



World Health  
Organization

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# INNOVATIVE SOLUTIONS FOR THE ELIMINATION OF TUBERCULOSIS AMONG REFUGEES AND MIGRANTS

REPORT OF THE 7TH EDITION OF THE  
WORLD INNOVATION SUMMIT FOR HEALTH

Tereza Kasaeva  
Farai Mavhunga  
Kerri Viney  
Hannah Monica Dias  
Martin van den Boom  
Santino Severoni  
Josette Najjar Pellet  
Diana Abou Ismail  
Sanaa Al-Harabsheh

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## FOREWORD

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The unprecedented levels of human migration and displacement have become a critical public health priority, especially when exacerbated by infectious diseases such as tuberculosis (TB).

This report outlines bold new strategies, innovations and best practices to enhance TB prevention and care interventions in all migration and displacement contexts, building on experiences and best practices from pathfinding countries. The report asserts that if we join forces and apply our collective ingenuity to this escalating and often neglected global threat, we can successfully end TB.

Our response must be both global and multifaceted. We need to accelerate our momentum by implementing the innovative solutions and policy options outlined in this report as rapidly as possible.

The health of millions of refugees, migrants and populations in humanitarian settings rests in our hands. This is a huge responsibility – we cannot let them down. Together we can ensure that no one is left behind.



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**Dr Tereza Kasaeva**

Director, Global Tuberculosis Programme, World Health Organization



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**Professor Lord Ara Darzi**

Director of the Institute of Global Health Innovation and Paul Hamlyn Chair of Surgery at Imperial College London; Executive Chair, WISH





## EXECUTIVE SUMMARY

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Tuberculosis (TB) remains a significant global health challenge, particularly among refugees and migrants who face unique barriers to accessing healthcare. This report, prepared by the World Health Organization (WHO) in collaboration with the World Innovation Summit for Health (WISH) and Qatar Foundation, outlines innovative solutions and policy options to address TB in these at-risk populations.

WHO's End TB Strategy aims to end the global TB epidemic by 2030, aligning with the Sustainable Development Goals (SDGs). The political declaration from the 2023 United Nations (UN) high-level meeting on the fight against TB, WHO's global action plan on promoting the health of refugees and migrants, and the Global compacts on Refugees, and for Safe, Orderly and Regular Migration, emphasize the need for comprehensive care, particularly for vulnerable groups such as refugees and migrants. However, these populations often face significant barriers, including poor living conditions, legal and policy restrictions, social and cultural barriers, and inadequate access to healthcare. These barriers contribute to delayed diagnosis, poor treatment outcomes, and increased transmission of TB.

To address these challenges, this report proposes innovative solutions and policy options. It highlights the importance of high-level leadership and political support to ensure comprehensive, people-centered, and culturally sensitive TB services, including prevention, systematic screening, treatment and effective models of TB care. Adequate resources, both domestic and international, are needed to address the drivers of the TB epidemic, and for the provision of essential services. It is essential that we collaborate with civil society to develop and implement refugee-sensitive health policies that protect the rights of refugees and migrants and ensure equitable access to healthcare. Multisectoral engagement, fostering co-ordination between health and non-health sectors, and strengthening cross-border initiatives are also vital to ensure continuity of TB care for migrants and refugees. Other recommendations include improving surveillance and monitoring systems to record high-quality data on TB among at-risk populations, and conducting implementation research to identify and address barriers to TB care.

This report includes case studies demonstrating examples of impactful actions in regions and countries such as Qatar, the Greater Mekong Subregion (GMS), the Middle East, Cox's Bazar, the Amazonas, Eastern Africa and Poland. These case studies illustrate the effectiveness of innovative approaches and cross-sectoral collaboration in addressing TB among refugees and migrants.

In conclusion, the report calls for urgent action and the roll-out of innovative solutions to eliminate TB among refugee and migrant populations.





World Health  
Organization

وزارت صحت عامه جمهوری اسلامی افغانستان

SHRDO مؤسسه خیریه

کلینیک سیار صحتی پل کمپنی  
Poli Company IDP Camp Mobile clinic



Project Name: Mobil Health clinic for IDP camps (Poli Company) نام پروژه: کلینیک سیار صحتی کمپنهای پل کمپنی

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## SECTION 1. INTRODUCTION

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Tuberculosis (TB) remains one of the world's leading infectious disease killers, despite being preventable and curable. Human migration and displacement are also a major public health issue, with unprecedented levels of migration taking place in recent years.

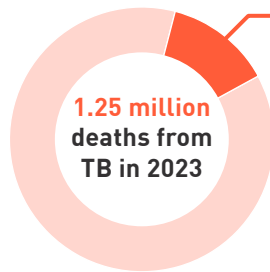


**TB remains one of the world's leading infectious disease killers, despite being preventable and curable.**

TB is an airborne infectious disease that can affect anyone. Though it is most prevalent in 30 high-TB burden countries, it affects the most vulnerable populations, including refugees and migrants, in any setting. Therefore, TB is an issue of concern for all nations, including those where refugees and migrants originate or transit, but also for host countries. To effectively address TB among migrants, refugees and internally displaced persons, better awareness and understanding of this issue, as well as multisectoral public health actions are required. This report aims to increase awareness, deepen understanding, and provide an overview of some of the main policy options and innovations that aim to effectively address TB among these populations.



# Tuberculosis is the top infectious killer in the world



**161,000 deaths** among people with HIV

TB is also the leading cause of deaths among people with HIV and a major cause of antimicrobial resistance related deaths

In 2023, an estimated

**10.8 million**

people fell ill with TB

**79 million**

lives have been saved since the year 2000 due to global efforts to combat TB

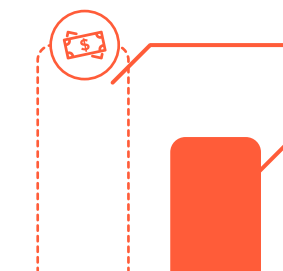
Drug resistant TB remains a **public health crisis** with gaps in detection and treatment



Only about

**2 in 5 people**

with drug-resistant TB accessed treatment



**\$22 billion USD** was required annually for TB diagnosis and care

**\$5.7 billion USD** was available in 2023, of which:

- 80% came from domestic financing
- 20% from international financing

Source: WHO (2024)<sup>1</sup>



## SECTION 2. OVERVIEW OF TUBERCULOSIS AS A PUBLIC HEALTH PROBLEM

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In 2023, according to the latest data from WHO's *Global Tuberculosis Report*, an estimated 10.8 million people fell ill with TB, and 1.25 million lost their lives to this disease, including 161,000 people with HIV.

