women’s participation and representation.* Women were underrepresented in the mining sector, constituting only 12 percent of employees, and when women were employed, they were in the lower ranks as compared with their male counterparts. The study also found that women’s participation in decision making was low, slightly above 5 percent. Qualitative data indicated that two key factors constraining women’s participation in the mining sector were the burden of care borne by women in their homes and communities and their lack of access to information and health services. For example, some women could not work overtime because of household responsibilities. And women’s participation in the night shift was virtually nonexistent. Qualitative data also indicated that the work conditions present at the mines were not always conducive to women’s participation. In all 10 countries surveyed, the lack of sensitivity to women’s needs was cited as a barrier to women’s participation in the workplace. Examples are lack of respect for a women’s right to maternity leave, insensitivity
- toward time taken off to attend to child care responsibilities, and lack of sanitary facilities. The study also found that women constituted the majority of contract workers. Contract workers are usually employed through “labour broker schemes,” otherwise known as temporary employment agencies. Workers who are employed under the labour broker schemes are more vulnerable to low wages, job insecurity, and reduced benefits, thereby compromising their status within the mining employment sector.
- Collective action.* The participation of civil society organizations that focus on human rights and gender in the mining sector is weak. Where those organizations exist, their capacity is constrained by lack of funding. Very few of the 106 civil society organizations documented focused on women’s human rights.
- Nondiscrimination and equality.* Discrimination against women in southern Africa manifests itself in their exclusion from meaningful participation in the economies of their countries. The study found that male-dominated cultures and mines discriminated against women and that inequitable access to sexual and reproductive health (SRH) services in the mines appeared to perpetuate the gender discrimination in access to health services, with male-centered SRH services more available than women-centered SRH services. The study also found that the negative cultural attitudes toward men who disclosed their serostatus posed a barrier for men in seeking early treatment for HIV and TB. Therefore, there is a need to address societal attitudes toward men in relation to their access to health services.

continued

Box 5.1, continued

- *Protection and empowerment.* The study revealed limited information on the duty of mining companies and labor unions to protect women from discrimination, violence, and sexual harassment. In November 2015, the Centre for Applied Legal Studies at the University of the Witwatersrand submitted evidence to the United Nations Commission on Human Rights of gender-based violence in mines. It noted, “The phenomenon is occurring in part due to the regulation that requires 10 percent of all mineworkers to be female. This small percentage, however, means that women are a minority of underground workers and, as such, are extremely vulnerable to sexual violence.” Other factors contributing to sexual violence toward women working underground in mines include the prevalent gender norms in mining, lack of security, and lack of policies around gender-based violence in mining. Although many cases of sexual violence go unreported and there is a paucity of recently documented cases of sexual violence in mines across SADC countries, the phenomenon is reportedly a challenge in many communities.
 - *Sexuality.* The study sought to identify attitudes toward the lesbian, gay, bisexual, transgender, and intersex (LGBTI) persons and their access to services. It appears, however, that the existence of LGBTI persons was denied, or, because of stigma and discrimination, the right of LGBTI persons to be heard was constrained. Therefore, more research is needed on the LGBTI population in the mining sector
- See appendix D for a full description of the study results.

INITIAL SITUATION

Despite their active involvement in former mineworkers’ issues at the country level, national mineworkers’ associations in Lesotho, Mozambique, South Africa, and eSwatini have been constrained in their operations by limited opportunities for policy engagement and limited resources. Meanwhile, small-scale, short-term interventions within the region—for example, funded by the World Bank, International Organization for Migration (IOM)/Netherlands, and U.S. Department for International Development—have aimed at building the capacity of these associations. National associations often pursue interventions that are limited to the provision of information on TB care, treatment, and compensation, but these associations are not operating on a scale that can have an impact, and some require technical support to build their capacity to address a broader mandate. In addition, these organizations have had limited reach and influence with their respective governments as well as limited platforms for policy engagement.

KEY STRATEGIES

With support from the Southern Africa TB in the Mining Sector Initiative, both the national associations and SAMA have collaborated closely with strategic partners to sustain high-level political attention to the key health and social issues affecting mineworkers. At the national level, the associations have held

sensitization workshops and other programs on screening for occupational TB and silicosis, as well as care and treatment services. At the regional level, as a representative of the national associations, SAMA has engaged and influenced key political and economic decision makers and mobilized broader public and political support for mineworkers' rights. SAMA has also worked closely with the national associations to support former mineworkers and their beneficiaries in their efforts to access financial and social benefits and occupational health services. Working together to leverage their complementary strengths and perspectives, these membership organizations have played an important role in integrating beneficiaries in the initiative through the strategies described in the sections that follow.

Building a strong alliance

SAMA's formation as a representative body of current and former mineworkers was a critical first step toward uniting the national associations, establishing a collective regional vision and agenda, gaining mineworkers' participation and buy-in, and including their voices in the specific interventions designed to serve them. Before SAMA was established, national associations found it challenging to collaborate and coordinate with each other because of both limited opportunities and resources. Since the associations joined efforts, identification and prioritization of mineworkers' needs have been enhanced. SAMA is representing mineworkers across regional platforms—for example, in the Project Implementation Committee and at regional consultations and regional workshops—while the national associations serve as the primary actors operating on behalf of current and former mineworkers and their dependents in their respective countries.

Strategically advocating with public and private institutions and high-level political leaders

Through participation in various forums for exchange and dialogue, including national and regional consultations, workshops, and meetings, the membership organizations have engaged in high-level advocacy with ministry officials, mining companies, mining unions, donors, and other partners. The four national associations began initial engagement around TB issues at the regional level when the World Bank disseminated findings from the 2010 study conducted by South Africa's National Institute of Occupational Health (NIOH). The study highlighted the burden of TB and TB/HIV (human immunodeficiency virus) in the mining sector in Botswana, Lesotho, Namibia, and eSwatini, and provided evidence for development of the SADC Declaration on TB in the Mining Sector. In addition to illustrating the impact of TB on the economy, findings from the study increased awareness of the associations' critical role in reaching mineworkers with information about health and other social services. Each association was then invited by its respective ministry of health or ministry of labor to take part in a national consultation on TB in the mining sector in early 2012.

These consultations were aimed at soliciting the views of key stakeholders, including mineworkers' associations, on critical challenges, programmatic interventions, and recommendations. They marked the first formal recognition of

the national associations by their respective ministries. The national associations, represented by SAMA, were then invited to participate in a regional stakeholders' consultation meeting on TB in the mining sector in South Africa in March 2012. There, the associations presented critical information on the burden of TB among mineworkers in their respective countries and the ways in which they were exposed to the disease. These opportunities created space for real dialogue and formed the basis for improved relationship building between current and former mineworkers, mining companies, unions, and other groups. They also provided a platform for the organizations to showcase their strength as a powerful vehicle for influencing and achieving mineworkers' goals, especially around the need to improve compensation funding mechanisms and address the major challenge of silicosis and other related lung diseases.

Contributing inputs to regional legal and policy frameworks

The critical information presented by the national associations and SAMA at the regional SADC-level multistakeholder consultation organized in March 2012 was considered during the drafting of the SADC Declaration on TB in the Mining Sector in 2012 and was reflected in a number of areas for urgent action identified in the document. In 2013 the national associations, again represented by SAMA, were actively involved in drafting the Framework for the Harmonized Management of Tuberculosis in the Mining Sector, highlighting the needs of and barriers faced by mineworkers, particularly around the cross-border referral process and the challenges associated with maintaining a continuum of care when returning to their home countries. These consultations provided the associations with a high-level platform to specify those areas requiring more attention and financial resources from decision makers. Those areas include the occupational risks and realities of working in the mines such as level of exposure to silica dust, poor living conditions, the issues faced by mineworkers' families, and the measures undertaken by mining companies and government to address gaps in service provision.

RESULTS

The effort to develop a harmonized regional response to TB in the mining sector in southern Africa has further united current and former mineworkers around a common agenda and has enhanced the capacity of their membership organizations to effectively represent their needs. Prior to this initiative, the national associations often operated in isolation, with limited opportunities to exchange information or collaborate with regional stakeholders. Recent efforts, including the formation of SAMA and participation in this initiative, have strengthened mineworkers' capacity for political advocacy, broadening their influence and participation in the policy-making process, contributing to greater awareness of their rights, and increasing their visibility and access to funding, training, and other opportunities. As a sign of its progress within the region, SAMA has expanded beyond its original base and now includes representation from mineworkers' associations in Botswana, Malawi, and Zimbabwe, which joined in 2015. Other notable achievements are described in the sections that follow.

Increased participation of current and former mineworkers in addressing TB in the mining sector

The inclusion of current and former mineworkers' perspectives in the development of the two policy documents provided the context for delivering a regional TB response in the mining sector: the SADC Declaration on TB in the Mining Sector and the Framework for the Harmonized Management of Tuberculosis in the Mining Sector. Through national level and regional consultations, the Southern Africa TB in the Mining Sector Initiative provided a platform for including the experiences, knowledge, and skills of current and former mineworkers in policy formulation and service delivery planning.¹

Increased awareness of TB prevention and care

SAMA, along with the national mineworkers' associations of Lesotho, Mozambique, South Africa, and eSwatini, has also succeeded in raising greater awareness of TB prevention and care among current and former mineworkers. Increased visibility and relevance have enabled the organizations to further extend their advocacy messages and bridge information and activities between stakeholders and affected communities. Anecdotal evidence indicates that mineworkers have become more knowledgeable about the exceptionally high risk factors associated with TB, including HIV, interrupted health care due to migration, and low socioeconomic status. Also, through this initiative the associations' advocacy and outreach efforts have increased mineworkers' knowledge of their rights—especially around social security benefits, biannual benefit medical examinations, compensation, and the urgent need to address silicosis and other occupational lung conditions. In recognition of the pivotal role these associations can play in helping former mineworkers reintegrate back into their communities, the Swaziland Migrant Mineworkers Association (SWAMMIWA) won the Investing in the Future and Drivers of Change Civil Society Award presented by the Southern African Trust in October 2015.

Improved capabilities and resources

The capacity of the national associations has been strengthened through organizational development support to improve their functionality, leadership, and service delivery. The national associations and SAMA have also benefited from expert knowledge through national and regional consultations, in addition to opportunities to engage at a high level with government and the private sector. These opportunities have enhanced their partnership and community engagement capacities, as well as their skills as negotiators and collaborators.

Increased funding for compensation

In May 2015, South Africa's minister of health launched Project Ku-Riha (which means compensation in Tsonga). This initiative of the Department of Health aims to compensate the over 100,000 current and former mineworkers suffering from occupational lung diseases, and whose applications have been pending for several years. The government of South Africa intends to pay out approximately R 1.3 billion (approximately US\$117.5 million) to this group.

LESSONS LEARNED

Applying a network approach consolidates support

Associations with a strong commitment and leadership are a powerful vehicle for advancing mineworkers' goals. Despite dealing with similar issues, the national mineworkers' associations often worked in isolation, with limited opportunities to engage and share experiences. By uniting efforts and forming a regional (network) organization, current and former mineworkers were more easily able to marshal support around a jointly identified agenda, address obstacles to consensus, consolidate and strengthen their evidence base, and mobilize resources. This process also amplified mineworkers' voices and gave them greater leverage in policy making and service delivery design during the development of the SADC Declaration and harmonized management framework.

Opportunities for learning and exchange are needed to enhance communication between national associations and government

Although the formation of SAMA played a critical role in increasing the recognition of mineworkers and uniting their voices, many challenges remain for national associations. Despite greater collaboration, political tension persists with some national governments, which believe they are best placed to address the issues of mineworkers. Accordingly, exchange visits and study tours could be used to enhance knowledge transfer and learning across countries. For example, because the associations in Mozambique, South Africa, and eSwatini collaborate quite closely with their respective national TB programs (NTPs), Lesotho's association could learn from the three about how to strengthen engagement with its NTP at the national level.

Strengthening the capacity of the leaders and members of mineworkers' associations remains vitally important

One of the main capacity constraints facing mineworkers' associations is that although the leaders of these national organizations often are well equipped to understand the challenges, needs, and opportunities of their members, they do not necessarily have the management, administrative, or technical skills needed to best undertake their work. Thus they require further mentoring, training, and skills to respond effectively to the challenges they encounter. With the exception of South Africa's National Union of Mineworkers (NUM), which has its own college (Elijah Barayi Memorial Training College, where all leaders receive political education), ways in which to address this knowledge gap in the other associations have yet to be fully explored. Additional technical and capacity-building support is needed for the advancement of the associations and the development of their leadership.

Continual awareness-raising at the community level is key to changing the mindset

Awareness and educational campaigns targeting employees and their families are still in their infancy, and the associations have limited resources to scale these up by, for example, translating some of the material into the local languages.

In addition, certain social and cultural factors continue to create barriers to mindset change around health-seeking behaviors. Cultural beliefs, particularly in rural Lesotho, Mozambique, and eSwatini, that suggest TB is the result of witchcraft, often prevent mineworkers from seeking medical help. Working with existing organizations within countries to continually raise awareness may help to circumvent some of the resource constraints and other barriers faced by the associations. For example, faith-based organizations may be best positioned to address the issues of stigma and discrimination that are typically associated with TB.

Limited operationalization at the national level of the SADC Declaration and harmonized management framework has delayed progress

Some two years after the signing of the harmonized management framework, the mineworkers' associations have observed that some health practitioners and facilities do not follow the appropriate protocols. The development and dissemination of codes of conduct would enable the associations, on behalf of mineworkers and their families, to monitor implementation and ensure their right to a decent life.

CONCLUSION

The meaningful inclusion of beneficiary views and experiences in policy and program development is widely considered good practice. When programs are being designed, the beneficiary perspective provides invaluable insight into the needs and constraints of target populations. During program implementation, beneficiaries can provide an important feedback loop to help improve program outcomes. As a powerful coalition, SAMA and the national mineworkers' associations of Lesotho, Mozambique, South Africa, and eSwatini have strengthened and promoted the representation of current and former mineworkers' voices and supported the inclusion of their needs into the key policy and service delivery frameworks driving the regional TB agenda. The organizations' calls for mutual accountability among key public, private, and government stakeholders have led to tangible results, with greater commitment to and funding of efforts to address the issue of unclaimed benefits for mineworkers and their families. Although significant progress has been achieved in bringing current and former mineworkers to the table, many more opportunities for engagement are needed to sustain mineworkers' commitment and participation and ensure that they receive the services and benefits they so urgently require.

NOTE

1. Preliminary findings from a study by Dartmouth College, University of Witwatersrand, and the World Bank on the social and behavioral determinants of TB and related health behaviors of mining communities in Gauteng and the Eastern Cape highlighted the "culture of invisibility" experienced by former mineworkers and the value of including their voices and experiences in the development of new models for TB care.

6 Addressing Systemic Barriers to Improving Public-Sector Occupational Health Services Delivery to Mineworkers

Mineworkers in southern Africa often face extraordinary social, structural, and institutional obstacles to accessing health services and social protection benefits. South Africa has established a comprehensive occupational health and safety system, including legislation that governs the provision of occupational health and safety services in the mining sector. But multiple policy and legal frameworks across the Departments of Labour, Health, and Mineral Resources, coupled with different agencies and funds responsible for the provision of care and benefits to mineworkers, have resulted in a fragmented approach to the delivery of occupational health and social services (Michell and Rispel 2017). This highly fragmented approach has perpetuated and reinforced the exclusion of mineworkers, especially those suffering from compensable diseases.

The one-stop service center (OSSC) model, in which services are brought together under one roof, has emerged as a promising practice in both South Africa and globally to increase access to a range of services that are client-oriented, cost-effective, and more efficiently delivered (Mining Safety 2014)—see box 6.1. In conjunction with reforms in the public sector aimed at addressing the siloed and disconnected approach to occupational health service provision for mineworkers, the government of South Africa established four one-stop service center demonstration sites. Supported by the World Bank, the sites were intended to test the efficacy of a decentralized, integrated approach to improving health and social outcomes for mineworkers. They also are driving forward an ambitious program to address the backlog of compensation claims from mineworkers. The first demonstration site was launched in April 2014 in Carletonville, Gauteng, followed by three others in 2017. Since then, a Global Fund grant has supported the scale-up of additional sites in the region. The OSSCs provide health, rehabilitation, and social services, as well as support for accessing compensation, pension, and provident funds. As a result of this innovative pilot, clients can now be diagnosed and treated, as well as gain access to financial services, at one location.

This cross-sector, cross-systems initiative, led by the government of South Africa with funding from the World Bank, was designed in collaboration

BOX 6.1**Occupational health one-stop service centers: Key program details**

The occupational health one-stop service centers (OSSC) were conceptualized in response to several long-standing challenges of delivering occupational health and social service to mineworkers in South Africa, especially those suffering from compensable diseases. Evidence suggests that strategies to address these problems frequently cross the health, economic, social, and public and private sectors. The One-Stop Service delivery framework seeks to integrate and streamline access to services for occupational diseases, injuries, compensation, and other social protection benefits by offering comprehensive care through decentralized facilities that are more easily accessible to mineworkers.