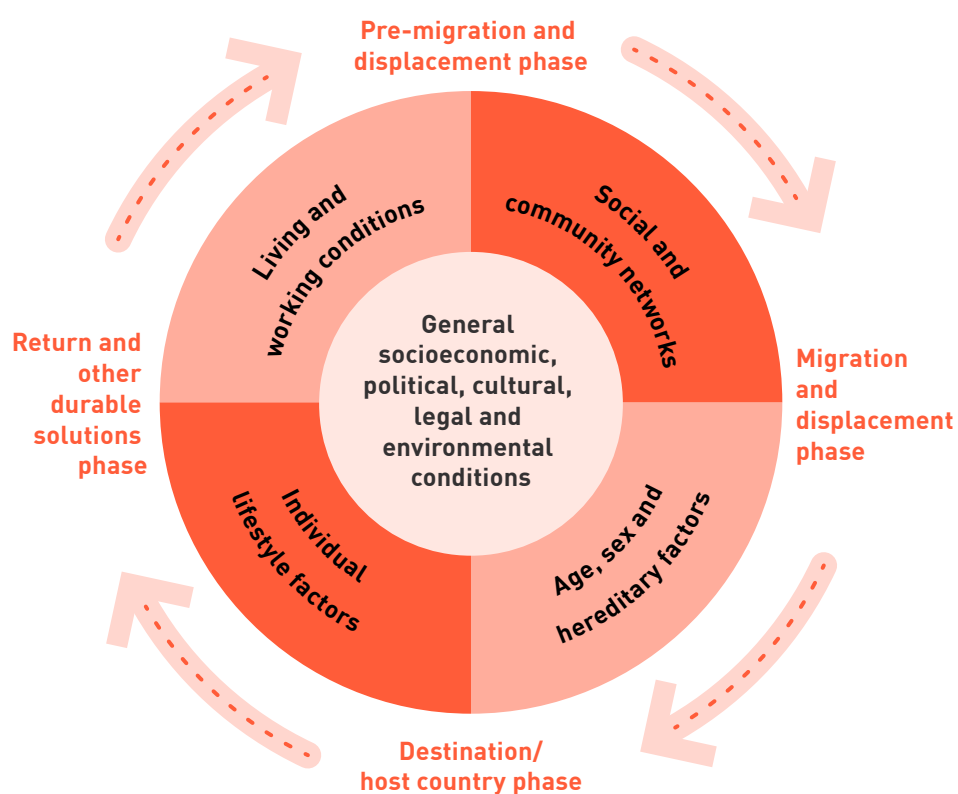
TB is spread when people who have TB disease expel bacteria into the air (for example, by coughing). It is estimated that about a quarter of the world's population has been infected with *Mycobacterium tuberculosis* (the bacterium that causes TB) and between 5 percent and 10 percent may eventually develop TB disease during their lifetime. In 2023, 55 percent of people who developed TB were men, 33 percent were women and 12 percent were children (aged 0–14 years). Drug-resistant TB remains a public health crisis. About 400,000 people developed multidrug/rifampicin resistant (MDR/RR) TB in 2023, however, only two in five accessed treatment. TB is the leading cause of death among people with HIV and a major cause of deaths related to antimicrobial resistance.



**TB can affect anyone; however, some people are more vulnerable to developing TB due to social, structural, or biological determinants and risk factors. This includes migrants, refugees, asylum seekers and internally displaced people.**

TB can affect anyone; however, some people are more vulnerable to developing TB due to social, structural, or biological determinants and risk factors. This includes migrants, refugees, asylum seekers and internally displaced people. They may have limited access to healthcare, may experience legal or other barriers which impede access to healthcare and social protection, and may also face other challenges and hardships, such as poverty, crowded and unstable living conditions, and adverse circumstances along the migration and displacement journey. These factors all contribute to increasing the risk of being infected with TB, developing TB disease once infected, experiencing TB-related stigma, or having poorer health and social outcomes when they develop TB. They may also have comorbid conditions such as HIV, undernutrition, mental health conditions or substance use disorders – which amplify TB risk.<sup>2,3</sup> The key facts about TB are summarized in Appendix 2.

## Factors that determine health for refugees and migrants



Source: WHO (2022)<sup>4</sup>

## SECTION 3. GLOBAL SITUATION ON MIGRATION AND DISPLACEMENT

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In recent times, human migration and displacement have reached unprecedented levels. About 1 billion (or one in eight) people have migrated or have been forcibly displaced globally.<sup>5,6</sup> By May 2024, more than 120 million people were forcibly displaced worldwide as a result of persecution, conflict, violence, or human rights violations and other disruptive events. As of the end of 2023, this includes 43.4 million refugees, 68.3 million internally displaced people, and 6.9 million asylum seekers.<sup>7,8</sup> Globally, the total number of refugees has more than tripled over the last decade, with 75 percent living in low- and middle-income countries.<sup>9</sup> In addition, the number of internally displaced persons displaced due to conflict or violence increased by 10 percent between 2022 and 2023.<sup>10</sup>



**About 1 billion (or one in eight) people have migrated or have been forcibly displaced globally.**

International migration is also increasing. Between 1990 and 2020, the total number of international migrants increased from 153 million (2.9 percent of the global population) to 281 million (3.6 percent of the global population).<sup>11</sup> About 115 million international migrants are women<sup>12</sup> and some 36 million are children.<sup>13,14</sup> The greatest increases in international migration during the last decade have been due to family migration (including family reunification) and labor migration.<sup>15</sup>

Migration and displacement are key determinants of health and wellbeing. Refugees and migrants often experience poorer health outcomes than the communities that host them, resulting in an equity gap.<sup>16</sup> WHO's *World Report on the Health of Refugees and Migrants* outlines the determinants that influence the health and wellbeing of refugees and migrants, and which affect them differently at various stages of their displacement and migration (see figure on previous page). As highlighted in the report, a refugee or migrant may face greater barriers to accessing healthcare than the host population, and this places them at an increased risk of delayed diagnosis, treatment and care, and poorer health and social outcomes.



## CASE STUDY 1. COMBATING TUBERCULOSIS IN GREATER MEKONG SUBREGION MIGRANTS



Cross-border mobility in the Greater Mekong Subregion (GMS) is dynamic, with fluctuating migration patterns, particularly in cross-border settings and in major migration corridors. Migrants may face serious difficulties in accessing healthcare as a result of their mobility status. They are also at higher risk of developing TB due to poor nutrition status, poor working and living conditions, low literacy levels and limited access to healthcare.

Tuberculosis Elimination Among Migrants 2 (TEAM2) is a three-year project funded by the Global Fund, with IOM as the principal recipient, and covering the GMS countries of Thailand, Vietnam, Cambodia, Myanmar and Lao People's Democratic Republic. The project aims to reduce the burden of TB among migrant populations, especially among people with TB who are missed by health systems and are not diagnosed and treated, and to decrease TB transmission, incidence and mortality.

Target populations include cross-border migrants, returnees, refugees, host communities, migrants in special economic zones, internally displaced persons, LGBTQI+ migrants and other vulnerable populations such as victims of human trafficking, the elderly and people living with HIV.

Collaboration with implementation partners at all levels – ranging from civil society organizations and academia to national TB programs – as well as across sectors is a key enabling project feature. Access to TB services is enhanced through targeted systematic TB screening in high-risk communities, which complements regular case finding via the national TB programs. Community-based mechanisms, including peer outreach and health education at the community level, are also implemented. The project is also looking at the feasibility of an innovative regional cross-border TB database and referral system. Regional policy recommendations have been drafted to address TB among migrants in consultation with the target countries – the first in the GMS.

During the first two years of the project (2022 and 2023), 101,920 migrants were screened for TB symptoms: 47,666 had chest x-rays, and 9,182 migrants and other mobile populations were diagnosed with TB. These people were linked with treatment and care services, which highlights the importance of cross-border and collaborative approaches to TB care which incorporates dedicated case-finding among at-risk populations. The project also provided health education to 128,735 migrants and trained 995 community volunteers.

## SECTION 4. BARRIERS TO ACCESSING HEALTHCARE, AND THE IMPACT ON TUBERCULOSIS

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Migration and displacement are independent and key determinants of vulnerability to TB infection, TB disease and poor treatment outcomes, as well as potentially limiting access to healthcare for refugees and migrants. Several other converging factors also heighten the risk of TB for refugees and migrants and underscore the urgent need for targeted and inclusive interventions<sup>17</sup> to address TB among migrants, refugees and internally displaced persons as a global health priority.

The determinants and barriers to accessing healthcare and social protection that are particularly important for refugees, migrants and internally displaced persons are outlined in the figure on the following page.

### LIVING CONDITIONS AND OVERCROWDING

Poor living conditions and overcrowded housing play an important role in the transmission and development of communicable diseases such as TB. Refugees and migrants (including irregular migrants) may have poor living conditions, such as crowded accommodation in urban settings, camps, settlements or places of detention, limited access to adequate food, water, sanitation and hygiene. They are also exposed to environmental hazards which are exacerbated by the effects of climate change, heat stress and natural disasters.

### WORKING CONDITIONS AND POTENTIAL EXPLOITATION

Refugees and irregular migrants may face exploitation through forced labor, low paying or stressful occupations, and human trafficking. This includes domestic workers who are exposed to an increased risk of gender-based abuse and exploitation. These challenges, as well as limited job opportunities, lower wages than host communities, and unstable employment impact on the health and wellbeing of refugees and migrants and their families, making them more vulnerable to TB. For low-wage migrant workers, poor working conditions, with no sick leave or lack of health insurance can lead to late TB detection and difficulties in completing TB treatment.

## Factors that affect migrant and refugee health at different migration stages



Source: IOM (2016)<sup>18</sup>

## **STIGMA, SOCIAL AND CULTURAL BARRIERS AND LACK OF INFORMATION<sup>19</sup>**

Refugees and migrants frequently encounter obstacles in accessing healthcare or accurate information about TB. Cultural norms, language barriers, variable levels of health literacy and misinformation contribute to a poor understanding about TB and can negatively affect TB treatment outcomes. This can perpetuate anxiety and stigma and result in a reluctance or delay in accessing healthcare services, or to disclose a TB diagnosis to household members or employers. Migrants may face additional stigma based on the incorrect public perception of the potential risk of migrants transmitting TB to host communities.

## **INADEQUATE AND INEFFECTIVE IMPLEMENTATION OF LAWS AND POLICIES, INCLUDING CROSS-BORDER POLICIES, TO PROTECT THE RIGHTS AND ADDRESS THE NEEDS OF REFUGEES AND MIGRANTS**

Refugees and migrants can face challenges in realizing their human rights due to restrictive laws and non-inclusive policies. Some sub-groups of refugees and migrants are at particular risk of exclusion from health systems – this includes asylum seekers, internally displaced persons, or those who are undocumented. Long and complex migration processes, as well as irregular migration status, may prevent some migrants from seeking medical assistance due to fear of arrest or deportation. Inadequate access to healthcare may result in late presentation and diagnosis, potentially resulting in TB transmission within households, and increased risk of TB-associated disability. In some countries, historical policies that have focused on border control measures in relation to TB and infectious diseases have not been complemented with access to healthcare (and universal health coverage) for all people with TB, or at risk of TB.

## **INADEQUATE EXCHANGE OF INFORMATION AND HINDRANCES TO DATA SHARING**

Many factors hinder effective information exchange between countries, such as legal restrictions on data sharing, privacy concerns, and inconsistent data collection methods. Refugees and migrants with TB frequently cross borders, and therefore there is a need to ensure that health services collaborate so that people can receive uninterrupted cross-border TB treatment. This will require health services to share information. The diversity of healthcare systems and the lack of standardized data-sharing protocols make it challenging to compile and compare information on TB among migrants, refugees and internally displaced people.

## **LACK OF CO-ORDINATION TO ADDRESS TB AND COMORBIDITIES**

Coexisting conditions and health behaviors – for example, HIV, diabetes, cigarette smoking, or substance use disorders, coupled with poor overall health, stress and undernutrition – weaken immune systems and make people more susceptible to TB. Refugees and migrants may also face significant mental health challenges due to the stress and anxiety associated with their displacement, or to the challenges they face when settling in another country. These stresses also exacerbate TB risk and can



result in poor health, social and economic outcomes. For people diagnosed with TB, stigma may negatively affect mental health and adherence to treatment, and may result in non-disclosure of the diagnosis to household members. If people-centered services are not provided to refugees and migrants with TB and comorbidities, additional health and support needs may not be met. This will lead to poorer health and social outcomes.<sup>20</sup>

## **LIMITED, DELAYED OR INTERRUPTED ACCESS TO HEALTHCARE**

Access to TB services may be compromised due to lack of access to national health services and insufficient awareness of the right to health services and the correct procedures to access them. Other factors include the cost of accessing healthcare, and healthcare systems that are not sensitive to the needs of refugees and migrants. The problem is compounded by limited access to health insurance or social protection, discrimination of refugees and migrants in health facilities, and a lack of translation or culturally appropriate services. There is an increased risk of interruption to TB treatment due to disruption of health services, and delays in access to TB treatment upon arrival in the country of asylum or work, especially during acute emergencies. Countries may also follow different protocols for the prevention, diagnosis, treatment and management of TB, and this may lead to a disruption in continuity of TB care when a person with TB crosses borders. The provision of TB services to refugees and migrants should be provided in the context of universal health coverage, where all people have access to the services they need, when they need them, and without incurring financial hardship.

## **LACK OF COLLABORATION AND FUNDING**

There is a lack of collaboration between countries and key stakeholders, and absence of innovative funding mechanisms to effectively address TB among migrants and refugees in a timely way.

## **ADDITIONAL COMPLEXITIES OF EMERGENCIES, INCLUDING CLIMATE CHANGE**

The disruption of essential health services during an emergency, such as TB screening, diagnosis and continuity of treatment, may result in delayed diagnosis and poorer outcomes, including drug resistance. The need to address acute healthcare requirements during emergency situations may also drive global attention away from existing health issues of public health importance. This can divert funds, healthcare personnel and other resources to managing the crisis. Distribution of essential commodities such as TB drugs, supplies and laboratory consumables may also be interrupted, particularly during the acute phase of an emergency.

## **SOCIAL, ECONOMIC AND HEALTH IMPACT**

The factors described in this section can result in several negative impacts for refugees and migrants who may have TB or related diseases. The health impacts include a reluctance to seek medical care, late diagnosis of TB, the possibility of suboptimal TB treatment outcomes, anxiety and exacerbation of mental health conditions, and the increased risk of TB-associated disability. Migrants and their

families may face financial strain due to healthcare costs and lost productivity, as well as societal-level economic impact due to decreased productivity, revenue loss, and a decline in remittances. Social impacts can be far-reaching and include a strain on families and marriages, disruptions in schooling for children, loss of employment and income, and loss of social connection related to stigma.

## CASE STUDY 2. DRUG-RESISTANT TB TREATMENT FOR UKRAINIAN WAR REFUGEES IN POLAND



Poland has historically had a low burden of TB (about nine cases per 100,000 population). However, there was a significant increase in TB notifications, including drug-resistant TB (DR-TB), in 2022–2023, attributed to a post-pandemic resurgence and an influx of refugees from Ukraine, where TB rates are higher. This caused challenges with the high cost and limited market availability of medicines to treat DR-TB, as well as constrained TB laboratory capacity and insufficient knowledge among pulmonologists on managing DR-TB according to the latest WHO recommendations.

Poland implemented the European Union Temporary Protective Directive to give Ukrainian refugees full access to medical assistance. Then, in 2022, the Ministry of Health, supported by WHO European Region (EURO) and Médecins Sans Frontières, launched the Emergency People-centered MDR-TB Response Project featuring a patient-centered approach aligned with WHO guidelines, including video-supported ambulatory treatment, new and shorter treatment regimens for DR-TB, and upgraded TB laboratory diagnostics.

The main outcomes included: the uptake of shorter, home-based treatment, reducing costs for health authorities; video-supported outpatient treatment; TB drugs donated by WHO, benefiting 160 patients, 95 percent of whom were non-Polish nationals; training for 133 doctors and nurses on the new TB medicines and person-centered models of care; strengthened TB laboratory network for rapid DR-TB diagnosis; and technical support from WHO to launch Poland's National TB Consilium, to enhance clinical decision-making for people with complex needs.

Poland's proactive measures in response to the surge in TB demonstrate the potential for effective TB management in health systems exacerbated by crises. The response by all partners highlights the impact of an intervention backed by political commitment, funding, legislation and international co-operation. The fight against TB, especially drug-resistant strains, requires continued vigilance and proactive efforts to ensure that healthcare systems remain resilient and prepared for future threats.