The framework was designed in collaboration with the following key stakeholders:

- South African Departments of Health, Mineral Resources, and Labour
- South African Chamber of Mines
- South African National Union of Mines Workers

- Various government departments, employer organizations, development partners, nongovernmental organizations, and former mineworkers' associations.

Four demonstration sites were selected to test the model and to generate lessons learned from the scale-up of sites in other provinces and labor-sending countries. The first demonstration site was opened in Carletonville, Gauteng, followed by three others in Mthatha in the Eastern Cape, Kuruman in the Northern Cape, and Burgersfort in Limpopo in 2017. The Carletonville OSSC is fully integrated with the Carletonville Hospital, and the Mthatha OSSC operates at the Nelson Mandela Academic Hospital. All the OSSCs offer health and rehabilitation services, social services, and compensation and benefit management services. The OSSCs also serve as decentralized claims management centers, facilitating access to compensation and social security benefits for former mineworkers who have left the peri-mining communities and returned home.

with employer organizations, the private sector, various development partners, civil society, associations of former mineworkers, and the governments of labor-sending countries such as Lesotho, Mozambique, and eSwatini. Each partner brought unique strengths and capacities to the collaboration that have been leveraged to address inefficiencies in the system and to improve the lives of thousands of mineworkers. How was this interagency and cross-systems collaboration developed, and how can it be sustained to address the acute challenges mineworkers have faced in accessing key services and benefits? This case study examines the strategies and challenges associated with effectively delivering services in a coordinated, integrated effort to serve a population whose needs cross multiple systems.

INITIAL SITUATION

Mining and peri-mining communities in South Africa are often distressed by high levels of poverty, social exclusion, and lack of support. Mineworkers and their dependents lack access not only to health services, but also to social protection benefits. This is especially true for the estimated 480,000 former mineworkers suffering from compensable diseases (Rees 2006). A large number of former mineworkers eligible for occupational injury and disease benefits and social security benefits such as housing, medical care, and life and retirement

insurance have not received them. Key barriers are cumbersome and bureaucratic work processes and systems, including overlapping areas of oversight and regulation for occupational health and safety between the Departments of Mineral Resources and Health (the main governmental departments responsible for managing health in the mines¹); lack of a database, financial records, resources, and infrastructure to manage compensation claims; and lack of standardization in services. Furthermore, mineworkers' and their dependents' limited knowledge about how to access their rights, along with burdensome administrative formalities, have left thousands of mineworkers without access to services and benefits. The obstacles facing migrant mineworkers are particularly daunting and include challenges related to the migrant labor system and the cross-border portability of compensation and social security benefits, along with loss of patient referrals and issues with tracing mineworkers from Lesotho, Mozambique, and eSwatini (Dartmouth College 2015).

KEY STRATEGIES

By means of the OSSC structure, the South African government and its partners have sought to move beyond the fragmentation and institutional silos of the occupational health delivery system to create a sustainable framework for delivering enhanced services to mineworkers and a platform for replication in other sites and countries. The OSSC framework is also allowing government and its partners to pilot a process to close the service delivery gap and improve public sector occupational health services through use of the strategies described in the following sections.

Addressing systemic barriers

The deficiencies in South Africa's occupational health system are long-standing. They result in part from historical issues that have evolved over the past 100 years, including a compensation system characterized by racial discrimination and historical underfunding (Ehrlich 2012). To address these complex dynamics, the South African government and its partners have made significant investments in upgrading organizational structures, systems, and skills. Building on lessons learned from the Eastern Cape Ex-Mineworkers Project, which identified the need for streamlined and comprehensive health and compensation services for mineworkers,² the Department of Health strategically established one-stop service centers in mining towns and labor-sending areas. By placing the centers closer to where mineworkers live, the OSSC framework has sought to address mineworkers' mobility and time constraints. To tackle the fragmentation in the compensation system, a formal partnership was established between the Medical Bureau for Occupational Diseases (MBOD) and the Compensation Commissioner for Occupational Diseases (CCOD)—the two institutions through which the occupational lung disease compensation system for mineworkers is governed.³

The MBOD/CCOD, under its new leadership, then launched an initiative to reform the compensation process through Project Ku-Riha, an innovative public-private partnership that included a joint commitment to provide R 5 million in funding (approximately US\$450,000) from eight gold mining companies. The funding from the project enabled the MBOD/CCOD to employ

project management and technical staff, including occupational health specialists, and to develop an electronic database of current and former mineworkers that enables MBOD/CCOD to track and trace mineworkers and that will facilitate communication and compensation. The MBOD then established decentralized structures for the provision of benefit medical examinations⁴ for current and former mineworkers through the occupational health one-stop service centers and private practitioners. By addressing these systemic weaknesses, the South African government has begun to address the complex needs of a uniquely vulnerable population.

In January 2016, the deputy minister of mineral resources, Godfrey Oliphant, hosted a two-day compensation workshop at which more than 200 stakeholders addressed both the multiple inefficiencies associated with administering compensation for occupational lung diseases and possible solutions. Workshop participants included representatives of the South African government and neighboring country government officials, former mineworkers' associations, mining companies, labor unions, civil society organizations, and lawyers representing persons with civil claims against the mining industry. As a result of the workshop, five technical task teams were created with specific terms of reference to address these issues. A follow-up summit on the integration of compensation was held in May 2016, with the support of South Africa's Mine Health and Safety Council and the International Organization for Migration. The summit, which hosted 230 delegates and wide stakeholder representation from mining unions, government, development partners, and others, continued the effort to address the fragmented compensation system, with participants providing inputs on how to develop an integrated system. The summit concluded with a resolution to align the benefits of ODMWA and COIDA as soon as possible to enable the some 400,000 mineworkers working in the industry to receive the same benefits as the 14 million workers covered under COIDA. It also resolved to track and trace those former mineworkers to ensure that they received the unpaid benefits due them.

Leveraging public-private partnerships

The South African government's capacity to meet the health and social benefit needs of mineworkers has been significantly constrained by limited resources, low levels of capacity, and a lack of interagency coordination. Partnerships with both public and private stakeholders have been instrumental in testing and identifying new models of service provision and creatively responding to the complex issue of mineworkers' compensation. The OSSC structure benefits from coordination, resources, and technical assistance from a broad range of public and private partnerships. The Mthatha OSSC is fully funded by the South African government, whereas the Chamber of Mines provided seed funds for the capital costs and operations of the Carletonville OSSC. The South African government further supplied critical human resources and ground-level relationships through seconded staff and medical personnel at both the centers and the OSSC project office in Gauteng. Various donors, including the World Bank, are supporting the operational costs of the OSSCs, including the provision of technical assistance.

Building on the work of the OSSC model, Project Ku-Riha was conceived as an innovative public-private partnership aimed specifically at tackling the backlog of compensation claims from mineworkers who suffer from occupational lung diseases. The project marked a shift in the administration and operation of the compensation fund by working swiftly to operationalize a

mechanism to address the significant backlog in claims processing that has built up over years—many of which date back nearly 20 years. With the R 5 million funding commitment from the Gold Working Group composed of eight mining companies,⁵ the MBOD identified approximately 103,000 former mineworkers with compensable claims with the intention of paying out approximately R 1.3 billion (US\$117.5 million).⁶ It then collaborated strategically with the mining companies to form a working group to ensure that compensable claims were paid to claimants between 2015 and 2016. Although the process has been slow and long, the MBOD/CCOD has paid 5,820 claimants approximately R 219 million, with R 82 million going to neighboring countries between February 2016 and March 2017.

Increasing service efficiency

The health needs of mineworkers are complex and varied, requiring cross-agency and cross-sector collaboration. The OSSCs enable such coordination and collaboration because a client is able to access, for example, benefit medical exams and rehabilitation services in one place and with a single point of contact. In addition, by placing the OSSCs close to primary and secondary care, mineworkers do not have to travel long distances if they require additional treatment. The OSSCs also serve as claims management centers for compensation and other social benefits (pensions, life insurance, etc.) for former mineworkers who have left the peri-mining communities and returned home, thereby providing a much-needed mechanism to help former mineworkers navigate the often-burdensome administrative process of filing claims. Having one service delivery point for access to health care and social benefits significantly decreases travel time and costs and closes a critical administrative loop for clients who would otherwise have to visit multiple agencies and providers. This has resulted in more efficient provision of occupational health and social services, making it simpler for mineworkers who often have limited resources and already face extraordinary challenges to access care and benefits.

Promoting a learning-by-doing approach

The OSSCs have served as a model for sharing and scaling up learning and resources across services, sectors, and the region. Lessons learned from these centers were applied to other sites established in other provinces and throughout the region. The demonstration sites are contributing to better health and social outcomes for mineworkers, and they show the value of collaborating across sectors and using one-stop service provision to address the complex needs of a vulnerable and marginalized population.

RESULTS

Increased service provision for former mineworkers

Establishment of the OSSC sites has led to an improved government capacity to address occupational health and social service delivery and enhanced mineworkers' access to health and other social services.

The OSSCs provide banking and claims management services and a health clinic with x-ray and lung function testing facilities. Mobile outreach activities

targeted former mineworkers for medical assessments and claims management. The new approach to piloting services closer to the former mineworkers was made possible by funding from the World Bank, Chamber of Mines, and Gold Working Group and by support from the provincial and local governments, traditional leaders, nongovernmental organizations (NGOs), banks, and social partners.

Improved tracking and tracing of former mineworkers

The Department of Health, with assistance from South Africa's Chamber of Mines and the Gold Working Group, has developed a database that includes the demographic and medical information of 600,000 former mineworkers. It was anticipated that an additional 400,000 current mineworkers would be added to the database by 2018. In addition, the World Bank provided seed funds for the physical tracking and tracing of unpaid claimants for the period June–November 2016. The database can be used to search claimants by district and has a personalized web-based link that the OSSCs can use to inform mineworkers or their beneficiaries of their claim status. The tracking and tracing project moved the MBOD/CCOD from a passive recipient of mineworkers accessing services in Johannesburg to an active player with fieldwork in partnership with provincial and neighboring country governments, former mineworkers' associations, and NGOs supported by the World Bank, the Chamber of Mines, and the Gold Working Group. A call center in Johannesburg provides mineworkers with information about the status of their claims and answers their questions.

LESSONS LEARNED

The following key lessons emerged during implementation of the OSSC model.

Start with a solid foundation

Addressing multisystemic, multidimensional issues can be fraught with complexity. The effective design and implementation of programs within this context are never easy, and they can become particularly challenging without a flexible institutional infrastructure and adequate resources in place. The occupational health structure in South Africa was not designed to address the current burden of diseases affecting mineworkers. Two key challenges faced by the system were the lack of a functional governance structure to oversee services and limited occupational health specialists. Integration of the MBOD and CCOD, along with a dedicated project office, helped to streamline efforts and laid the groundwork for collaboration. However, the MBOD/CCOD's limited capacity to respond to and process in a timely manner the large volume of compensation claim files submitted through Project Ku-Riha and the centers, along with an insufficient budget for equipment and the limited staff at the centers, has undermined the drive of the initiative.

Although the OSSC model is a valuable innovation in occupational health and benefits service delivery, its replication should not be taken for granted. Implementation of the current model should be fine-tuned prior to scale-up. A successful roll-out of new reforms, especially those that require the close coordination and collaboration of a diverse range of partners, will depend on

laying a solid foundation that includes a forward-looking workforce as well as structural and financial management strategies that support and enable implementation.

Think holistically

Evidence suggests that integrated, comprehensive services and support are more effective for disadvantaged groups with complex needs. Innovative health programs have been designed and have found success in meeting the specific needs of these populations (see box 6.2). Although compensation for occupational TB and silicosis has been highlighted as an urgent concern for former mineworkers and their families, this concern does not take into account the longer-term structural issues of poverty and social exclusion that affect many mineworker communities (Dartmouth College 2015). In addition to tackling

BOX 6.2

Innovations in HIV and TB service delivery

As part of the broader Southern Africa TB in the Mining Sector Initiative, the Clinton Health Access Initiative (CHAI) was contracted by Aquity Innovations and the World Bank to support the delivery of targeted HIV and TB case finding, access to rapid HIV and TB diagnostic tests, diagnosis, and linkages to treatment services using innovative approaches. CHAI partnered with Jhpiego, a non-profit health organization affiliated with Johns Hopkins University in the United States, and the Mineworkers Development Agency (MDA), a development organization that provides services to former mineworkers. From February through July 2016, a HIV and TB campaign targeting former mineworkers and their family members was conducted in five districts of Lesotho; it was the largest community-level HIV and TB screening effort targeting this population in the country to date.

The following activities were carried out to achieve the campaign's objectives:

- Finding cases of active HIV and TB cases through health education, distribution of information, education, and communication (IEC) materials, voluntary HIV testing, and voluntary TB screening and sputum sample collection at MDA events scheduled during the implementation period. Other activities

were targeted community-based voluntary HIV testing and TB screening of current and former mineworkers and their family members in the Maseru, Leribe, Butha Buthe, Quthing, and Mafeteng districts of Lesotho.

- Linking newly diagnosed HIV and TB cases to follow-up care and treatment, including interpersonal therapy (IPT), using mobile technology to track the status of patients; and using a mobile payment incentive system to encourage patients to seek care.
- Building the capacity of the MDA through HIV and TB program management and financial management training to enhance its ability to provide its beneficiaries with targeted health services after the project.

Key findings and results

- Community-based case finding can substantially increase access to hard-to-reach populations, such as former mineworkers, and promote early detection of disease. The project employed a mobilization strategy that focused on sending field workers who had had experience with former mineworkers to the target communities. Those communities were identified using an existing database of former mineworkers and

continued

Box 6.2, continued

referrals from local authorities. As a result, the project registered some 7,108 individuals across 42 community outreach events and home visits, reaching over 150 percent of the project target of 5,500 clients. Of that number, 5,945 (85 percent) were current or former mineworkers, and 1,021 (15 percent) were family members. Eighty-seven percent of the participants mobilized for cluster events were male. Of the current or former mineworkers, 5,702 (96 percent) had worked in the gold mines in South Africa for an average of 23 years—almost all of them in an underground environment that increased their risk of developing TB.

- The use of mobile data collection can improve patient tracking. First, data entry through the mobile application enforced adherence to the HIV and TB testing algorithms, routing clinical staff to various outcomes depending on their selection of testing/treatment history

and symptoms. This approach ensured greater consistency than a paper-based system. In addition, electronic data collection facilitated rapid identification of individuals requiring follow-up for lab test results, follow-up household visits, or linkage to care. As a result, 100 percent of newly diagnosed TB cases and 76 percent of newly diagnosed HIV cases were successfully linked to care within two months. Data were also extracted to populate the HIV and TB register for sharing with the respective programs and the concerned district hospitals and health facilities. Finally, the availability of the outreach event data allowed rapid troubleshooting and course corrections by, for example, examining consent rates at the TB and HIV stations and event day turnout, which typically would be delayed if data storage were paper-based.

See appendix F for a full description of the study and results.

occupational diseases such as TB and silicosis, service delivery to current and former mineworkers should consider adopting a holistic approach that integrates the broader issues of wellness, preventive and primary health care, psychosocial support, and socioeconomic development. The OSSC model is an ideal entry point to a full range of health and social services in addition to those currently offered. By investing in models that have the capacity to encompass the broader social and economic environment rather than focus primarily on the crisis surrounding compensation, governments can improve the overall well-being of mineworkers and their families over the long term.

Invest in feedback mechanisms

Feedback mechanisms or loops are an important part of keeping lines of communication and collaboration open with partners, beneficiaries, and other stakeholders. They also play a critical role in strengthening program management and improving quality of care. Insufficient planning was devoted to establishing and supporting feedback mechanisms at the OSSCs, especially around staff and client satisfaction. As a result, it is difficult to gain reliable insight into the extent to which the project has fully delivered on its mandate. Feedback loops should be built into the design of the OSSC model and adapted as necessary during implementation. By systematically gathering feedback throughout implementation, the OSSCs will be better able to capture early lessons learned and adjust course as necessary.

CONCLUSION

Although issues associated with occupational health care in the South African mining industry are complex and difficult to resolve, the OSSC model has demonstrated that, with resources, commitment, and coordination, along with the combined efforts of international, national, and local actors, reforms in the occupational health system are possible. Driving this shift has been the increased pressure on governments to improve compensation benefits for mineworkers and address the lack of coordination and standardization across health and social services. By moving beyond a fragmented approach, the government of South Africa has been able to forge critical partnerships and initiate reforms of a fractured system that no single government agency, sector, or service provider could tackle alone. As a result, the decentralized OSSCs have extended services and benefits to many people and have the potential to reach significantly more across the region.