## SECTION 5. GLOBAL, REGIONAL AND COUNTRY COMMITMENTS AND STRATEGIES

Ending the global TB epidemic by 2030 is an ambitious goal that has been adopted by all Member States through WHO's End TB Strategy.<sup>21</sup> It is fully aligned with SDG Target 3.3: Communicable Diseases.<sup>22</sup> The End TB Strategy's targets include a 90 percent reduction in the number of TB deaths, an 80 percent reduction in the TB incidence rate compared to the 2015 baseline, and to achieve 0 percent of TB-affected households facing catastrophic costs due to TB. Multisectoral collaboration and accountability is key to successful implementation of the End TB Strategy.<sup>23</sup>



**Ending the global TB epidemic by 2030 is an ambitious goal that has been adopted by all Member States through WHO's End TB Strategy.**

Efforts to bolster political support for the fight against TB have been strong over the last few years. In the political declaration from the 2023 UN high-level meeting on the fight against TB, Heads of State committed to:

- reaching 90 percent of people in need with TB prevention and care services (which includes TB treatment as well as TB preventive treatment).
- ensuring that 100 percent of people with TB receive a WHO-recommended rapid diagnostic test.
- ensuring that 100 percent of people with TB are provided with a health and social benefits package.
- ensuring the availability of at least one new TB vaccine that is safe and effective.
- closing funding gaps for TB implementation and research by 2027.<sup>24</sup>

The political declaration includes a strong commitment to providing and strengthening comprehensive care for all people with TB. Particular attention is on people who are vulnerable or in vulnerable situations, such as migrants, refugees, and internally displaced people. The declaration also aims to ensure that TB services are safeguarded as essential health services during humanitarian crises and health emergencies.<sup>25</sup>

The overarching goals and interventions outlined in the End TB Strategy, the Global Plan to End TB 2023–2030, and the political declaration of the UN high-level meeting on the fight against TB are reflected in regional strategies on TB or communicable diseases, as well as national TB strategic plans or health plans.<sup>26–30</sup> These plans emphasize the strategic importance of political and financial commitment, the need for multisectoral action to address TB, the significance of ensuring universal access to health services to end TB, and the significance of working with communities.



WHO's global action plan on promoting the health of refugees and migrants, 2019–2030 is instrumental in prioritizing efforts to improve global health equity by addressing the physical and mental health and wellbeing needs of refugees and migrants worldwide. The action plan also addresses the relevant SDGs for these populations, and meets the objectives outlined in the Global Compact on Refugees and the Global Compact for Safe, Orderly and Regular Migration.<sup>31</sup>

The Global Compact on Refugees offers a framework where WHO Member States and other stakeholders have committed to contribute resources and expertise to expand and enhance the quality of national health systems to facilitate effective and equitable access by refugees and host communities.<sup>32</sup> The Global Compact for Safe, Orderly and Regular Migration features health as a cross-cutting priority and encourages national governments to “incorporate the health needs of migrants in national and local healthcare policies and plans”.<sup>33</sup> In 2023, WHO Member States also adopted the Rabat Declaration during the Third Global Consultation on the Health of Refugees and Migrants.<sup>34</sup> The declaration reaffirms the commitments outlined in the global action plan and the global compacts to accelerate efforts to improve the health of refugees, migrants and their host communities.<sup>35</sup> In addition, the 2023 WHO Global research agenda on health, migration and displacement outlines international research priorities needed to promote knowledge generation at global, regional and local levels, and to use research findings to guide policy action.<sup>36</sup>

The commitment to addressing the health of refugees and migrants is also reflected in the development of regional action plans and strategies, and the convening of high-level meetings on health and migration. National level health system reviews and training on health competency standards have also highlighted opportunities for further implementation of the global action plan.<sup>37–40</sup>

2014

#### WHO End TB Strategy

- 80% reduction in TB incidence by 2030, compared with 2015
- 90% reduction in the number of deaths by TB by 2030, compared with 2015
- No TB-affected households face catastrophic costs by 2020

2015

#### Sustainable Development Goals

- By 2030, end the epidemics of AIDS, TB, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases

- **Global commitments to end tuberculosis by 2030**

- **Global commitments on health, migration and refugees**

2016

- The Summit for refugees and migrants organized at the UN General Assembly aimed to guide the development of a global strategy to address international migration and led to *The New York declaration for refugees and migrants*

This declaration recognizes that health is a fundamental human right, calls for global and national efforts to strengthen health systems and understands the need to address the health challenges that displaced populations face

2018

- Two agreements were made:  
The Global Compact for Safe, Orderly and Regular Migration (GCM). It lists 23 objectives that aim to help countries build their strategies to mitigate migration's risks and migrants' vulnerability  
The Global Compact on Refugees (GCR) was developed with four objectives that lay out the road map for governments to ensure that host communities receive the needed assistance and that refugees lead productive and successful lives

2018

- First UN High Level Meeting on the fight against TB was organized in New York

2019

- The Global Action Plan on promoting the health of refugees and migrants 2019–2023 was adopted during the Seventy-second World Health Assembly

2023

- The Global Action Plan on promoting the health of refugees and migrants was extended till 2030  
The Third Global Consultation on the Health of Refugees and Migrants was organized in Morocco and resulted in the Rabat declaration

2023

- Political declaration of the second UN high-level meeting on the fight against TB
- Tuberculosis treatment coverage: 90% by 2027 (equivalent to up to 45 million people globally from 2023–2027, including up to 4.5 million children and up to 1.5 million people with drug-resistant TB)
- Coverage of TB preventive treatment: 90% by 2027 (equivalent to up to approximately 45 million people globally from 2023–2027, including 30 million households, contacts of people with TB, and 15 million people living with HIV)
- Coverage of rapid diagnostic testing for TB: 100% by 2027
- Annual funding for essential TB services: \$22 billion by 2027
- Annual investment in TB research: \$5 billion by 2027
- Availability of new vaccines against TB that are safe and effective: rollout initiated, preferably within five years

## SECTION 6. INNOVATIVE SOLUTIONS AND POLICY OPTIONS

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To effectively address TB among refugees and migrants, we need innovative solutions and proven interventions supported by strong governance and policies that are sensitive to refugees and migrants. In line with the commitments and recommendations outlined in the UN political declarations on TB, migration and refugees, WHO's End TB Strategy and global action plan, alongside regional and country plans, the following policy options should be taken at the global, regional and national levels. These recommended policies are targeted at national governments and key stakeholders on the ground. They build on current experiences, innovations, lessons and best practices implemented by pathfinding countries that can serve as role models in addressing the challenge of TB and the refugee/migration crisis.



**1.** Mobilize and fully engage high-level political leadership to secure strong political support for addressing TB in migrants, refugees, internally displaced populations and vulnerable host communities affected by migration.



**2.** Ensure that the TB response is adequately resourced, and leverage resources from other sectors to provide effective TB prevention and care services for refugees, migrants, internally displaced persons, and their families, and to tackle the drivers of the epidemic.



**3.** Ensure that national health policies are sensitive to refugees and migrants. Legislative frameworks should protect legal rights to healthcare and facilitate continuity of care that is free from stigma and discrimination, with access to a health and social benefits package. This is especially important for those people who may be excluded from such frameworks, in line with the *Interagency Field Guide: Tuberculosis Prevention and Care Among Refugees and Other Populations in Humanitarian Settings*.



**4.** Promote mechanisms for co-ordination and dialogue to facilitate multisectoral, interagency, and international engagement and action on TB, migration and displacement in line with WHO's Multisectoral Accountability Framework to end TB.



**5.** Promote inter-regional actions such as cross-border collaboration, regional consilia with information-sharing between countries, regular monitoring and evaluation of cross-border initiatives, and adaptation of policies and support for country-level implementation.



**6.**

Leverage technical guidance and support from WHO, other UN agencies and stakeholders to ensure that refugees and migrants benefit from universal health coverage through the delivery of comprehensive, people-centered services through primary healthcare. Also, strengthen referral systems to other levels of care, when they are needed.



**7.**

Promote the meaningful engagement of civil society, non-governmental organizations and representatives of refugees and migrants, to support the delivery of TB services and combat TB-related stigma and discrimination.



**8.**

Improve the capacity of surveillance and monitoring and evaluation systems to capture high-quality data on TB among at risk populations including refugees and migrants. Enhance the capacity to disaggregate data and use it to improve health outcomes and service delivery, and for public health action.



**9.**

Promote research that highlights the barriers to accessing TB prevention, diagnosis and care, and the practical steps to overcome them. Translate and disseminate research into evidence for policies and practice that are sensitive to refugees and migrants, aligned to WHO's global strategy for TB research and innovation.



**10.**

Review and monitor progress made on addressing TB in refugees and migrants at global, regional and country levels, including implementation of the policy options.



## POLICY OPTION 1

**Mobilize and fully engage high-level political leadership to secure strong political support for addressing TB in migrants, refugees, internally displaced populations and vulnerable host communities affected by migration.**

- TB has an adverse impact on the already overburdened lives of refugees and migrants, but efforts to ensure that these populations have access to TB prevention and care have so far been insufficient. With the support of WHO and key partners, Member States should promote and prioritize bolstering a fully funded TB response to address the needs of refugees, migrants and internally displaced populations. The response should engage key stakeholders, including civil society and affected communities.
- Actions to address TB in refugees and migrants should be integrated into national health or emergency strategies, policies, plans and actions. These actions should be designed to strengthen national capacity to meet the health needs of refugees, migrants and internally displaced populations and hosting communities. This should include incorporating refugee- and migrant-sensitive actions into TB strategic plans and operational plans to ensure universal access to quality TB services. A multisectoral perspective should be used to also address poverty and undernutrition, the main drivers of TB among these populations.

## POLICY OPTION 2

**Ensure that the TB response is adequately resourced, and leverage resources from other sectors to provide effective TB prevention and care services for refugees, migrants, internally displaced persons, and their families, and to tackle the drivers of the epidemic.**

- For many years, investments in the TB response and the refugee and migrant crisis have not met needs, and funding has decreased over time. Member States are urged to significantly boost domestic funding to tackle TB among refugees, migrants and internally displaced persons, and to meet national and global targets.
- International donor funding for the TB response and the refugee and migrant crisis should be dramatically increased through existing channels, as well as new and innovative funding mechanisms. For instance, Global Fund grants have played an important role in multicountry and regional funding initiatives to effectively address TB prevention and care among refugees and migrants. In the next funding replenishment, the Global Fund is urged to continue prioritizing and increasing resource allocation to address the needs of refugees and migrants with TB.
- Sustainable financial mechanisms should be developed, including from development actors and the private sector, to enhance social protection for refugees and migrants. This would also strengthen implementation of the WHO Global Code of Practice on the International Recruitment of Health Personnel.<sup>41</sup>

### POLICY OPTION 3

**Ensure that national health policies are sensitive to refugees and migrants. Legislative frameworks should protect legal rights to healthcare and facilitate continuity of care that is free from stigma and discrimination, with access to a health and social benefits package. This is especially important for people who may be excluded from such frameworks, in line with the *Interagency Field Guide: Tuberculosis Prevention and Care Among Refugees and Other Populations in Humanitarian Settings*.<sup>42</sup>**

- Refugees and migrants should receive equitable access to TB services, subject to national laws and practice, without discrimination based on gender, age, religion, nationality or race, and in accordance with international laws and conventions for refugees. The health of refugees and migrants should not be considered separately from the health of the overall population. Where appropriate, to reduce health inequities and contribute to achieving the SDGs, refugees and migrants should be included in existing national health systems, plans, policies and legislative frameworks.
- Health policies should advocate that refugees and migrants affected by TB are prioritized for equitable access to a health and social benefits package, so they avoid catastrophic costs and financial hardship.

### POLICY OPTION 4

**Promote mechanisms for co-ordination and dialogue to facilitate multisectoral, interagency, and international engagement and action on TB, migration and displacement in line with WHO's Multisectoral Accountability Framework to end TB.**

- Policy engagement and action between the health and non-health sectors (for example, immigration, labor, and so on) and civil society must support TB prevention and care within countries and, where relevant, across country borders. This aligns with WHO's Multisectoral Accountability Framework to end TB<sup>43</sup> and the Health in All Policies (HiAP) approach.<sup>44</sup>
- The humanitarian-development nexus, partnerships and co-ordination mechanisms should be enhanced across sectors, countries and agencies. This would achieve synergies and efficiency, and help to share best practice on addressing the health of refugees and migrants, especially in combating infectious diseases such as TB, and within the UN system. This includes collaboration with stakeholders, including WHO, International Organization for Migration (IOM), United Nations High Commissioner for Refugees (UNHCR), the United Nations Children's Fund (UNICEF), International Labour Organization (ILO), United Nations Development Programme (UNDP) and World Food Programme (WFP), focused on providing TB prevention and care services for refugees and migrants.
- In collaboration with major partners such as the US Agency for International Development (USAID), Global Fund, Stop TB Partnership, and other international and civil society organizations, WHO should provide guidance and support to countries to address TB in refugees and migrants.

- The health system's response to migrant and refugee needs should be reviewed to understand service delivery challenges and identify opportunities to strengthen health system capacity and improve access to health services for refugees and host communities.

In the Greater Mekong Subregion, the implementation of migrant-inclusive interventions was effective in detecting more people with TB, linking them to TB care and supporting them to complete TB treatment.

## POLICY OPTION 5

**Promote inter-regional actions such as cross-border collaboration, regional consilia with information-sharing between countries, regular monitoring and evaluation of cross-border initiatives, and adaptation of policies and support for country-level implementation.**

- Countries should receive guidance and technical assistance to strengthen cross-border and cross-sectoral collaboration. This would ensure continuity of care – for example, for transfer and follow-up of people with TB, including for the procurement and supply of TB medicines and diagnostics through systematic planning and co-ordination. This also includes establishing sustainable use of digital technologies and e-platforms such as inter-regional consilia.<sup>45</sup>
- TB services should be rolled out across borders. This should be supported by leveraging existing and new global refugee and migration co-ordination arrangements with Member States (where appropriate), as well as the UN cluster co-ordination mechanism. Other agencies should be engaged – for example, IOM, UNHCR, UN Network on Migration, ILO, and other humanitarian and development organizations such as the International Red Cross and Red Crescent Movement, civil society and faith-based organizations.

In response to displacements caused by conflicts and political instability in the Eastern Mediterranean region, the Middle East Response Initiative was launched in 2017.

In the East Africa region, co-ordination mechanisms were set up within and between countries to exchange information, share experiences and allow the transfer of people with TB from one country to another to promote continuity of TB care.

### CASE STUDY 3. MANAGEMENT OF TUBERCULOSIS AMONG MIGRANTS TO QATAR



Qatar reports a total of 850 to 1,000 TB cases annually, with more than 95 percent of these occurring among migrants. People from India, Nepal and the Philippines constitute almost 60 percent of the annual TB caseload.

The national TB program in Qatar aims to reduce incidence and mortality through comprehensive TB elimination strategies. This approach emphasizes training, education and research, while actively engaging with the community and other organizations to facilitate early TB detection and treatment through a robust referral system. Addressing TB among non-Qatari born populations is essential for comprehensive TB care in Qatar and requires a multifaceted approach that addresses the specific needs and challenges faced by migrant populations.

Hamad Medical Corporation, specifically the Communicable Disease Center (CDC) is the primary hub for the national TB elimination program. Operating under the Ministry of Public Health, CDC collaborates with public health centers, private clinics, and other non-governmental organizations. All individuals with presumptive TB are referred to the CDC for clinical evaluation following an established pathway for diagnosis and treatment. A multidisciplinary approach to care is provided involving collaboration among nurses, physicians, TB laboratory services with whole genome sequencing facilities, clinical imaging, dieticians, and pharmacists. Psychological and social support services are also provided, underscoring the holistic approach to TB management. TB services are free of charge to all patients diagnosed with TB.

To detect TB early, migrants from high TB incidence countries – including India, Nepal, Bangladesh, Pakistan, Philippines and Sri Lanka – are screened at Qatar Visa Centers in their respective home countries, a process that is overseen by the Qatar Ministry of Interior. Newcomers from other countries complete a medical checkup within one week of arrival to Qatar. Also, workers in restaurants, barber shops, laundries and health clubs undergo annual health checks. People with presumptive TB are referred to CDC for clinical evaluation and treatment. Once diagnosed, video-supported treatment is offered to facilitate adherence and completion. Newer TB medicines and regimens, including with second-line drugs such as bedaquiline and pretomanid, are offered, according to WHO recommendations. When needed, stringent infection control measures, such as respiratory isolation, are in place and contact investigation is carried out.