NOTES

1. The Department of Mineral Resources (DMR) administers the Mine Health and Safety Act, intended to protect the health and safety of employees. The Department of Health (DoH) administers the Occupational Diseases in Mines and Works Act (ODMWA) of 1973, which provides compensation for lung diseases contracted in mines and work. The regulator is the Compensation Commissioner for Occupational Diseases (CCOD). The Medical Bureau for Occupational Diseases (MBOD) of the DoH provides benefit medical examinations for workers claiming compensation for occupational diseases. The Department of Health, through the National Institute for Occupational Health (NIOH), is responsible for supporting the provision of effective occupational health services in South Africa, but it has no policy-making or enforcement functions in the regulation of occupational health. The Department of Labour (DoL) administers the Compensation for Occupational Injuries and Diseases Act (COIDA) of 1993, which covers all types of work other than the occupational lung diseases under ODMWA.
2. The Eastern Cape Ex-Mineworkers Project was resuscitated in 2013 to trace mineworkers from the former unrecognized state of Transkei and pay them benefits from a special fund set up by the former Transkei government. During the tracing project and meetings with former mineworkers, several concerns were raised, including access to services, interaction with multiple government departments, and payments for the record of service from the Employment Bureau of Africa (TEBA).
3. The Occupational Diseases in Mines and Works Act entitles workers with occupational diseases to receive compensation from the state. The Medical Bureau for Occupational Diseases, together with the Compensation Commissioner for Occupational Diseases, works within the Department of Health to provide services for current and former mine workers. Compensation is administered by the Medical Bureau for Occupational Disease, which is responsible for providing medical examinations for current and former mineworkers if required. The CCOD's key objective is to compensate workers for occupational lung diseases.
4. Under the Occupational Diseases in Mines and Works Act of 1973, mineworkers are entitled to a "benefit medical examination" every two years to determine their entitlement to compensation for heart and lung diseases.
5. African Rainbow Minerals, Anglo American, AngloGold Ashanti, DRDGold, Gold Fields, Harmony, Sibanye Gold, and Village Main Reef. See <https://www.business-humanrights.org/en/south-african-gold-mining-companies-form-working-group-to-compensate-workers-for-lung-disease>.
6. Compensation was paid to patients with tuberculosis, silicosis, and other illnesses, including workers from other labor-sending countries.

REFERENCES

- Dartmouth College. 2015. "Mining for Solutions: Final Report on Research Designed to Engage Southern African Mineworkers, Ex-mineworkers, Managers And Policymakers, Clinicians, and Communities on Tuberculosis to Improve Health Care Delivery." <http://pubdocs.worldbank.org/en/201901483124603161/Mining-for-Solutions-to-Health-Inequities-Voices-from-Southern-Africa-Report.pdf>.
- Ehrlich, R. 2012. "A Century of Miners' Compensation in South Africa." *American Journal of Industrial Medicine* 55: 560–69.
- Michell, K., and L. C. Rispel. 2017. "Governance of Occupational Healthcare Services in South Africa: Cohesion or Conflict?" *Occupational Health Southern Africa* 23 (2): 10–17 (March/April).
- Mining Safety. 2014. "A One Stop Service Centre for Miners to Be Opened at Carleton Hospital." <http://www.miningsafety.co.za/newscontent/712/a-one-stop-service-centre-for-miners-to-be-opened-at-carletonville-hospital>.
- Rees, D. 2006. "Silicosis Elimination in South Africa." *Occupational Health Southern Africa* 12 (1): 8–11.

7 **Developing Strategic Alliances**

ENGAGING THE MINING INDUSTRY TO ACCELERATE INVESTMENTS IN MINEWORKERS' HEALTH

Employees of the mining sector are acutely vulnerable to health and safety hazards, including occupational lung diseases. Mining companies can and should play an important role in preventing and containing the spread of disease among their workforces and in the communities in which they operate. Recognizing the inextricable link between mining and health, many mining companies, especially large ones, have programs in place to address occupational health and safety issues, as well as provide medical services to their employees and their families. Increasingly, companies are also investing in the health and well-being of former employees. For example, in South Africa companies contribute to compensation funds intended for former mineworkers who develop lung diseases such as tuberculosis (TB) and silicosis. Despite these efforts, there have been calls for medium and small mining companies to take greater responsibility for addressing the high rates of occupational TB within the mining industry.

Evidence from research on governance and mining suggests that cross-sector collaboration plays an essential role in addressing the effects of mining on mine-workers and their communities (Pattenden and Everingham 2011). In South Africa, mining companies are working in partnership with government agencies, development partners, and communities to explore ways to mitigate the negative impacts of prolonged exposure to silica dust and other occupational health risks. Since 2010, the Chamber of Mines in South Africa, on behalf of its members in the mining industry, has been collaborating closely with the Southern Africa TB in the Mining Sector Initiative to respond to the occupational risks of silicosis, TB, and the human immunodeficiency virus (HIV). Their efforts have included participation in the development of the Southern African Development Community (SADC) Declaration on TB in the Mining Sector adopted by SADC heads of state in 2012 and the Framework for the Harmonized Management of Tuberculosis in the Mining Sector in 2014. The chamber has also been working closely with the Medical Bureau for Occupational Diseases (MBOD) and the Compensation Commissioner for Occupational Diseases (CCOD) to review the regulatory framework for mine regulation; update the regulatory and legislative instruments for compensation for occupational lung diseases for current and former mineworkers; and develop innovative one-stop service centers (OSSCs),

which for the first time provide both current and former mineworkers with a comprehensive package of occupational health services.

Significantly, these recent partnerships mark a shift away from a complex and negative past. The issue of TB in the mining sector includes a history of distrust, negative perceptions, and deeply polarized conflicts among the mining industry, mineworkers and local communities, unions, and government. How did these disparate parties come to work together to tackle an enduring, well-studied, and contested issue? How has private sector involvement enhanced occupational health services and improved support for former mineworkers suffering from occupational lung diseases? This case study examines the process of developing a strategic alliance/partnership of the mining industry, government, unions, and former mineworkers in order to accelerate improvements in mineworkers' health. Indeed, the Chamber of Mines and trade unions in South Africa's mining sector, together with the Department of Mineral Resources, have set various targets for HIV, TB, and silicosis as well as noise, using the summits of 2003, 2008, 2011, and 2014 to report on progress. In June 2015, the Chamber of Mines began a screening program for TB in all current mineworkers—Masoyise iTB—which has raised the profile of TB within the current mining workforce.

INITIAL SITUATION

In South Africa, mining operations have created health risks that have increased mineworkers' vulnerability to occupational hazards. Mineworkers there carry a massive burden of silicosis and have the highest TB incidence of any working population in the world. Historically, the large number of black laborers in the mines have been subjected to harsh living and working conditions, including exposure to high levels of dust and crowded and unsanitary hostels. Many mineworkers who contracted TB were repatriated to their areas of origin without any effort to ensure continuity of TB treatment (London et al. 2014). It is believed that this practice played a significant role in driving the TB epidemic and created a pathway to propel the HIV epidemic across southern Africa (London et al. 2014). Black mineworkers have also endured the legacy of colonial rule and the apartheid system, which led to race-based standards of disease surveillance and compensation.

Despite industry awareness of the problem and knowledge of mine-related respiratory diseases for 100 years, TB rates remain at an epidemic level, with only a few of the larger mines adopting industry standards (Dharmadhikari et al. 2013). Furthermore, due to the connectivity linking mineworkers, the communities where they live and operate, and the communities where they originate, there are increased calls for mining companies to forge improved partnerships and dialogue with local mining communities. These complex and multidimensional factors have resulted in low levels of trust and limited cooperation among the mining industry, mineworkers, mining communities, and government.

KEY STRATEGIES

Balancing the roles and expectations of mining companies, government, and civil society in responding to occupational health and safety issues is a considerable challenge. Led by the World Bank, the Southern Africa TB in the Mining

Sector Initiative has served as an innovative platform to bridge divides and build trust among the mining industry, government, civil society, and the mining sector in South Africa. In this way, the initiative has served as a platform for shifting energy and focus away from a divisive debate and developing cohesion around a united vision to mitigate TB in the mining sector. Through these efforts, mining companies have been more effectively engaged and have scaled up investments in mineworkers' health through the following strategies:

Using evidence to reduce ambiguity and build trust

According to Stadler and Probst (2011), sectoral differences and suspicion often hamper any initial attempts to convene public-private partnerships. The climate of mistrust and tension that has characterized relationships among key stakeholders in South Africa's mining industry was a significant barrier to private sector engagement. Key points of contention included the reluctance of the mining industry to classify TB and silicosis as occupational diseases and the failure of the mining companies to ensure treatment of mineworkers with these diseases after they left employment. There was also a high level of skepticism about the authenticity of the mining industry's intentions and defensiveness about the "culture of blame."

The presentation of research at various multisectoral stakeholder consultations and meetings played a critical role in defining the scope of the problem in irrefutable terms and highlighting potential areas of intersectionality between the private sector and public sector. Specifically, the World Bank-funded National Institute for Occupational Health (NIOH) study and economic analysis served to outline the true scale of the problem and the benefits and costs of reducing TB in the sector. The Chamber of Mines credits the use of this evidence as instrumental in shifting perspectives within the industry as well as outlining specific areas in which the mining industry could leverage its strengths to align around the common goal of addressing TB in the mining sector. Furthermore, regular interactions, including stakeholder consultations, meetings, and workshops to discuss the mining companies' roles and responsibilities, as well as field visits to mining sites, enabled partners to develop trust and created space for exchange and opportunity to identify win-win strategies (Langeveld, Stronks, and Harting 2016). Given the diverse and often competing interests among mining companies, mineworkers, civil society, and government, closing the trust gap was a necessary step toward addressing areas of contention and building the commitment necessary to work together. The use of strategic information, coupled with the World Bank's competency to influence others by presenting models based on evidence, engendered a greater level of trust and agreement among these often-divergent stakeholders and opened the door to further conversations around potential alignments.

Identifying high-impact investment areas

Through this initiative, the mining industry was engaged to focus on strategic areas in which they could achieve a high impact and use their particular strengths. As described in chapter 6, in 2014–15 eight mining companies jointly committed to a R 5 million funding program for Project Ku-Riha—a partnership with South Africa's Department of Health aimed at addressing the backlog of compensation claims from mineworkers who suffered from

occupational lung diseases. The project will ensure that new valid claims are paid within a reasonable timeframe. Funding from the mining companies has enabled the MBOD and CCOD to employ a project manager and additional financial, administrative, and health professionals to carry out the work needed to reduce the backlog of compensation claims. Compensation was a particularly strategic and synergistic area of private sector engagement not only because of the issue's current high visibility, but also because it aligned with the mining companies' broader initiatives to address issues relating to compensation and medical care for occupational lung diseases in the gold mining industry in South Africa.

Facilitating learning from across companies

Another key strategy used to bridge divides and enhance private sector collaboration was a partnership forum to enhance learning. The dialogue processes and joint forums supported by this initiative have facilitated learning and sharing knowledge across mining companies about the practices that have been successfully developed and piloted to address TB among mineworkers and in mining communities. Kumba Iron Ore's UGM Wellness Clinic⁴ is an example of such and has been cited as an innovative model for supporting community development and improving health care in mining communities. Launched in 2007, the UGM clinic in Kathu delivers integrated TB/HIV wellness services to its employees, contractors, and the surrounding mining communities. This collaborative initiative is a public-partnership involving the mining company, which pays the operational, staff, and maintenance costs; the Department of Health, which provides antiretroviral therapy (ART) medication and medical consumables; and the municipality, which provides land, water, and electricity services. It serves as an example that other mining companies could replicate and that, if widely adopted, has the potential to improve industry practice.

RESULTS AND PROGRESS

Efforts to bridge divides and address contentious debates about the roles and responsibilities involved in tackling TB in the mining sector not only led to improved trust and collaboration among the mining industry, mineworkers, and government, but also has accelerated investments in mineworkers' health. The following results have been achieved.

Improved TB screening for mineworkers

In 2015 the Chamber of Mines jointly launched with the government, unions, and employers a major TB screening campaign in South Africa's mining sector to combat tuberculosis and HIV. Over a three-year period (2016–19), the chamber is working with the Departments of Health and Mineral Resources and four mining unions—the Association of Mineworkers and Construction Union, National Union of Mineworkers, Solidarity, and UASA (formerly the United Association of South Africa)—to screen every employee of Chamber of Mines member companies—that is, about 90 percent of all mineworkers under Project Masoyise iTB.

Improved compensation services for former mineworkers

The OSSCs, which serve as decentralized payment centers, facilitating access to compensation and social security benefits, have scaled up access to compensation services for former mineworkers in regions. Supported by a R 5 million funding commitment from the Gold Working Group, Project Ku-Riha and the MBOD have identified approximately 103,000 former mineworkers with compensable claims, and they seek to ensure that sums owed are paid to claimants over the next few years.

LESSONS LEARNED

A combination of data-driven evidence and emotional persuasion can shift the story

In 2010 South Africa Minister of Health Aaron Motsoaledi publicly stated, “If TB and HIV are a snake in Southern Africa, the head of the snake is here in South Africa. People come from all over the Southern African Development Community to work in our mines and they export TB and HIV, along with their earnings. If we want to kill a snake, we need to hit it on its head.” This strong message asserted in unequivocal terms the impact of South Africa’s mines on the spread of TB across the region. The Chamber of Mines has noted that this statement by the minister of health served as a persuasive tool to shift perceptions within the industry. The minister’s ethical and emotional appeal, coupled with the use of World Bank economic analysis data that clearly demonstrated the cost-benefit analysis of investing in TB prevention and control, created a connection between two disparate sides and catalyzed further constructive engagement.

Enforcement of occupational health and safety standards is critical

The role of mining companies in minimizing the spread of disease within their workforce is clear. They must adhere to occupational health and safety standards, improve living conditions, provide adequate health services, and invest in preventative measures for their employees. These responsibilities of mining companies are often enshrined in law. However, a critical challenge remains: monitoring and enforcing compliance with national regulations. In South Africa, despite a strong regulatory regime and a broad consensus to promote better health and safety practices in the mining industry, occupational lung diseases such as silicosis persist. It is therefore important for mining companies to avoid taking short-cuts and instead adhere to international best practices in occupational health and safety, especially because many countries lack the capacity to effectively monitor compliance.

Investments in strengthening health systems are key for long-term improvements in health

From a corporate standpoint, investing in communities is critical to sustaining a long-term partnership with the host government and the local community, as well as to maintaining a social license to operate. For this reason,

mining companies work with local health authorities to design and deliver preventative and treatment programs for diseases such as malaria, HIV/AIDS (acquired immune deficiency syndrome), and TB. Unfortunately, these efforts are usually part of a broader corporate social responsibility program and are not typically integrated into broader health systems, thereby strengthening efforts at the national and local levels. It is critical for mining companies and health authorities to jointly define priorities, align interventions, and capitalize on their respective comparative advantages so that mining companies can support critical investments in strengthening health systems.

CONCLUSION

The Southern Africa TB in the Mining Sector Initiative reflects the significant commitment of mining companies, governments, civil society, and mineworkers to bridging divides and achieving consensus on a plan to improve occupational health and safety in an industry that remains hazardous. The initiative has succeeded in laying the groundwork for collaboration in an environment in which the starting point was characterized by low levels of trust, limited political will, and limited cross-sectoral engagement. Despite competing priorities among key stakeholders, the initiative has shown that a strategic alliance between private and public sector actors developed through a collaborative approach can help to set aside the key barriers to engagement. It has also served as a platform to bring the mining industry together to create a consensus on how it can continue to improve and strengthen the practices devoted to defeating TB. In this way, the initiative has provided a tremendous opportunity to demonstrate how enhanced collaboration among the health, labor, and mining sectors, along with mining communities, can stimulate mining companies to look beyond their immediate business imperatives. These developments should in turn help contribute to increased accountability in the mining sector—including the prospect of safer work environments and healthier and more productive workers.

NOTE

1. Anglo American's iron ore company.

REFERENCES

- Dharmadhikari, A., Jonathan Smith, Edward A. Nardell, Gavin Churchyard, and Salmaan Keshavjee. 2013. "Aspiring to Zero Tuberculosis Deaths Among Southern Africa's Mineworkers: Is There a Way Forward?" *International Journal of Health Services* 43 (4): 651–64.
- Langeveld, K., Karien Stronks, and Janneke Harting. 2016. "Use of a Knowledge Broker to Establish Healthy Public Policies in a City District: A Developmental Evaluation." *BMC Public Health* 16: 271. <http://doi.org/10.1186/s12889-016-2832-4>.
- London, L., Godfrey Tangwa, Reginald Matchaba-Hove, Nhlanhla Mkhize, Remi Nwabueze, Aceme Nyika, and Peter Westerholm. 2014. "Ethics in Occupational Health: Deliberations of an International Workgroup Addressing Challenges in an African Context." *BMC Medical Ethics* 15: 48. <https://doi.org/10.1186/1472-6939-15-48>.

- Pattenden, C., and Jo-Anne Everingham. 2011. "Cross-Sectoral Governance: A Comparison of International Responses to Mining and Community Impacts." *SR Mining*. <https://www.csr.uq.edu.au/publications/cross-sectoral-governance-a-comparison-of-international-responses-to-mining-and-community-impacts>.
- Stadler, L., and Gilbert Probst. 2011. "How Broker Organizations Can Facilitate Public-Private Partnerships for Development." *European Management Journal* 30 (1): 32–46. <https://doi.org/10.1016/j.emj.2011.10.002>.

8 Key Enablers of and Barriers to Implementing a Regional Multisectoral Partnership Initiative

The case studies in this book demonstrate the opportunities and challenges encountered in working with a cross section of diverse partners to address a complex, multidimensional health issue. They also offer an invaluable chance to reflect on the practicalities of regional collaboration in the process of monitoring, tracking, and sharing health information across borders. Although there were differences in the case study settings, models, and mechanisms, several cross-cutting themes emerged. A summary of key enablers and barriers that exist across the case studies follows.

KEY ENABLERS

A backbone or lead agency

There is strong evidence that using a common focal point or lead agency increased trust, which was critical to gaining buy-in from all partners. Responding to the call of the ministers of health of Lesotho, Mozambique, South Africa, and eSwatini in 2012, the World Bank accepted the role of convener and partnership and knowledge broker of the regional initiative. In this capacity, the Bank served as an independent partner to identify gaps, set priorities, provide technical assistance, and establish standards. Drawing on its ability to convene high-level political leaders such as the ministers of health from the four countries, along with academic and policy experts, the Bank engaged support from partners in the public, private, and civil society organization sectors and fostered cross-sector collaboration by serving as a knowledge hub for the ongoing and widespread sharing and synthesizing of evidence at the national and regional level. Furthermore, the Bank marshaled significant investments in this regional initiative by organizing \$30 million in Global Fund financing and providing an additional \$120 million in World Bank funding.

Champions

Consistent with the literature on multisectoral partnerships, the importance of champions—effective catalysts of change and enabling mechanisms for cross-sectoral collaboration—are highlighted in all the case studies in this book (WHO 2013). Specifically, leadership and commitment at the highest political level have been cited as fundamental to the success of the signing of the Southern African Development Community (SADC) Declaration on TB in the Mining Sector and the Framework for Harmonized Management of Tuberculosis in the Mining Sector. Key participants who championed the Southern Africa TB in the Mining Sector Initiative its early stages and placed the issue of tuberculosis (TB) and mining on the SADC agenda in November 2011 included Dr. Aaron Motsoaledi, minister of health of South Africa, Dr. Mphu Ramatlapeng, vice chair of the Global Fund Board and former minister of health of Lesotho; and Benedict Xaba, minister of health of eSwatini. Moises Uamusse, secretary-general of the Southern Africa Miners' Association (SAMA), was a driving force behind the success of bringing the concerns of current and former mineworkers to the table and ensuring they had an effective platform for policy engagement within the context of occupational health. South Africa's compensation commissioner and minister of health played a central role in designing and initiating Project Ku-Riha and advocating an overhaul of South Africa's compensation and occupational health systems. Cross-convenorship by the Departments of Health and Mineral Resources was made possible by the leadership and active participation of the deputy minister of mineral resources. Finally, the Chamber of Mines and the Gold Working Group representing the gold mining companies served as effective leaders in unifying the mining sector around the need for action based on evidence and identifying key areas of engagement.

Win-win strategies

The use of win-win strategies facilitated cross-sectoral collaboration by enhancing buy-in and the feasibility of the initiative across sectors (Molnar et al. 2016). Areas in which win-win strategies were used included the following:

- Using economic evidence to develop a shared understanding of and language about the nature of the problem by actors from different sectors
- Targeting multiple outcomes—that is, harmonizing the families of drugs included in the TB treatment regimens rather than stipulating the specific drugs to be used to appeal to or accommodate different country preferences during the process of developing the harmonized management framework.
- Advocating with a collective voice through the formation of SAMA, which further amplified the efforts of each national member organization.
- Addressing legacy issues by seeking to find a solution to the considerable backlog of compensation claims from current and former mineworkers through Project Ku-Riha, which was actively driven by both the mining industry and the Department of Health.
- Providing one-stop service centers (OSSCs) to extend decentralized services to former mineworkers.

Opportunities for knowledge exchange

The fragmented nature of the relationships among key stakeholders dealing with TB in the mining sector limited their communication and cooperation.

Creating a dialogue between these sectors has influenced policy and contributed to numerous positive outcomes, including the signing of the SADC Declaration; the development of the harmonized management framework; the increased agency of current and former mineworkers; the development of the OSSCs; and the improved mining sector engagement and commitment to addressing TB.

KEY BARRIERS

As with any venture involving multiple partners, several barriers had to be tackled before significant achievements could be recorded. The key barriers to the Southern Africa TB in the Mining Sector Initiative are described in the following sections.

The absence of multicountry, multisectoral coordination and leadership focal points

Countries in the southern Africa region have signed the SADC Declaration on TB in the Mining Sector. A Project Implementation Committee has also been established to provide technical leadership. So far, the ministers of health of the signatory countries have shown the political will to address TB in the mining sector. However, the responsibilities of the sectors involved in the management of TB are not clearly delineated, including those in health, labor, housing, minerals, and migration. This lack of clarity has resulted in dispersed responsibility and accountability for managing the TB risk, and it often means that progress is slow and uneven, which emphasizes the need for stronger regional platforms and consultative mechanisms. In January 2015, the countries signed a Code of Conduct on TB in the Mining Sector to guide implementation of the SADC Declaration (see appendix A) and established an Inter-Ministerial Committee on TB in the Mining Sector. However, operationalization is needed of the structures put in place to help achieve a coordinated response.

Variations in strengths and weaknesses of leadership and governance structures at the country level

In most of the project countries, regional, national, and district-level management teams are overseeing health services delivery. Policies, strategies, guidelines, supervision, monitoring, and capacity development are coordinated at the national level with the participation of a wide range of stakeholders. Subnational structures are then expected to implement measures agreed on at the regional and national level. However, the strengths and weaknesses of these structures vary across countries. As can be expected, the weaknesses have adversely affected the effective coordination and implementation of this regional initiative.

Limited community engagement

Inadequate investment and the weak capacity of community systems for the key affected populations have hindered more meaningful community-level partnerships and the provision of adequate TB care and prevention across the four countries.

REFERENCES

- Molnar, A., Emilie Renahy, Patricia O'Campo, Carles Muntaner, Alix Freiler, and Ketan Shankardass. 2016. "Using Win-Win Strategies to Implement Health in All Policies: A Cross-Case Analysis." *PLoS ONE* 11 (2): e0147003. <https://doi.org/10.1371/journal.pone.0147003>.
- WHO (World Health Organization). 2013. *Interprofessional Collaborative Practice in Primary Health Care: Nursing and Midwifery Practices: Six Case Studies*. Human Resources for Health Observer, Issue No. 13. Geneva: WHO. http://www.who.int/hrh/resources/IPE_SixCaseStudies.pdf.

3 Maintaining Momentum

9 Recommendations

The case studies in this book were selected because they are good examples of how a multisectoral partnership has advanced efforts to scale up tuberculosis (TB) prevention, care, and treatment in the mining sector in southern Africa. Although many of the insights are context-specific, these case studies nonetheless reveal some common components of success, transferrable knowledge, and evidence-based recommendations that can guide other initiatives. The following recommendations are offered to governments, civil society, development partners, and other key stakeholders interested in utilizing multisectoral partnerships to mobilize action for cross-border or regional health interventions.

RECOMMENDATION 1: CREATE A "BURNING PLATFORM"

Mobilize stakeholders and resources with a hot button issue that gives them a reason to act immediately. The issue of TB in the mining sector presented many serious strategic and compelling challenges that required immediate action. Among them were the exceptionally high risk of TB faced by mineworkers; the epidemic-like TB incidence rates among mineworkers (10 times higher than the World Health Organization threshold for an epidemic); and the cross-border nature of the disease. Together, these crises created a compelling story that appealed to a broad audience, aligned with emerging global health priorities, and marshaled significant stakeholder commitment and resources to launch a comprehensive regional effort.

RECOMMENDATION 2: SEEK POLITICAL WILL AND COMMITMENT AT THE HIGHEST LEVEL

Secure political commitment as a catalyzing force at the very beginning of the process to stimulate action. Without political backing and commitment from the highest levels of government for the partnership's mandate, the initiative may never have gained the necessary steam to take off. The endorsement of the

SADC Declaration on TB in the Mining Sector signed by the 15 SADC heads of state was a significant expression of the highest levels of political will and commitment. It further elevated the long-standing issue of TB in the mining sector and galvanized key stakeholders—government, civil society organizations (CSOs), and development partners—to support a plan to identify a comprehensive regional solution.

RECOMMENDATION 3: PRESENT A STRONG BUSINESS CASE

Support partnerships and interventions with a robust business case that supports broader health policy initiatives to enhance the likelihood of success. In this effort, the World Bank's economic analysis provided data on the economic benefits of TB control, estimated the return on investment, and recommended high-impact interventions that could maximize investment in TB control in the mining sector of Lesotho, Mozambique, South Africa, and eSwatini. The Bank's study was also one of the key data sources that informed the development of the TB service delivery model. By presenting a strong business case, which clearly demonstrated benefits for both public and private sector actors, along with the potential benefits for the wider society, the initiative succeeded in moving from partnership discussions into collective action.

RECOMMENDATION 4: USE EXISTING NETWORKS

Establish partnerships by using existing networks and build on previous efforts, particularly in the early stages when ongoing attention, resources, and relationships are required. To circumvent, ignore, or fail to engage with existing networks might be counterproductive and generate opposition to well-intentioned initiatives, even those that would benefit those networks. The TB in the mining sector project began with discussions at the Stop TB Partnership Coordinating Board, which subsequently evolved into a platform strongly supported by the World Bank, Global Fund, World Health Organization (WHO), International Organization for Migration (IOM), and other partners. As a result, this platform benefited from the networks, relationships, and progress that had been developed over several years.

RECOMMENDATION 5: ENSURE LEADERSHIP ROLES FOR BENEFICIARIES WITHIN THE PARTNERSHIP MODEL

Determine the appropriate mechanisms and resources to ensure that beneficiaries provide leadership, capacity building, and coordination support in designing the interventions. In the case of TB in the mining sector, current and former mineworkers and the mining communities are the primary stakeholders. Thus their unique perspectives provide an invaluable opportunity to deepen and improve outreach strategies and develop innovative models of care. The Southern Africa Miners' Association (SAMA) provided its members with a strong collective *voice* and a platform to engage with policy makers and other stakeholders. Its inclusion in the development of the Global Fund grant, for example, led to the

design of better-targeted and more robust service delivery interventions for beneficiaries. Such approaches encourage the formation of partnerships that maximize the contributions of and benefits to affected communities.

RECOMMENDATION 6: SHARE INTELLIGENCE

Intelligence sharing through partnerships increases the insight and the value it can bring and supports a more coherent strategy. The various partners and sectors involved in multisectoral initiatives often collect their own data, but they all are likely to have access to information that can benefit everyone. Multistakeholder consultations provided the forum through which the mining industry, ministries of health, development partners, unions, CSOs, and beneficiaries could share their sector-specific data and information.

RECOMMENDATION 7: STRENGTHEN MEASUREMENT OF IMPACT

Promote and reinforce a culture of measurement, information use, and continual process improvement through high-quality research. As part of this broader TB initiative, several research studies were conducted to inform a strategy for implementing critical TB interventions. These included studies on developing innovative service delivery models and cross-border referral mechanisms, addressing human rights and gender issues, and designing a minimum package and models for the provision of occupational health services. This research laid the groundwork for the scale-up of improved TB services and helped to make a strong case for additional funding through the Global Fund and World Bank mechanisms.

10 Future Directions

Despite the achievements that have been made thus far in the Southern African TB in the Mining Sector Initiative and their potential to strengthen tuberculosis (TB) interventions, critical gaps remain in addressing barriers to access, delivery of quality services, and increased uptake of TB services. The following steps could now be taken to provide effective support for further action in this area at the country and regional level:

- *Community mobilization, education, and awareness to address misinformation about TB.* The stigma and discrimination associated with TB remains a major barrier to successful prevention, treatment, and care programs. Because of fear of disclosure, distrust of health care staff, and concerns about patient confidentiality, some mineworkers have not sought medical care, or they have delayed treatment. The combination of mineworkers' fears and stigmatizing behaviors within communities and health care settings threaten to stall progress. Increased community mobilization, sensitization, education, and sustained awareness are needed to improve TB case detection and adherence (see appendix C for a case study on successful measures to improve adherence to TB treatment). These activities are also needed to help develop comprehensive care and support services for current and former mineworkers that are more relevant, patient-centered, and tailored to their specific needs.
- *Regional tracking and tracing of mineworkers.* Challenges in continuity of care for mineworkers persist because an effective regional referral and monitoring system is not in place. A regional tracking and referral system is critical to ensuring that patients can access care no matter where they are. Such a system will also help to significantly reduce the risk of drug resistance and ongoing transmission of TB among mineworkers, their families, mining communities, and labor-sending communities. Through the Global Fund project, a database of all mineworkers in the 10 countries in southern Africa is being developed to enhance the tracking and tracing of mineworkers and service delivery efforts. The aim is to provide selected health professionals in the Southern African Development Community (SADC) region with access to the database so that patient information can be shared between health

professionals across borders. Despite this progress, significant cooperation, resources, and momentum from all stakeholders is still needed to ensure that systems and services are developed and are fully functional across countries.

- *GIS mapping of mineworkers and health services.* In 2014 geographic information systems (GIS) mapping was undertaken to place current and former mineworkers who were working or had worked in South African mines, along with their families, in relation to the geographic location of health facilities. This effort generated accurate, detailed, and up-to-date information on the demographic characteristics of current and former mineworkers and the availability of and level of TB screening and treatment facilities close to where they lived. The next phase of this process includes assessing the quantity and quality of health service inputs available for the provision of TB services in the identified health facilities and creating unique identification of all current and former mineworkers, mapped to geographic locations. Mapping will include collecting the following information on current and former mineworkers: demographic information, employment history, knowledge and awareness of the relevant health issues and available services, and perspectives on access to health and TB care. GIS addresses for health facilities and information on other health services will enable planners at various levels to plan for future health needs and priorities and develop the appropriate referral pathways. The information gathered has tremendous potential to redefine how health services can be provided in rural communities and to disadvantaged groups.
- *Inclusion of women in the mining industry.* Female mineworkers face a multitude of challenges. Complementary investments are needed to create an enabling environment for the greater representation and participation of women in the mining sector. Specific investments might include the development of gender policies, enhanced social support systems to enable women to work outside of the home, and improved health services and facilities in the mines. These investments will contribute to the elimination of the discrimination against and exclusion of women, including sexual and other forms of harassment and violence. They will also increase women's ability to participate actively and benefit from development processes, including work in the mining sector, in a sustained and effective manner.

Appendix A

SADC Code of Conduct on Tuberculosis (TB) in the Mining Sector

SOUTHERN AFRICAN DEVELOPMENT COMMUNITY (SADC) THE CODE OF CONDUCT ON TUBERCULOSIS (TB) IN THE MINING SECTOR

January 2015, SADC Secretariat

ARTICLE 1 INTRODUCTION

This document is the Code of Conduct for TB in the Mining Sector (herein after referred to as the Code) which addresses TB, TB and HIV, Silicosis and other occupational respiratory diseases affecting mine workers, their families and their communities. It provides principles for operationalising the Declaration on Tuberculosis in the mining sector (herein after referred to as the Declaration) which was signed by the SADC Heads of State and Government in Maputo, Mozambique in August 2012. The Declaration on TB in the Mining Sector was developed in recognition of the contribution of the mining sector to the economic development of the region, and the realisation of the disproportionately high levels of TB, TB and HIV, and Silicosis among people working in the mining sector. The Code also takes into account on-going initiatives by Member States to combat TB, HIV, TB and HIV, Silicosis and other occupational respiratory diseases in the Mining Sector Furthermore, it has been noted that occupational TB, TB and HIV and Silicosis were found to be eroding the contribution of the mining sector to the economic development of the region.