The Government of Qatar is currently screening all individuals at high risk for TB infection and reactivation, including correctional facility residents, healthcare workers, and immunocompromised individuals.

The national TB program achieves high rates of treatment success – above 90 percent – and maintains a low rate of drug-resistant TB and TB relapse, with rates below 2 percent. Annual TB campaigns and continuous awareness programs are implemented to empower individuals with knowledge about

TB, to promote early TB detection and treatment, to reduce stigma, and to facilitate access to TB-related healthcare services. These initiatives engage the community and raise awareness about TB, playing a vital role in preventing and managing TB in Qatar.

The data demonstrate that Qatar has made significant progress in managing TB – with 41 cases per 100,000 people in 2002 decreasing to 31 cases per 100,000 people in 2023. This decline demonstrates the effectiveness of the comprehensive TB prevention, management and care approach. However, sustained vigilance and adaptation to changing circumstances will be essential to sustain the current achievements and contribute to national and global efforts to end TB.

#### **CASE STUDY 4. MIDDLE EAST RESPONSE INITIATIVE: IMPROVING TB SERVICES IN CROSS-BORDER SETTINGS**



The Middle East Response Initiative was implemented by IOM as principal recipient, in partnership with WHO as key technical partner, with funding from the Global Fund. The main aim was to streamline the Global Fund's investments in the region's participating countries under a unified inter-regional grant management platform to provide preventive, diagnostic and treatment services within fragile health systems.

Refugees, internally displaced persons, women and children, and host populations who are widely affected by the context in this region, were included. The project was implemented with multistakeholder collaboration between the national TB program, international and national non-governmental organizations, and other UN agencies such as UNDP, UNHCR, UNICEF and WFP.

Outreach and systematic screening for TB were completed in refugee and internally displaced populations in Syria, Yemen and Iraq and among migrant workers in Jordan and Lebanon, using mobile units and mobile x-ray teams, complemented by computer-aided detection. People with TB were offered treatment and monitoring at no cost.



## POLICY OPTION 6

**Leverage technical guidance and support from WHO, other UN agencies and stakeholders to ensure that refugees and migrants benefit from universal health coverage through the delivery of comprehensive, people-centered services through primary healthcare. Also, strengthen referral systems to other levels of care, when they are needed.**

- Establish strong collaboration with all partners involved in the national TB response to ensure that TB prevention and care services are sensitive to refugees and migrants – to their age and gender – and that they are people-centered. WHO-recommended interventions should be implemented, including:
  - Systematic screening for TB, using the latest technologies and screening tests such as chest x-ray with computer-aided detection, mobile vans and other point-of-care tests.
  - Harmonized approaches to TB screening across countries, and document and share experiences and best practices.
  - Access to WHO-recommended molecular rapid diagnostic tests, drug susceptibility testing, whole genome sequencing technologies and diagnostic algorithms for everyone with presumptive TB or confirmed TB.
  - Contact investigation at community level, linked to timely TB and preventive treatment with shorter treatment times.
  - Readiness to adopt a new TB vaccine when it has been evaluated. This also aligns to the work of the WHO TB Vaccine Accelerator Council.<sup>46,47</sup>
  - Provision of effective and timely TB treatment, including shorter times for the treatment of drug-susceptible and drug-resistant TB, with support measures to optimize treatment outcomes and limit TB transmission.
  - Access to screening, diagnostic and treatment algorithms on apps to inform TB prevention, management and care. The use of technologies such as drones to support TB care in difficult-to-access areas.
  - Screening and management of comorbidities and other health conditions or behaviors, including mental health conditions, substance use disorders, undernutrition, HIV, diabetes, hypertension, smoking or sexually transmitted infections.
  - Person-centered models of care using age-appropriate outreach strategies, peer supporters and other innovations – for example, differentiated service delivery models that include the use of digital technologies for migrants, refugee populations and internally displaced populations.
  - Building the capacity and confidence of healthcare workers – including community health workers and peer supporters, to provide TB prevention and care services – to adopt innovations such as video-supported treatment, and to establish trust with migrants and refugees.

- People-centered and culturally sensitive, refugee/migrant friendly, outpatient, and home- or community-based care (with infection prevention and control) supported by accredited translators or healthcare workers fluent in refugee and migrant languages, and the use of digital innovations.
- Medical records that are owned by migrants and refugees.
- Information on TB prevention and care, and treatment support in refugee and migrant languages.

Qatar has made significant progress in managing TB with free-of-charge TB services provided by highly trained physicians and multidisciplinary healthcare teams using a compassionate and patient-centered approach. Immigrants with TB are offered psychological and social support services as part of TB care.

In 2022–2023, Poland implemented a European Union Temporary Protective Directive to ensure that Ukrainian refugees had full access to medical assistance, including TB services.

## POLICY OPTION 7

**Promote the meaningful engagement of civil society, non-governmental organizations and representatives of refugees and migrants, to support the delivery of TB services and combat TB-related stigma and discrimination.**

- Empower migrant and refugee community leaders and organizations to advocate for the rights of TB-affected individuals and communities, and take action against TB-related stigma and discrimination.
- Ensure that refugees and migrants are involved and engaged in relevant decision-making processes in the development of health and TB policies, strategies and plans, and in interventions across the migration and displacement cycle and in countries of origin, transit, and destination.
- Prioritize country-collaboration with civil society and partners to reach vulnerable or excluded subgroups of refugees and migrants (for example, women or men, unaccompanied or separated children, LGBTQI+ populations, older people, or people with disabilities) with more effective TB prevention and care. This could include addressing precarious working conditions for low-wage labor migrants, and the living conditions for those in crowded settings, or in reception and detention centers.

In Cox's Bazar, Bangladesh, WHO, the national TB program, other government ministries, UN and development agencies, the private sector, and non-governmental organizations collaborated to provide healthcare, TB prevention and care to Rohingya refugees in Bangladesh.

## CASE STUDY 5. LESSONS LEARNED, CHALLENGES AND BEST PRACTICES IN REFUGEE SETTINGS IN EAST AND HORN OF AFRICA AND THE GREAT LAKES REGION



TB is a major public health challenge among refugees and internally displaced populations in the Eastern Africa region, covered by the Intergovernmental Authority on Development (IGAD). More than 60 percent of refugees in the region are in Ethiopia, Kenya and Uganda, which are also among the 30 high-burden countries for TB, TB/HIV and MDR TB.

In collaboration with partners, IGAD implemented a project to address TB among refugees in Uganda, Ethiopia, Kenya, Sudan, Djibouti and South Sudan. The activities focused on enhancing TB case detection in the community, scaling up access to TB diagnosis for refugees and host communities, bi-directional testing for TB and COVID-19, and improving adherence to TB treatment.

Innovative strategies to address TB among refugees in this region included: sensitization and mobilization of community influencers such as refugee community leaders and community health workers; social support groups for people with HIV-associated TB; strong collaboration between all partners and the national TB programs; establishment of TB diagnosis and treatment sites near refugee centers; continuous capacity building of national TB program staff; and strengthened cross-border collaboration.

The implementation of this approach resulted in a number of positive outcomes, including 12,090 TB episodes notified in a three-year period. There was also a significant increase in the TB case notification rates from 87 to 131 per 100,000 population (2017 to 2022). The contribution of community referral to TB notifications also increased from 20.7 percent in 2019 to 37.5 percent in 2021. Treatment success rates were maintained above 90 percent in three countries (Kenya, South Sudan and Uganda).

HIV testing rates remained consistently high and increased slightly, from 95.4 percent to 97.6 percent (2019–2022), and the prevalence of HIV among people with TB reduced from 13.2 percent to 7.2 percent (2019–2022). Take-up of antiretroviral therapy was consistently high – above 90 percent (Kenya, South Sudan and Uganda).

There was also a significant improvement in the diagnostic capacity for drug-resistant TB: the percentage of people with a drug susceptibility testing result for rifampicin increased from 51.7 percent in 2019 to 61 percent in 2021. Of those people diagnosed with MDR TB, 98 percent started treatment.

This approach highlights the importance of focused attention on TB in refugee camps in the East Africa region. The close cross-border co-operation between national TB programs, other government agencies and humanitarian partners enabled a continuum of care for people with TB. Intensified community support and systematic screening resulted in an increased number of people diagnosed with TB, tested for HIV and for drug resistance, with high treatment success.

## **CASE STUDY 6. REACHING THE UNREACHED: COMBATING TUBERCULOSIS IN ROHINGYA REFUGEE CAMPS**



About one million Rohingya refugees live in the largest refugee camp in the world in Cox's Bazar, Bangladesh. The Rohingya are an ethnic minority originally from Myanmar, making them the world's largest stateless population. Most arrived in 2017, fleeing persecution, large-scale violence and human rights violations.<sup>48</sup>

Rohingya refugees rely entirely on humanitarian assistance for protection, food, water, shelter and health. They live in temporary shelters in highly congested camps that are vulnerable to weather-related hazards, such as cyclones, flooding and landslides. This environment is also conducive for TB transmission.

Access to health facilities has historically been challenging for people in Cox's Bazar due to complicated administrative procedures, stigma and fear.

WHO, the national TB program, other government ministries, development agencies, the private sector, non-governmental organizations, civil society and community actors established an active partnership to provide healthcare and TB prevention and care to Rohingya refugees in Bangladesh.

To enhance action on systematic screening and diagnosis, eight TB laboratories and two mobile vans equipped with GeneXpert machines were installed within the camps. Two more vans equipped with digital chest x-ray and GeneXpert machines were introduced in 2023 to support case finding activities in host communities in the vicinity of camps. Together, these systems assisted in the early detection of people with presumptive TB and their prompt treatment, cutting the chains of TB transmission.

Community health education sessions – adapted to people's needs, and aimed at controlling various communicable diseases and pertinent health concerns such as dengue, maternal and child health – are held regularly at primary healthcare centers and in households. Medical samples from people with presumptive TB were transported to a centralized unit for further testing. TB diagnosis and treatment services were completely free to all citizens, including the refugee population.

About 1,000 people were reached with health education messages every month. After TB screening, 9,334 people were diagnosed with TB in one year, including 75 percent (6,992) from the host community and 25 percent (2,342) from the Rohingya community. Treatment success rates were high. These activities are ongoing and include education for people on present and emerging issues related to health.

People at risk of TB in Cox's Bazar were successfully reached due to multisectoral efforts, community engagement, and systematic screening linked to TB treatment.

## POLICY OPTION 8

**Improve the capacity of surveillance and monitoring and evaluation systems to capture high-quality data on TB among at risk populations including refugees and migrants. Enhance the capacity to disaggregate data and use it to improve health outcomes and service delivery, and for public health action.**

- Collate and analyze disaggregated data on TB among refugees and migrant populations at country and local levels, including health-seeking behavior, and access to and use of healthcare services. Migrants and refugees should be able to self-disclose information, and when they do, data protection, privacy and confidentiality should be ensured.
- Develop intercountry approaches to generating data and producing shared databases on health risks, including TB, in countries of origin, transit and destination.
- Promote the portability of health data and electronic medical records, including for TB, in accordance with national law and data protection principles (including individual ownership) to ensure continuity of care. And, as needed, individual health information should be made available for use in different countries.
- Identify, collate and facilitate the exchange of experiences and lessons learned among Member States, and generate a repository of information on experiences in affected countries.
- Leverage the use of artificial intelligence and data to predict potential movement of people and establish where TB services may be needed.

In co-ordination with local health authorities, IOM Venezuela implemented a community-based syndromic disease surveillance system in hard-to-reach border areas of the Amazonas Region. After assessing people for symptoms and using pre-defined case definitions, indigenous community health workers and local medical practitioners issued timely alerts to the nearest primary healthcare and local epidemiologist. Using this approach, more than 700 alerts were sent, and a number of people were diagnosed with TB.

## POLICY OPTION 9

**Promote research that highlights the barriers to accessing TB prevention, diagnosis and care, and the practical steps to overcome them. Translate and disseminate research into evidence for policies and practice that are sensitive to refugees and migrants, aligned to WHO's global strategy for TB research and innovation.<sup>49</sup>**

- Enhance research on identifying and addressing barriers to accessing TB and social protection services, including TB-related stigma, discrimination and marginalization.
- Investigate the following aspects as they relate to TB among migrants, refugees and other displaced populations:<sup>50–55</sup> artificial intelligence models trained on individual screening data; health-related, sociodemographic, spatial and vulnerability level data; the TB risk and the impact of living and working conditions on the health of migrants, refugees and other displaced populations; effective and sustainable models of healthcare and health financing in humanitarian settings in low- and middle-income countries and fragile contexts; migrant-sensitive health systems and models of care to improve early TB detection, including for internal migration; approaches to systematic TB screening (and links to TB care)<sup>56–58</sup> in several settings, including for international migrants, asylum seekers and internally displaced people.<sup>59–62</sup>
- Research the broader impact of climate change in driving migration and displacement, and its impact on the other determinants of TB such as food insecurity, undernutrition and access to safe drinking water.
- Support engagement in TB vaccine research so that all at-risk communities (including refugees and migrants) will benefit from a new TB vaccine.
- Provide adequate funding of TB research that aims to benefit migrants and refugees, including studies generated by the Unitaid-funded projects and the USAID-funded SMART4TB project.<sup>63,64</sup>

## POLICY OPTION 10

**Review and monitor progress made on addressing TB in refugees and migrants at global, regional and country levels, including implementation of policy options.**

- In collaboration with other international and UN organizations, WHO has a lead role to co-ordinate and promote refugees' and migrants' health on the international agenda, including ending TB. Countries are urged to provide regular updates to WHO, which will monitor the implementation of the innovative solutions and policy options outlined in the report.



## CASE STUDY 7. TB SURVEILLANCE IN HARD-TO-REACH BORDER AREAS OF AMAZONAS, VENEZUELA



TB continues to be a major concern in Venezuela, with an overall incidence rate of 35 cases per 100,000 population in 2022, and an increasing trend, particularly in the Amazonas region. As a consequence of the protracted socioeconomic and political crisis in the country, the communicable diseases surveillance system has limited early detection and diagnostic capacities. In Venezuela, indigenous populations in border states are the second most at-risk group for TB disease (after incarcerated men). Indigenous communities face further barriers to access health services, such as geographical, cultural and linguistic barriers.

In co-ordination with local health authorities, IOM Venezuela implemented a community-based syndromic disease surveillance system using WHO and International Federation of Red Cross models and case definitions in hard-to-reach border areas of the Amazonas region. Community health workers (CHWs) from indigenous populations and local medical practitioners were trained in syndromic identification of communicable diseases of public health significance, and in issuing timely alerts to the nearest primary healthcare center and to the local epidemiologist for further investigation.

From July 2023 to March 2024, 711 alerts were issued by CHWs in Amazonas state. The community-based syndromic disease surveillance system identified and reported 127 potential episodes of malaria, dengue and TB. In total, 13 cases of presumptive TB were reported. Of these, 12 were bacteriologically confirmed using WHO-recommended rapid molecular diagnostic tests, were started on TB treatment with support from CHWs.

Community-based syndromic disease surveillance system training for CHWs, local medical practitioners, and local epidemiologists was important in fostering relationships and co-ordination with all relevant actors.





A health worker examines  
a child at Makariv Outpatient  
Clinic, Ukraine  
© WHO/Christopher Black

## SECTION 7. AN URGENT CALL TO ACTION

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Urgent action is needed to combat the dire impact of TB on migrants, refugees and internally displaced persons, and to address the underlying drivers of the epidemic. The innovative solutions and policy options outlined in this report highlight clear actions, that should be implemented with respect for the universal health coverage principle of non-discrimination, and guided by an inclusive human rights approach that ensures accountability. This includes ensuring sustainable financing and the involvement of a range of non-state and government actors across multiple sectors, leveraging multisectoral, multilevel, and transnational approaches.