TB and TB/HIV epidemics in the mining sector are driven by many factors including high prevalence of silicosis resulting from long term exposure to silica

dust in the mines; and that in addition high prevalence of HIV combined with generally poor conditions of mine workers further increases the risk of contracting and developing active TB. Despite continued investment in TB and HIV prevention, treatment and care by the mining industry, the TB epidemic continues unabated.

The Code will guide Member States and Partners in the implementation of the Declaration. It provides operational guidance and strategic direction to Member States and Partners in their efforts to combat TB, TB and HIV and Silicosis and other occupational respiratory diseases in the mines. Furthermore, it provides Member States and Partners with principles and minimum standards for the control of occupational TB, TB and HIV, Silicosis and other occupational respiratory diseases in the mining sector.

The Code will also act as an instrument for resource mobilisation for the control of occupational TB, TB and HIV and Silicosis. Finally, it sets out roles and responsibilities of the various stakeholders involved in the implementation of the Declaration on TB in the Mining sector.

ARTICLE 2 DEFINITIONS

In this Code, unless the context indicates otherwise, the following terms shall have the meaning ascribed to them as follows:

AIDS: Stands for Acquired Immuno-Deficiency Syndrome. The WHO defines AIDS as “Advanced HIV infection diagnosed based on clinical and/ or immunological criteria among people with confirmed HIV infection.”

Compensation: refers to benefits payable to a mine worker or ex-mine worker, or in the case of death to his or her family, who contracts occupational TB arising out of or in the course of his or her employment in the mines.

Ex-miner worker: Any person who previously worked in a mine regardless of their immigration or employment status—fulltime/part time, contract, sub contract or casual.

HIV: Stands for Human Immunodeficiency Virus, a retrovirus that causes AIDS by infecting helper T cells and destroying the human immune system.

TB and HIV: refers to TB and HIV co-infection which is when people have both HIV infection, and either latent or active TB disease. Also for the purpose of this code, it refers to TB and/or HIV as HIV infection and infection with TB bacteria are completely different infections.

Miner’s family: refers to the current or ex-mineworkers’ spouse(s), children and immediate legal dependants.

Gender equity: refers to fairness and justice in the distribution of benefits and responsibilities between women and men.

Mineworker: Any person who works in a mine regardless of their immigration or employment status—fulltime/part time, contract, sub contract or casual.

Immigrant: a person who comes to live permanently in a foreign country.

Migrants: are persons who move to a country other than that of their usual residence for a period of at least one year, so that the country of destination effectively becomes their new country of usual residence.

Mining Community: Also known as a mining town or a mining camp is a community created around a mine to house mineworkers and their families. It exists directly at the settlement or within the immediate area of the mine and the population relies on the mine economically. Sometimes the mining community remains after all the mining activities have ceased.

Mining Sector: This refers to establishments that extract naturally occurring mineral solids, such as coal and ores; liquid minerals such as crude petroleum; and gases such as natural gas. The sector covers mine operation including establishments operating mines, quarries, or oil and gas wells on their own account or for others on a contract or fee basis, and mining support activities that include establishments that perform exploration (except geophysical surveying) and/or other mining services on a contract or fee basis.

Multi-actor responsibility: This implies that roles relating to prevention, treatment and care for TB, HIV, Silicosis and other occupational respiratory diseases are shared by governments, workers and their representatives, employers, civil society and cooperating partners. However, governments bear the overall responsibility on policy guidance and directives.

Occupational Disease: Any disease contracted as a result of an exposure to risk factors arising from work activity. Two main elements are present in the definition of an occupational disease:

- (i) The causal relationship between exposure in a specific working environment or work activity and a specific disease; and
- (ii) The fact that the disease occurs among a group of exposed persons with a frequency above the average morbidity of the rest of the population.

Occupational Respiratory Diseases: Diseases affecting the human respiratory system. Specifically, diseases affecting targeted respiratory organs.

Sending Country: is the country whose citizens leave to migrate to other countries generally to find employment. The migration may be temporary or permanent.

Receiving Country: refers to a country that has accepted to receive a certain number of refugees and migrants on a yearly basis by presidential, ministerial or parliamentary decision.

Silicosis: Belongs to a group of lung disorders called pneumoconiosis and is characterized by formation of lumps (nodules), and slowly progressive fibrotic changes in the tissues of the lungs leading to progressive impairment of lung function resulting from occupational exposure to inhalable particles of silica dust mostly from siliceous minerals mining and grinding such as coal, quartz and slate over a period of years.

Subsidiary: This refers to the use of institutions, authorities or agencies outside SADC structures to initiate and implement regional programmes using their own generated resources

Social Dialogue: a mechanism that include different types of negotiations, consultations or simply exchange of information between, or among,

representatives of governments, employers and workers, on issues of common interest relating to economic and social policy

Social Partners: Employers' associations and mining unions forming the two sides of social dialogue.

Equitable access: is the provision of access to resources, services and programs that would not otherwise be available to them due to disadvantages created over time resulting from many factors including marginalization, racism, discrimination, and oppression.

Tripartism: This is an economic affiliation of three groups, namely: government, labour and business in an economy. The three become social partners to formulate and implement socio-economic policy through cooperation, consultation, negotiation and compromise. This is the principle used by the International Labour Organisation to draft international standards and conventions, and monitor compliance.

Tripartism plus: This refers to the three social partners mentioned above working with civil society to implement this Code.

Tuberculosis (TB): is an infectious bacterial disease caused by *Mycobacterium tuberculosis*, which most commonly affects the lungs. It is transmitted from person to person via droplets from the throat and lungs of people with the active respiratory disease.

Tuberculosis in the mines: refers to TB contracted by a mine worker or ex-mine worker, arising out of or in the course of employment in the mines.

ARTICLE 3 PRINCIPLES TO THE PROVISIONS OF THE CODE

The provisions of the Code are informed and supported by the underlying principles:

Subsidiarity: The successful implementation of this code requires that all programmes and activities be undertaken at levels where they are best managed through the SADC principle of Subsidiarity. This entails promoting and encouraging the use of institutions, authorities or agencies outside SADC structures to initiate and implement regional programmes using their own generated resources.

Multi-actor responsibility: The roles relating to prevention, treatment and care for TB, HIV, Silicosis and other occupational respiratory diseases should be shared by governments, workers and their representatives, employers, civil society and cooperating partners. However, governments bear the overall responsibility.

Non-Discrimination: In the spirit of decent work and respect for the human rights and dignity of persons with TB, HIV, Silicosis and other occupational respiratory diseases, there should be no discrimination against ex-mineworkers, their families and local communities on the basis of their real or perceived health status, legal status, gender and sexual orientation.

Confidentiality: The requirement for provision or access to personal data relating to a worker's health status shall be bound by the rules of confidentiality consistent with the ILO's Code of Practice on the protection of workers' personal data, 1997.

Equitable access: Promoting fairness in the distribution of resources, particularly for those most in need and promoting people's rights to access to resources and services essential to meeting their basic needs and improving their quality of life.

Gender Equity and inclusiveness: The gender dimensions of TB, TB and HIV, Silicosis and other occupational respiratory diseases should be recognized in order to ensure equitable distribution of resources that identify the similarities and differences in the needs of men and women in the workplace. These similarities and differences are based on an analysis of the gendered obstacles that currently prevent workers from realising their potential.

Tripartism: The successful implementation of this Code requires consultation, negotiation, cooperation and trust between the three social partners in an economy namely; government, employers and workers representatives.

Social Dialogue: Implementation of policies and programmes on TB and HIV in the mines should be based on cooperation and trust among government, employers, workers and their representatives plus civil society. Employers, workers and civil society should be engaged in the design, implementation and evaluation of national and workplace programmes in the mining sector.

Respect for Human Rights: Respect for human and labour rights, including patient rights, rights to confidentiality, dignity and non-discrimination should be observed in the implementation of this Code.

ARTICLE 4 STRATEGIC GOAL

The goal of this Code is to commit Member States and Partners to achieving a vision of zero new infection, zero stigma and HIV discrimination and zero deaths resulting from TB; and reduce exposure to Silica dust to minimize the occurrence of Silicosis and other occupational respiratory diseases.

ARTICLE 5 STRATEGIC OBJECTIVES

Consistent with the Declaration, the strategic objectives of the Code are to strengthen:

- (i) Accountability, coordination, and collaboration for TB, TB and HIV and Silicosis control in the mining sector at national and regional levels;
- (ii) The policy and legislative environment for addressing TB, TB and HIV, Silicosis and other occupational respiratory diseases control in the Mining Sector;
- (iii) Programmatic Interventions for TB, TB and HIV, Silicosis and other occupational respiratory diseases control in the Mining Sector;
- (iv) Disease surveillance system for TB, TB and HIV, Silicosis and other occupational respiratory diseases control in the Mining Sector;
- (v) Programme Monitoring and Evaluation (M&E);
- (vi) Financing of TB, TB and HIV, Silicosis and other occupational respiratory disease interventions in the Mines.

ARTICLE 6 STRATEGIC ACTIONS

The following are strategic actions to facilitate implementation of the code:

Strengthening Accountability, Coordination and Collaboration for TB, TB and HIV, Silicosis and other occupational respiratory diseases control in the mining sector at national and regional levels

- (i) Develop or strengthen national and regional frameworks for coordination of issues pertaining to TB, TB and HIV, silicosis, other occupational respiratory diseases and occupational health and safety issues for all mineworkers including cross-border mine workers and ex-mine workers.
- (ii) Clearly define roles and responsibilities of stakeholders (see Articles 9 to 13 of this Code).
- (iii) Establish and/or strengthen regional and national Technical Task Teams on communicable diseases, occupational health and mobile populations consisting of relevant institutions that provide support to the implementation of frameworks and its coordination.
- (iv) Establish or strengthen regional ministerial commissions with the highest level of membership from the tripartite-plus structures to provide oversight on the implementation of the national and regional frameworks.
- (v) Establish or strengthen independent national offices to facilitate resolution of complaints related to health issues in the mining sector.
- (vi) Develop or strengthen a social dialogue mechanism to respond to TB, TB and HIV and Silicosis, and other occupational respiratory diseases.

Promoting a Supportive Policy and legislative environment for TB, TB and HIV, Silicosis and other occupational respiratory diseases control in the mining sector

- (i) Develop and/or revise National laws and policies to include TB in the occupational diseases lists as defined by the International Labour Organization and in line with provisions of the Declaration.
- (ii) Institute policies and legislation for compulsory reporting of occupational health and safety data including TB, Silicosis and other occupational respiratory diseases in a manner that respects confidentiality, dignity and non-discrimination.
- (iii) Develop, revise and implement policies and legislation on TB, TB and HIV, Silicosis and other occupational respiratory diseases in the mining sector, consistent with SADC minimum standards and international best practices.
- (iv) Create a legislative environment that supports compensation of mine-workers and/or ex-mineworkers that contract occupational TB and/or Silicosis.
- (v) Develop and implement minimum standards for addressing infection control within living and working environments of mine workers.

- (vi) Develop minimum standards for the provision of housing in the mining sector.
- (vii) Develop and/ or strengthen and enforce Legislation on the limits for cumulative exposure to silica dust in line with international conventions and best practices.
- (viii) Develop guidelines for aligning silica occupational exposure limits (OEL) with international best practice.

Strengthening Programmatic Interventions for TB, TB and HIV, Silicosis and other occupational respiratory diseases control in the mining sector

- (i) Develop and enforce minimum standards and package for programme intervention that cover prevention, treatment, care and support as well as impact mitigation for TB, HIV, Silicosis and other occupational respiratory diseases in the mining sector throughout the region.
- (ii) Develop guidelines for and promote integrated workplace wellness programmes to ensure that employers take full responsibility for the management of all TB, TB and HIV, Silicosis and other occupational respiratory disease cases including those occurring post-employment.
- (iii) Build capacity to strengthen implementation of effective interventions to ensure a safe working environment that minimizes exposure to silica dust.
- (iv) Implement operations research to support evidence based programming for TB, HIV, Silicosis and other occupational respiratory diseases.
- (v) Implement comprehensive community mobilisation programmes in the mining communities including labour supplying areas or countries.

Strengthening Disease Surveillance system for TB, TB and HIV, Silicosis and other occupational respiratory diseases Control in the Mining Sector:

- (i) Establish mandatory occupational disease surveillance and reporting of gender disaggregated data for TB, Silicosis and other occupational respiratory diseases.
- (ii) Establish & strengthen a standardized reporting of gender and sector disaggregated data on HIV according to national guidelines.
- (iii) Harmonize systems for reporting on TB, Silicosis and other occupational respiratory diseases across SADC Member States.

Strengthening Programme Monitoring and Evaluation (M&E)

- (i) Develop a regional M&E framework with standardised core indicators for TB, TB and HIV, Silicosis and other occupational respiratory diseases in the mining sector.
- (ii) Adopt and develop standardized core indicators to monitor and evaluate TB, HIV, Silicosis and other occupational respiratory diseases in the mines.
- (iii) Monitor compliance with regulations for TB, HIV, Silicosis and other occupational respiratory diseases and dust exposure.
- (iv) Monitor national budgets and expenditure on TB, HIV, Silicosis and other occupational respiratory diseases.

- (v) Develop an M&E Framework for silica dust levels in the mines and monitor compliance.
- (vi) Prepare national and regional progress reports on implementation of the SADC Code of Conduct on TB in the Mining Sector.

Strengthen Financing of TB, TB and HIV, Silicosis and other occupational respiratory diseases in the Mines:

- (i) Develop, strengthen and implement national multi-sectoral funding mechanisms for occupational TB, TB and HIV, Silicosis and other occupational respiratory diseases, and compensation obligations in the mining sector.
- (ii) Strengthen national, regional and international partnerships for resource mobilisation to support the implementation of the SADC Declaration on TB in the Mining Sector.

ARTICLE 7 IMPLEMENTATION MECHANISMS

The implementation mechanisms define the roles of different stakeholders in the implementation of the Declaration. Successful implementation of the Declaration will require the collaboration of the different stakeholders and their roles and responsibilities are defined as follows.

ARTICLE 8 ROLES AND RESPONSIBILITIES OF GOVERNMENTS

Governments of Member States will provide the overall leadership in the implementation of this Code through the provision of legislative and regulatory frameworks including the following:

- (i) Ensuring the classification of TB and silicosis acquired through work related causes as occupational diseases as defined in Article 1 of this Code;
- (ii) Providing for compulsory surveillance and reporting of gender or disaggregated occupational health and safety data including TB, Silicosis and other occupational respiratory diseases in national legislation;
- (iii) Providing relevant regulatory frameworks, and where necessary revise policies and laws on TB, HIV, Silicosis and other occupational respiratory diseases in the mining sector including prevention treatment care and support consistent with international best practices;
- (iv) Ensuring the domestication and implementation of the Code in accordance with the regional and international instruments and conventions as stated in Article 1 of the SADC Declaration on TB in the Mining Sector;
- (v) Ensuring the establishment or strengthening of independent national offices to facilitate resolution of complaints related to health issues in the mining sector;
- (vi) Ensuring the development, of a legislative environment that supports compensation of mineworkers or ex-mineworkers that contract occupational TB, and in case of death, their families;

- (vii) Establishing or strengthening national tripartite-plus consultative structures to develop and promote standards and ensure adequate development of expertise, facilities and resources for effective implementation of the Code of Conduct;
- (viii) Providing and mobilizing resources through stronger national and international partnerships to support programmes addressing TB, HIV, Silicosis and other occupational respiratory diseases in the mining sector.

ARTICLE 9

ROLES AND RESPONSIBILITIES OF MINE WORKERS, EX-MINE WORKERS AND THEIR ASSOCIATIONS

Workers will contribute to the implementation of the Declaration and this Code through full and active participation in policy development and legislation, social dialogue and constructive engagement and resource mobilization. In particular, the role and responsibilities of mine workers will include the following:

- (i) Engaging in consultations with governments to ratify and domesticate relevant conventions, protocols and recommendations that address issues of concern in occupational TB, HIV, Silicosis and other occupational respiratory diseases in the mining sector;
- (ii) Advocating for harmonization of labour migration policies and standards relevant to the prevention and control of TB, HIV and Silicosis, and that support the welfare of mineworkers, their families and communities across borders;
- (iii) Advocating for laws that enforce compensation for mineworkers, ex-mine workers and their families;
- (iv) Participate in social dialogue and protection through regional and national tripartite structures to ensure effective implementation of occupational health and safety standards and the provisions of this Code;
- (v) Advocating for Collective Bargaining Labour Agreements, to include clauses on no loss of wages, non-discrimination and provision of medical cover for treatment of all mineworkers and ex-mineworkers with occupational TB, HIV, Silicosis and other occupational respiratory diseases;
- (vi) Advocating for Collective Bargaining Labour Agreements include policies that cover and promote contract worker access to the same health care benefits as permanent employees;
- (vii) Coordinating education and awareness training for mine workers on their rights at work, TB/HIV and silicosis in the workplace and encouraging fellow workers to comply and take responsibility towards the management of all TB, TB and HIV, Silicosis and other occupational respiratory disease cases at both regional and national levels;
- (viii) Advocating for adequate structures that allow mineworker organizations to follow-up mineworkers post-employment to ensure that employers adhere to binding post-employment compensation, treatment, support and care;
- (ix) Encouraging governments and employers to put in place monitoring mechanisms and adhere to them;

- (x) Constructively engaging employers to ensure that they take full responsibilities for the management of all occupational TB, HIV and AIDS, Silicosis and other occupational respiratory disease cases; and
- (xi) Mobilizing resources through national and regional workers' structures to undertake training on programmes such as behavioural change among workers in the mines on issues of occupational TB, HIV, Silicosis and other occupational respiratory diseases including other related activities to ensure full implementation of this Code.

ARTICLE 10 ROLES AND RESPONSIBILITIES OF MINE EMPLOYERS AND THEIR ASSOCIATIONS

Employers will contribute to the implementation of the Declaration and this Code through participation in policy and legislation and social dialogue and constructive engagement of government and workers representatives, and resource mobilization. In particular, the role and responsibilities of mine employers will include the following:

- (i) Engaging in consultations with government to ratification and domestication of relevant internationally recognized conventions, protocols and recommendations that address issues of concern in occupational TB, HIV, Silicosis and other occupational respiratory diseases in the mining sector;
- (ii) Engaging in consultations with government for the harmonization and implementation of labour migration policies and standards relevant to prevention and support for mineworkers, ex-mineworkers, their families and communities across borders;
- (iii) Adhering to laws and policies that ensure safety, health and compensation for mineworkers, ex-mineworkers and their families and communities;
- (iv) Taking full responsibility for the management of all occupational TB, TB and HIV, Silicosis and other occupational respiratory disease cases including those occurring post-employment;
- (v) Adhering to national laws and policies, and negotiate with workers binding collective labour agreements that comprehensively provides for compensation benefits for occupational TB, HIV, Silicosis and other occupational respiratory diseases, including those occurring post-employment;
- (vi) Providing adequate, safe and healthy housing for mineworkers and their families;
- (vii) Providing access to health services that fulfill the needs of male and female mineworkers with occupational TB, HIV, Silicosis and other occupational respiratory diseases; and referral of such workers to treatment and care services in the community where applicable;
- (viii) Ensuring non-discrimination of mineworkers with occupational TB, HIV, Silicosis and other occupational respiratory diseases and compliance with confidentiality requirements and rights of employees;
- (ix) Ensuring collaboration between mines and national programme activities on occupational TB, HIV, Silicosis and other occupational respiratory diseases;

- (x) Developing and implementing education and awareness training for mine workers on their rights and responsibilities at work, on occupational TB, HIV, Silicosis and other occupational respiratory diseases in the workplace;
- (xi) Creating a conducive environment for workers to comply and take responsibility towards the management of all occupational TB, HIV, Silicosis and other occupational respiratory disease cases at both regional and national levels;
- (xii) Ensuring implementation of a confidential employment and health information system that enables tracking of each mineworker and ex-mine worker, regardless of employment status, health screening, appropriate prevention, treatment and medical referral as well as appropriate and timely post-employment follow-up;
- (xiii) The monitoring of dust exposure limits;
- (xiv) Ensuring that mineworkers, ex mineworkers and their families and communities have access to and benefit from prevention, treatment, care and support in relation to TB and HIV in the workplace should play a role in facilitating access to these services;
- (xv) Mobilizing financial and human resources for the implementation of the Code;
- (xvi) Developing and implementing programmes that address health in communities surrounding the mines and mine worker sending communities.

ARTICLE 11

ROLES AND RESPONSIBILITIES OF CIVIL SOCIETY

Civil Society will participate and play an active role in advocacy, dissemination and support to facilitate implementation of the Declaration and this Code. The roles and responsibility of Civil Society will include the following:

- (i) Assisting in the implementation of agreed upon minimum standards;
- (ii) Advocating for effective TB control programmes, and TB, Silicosis and HIV elimination;
- (iii) Augmenting resources to ensure implementation of the Declaration and this Code;
- (iv) Assisting in disseminating information on best practices within the region;
- (v) Providing additional human resources where needed to support implementation of minimum standards;
- (vi) Supporting the integration of TB and HIV prevention, care, and treatment programmes as well as other primary health care services; and
- (vii) Working with Member States to establish formal cross-border TB control mechanisms.

ARTICLE 12

ROLES AND RESPONSIBILITIES OF DEVELOPMENT PARTNERS

Development Partners will mainly play a supportive role in the implementation of the Declaration and this Code within the parameters set by the SADC

Declaration on TB in the Mining Sector and the strategic interventions outlined in this Code. The roles and responsibilities of Development Partners will focus on the following areas:

- (i) Participating in the joint planning, implementation and monitoring of programmes, and supporting routine reporting and recording of TB, TB and HIV, Silicosis and other respiratory diseases data;
- (ii) Providing technical assistance that is demand-driven and necessary to meet the capacity development needs identified by Member States. The capacity building initiatives should include both systems and institutions;
- (iii) Supporting the investigation and reporting of the TB burden in each Member State;
- (iv) Supporting that Member States have access to appropriate new technologies and tools for diagnosis and management of TB, TB and HIV, Silicosis and other respiratory diseases in the mining sector;
- (v) Facilitating sharing of information and good practices;
- (vi) Supporting the collection, analysis and dissemination of data on TB, TB and HIV, Silicosis and other occupational respiratory diseases;
- (vii) Programmes in the mining sector are comprehensive and accessible to mineworkers, women and other vulnerable groups; and
- (viii) Mobilising and providing financial resources to support and complement efforts of Member States in combating TB, TB and HIV, Silicosis and other respiratory diseases in the mining sector for comprehensive and sustainable programmes;
- (ix) Supporting research on TB, TB and HIV, Silicosis and other occupational respiratory diseases in the region.

ARTICLE 13 ROLES AND RESPONSIBILITIES OF SADC SECRETARIAT

The mandate of the Secretariat in the implementation of the Declaration and this Code will be to harmonize and coordinate the programmatic framework of the Code, mobilise resources, monitor and evaluate the implementation of the Code and to provide regular progress reports to Member States and stakeholders. In particular, the roles and responsibilities of the Secretariat will include the following:

- (i) Mobilising resources from cooperating partners and ensuring the SADC HIV Special Fund integrates TB;
- (ii) Facilitating the harmonisation of prevention, treatment and care policies and guidelines throughout the Region;
- (iii) Facilitating the establishment or strengthening of a regional inter-ministerial commission with the highest level of membership from the Tripartite structures to provide oversight on the implementation of the national and regional frameworks;
- (iv) Facilitating the creation or strengthening of regional and national task teams on TB, TB and HIV, Silicosis and other, occupational respiratory diseases and mobile populations consisting of relevant institutions to provide oversight of the national framework and its coordination;
- (v) Facilitating the development or strengthening of national and regional frameworks for coordination and monitoring of TB, TB and HIV,

- Silicosis and other, occupational respiratory diseases and safety issues in the mines for all workers, including cross-border mine workers and ex-mineworkers;
- (vi) Strengthening of a standardised system for reporting on TB, TB and HIV, Silicosis and other occupational respiratory diseases across SADC Member States;
 - (vii) Facilitating the establishment or strengthening of a common M&E Framework including the development of minimum standards for addressing infection control for SADC Member States on TB, TB and HIV, Silicosis and other occupational respiratory diseases in the mines; and
 - (viii) Facilitating the promotion of a stronger national and international partnerships for resource mobilisation to support programmes addressing TB, HIV, Silicosis and other respiratory diseases in the Mining Sector;
 - (ix) Encouraging Member States to ratify and implement international occupational safety and health standards through peer review and collaboration with international cooperating partners;
 - (x) Facilitating the development and implementation of a SADC communications strategy and advocacy strategy on occupational TB, HIV, silicosis and other occupational respiratory diseases;
 - (xi) Receiving National reports, collating reports, analyzing and dissemination results;
 - (xii) Coordinate efforts of Development Partners and other actors on implementation of TB and HIV, Silicosis and other, occupational respiratory diseases related activities in the region.

ARTICLE 14

MONITORING EVALUATION AND REPORTING

Implementation of the Code of Conduct must be monitored in order to objectively assess areas that are making progress and those where progress is slow. This will help to seek solutions for those areas where implementation is slow. Implementation of the Code occurs at two levels, that is, at the Member States and the regional levels:

- (i) The SADC Secretariat will facilitate development of core indicators that measure progress towards desired impacts inherent in the Strategic Goal. These core indicators will be added to the SADC Harmonised Framework for HIV and AIDS, TB and Malaria. In addition, these indicators are expected to be domesticated into national M&E systems for HIV and AIDS and TB. Member States will report on these indicators annually to the SADC Secretariat to facilitate development of a Regional Report that shows the levels, patterns and trends of these core indicators.
- (ii) The SADC Secretariat will develop a Monitoring and Evaluation Tool with specific defined indicators to be approved by Member States. The Tool will be administered in all the SADC Member States. Over and above, tracking and reporting on core impact indicators, the region will regularly report on the number of Member States that have implemented key actions articulated in the Code under each of the Strategic Objectives.
- (iii) SADC Secretariat will facilitate Regional level evaluation.

Appendix B

Framework for the Harmonized Management of Tuberculosis in the Mining Sector: An Overview

In 2012, the heads of state of countries in the Southern African Development Community (SADC) signed a declaration on TB in the mining sector. By means of this declaration, they recognized the elevated risk of tuberculosis (TB) among mineworkers in the region. One of the most pressing challenges for TB management at the regional level is the lack of harmonization of TB prevention and treatment among SADC countries.

In 2013, the governments of Lesotho, Mozambique, South Africa, and eSwatini asked the World Bank and the World Health Organization (WHO) to facilitate the development of a TB management framework that would harmonize the treatment, prevention, diagnosis, and referral of TB cases across the four countries. The development of this harmonized management framework was finalized in March 2014. The framework complements national TB strategic plans; addresses TB management for current and former mineworkers, communities around mines, and labor-sending communities; and follows WHO recommendations.

This appendix is an overview of the key elements of this framework.

GUIDANCE IN DEVELOPMENT OF COMMUNITY AND WORKPLACE TB PROGRAMS

The framework provides guidelines for conducting situation analyses in communities around mines and in labor-sending communities to provide a baseline information and inform the design and implementation of TB interventions. These include the identification of available support systems and stakeholders outside the public health system that can be mobilized to support the TB program. Guidelines on the management of TB and TB/HIV (human immunodeficiency virus) in the mining workplace are provided. These cover areas such as advocacy and education of employees, confidentiality, return-to-work policy,

referral and treatment support, continuity of treatment, and outreach to families of employees.

CLINICAL GUIDANCE AREAS

Guidance on TB screening (systematic and active), diagnosis, and treatment is provided in the framework. These include:

- Treatment protocols for drug-susceptible TB in adults and adolescents
- Treatment regimens for drug-sensitive childhood TB
- Protocol management for drug-resistant TB (DR-TB), including protocols for DR-TB case finding, diagnosis, and treatment
- Treatment regimen for multidrug-resistant TB (MDR-TB) in adults, MDR-TB in children, and extremely drug-resistant TB (XDR-TB) in adults and adolescents
- Treatment of TB/HIV coinfection
- Monitoring of DR-TB and HIV therapy in coinfecting persons, including the provision of antiretroviral therapy (ART) to adults, adolescents, and children; TB/HIV coinfection cases with DR-TB; and coinfecting patients with DR-TB.

The harmonized management framework includes recommendations on administrative, environmental, and personal protection measures for TB infection control, as well as the use of Isoniazid Preventive Therapy (IPT) among high-risk groups such as mineworkers.

COORDINATION OF CARE

The framework defines the roles and responsibilities of key stakeholders in TB management. These stakeholders include:

- National TB and HIV programs
- Employer organizations and chambers of commerce
- Mining unions
- Ministries of labor
- Development partners
- UN agencies.

INSTITUTIONAL LINKAGES FOR REGIONAL COORDINATION OF TB CONTROL IN THE MINING SECTOR

The framework outlines a mechanism for coordination between institutions in the relevant countries. Key areas highlighted to facilitate regional coordination include:

- Establishing national and regional technical working groups to focus on the adoption and implementation of the framework
- Establishing a robust tracking and referral mechanism within and between the countries
- Mapping the number and location of current and former mineworkers. This should also include the mapping of health services (quantity and quality) available in these locations.

- Need for the countries to work together with mining companies and other stakeholders to generate a database of mineworkers with a history of TB infection
- Need to establish an effective cross-border patient tracking and contact tracing mechanism.

The complete framework document is available at <http://pubdocs.worldbank.org/en/815231483123459059/Signed-Framework-for-the-Harmonized-Management-of-TB-in-the-Mining-Sector.pdf>.

Appendix C

TB Treatment Adherence Study: A Summary

ASSESSING THE EFFECTIVENESS OF AN INTERVENTION TO IMPROVE ADHERENCE TO TB TREATMENT (AND SELECT PREDICTORS OF ADHERENCE) AMONG MINEWORKERS IN SOUTHERN AFRICA

EXECUTIVE SUMMARY OF THE IMPACT OF THE INTERVENTION

Study background and context

South Africa has been home to the largest gold-producing mines for nearly a century, peaking in the 1970s, and it remains in the top five countries for gold production worldwide. These mines are considered key hubs for employment and income throughout southern Africa for migrant mineworkers, who represent over a third of the workforce of the gold mines. Tuberculosis (TB) is common among mineworkers in South Africa because of a complex mix of factors. In 2012 the Southern African Development Community (SADC) prioritized regional activities to address the burden of TB in the mining sector and to provide continuity of TB care and treatment for current and former mineworkers and their families across regions, borders, and communities. This study, called MoLeSwaSa, was coined from the names of the four participating SADC countries: *Mo*(zambique)-*Le*(sotho)-*Swa*(ziland)-*S*(outh)A(frca). In 2016, the MoLeSwaSA study was conducted to develop and evaluate an evidence-based intervention to promote adherence to TB treatment and retention in care for mineworkers with TB, particularly when they return to labor-sending areas on leave (Enhancing Care Foundation 2016).

Study objectives and methodology

The overall aim of the study was to develop, implement, and evaluate a multi-level package of interventions to improve treatment adherence, retention in care, and clinical outcomes among mineworkers with TB infection—with or without human immunodeficiency virus (HIV) comorbidity—to inform a strategy for scaling up interventions in the broader mining context. The proposed study was implemented in three phases, each with a unique methodological approach as follows:

- Phase 1: a detailed scoping study, including a desktop review and elicitation research using mixed methods, which further enriched the design of the study intervention to ensure it was current, evidence-based, culturally appropriate, and responsive to key stakeholders
- Phase 2: development, implementation, and evaluation of the study intervention in a rigorous, randomized controlled study using clinical and behavioral outcomes
- Phase 3: a cost analysis of the intervention.

Key activities

Phase 1 of this study identified key individual informational, motivational, and behavioral skill (IMB) deficits as well as structural barriers to adherence to TB treatment and care for mineworkers with TB in two gold mines in South Africa. The activities to achieve this included a desktop review, elicitation research with relevant stakeholders, and a quantitative evaluation of the experiences of mineworkers with TB who had participated in previous interventions or had recently returned from a SADC country after holiday leave in 2015. The methodology included online- and paper-based surveys, structured interviews, and focus group discussions. Phase 1 findings formed the basis for the development of an intervention implemented and evaluated in phase 2.

Phase 2 was a randomized controlled study (RCT) that sought to assess whether a multilevel and context-specific intervention involving a client-centered component, framed on an information-motivation-behavioral (IMB) skill model, and a package of systems interventions would improve adherence to TB treatment, retention in care, TB knowledge, TB stigma, and select clinical outcomes. Mineworkers with TB from the Sibanye Gold and Harmony mines were recruited to take part in the study, and they completed baseline and follow-up surveys over the six-month study period. Adherence data as recorded by the Medication Event Monitoring System (MEMS Caps) were collected over the study period as an objective measure to complement the self-reported data from the surveys.

Phase 3 of the study consisted of a cost analysis based on cost-to-company expenses to scale the intervention. This exercise sought to generate information that could help future implementers of the intervention in the mining sector understand the cost of the intervention, resource allocation, and anticipated outcomes.

RESULTS AND FINDINGS

Phase 1

In Phase 1, the elicitation research using multiple research methodologies led to the development of a multifaceted, evidence-based intervention package,

which directly addressed the needs of mineworkers with TB. Various barriers to TB treatment adherence were assessed and targeted in the intervention design, content, and approach. Specifically, the intervention package included a half-day workshop to deal with the barriers to TB treatment adherence, including limited knowledge about TB and how it is spread; lack of information on how to navigate stigma and speak to family members and peers about TB and become an advocate for TB treatment adherence and prevention; inability to address alcohol, tobacco, and traditional medication use in the context of TB treatment adherence; and inability to interpret the differences between drug regimens supplied by the mining corporations and home countries. This content was reinforced in information, education, and communication (IEC) materials made available in local languages, including a health passport and weekly SMS (text) messages. Mineworkers were also given survival kits or “goody bags” as a modest incentive to adhere to treatment during their time away from the mines over the Easter break. The bags contained a t-shirt, water flask, and refreshments.

Phase 2

In Phase 2, 153 mineworkers were recruited into the study from nine medical hubs at the Sibanye Gold and Harmony mines. Overall, intervention participants attained better overall adherence, weekend adherence, and weekday adherence compared with the control participants. The mean difference in these scores between the two groups was statistically significant ($p = 0.015$, $p = 0.005$, $p = 0.013$, respectively). However, the average treatment effect was not statistically significant for Easter break adherence ($p = 0.184$, mean difference). In addition, the risk of defaulting TB treatment was significantly increased for intervention participants versus control participants in both mining companies.

The analysis revealed that the intervention effects were more pronounced for those with lower adherence, suggesting that the intervention worked best for those who needed it most. It increased the 25th percentile of the outcome variable by 23 percent ($p = 0.018$) and the median (50th percentile) by 22 percent ($p = 0.031$), but not at any higher percentile.

Participants in the intervention group trended toward higher gains in perceived psychosocial support scores and TB knowledge, as well as reported less stigma. Data analyses revealed that, on average, the scores for perceived psychosocial support and TB knowledge increased from baseline to endpoint for both the control and the intervention group. However, the participants in the intervention group experienced much deeper increases compared with those in the control group, with a significant improvement seen with knowledge. The same direction and magnitude of impact was also evident for the composite stigma index scores, but the differences between the two study groups were not statistically significant. Thus a positive trend was achieved in the intervention group for psychosocial support, less stigma, and gains in knowledge level.

Phase 3

Phase 3 evaluated the cost-to-company expenditure for future implementers of the intervention in the mining sector. It is envisaged that mining companies could anticipate a cost of US\$234 per intervention participant enrolled, which includes covering the wages of the mineworkers for participation in the

workshops, as well as the cost of printing materials, SMS bundles, workshop facilitation, and survival kit distribution.

LESSONS LEARNED AND RECOMMENDATIONS

This study benefited from the substantial collaboration among the mining corporations, the sponsor, and key stakeholders aimed at developing, implementing, and evaluating an evidence-based, sustainable intervention that addresses the barriers to TB treatment adherence experienced by mineworkers. Without this significant partnership, the intervention would not have been successfully implemented. Such interventions require ongoing collaboration, communication, and buy-in at all levels to achieve success.

The intervention showed great promise in this small but rigorously evaluated study, and results indicate that adherence could be improved if this type of intervention is offered as standard of care to support mineworkers in TB treatment while on leave and away from the mines. Importantly, overall adherence and weekend adherence were significantly improved in the intervention group, and elicitation research confirmed that weekends often present adherence challenges for mineworkers. The intervention was also shown to improve the adherence with those who had relatively poorer adherence at baseline, reflecting significant success with those who require more support.

The logistics of scaling up such an intervention should also be thoughtfully considered because much of the care currently provided by the mines is decentralized. This requires that interventions be seamlessly integrated into routine care with existing staff and resources. This observation has led to the recommendation that a triage approach in which the intervention is provided to those who need it most may benefit the mining companies. However, it is envisaged that the mining companies would have sufficient resources and capacity to implement the intervention based on the cost analysis and given the high quality of care that is provided by the mines.

At times, the research protocol, particularly the refilling and tracking of the MEMS Caps system, could be burdensome. Although this difficulty had no bearing on intervention implementation and scale-up, more lead time may be required in the future to allow for sufficient training in the research protocol and its requirements regarding the clinical care staff who were not directly employed by the study. Nonetheless, this study offers a valuable proof of concept and will serve as an important foundation for similar interventions to be delivered in this context.

REFERENCE

Enhancing Care Foundation. 2016. "MoLeSwaSA 2: Assessing the Effectiveness of an intervention to Improve Adherence to TB Treatment (and Select Predictors of Adherence) among Mineworkers in Southern Africa." Durban South Africa, September.

Appendix D

Human Rights and Gender Barriers Study: A Summary

A SURVEY ON ACCESS OF TB, TB/HIV, OCCUPATIONAL LUNG DISEASES, AND COMPENSATION SERVICES IN THE MINING SECTOR AND MAPPING OF CIVIL SOCIETY ACTORS IN SELECTED COUNTRIES IN SOUTHERN AFRICA

EXECUTIVE SUMMARY

This book describes a study and survey of the human rights and gender dimensions of tuberculosis (TB), TB/HIV (human immunodeficiency virus), occupational lung diseases, and compensation in the mining sector. It also presents a mapping of major civil society actors, focusing on human rights and gender issues in the mining sector. The study contributes to implementation of the World Bank Gender Strategy 2016–2023 (World Bank 2015).

The study is anchored in human rights–based approaches (HRBAs) and applies them to the identification of issues as well as data analysis. In applying the HRBAs, the study identifies the key concepts inherent in each human rights instrument and applies the issues contained in each concept to the areas under investigation.

Mining in southern Africa

According to the South African Chamber of Mines (2007), “The mining industry is among Southern Africa’s largest employers, particularly in South Africa, where one of every ten employed men (at least 500,000 men) mine for gold, diamonds, or other minerals.” The study found that the extent to which mineworkers are exposed to occupational lung diseases is partly determined by the type of mineral with which they are dealing and the technology used

for mining. Underground mining exposes workers to high levels of dust and restricted air circulation compared with open pit mining. The study found that half of the mineworkers in the southern Africa region work underground and the other half work in open pit mining. However, South Africa, eSwatini, and Zimbabwe have a significantly higher percentage of mineworkers working underground.

The study confirmed that more men than women are employed in the mining sector. This could be linked to the lower education levels among women compared with men. It could also be attributed to the burden of care borne by women. In the study, most women in the mining sector were working in the services sector. Most of them were also located on the lower echelons, with limited roles in decision making.

Spread of HIV and TB

The study revealed that unequal power relations between men and women in the mining communities contributed to the spread of HIV and TB. Unequal gender power relations were reflected in both the workplaces and the home. At workplaces, the work conditions (working hours and maternity leave) did not appear to take into account women's reproductive roles. There were differences though when it came to the night shift. Far more men than women worked the night shift. Meanwhile, there was limited access to information on HIV and TB transmission, especially for women. Women's lower education status affected their access to information. As for home life, the study found that for both men and women the absence of sexual partners for long periods led to multiple sexual partners. Moreover, widow inheritance and sexual harassment were mentioned as factors that contributed to the spread of HIV and TB infections.

When respondents were asked about lesbian, gay, bisexual, transgender, and intersex (LGBTI) groups, they seemed to have limited knowledge about the circumstances that contribute to the spread of HIV and TB within these groups. This could be attributed to respondents' denials about the existence of these groups, as well as the stigma and discrimination associated with them.

Coupled with unequal gender relations was the poor infrastructure in the mining communities. The study found that the type of mine affected exposure to TB infections. Because the majority of workers in underground mining are men, they are more exposed to TB infection than women. Also, poor housing and lack of separate facilities, such as toilets for women and men, exposed communities to HIV and TB infections. Generally, women respondents felt they had few amenities compared with those provided for men. The hygiene of toilets was reported to be poor.

Barriers to access to services

Gender differences exist in the availability of, use of, and access to services. More women than men had access to medical aid, and women were more likely to use health services than men. Men who disclosed their serostatus were frowned upon within the mining communities, which affected men's access to health services.

Health inequities

Health inequalities refers to the differences in health status of population groups. The research found that better-off income groups had more and better access to health services than those with lower incomes.

Most males and females had no opinion on whether health facilities provide adequate privacy for LGBTI. This could be attributed to the conservative nature of most communities in the region, where a strong stigma is associated with being LGBTI.

The study found that most company clinics provide medical attention specifically to the mineworkers. The families were expected to seek treatment from government hospitals. This meant different levels of care and treatment.

CSO actors

The mapping exercise sought to establish the nature of interventions by civil service organizations (CSOs) and the challenges they were facing. The exercise was an opportunity to identify existing gaps facing human rights, gender, and compensation and TB health services in the mines provided by civil society organizations, in addition to identifying potential partnerships.

Few CSOs have directly engaged with mining communities based on funding from donors. Instead, they often engage in a one-off basis because they engage in other activities to sustain their organizations.

REFERENCES

- Aquity Innovations, African Comprehensive HIV/AIDS Partnerships (ACHAP). 2017. *A Survey of Human Rights and Gender Barriers Related to Services for TB, TB/HIV and Occupational Lung Diseases in the Mining Sector and Mapping of Main Civil Society Actors in Ten Countries in Southern Africa*. January.
- South African Chamber of Mines. 2007. *Facts and Figures 2007*. Johannesburg: Chamber of Mines.
- World Bank. 2015. *World Bank Group Gender Strategy (FY16-23): Gender Equality, Poverty Reduction and Inclusive Growth*. Washington, DC: World Bank.

Appendix E

Occupational Health Services Delivery Study: A Summary

STUDY ON OCCUPATIONAL HEALTH SERVICES DELIVERY IN THE SOUTHERN AFRICA REGION TO ESTABLISH MINIMUM PACKAGES AND MODELS FOR PROVISION OF OCCUPATIONAL HEALTH SERVICES

EXECUTIVE SUMMARY

Context and brief methodology

Tuberculosis (TB) remains a considerable public health threat in southern Africa and continues to strain health systems and communities across the region. Active mineworkers are particularly at risk of TB and are disproportionately affected by the epidemic. Despite industry awareness of the problem, the access to and availability of occupational health services (OHS) for mineworkers in the region are relatively uneven. Only larger mines offer comprehensive occupational health services. In an effort to better understand and respond to the occupational health (OH) needs of mineworkers, Health Focus was commissioned to conduct a study aimed at developing minimum packages of occupational health services for current and former mineworkers in southern Africa (Health Focus 2016).

From late 2015 to early 2016, a desk review and country OH system assessments were conducted in the four study countries—South Africa, Tanzania, Zambia, and Zimbabwe. Key informant interviews were conducted with representatives of the regulatory authorities and with other key stakeholders such as the Chambers of Mines (CoMs) and the unions to gain a broader understanding of the OH legal and institutional frameworks and current gaps in OHS delivery. Site visits conducted at different mining areas within the countries included visits to mining site health facilities and public and private off-site occupational

health services serving the mining industry to learn about various service delivery models and modalities. The findings of the country assessments were validated during in-country stakeholder workshops at the end of each mission. The workshops further served as a forum for the compilation of recommendations on suitable minimum OHS packages and delivery models. The study report compiled the country review results and suggested service packages.

MAIN FINDINGS AND RECOMMENDATIONS

Legislation

The legislative frameworks in the four study countries provide a solid foundation for protection of the health and safety of mineworkers, including provisions for risk assessments, inspections, occupational health surveillance, OHS delivery, and the compensation of work-related injuries and diseases. Tanzania has already introduced a single occupational health law as recommended by International Labour Organization (ILO) Convention 155 and is reforming its systems after a review by the country's auditor general. The three other countries are continuing to reform their labor laws with emphasis on health and safety. There are, however, certain overlaps in provisions and competencies because in all countries the three ministries/departments of health, labor, and mining are jointly administering the legislation. Some legislation lacks detail or clarity in certain areas (for example, silica dust exposure limits) and the question of whether TB is classified as an occupational disease in mining is treated differently in the four countries.

To harmonize legislative frameworks in the southern Africa region, it is recommended that

- Occupational diseases that are deemed compensable be standardized
- Tuberculosis be clearly integrated as an occupational disease in mining work
- Hazard exposure limits, such as silica dust levels, be aligned
- The inspectorate's capacity be strengthened to affect controls and enforce set standards in terms of human resources, equipment, and competences.

Occupational health and management services

Mineworkers employed by large- and medium-scale mining operations in the four study countries are generally well protected in terms of occupational health and safety. This segment of the mining industry, mostly in the hands of transnational corporations, conducts regular risk assessments, establishes health and safety systems in line with national laws and regulations, and supplies its workforce with adequate personal protective equipment. The mines are regularly inspected by the relevant authorities or inspectorates under the ministries/departments of health, labor, and mining. The large-scale mining houses provide excellent, mostly above country standard primary health care, emergency, and occupational health surveillance services, combined with health promotion, prevention, and well-being programs under the Basic Occupational Health Services Concept (BOHS III/IV). The most sophisticated systems are found in South Africa, with its long mining tradition and a Chamber of Mines that has provided effective leadership in setting standards and disseminating good practices within the industry.

More challenges are found in the medium-scale mining in Tanzania, Zambia, and Zimbabwe. Depending on the size of the operation and the operator, service provision ranges from BOHS I to II in mines without any adequate health and safety systems in place. Clearly, limited implementation of regular health and safety inspections and limited enforcement of existing laws and regulations contribute to noncompliance in many workplaces in this mining segment.

The most underserved mineworkers are those working in artisanal small-scale mines (ASSM). Although most of the owners of these enterprises hold a valid mining license, they often do not apply the occupational health and safety regulations and standards issued by mining, health, or labor authorities. The limited availability of occupational health services in the vicinity of ASSM areas, financial access barriers, and the low degree of risk awareness contribute to low uptake of services by this mining population. Furthermore, in small-scale and artisanal mining health and safety inspections rarely take place. Generally, the public occupational health service providers and inspectorates in the four countries are underequipped and understaffed and are thus unable to effectively execute their mandates.

Given this context, the following recommendations are proposed to scale up occupational health services provision:

- To increase coverage of occupational health surveillance and services, countries should adopt the Basic Occupational Health Services Concept at the national level and develop service networks at different BOHS stages. The concept provides a pathway to comprehensive services and allows the setting of standards in relation to the size of the mining operations and the hazards involved. This can be done either by scaling up and decentralizing public services provision or by outsourcing models to private providers.
- It is strongly recommended that one-stop service centers (OSSCs) be paired with outreach models in order to address geographic accessibility, particularly for artisanal mineworkers and former mineworkers. Decentralized occupational health OSSCs represent an ideal model to increase coverage of occupational health screening in underserved areas, where the size of mining operations does not allow for integrated in-house solutions.
- Primary health care facilities in dense mining areas should offer BOHS II services, and selected district hospitals should complement this offer with BOHS III services, supported by a clear referral system. The widest coverage of OH services is achievable through primary health care–based service models. In countries in which public primary health care units integrate BOHS I/II models, as planned in Tanzania, such services may actually cover a large proportion of the country’s total occupational health service provision. This strategy, combined with outreach services, will increase coverage significantly.
- Fee structures must be adapted to facilitate equipment purchase, maintenance, and upgrading, as well as motivational costs for personnel.
- To facilitate formalization of artisanal mine work and integration into social security systems, microinsurance models that cover basic occupational health services, including regular OH screening, should be considered and introduced.

Compensation systems

Because dust and diseases related to chemical hazard exposure often become evident only years after exposure, many mineworkers are eligible for

compensation payments. However, once they have left or are retrenched from their workplace and have returned to their rural homes, most mineworkers are lost to regular follow-up of their health and have limited access to compensation.

The following recommendations are aimed at increasing the access of current and former mineworkers to compensation:

- Compensation systems and mechanisms in each of the four countries must be strengthened. This involves setting up and maintaining functioning occupational accident and disease reporting systems, optimizing claims processing and management, and developing communication strategies that inform and educate mineworkers about the right to compensation. Where and how claims are made need to be built in. Currently, the systems are rather reactive than proactive.
- Basic knowledge of the potential work-relatedness of diseases or injuries and the steps to be undertaken in the event they occur must be included in the education of health personnel. This includes knowledge about notification obligations and processes, but also about assistance and advice to claimants. Tanzania would benefit from technical assistance and lessons learned in southern African countries when operationalizing its new compensation system, the Workman Compensation Fund.
- Like South Africa, Tanzania, Zambia, and Zimbabwe should develop policies and approaches to actively locate former mineworkers and offer them benefit medical examinations as required by law.
- Ideally, benefit medical examinations should be included in decentralized occupational health services, which would facilitate access to services for both current and former mineworkers. Service coverage could be increased significantly when combined with mobile/outreach services or provided through inclusion in primary health care services.
- Given the size of artisanal small-scale mining, particularly in Tanzania and Zimbabwe, adapted compensation models covering the loss of earnings after an injury or in the case of a disease contracted through workplace exposures must be developed. The size of the workforce in this type of mining should be amenable to microinsurance models.

Rehabilitation

The compensation legislation and systems for work-related injuries and diseases in the four study countries include provisions for the rehabilitation of mineworkers. Although each of the four countries has mechanisms in place to rehabilitate injured or diseased mineworkers, the quality of provision and access vary. Rehabilitation facilities are not always easily accessible, and rehabilitation equipment is costly. The OSSC model is being rolled out to other SADC countries, and it is vital that it have the right infrastructure and human resources to support good rehabilitation. Furthermore, therapists working in the field of rehabilitation need specific competencies, and rehabilitation should be initiated at the right time for the injured mineworker. Not all countries' rehabilitation centers recognize the need for a multidisciplinary team of rehabilitation staff. Centers must recruit these staff with the right competencies and must include or have access to a medical doctor,

physiotherapist, occupational therapist, counsellor, nursing staff, assistants, orthotists, and prosthetists.

This research has shown that in all the countries the large-scale mines comply with national OHS legislation, but there is variation in the provision of rehabilitation to injured mineworkers, leading to inequity in the quality of and access to services. It is worrying that a huge proportion of the nonregulated and small-scale mining population does not contribute to any compensation fund and therefore cannot access rehabilitation if injured. They have no access to functional or vocational rehabilitation or assistive devices. Some may access public health services and increase the burden on the state, but generally former mineworkers who are injured in these small-scale and nonregulated mines return to their communities or countries of origin, and there is no record of their rehabilitation and assistive device needs. No provision is made for them; they are simply “lost” in the system.

In this context, the following recommendations are aimed at improving rehabilitation services for mineworkers:

- Governments and professional bodies should regulate clinicians working in the field of rehabilitation to ensure good governance and training. Health profession councils and universities should also ensure that training meets a high standard, and employers should ensure that they have good supervision in place for new and junior staff.
- All countries should seek technical advice and support from individuals working in this area to help design new rehabilitation centers and reconfigure current ones. Such advice and support would also be needed to design appropriate pathways, making adequate investments in gymnasiums, rehab equipment, assistive devices, and vocational rehabilitation programs. Patients of the centers should be encouraged to give feedback on how services can be improved.
- The governments of each country should ensure that all small-scale and nonregulated mining is formalized. This will require the collaboration of government ministries/departments, small-scale mineworkers’ associations, local traditional leaders, and other key stakeholders. The formalization process should include the use of microinsurance models for these workers. This insurance must take into account functional and vocational rehabilitation as well as the provision of assistive devices. As previously noted, rehabilitation should be provided at stages III and IV of the BOHS model.
- Government departments responsible for procurement should ensure that the equipment procured is of good quality and value for the money. Assistive devices, especially lower limb prostheses, are very expensive, and the large international suppliers have a monopoly in all the study countries. There is very little competition in the supply of equipment, particularly prosthetics, and transparency around costs. Steps to stimulate competition could encourage local manufacturers and suppliers to participate in the market.
- Vocational rehabilitation must have robust work hardening programs that take into account workers’ premorbidity job profile requirements. Tasks should be graded until an individual can return to work. If a worker is deemed unfit to return to his or her job with the same employer, alternative skills training should be considered, depending on the local economic opportunities. This approach was adopted in Zimbabwe with good clinical and economic outcomes.

Human resources for occupational health

Training and capacity building for staff are required for proper implementation of the proposed package of services. The BOHS model notes that it is not easy to anticipate optimal structures as the needs vary widely. An experience-based estimate calls for a minimum of one physician and two nurses per 5,000 workers, with great variation depending on the industry and size of workplaces, as well as on their geographical distribution. Given the growth in the mining sector and other industries in the southern Africa region over the past decade, the demand for qualified occupational health personnel has steadily increased.

- It is strongly recommended that countries train human resources for occupational health assessments and develop long-term strategies for training medical and nursing cadres. This should be a collaborative effort that includes the higher education and health sectors, the health professions councils, and the mining industry.

REFERENCE

Health Focus. 2016. "Study on Occupational Health Service Delivery in the Southern African Region to Establish Minimum Packages and Models for Provision of Occupational Health Services." June. <http://www.health-focus.de/mining-sector-health-services-package.188.en.html>.

Appendix F

Innovations in TB Services Delivery Study: A Summary

HIGH-IMPACT HEALTH SERVICES FOR EX-MINEWORKERS IN LESOTHO: PROJECT FINDINGS

EXECUTIVE SUMMARY

Lesotho has the highest incidence rate of tuberculosis (TB) in the world, and it has risen alongside the human immunodeficiency virus (HIV) rate over the past two decades. The TB rate is currently 852 cases per 100,000 persons. The mining sector has been identified as one of the key drivers of the TB burden in the southern Africa region, including in Lesotho, which over the past few decades has provided a substantial proportion of the workforce for South Africa's mines and now has a fledgling mining sector of its own. As part of a broader regional initiative on TB in the mining sector in southern Africa, the World Bank, Global Fund, International Organization for Migration (IOM), and other partners have been supporting specific activities to address this regional TB challenge at the request of the governments of Lesotho, Mozambique, South Africa, and eSwatini.

Within this context, the Clinton Health Access Initiative (CHAI) was contracted by Aquity Innovations and the World Bank to support the delivery of TB case finding, diagnosis, and treatment services for current and former mineworkers and mining communities. From February through July 2016, a TB and HIV campaign targeting former mineworkers and their family members was conducted in five districts of Lesotho—the largest community-level HIV and TB screening effort targeting this population in the country to date. This project sought to deliver targeted TB and HIV case finding; access to rapid HIV and TB diagnostic tests, diagnosis, and linkages to treatment services using innovative approaches; and a unique partnership between two health partners—CHAI and Jhpiego (a nonprofit health organization affiliated with Johns Hopkins University in the United States) and the Mineworkers Development Agency (MDA), a development organization that provides services to the community of former mineworkers.

Specifically, this project

- Conducted targeted TB and HIV case finding among current and former mineworkers and their family members by leveraging MDA's events and database
- Linked newly diagnosed HIV and TB cases to follow-up care and treatment using mobile technology to strengthen linkages
- Supported capacity building for the MDA team.

KEY ACTIVITIES

To achieve the project's objectives, the following activities were pursued:

- Active HIV and TB case finding through health education; distribution of information, education, and communication (IEC) materials; voluntary HIV testing; and voluntary TB screening and sputum sample collection at MDA events scheduled during the implementation period. In addition, there was targeted community-based voluntary HIV testing and TB screening of current and former mineworkers and their family members in the Maseru, Leribe, Butha Buthe, Quthing, and Mafeteng districts.
- Linkage of newly diagnosed HIV and TB cases to follow-up care and treatment, including Isoniazid Preventive Therapy (IPT), using mobile technology to track the status of patients and using a mobile payment incentive system to encourage patients to seek care
- Capacity building of MDA through HIV and TB, program management, and financial management training to enhance its ability to provide targeted health services to its beneficiaries after the project.

Concerted efforts were made to reach out to former mineworkers within their communities, specifically in community council areas that were relatively far from health centers. The project employed a mobilization strategy that focused on sensitizing and outreach to former mineworkers in target communities by field workers who had previous experience with former and current mineworkers. Target communities were identified using an existing database of former mineworkers and referrals from local authorities. As a result, the project registered over 7,108 individuals through 42 community outreach events and home visits—that is, over 150 percent of the project target of 5,500 clients. Of the number registered, 5,945 (84 percent) were current or former mineworkers and 1,021 (14 percent) were family members. Eighty-seven percent of the participants mobilized for cluster events were male. Of the current and former mineworkers, 5,702 (96 percent) worked in the gold mines in South Africa for an average of 23 years—almost all of them in an underground environment that increased their risk of developing TB.

KEY FINDINGS AND RESULTS

To ensure individuals were linked to care and received treatment in a timely manner, Jhpiego retrieved the test results from the laboratory directly and promptly communicated them to clients. When clinical staff visited the homes of the clients who tested positive for further counseling and to encourage

patients to present themselves for care, they also asked family members to be screened for TB and HIV. Mobile payment transfers helped clients to pay for transport to visit their health facilities for further care. One hundred percent of newly diagnosed TB cases and 76 percent of newly diagnosed HIV cases were successfully linked to care within two months. A total of 5,688 persons were evaluated for HIV, 2,862 of which were eligible and consented to HIV testing. High HIV rates were observed in the population—among all those who disclosed their HIV status, 23.8 percent were HIV-positive and 4.9 percent (139 persons) were newly diagnosed as HIV-positive.

A total of 6,135 persons were evaluated for TB. High rates of TB were also observed in the population, although many of these cases had been identified previously. Ninety-eight persons (1.6 percent) were already receiving treatment. A total of 5,995 persons were screened for TB, 281 of whom were identified as requiring further evaluation for TB. Twelve TB patients were newly diagnosed by the project and started on TB treatment.

LESSONS LEARNED AND RECOMMENDATIONS

The project successfully demonstrated the potential of using established community-based organizations to carry out large-scale health education and social mobilization efforts, including accessing hard-to-reach populations such as former mineworkers and promoting early detection of disease. This approach also has the potential to be replicated and expanded to other diseases. In addition, the project recommends the use of mobile technology for patient tracking. The use of this technology for data collection by nurses and counselors demonstrated the willingness of the clinicians to use technology for capturing patient information. Although the project did not achieve the anticipated yields of newly identified TB cases among the target population, the model was very successful in mobilizing former mineworkers, and there was a noticeable impact on awareness of HIV status in this group. The project will be handed over to the National Tuberculosis Program to enable it to use the best practices identified through the project for scale-up when the country obtains additional funding.

Appendix G

Tuberculosis in the Mining Sector Case Study

Interview List

NAME	ORGANIZATION	INTERVIEW TOPIC
Moises Uamusse	President, Mozambican Mineworkers Association	Nongovernmental organizations (NGOs)
Patrick Osewe	Team leader, World Bank	Southern African Development Community (SADC) / technical cooperation / occupational health / private sector / NGOs
Barry Kistnasamy	Medical Bureau for Occupational Diseases (MBOD)	Occupational health
Thembi Karigeni	Aquity Innovations	Occupational health / private sector
Tumi Legobye	Harmony Gold	Private sector
Lesego Rametsi	Kumba	Private sector
Rantso Mantsi	President, Lesotho Mineworkers Association	NGOs
Vama Jele	President, Swaziland Migrant Mineworkers Association	NGOs
Eric Gcilitshana	National secretary for health and safety, National Union of Mineworkers	NGOs
Okore Okorafor	Senior health specialist, World Bank	SADC / technical cooperation
Melusi Ndhlalambi	Consultant, Medical Research Council, South Africa	SADC / technical cooperation

Additional Readings

WORLD BANK REPORTS AND DOCUMENTS

- World Bank. 2013a. “Tuberculosis and HIV Primary Health Care Services for Mining Communities: Business Case,” Project Implementation Committee.
- . 2013b. “World Bank–WHO Technical Meeting on Harmonization of TB Treatment Protocols in Lesotho, Mozambique, South Africa and Swaziland Report.”
- . 2014a. “Concept Note: Harmonizing the Response Ministerial Meeting.”
- . 2014b. “Economic Benefits and Costs of Tuberculosis Prevention and Control in the South African Mining Industry—with Implications for Lesotho, Mozambique and Swaziland.”
- . 2014c. “Framework on Harmonization of TB Management,” PPT presentation by Okore Okorafor at the Regional Project Implementation Committee (PIC) Meeting.
- . 2014d. “Mapping of Mineworkers and Ex-Mineworkers in Lesotho, South Africa and Swaziland: Phase 1 Regional TB Service Delivery Framework Final Report.”
- . 2014e. “TB in the Mining Sector in the Southern Africa Region: Framework for Tuberculosis Service Delivery in the Mining Sector in South Africa, Swaziland, Lesotho, and Mozambique.”
- . 2015a. “Actuarial Assessment of the Financial Soundness, Viability and Long Term Sustainability of the South Africa Compensation Fund for Occupational Heart and Lung Diseases in the Mines and Works in South Africa.”
- . 2015b. “Report on the Occupational Diseases in Mines and Works Act.”
- . 2016. “Concept Note: TB in Mining Sector in Southern Africa, Investing for Impact against HIV, Tuberculosis or Malaria.” Report submitted to the Global Fund.

GOVERNMENT REPORTS AND LEGISLATION

- Department of Health, South Africa. 2007. “Tuberculosis Strategic Plan for South Africa, 2007–2011.” Pretoria.
- . 2010. “Report on Tuberculosis in the Mining Industry.” Pretoria.
- . 2011. “South Africa’s National Strategic Plan on HIV, STI, and TB 2012–2016.” Pretoria.
- . 2015a. “Carletonville One Stop Service, June Report 2015.” PPT presentation by N. Cemané, Carletonville.

- . 2015b. “Project Ku-Riha: Occupational Lung Disease: Dealing with a Collaborative Initiative by SA Mining Companies. Fact Sheet.” Pretoria.
- Department of Minerals, South Africa. 2010. “Report on HIV and TB in The Mining Industry in South Africa.” Prepared for the Department of Mineral Resources (DMR) by the National Institute for Occupational Health (NIOH), a Division of the National Health Laboratory Service (NHLS).
- Department of Minerals and Energy Affairs, South Africa. 1995. “Leon Commission. Report of the Commission of Inquiry into Safety and Health in the Mining Industry.” Pretoria.
- Department of Mineral Resources and National Institute for Occupational Health (NIOH), South Africa. 2010. “An Elimination of TB and the Control of HIV in South African Mines Summary Report.”
- Republic of South Africa. 1973a. “Occupational Diseases in Mines and Works Act, No. 78 of 1973.” *Government Gazette* 3970: 1–112.
- . 1973b. “Occupational Diseases in Mines and Works Act, No. 78 of 1973. Regulations.” *Government Gazette* 4042: 1–14.
- . 1981. “Report of the Commission of Inquiry into Compensation for Occupational Diseases in South Africa (RP 100/1981).” Department of Mineral and Energy Affairs, Pretoria.
- . 1982. “Occupational Diseases in Mines and Works Act, No. 78 of 1973. Amendment of Regulations.” *Government Gazette* 8482: 15–16.
- . 1993a. “Compensation for Occupational Injuries and Diseases Act, No. 130 of 1993.” *Government Gazette* 15158: 1–90.
- . 1993b. “Occupational Diseases in Mines and Works Amendment Act, No. 208 of 1993.” *Government Gazette* 15449: 1–34.
- . 1995. “Report of the Commission of Inquiry into Health and Safety in the Mining Industry.” R. N. Leon, Chairperson, Department of Minerals and Energy, Pretoria.

ECO-AUDIT

Environmental Benefits Statement

The World Bank Group is committed to reducing its environmental footprint. In support of this commitment, we leverage electronic publishing options and print-on-demand technology, which is located in regional hubs worldwide. Together, these initiatives enable print runs to be lowered and shipping distances decreased, resulting in reduced paper consumption, chemical use, greenhouse gas emissions, and waste.

We follow the recommended standards for paper use set by the Green Press Initiative. The majority of our books are printed on Forest Stewardship Council (FSC)–certified paper, with nearly all containing 50–100 percent recycled content. The recycled fiber in our book paper is either unbleached or bleached using totally chlorine-free (TCF), processed chlorine-free (PCF), or enhanced elemental chlorine-free (EECF) processes.

More information about the Bank’s environmental philosophy can be found at <http://www.worldbank.org/corporateresponsibility>.



This book presents key activities, promising practices, and lessons learned to date from the World Bank’s Tuberculosis (TB) in the Mining Sector Initiative—an innovative multisectoral, multicountry, public-private regional initiative. It examines how a collaborative platform was established to cover 10 southern African countries, and details the processes through which multiple countries, ministries, sectors, and partners have been brought together to address the various dimensions of the epidemic.

The case studies in this book highlight the significant progress and achievements made since 2010 in the effort to develop a regional platform for addressing TB in the mining sector in southern Africa. The primary focus of the case studies is how these cooperative regional processes—at both technical and political levels—have been designed, implemented, managed, and sustained through various partnerships to complement country-level efforts. The case studies provide an evidence base for practitioners working in TB management in the mining sector.

Despite the achievements that have been made and their potential to strengthen TB interventions, critical gaps remain in addressing barriers to access, delivery of quality services, and increased uptake of TB services. The case studies explore these key challenges and gaps, and offer strategies for replicating successes and addressing complex health service delivery interventions in other regions around the world. Further action is needed, including better compliance to occupational health and safety standards by mining companies; strengthened community health systems and improved coordination of TB care; increased empowerment and participation of women in the mining sector; and improved tracking and tracing of ex-mineworkers across borders.

The authors hope that readers will find the models, lessons learned, and recommendations helpful in their work, and that they provide a good starting point for analyzing the risks, opportunities, incentives, and contexts of regional health cooperation that involves multiple sectors and stakeholders.