The ambitious goal of ending TB is within reach and the path forward to safeguard and promote the wellbeing of migrants, refugees and other displaced populations is clear. It is now in our hands to move forward and translate these recommendations to action.

To review the progress made since the launch of this report, it is proposed that WHO presents an update at the next WISH Forum in 2026.



## ACRONYMS

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|               |                                               |
|---------------|-----------------------------------------------|
| <b>CDC</b>    | Communicable Disease Centre                   |
| <b>CHWs</b>   | community health workers                      |
| <b>DR-TB</b>  | drug-resistant TB                             |
| <b>EURO</b>   | European Region WHO                           |
| <b>GMS</b>    | Greater Mekong Subregion                      |
| <b>IGAD</b>   | Intergovernmental Authority on Development    |
| <b>ILO</b>    | International Labour Organization             |
| <b>IOM</b>    | International Organization for Migration      |
| <b>MDR/RR</b> | multidrug/rifampicin resistant                |
| <b>SDGs</b>   | Sustainable Development Goals                 |
| <b>TB</b>     | tuberculosis                                  |
| <b>UN</b>     | United Nations                                |
| <b>UNDP</b>   | United Nations Development Programme          |
| <b>UNHCR</b>  | United Nations High Commissioner for Refugees |
| <b>UNICEF</b> | United Nations Children's Fund                |
| <b>USAID</b>  | US Agency for International Development       |
| <b>WFP</b>    | World Food Programme                          |
| <b>WHO</b>    | World Health Organization                     |
| <b>WISH</b>   | World Innovation Summit for Health            |

## GLOSSARY OF TERMS

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**Asylum seeker:** Any person who is seeking international protection. In some countries, 'asylum seeker' is used as a legal term referring to a person who has applied for refugee status or a complementary international protection status and has not yet received a final decision on their claim. Not every asylum-seeker will ultimately be recognized as a refugee, but every refugee is initially an asylum seeker.<sup>65</sup>

**International migrant worker:** This report uses the International Labour Organization (ILO) definition of "all international migrants who are currently employed or unemployed and seeking employment in their present country of residence".

**Internally displaced person:** A person who has been forced or obliged to flee from their home or place of habitual residence, and who has not crossed an internationally recognized State border. Displacement is usually due to armed conflicts, generalized violence, violations of human rights, or natural or human-made disasters, or moving to avoid the effects of these challenges.<sup>66</sup>

**Migrant:** A person who moves permanently or temporarily from their usual place of residence to another, whether across or within international boundaries.<sup>67</sup> (There is no international consensus on the definition, but WHO has adopted the IOM's definition of a migrant and uses it in the Global Action Plan and WHO resolutions).

**Refugee:** Any person who meets the eligibility criteria under an applicable definition of refugee, as provided for in international or regional refugee instruments, under the mandate of the Office of the United Nations High Commissioner for Refugees (UNHCR) or in national legislation. Refugees outside their country of origin need international protection because they fear persecution or a serious threat to their life, physical integrity, or freedom in their country of origin as a result of persecution, armed conflict, violence or serious public disorder<sup>68,69</sup> [The UNHCR legal office agreed a definition with WHO Member States, which is used in the *WHO World Report on the Health of Refugees and Migrants*, the WHO global action plan to promote the health of refugees and migrants, and related WHO resolutions].

**Tuberculosis disease:** The disease state caused by *Mycobacterium tuberculosis*. It is also referred to as active tuberculosis.<sup>70</sup>

**Tuberculosis (TB) infection:** A state of persistent immune response to stimulation by *M. tuberculosis* antigens with no evidence of clinically manifest active TB. There is no 'gold standard' test for direct identification of *M. tuberculosis* infection in humans. Most infected people have no signs or symptoms of TB but are at risk for active TB disease.<sup>71</sup>

**Universal health coverage:** This means that all people have access to the full range of quality health services they need, when and where they need them, without financial hardship. Universal health coverage includes the full continuum of essential health services, from health promotion to prevention, treatment, rehabilitation, and palliative care, across the life course.<sup>72</sup>

# APPENDIX 1. SUMMARY OF LITERATURE REVIEW ON TUBERCULOSIS, MIGRATION AND REFUGEES

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## METHODS

Structured literature searches were carried out in April and May 2024, and covered the period from 2020 to 2024. Keywords (as described below) were used to search databases including PubMed, Scopus, ClinicalKey, Oxford Academic, Wiley Online Library, Google Scholar, and the websites of UN organizations (World Health Organization (WHO) and WHO Health and Migration Programme; International Organization for Migration; United Nations High Commissioner for Refugees). Relevant reports were also provided by WHO staff. Search results were scanned for relevance and papers were excluded if they focused exclusively on tuberculosis (TB) (epidemiology, physiopathology, and so on) or migration (statistics, pathways, causes). To be included, citations needed to address specific aspects and innovations related to TB in the population of migrants, refugees and/or internally displaced populations. Media announcements and opinion pieces were excluded, as were protocols of studies/reviews that had not been published or completed and other irrelevant types of publications such as news articles, editorials, non-peer-reviewed articles, certain government and non-governmental organization reports, or general reference works.

## RESULTS

The titles and abstracts of 3,697 articles were screened, of which 547 were found to specifically address TB among migrants, refugees and other displaced populations. A further 291 articles were excluded as they lacked relevance, presented outdated information, provided insufficient evidence, were redundant or focused on a specific geographical area. A total of 256 full text articles were imported into Zotero (reference management software) for further review, and 181 were excluded for various reasons. A total of 75 manuscripts were included and informed this technical report.

The 75 publications included: 20 systematic reviews; four meta-analyses; texts of nine global commitments, six regional plans and three national strategies; as well as other original research articles. Nine articles addressed multidrug-resistant TB, 16 addressed TB infection, 10 showed the challenges and burden of TB on health systems, four addressed the research plans for TB elimination, and 26 described interventions and innovations to prevent, control and/or eliminate TB in different countries. These publications represent countries from all six WHO Regions including low, middle and high TB incidence countries.



## APPENDIX 2. BASIC FACTS ABOUT TUBERCULOSIS

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Tuberculosis (TB) is an old disease. Studies of human skeletons show that it has affected humans for thousands of years.<sup>73</sup> Its cause remained unknown until 24 March 1882, when Dr Robert Koch announced his discovery of the bacillus responsible, subsequently named *Mycobacterium tuberculosis*.<sup>74</sup> The disease is spread when people who are sick with TB expel bacteria into the air (for example, by coughing). TB typically affects the lungs (pulmonary TB) but can also affect other sites (extrapulmonary TB). Most people who develop the disease (about 90 percent) are adults, and there are more cases among men than women.

Diagnostic tests for TB disease have improved substantially in recent years. There are now several rapid molecular tests recommended by the World Health Organization (WHO) as the initial diagnostic test for TB, some of which can detect drug resistance simultaneously.<sup>75</sup> These tests can be used at the lower levels of the health system. A point-of-care lateral-flow test performed on urine is also recommended by WHO; its main use is to assist with diagnosis of TB in people with advanced HIV disease, in combination with rapid molecular tests. There are additional rapid molecular tests specifically for the detection of resistance to a variety of first- and second-line anti-TB drugs, while sequencing technologies can be used to provide a comprehensive individual profile of drug resistance. The older method of sputum smear microscopy (developed more than 100 years ago) is still widely used for TB diagnosis in low- and middle-income countries, but is increasingly being replaced with rapid tests.

Culture testing remains the reference standard for TB diagnosis. In addition, culture is required for the detection of resistance to newer anti-TB drugs and may also be used as a confirmatory test in settings and situations where people have a low pre-test probability of having TB disease. Following diagnosis, culture or smear (as opposed to rapid molecular tests) are necessary to monitor an individual's response to treatment.

Without treatment, the death rate from TB is high. Studies of the natural history of TB disease in the absence of treatment with anti-TB drugs (conducted before drug treatments became available) found that about 70 percent of individuals with sputum smear-positive pulmonary TB died within 10 years of being diagnosed, as did about 20 percent of people with culture-positive (but smear-negative) pulmonary TB.<sup>76</sup>

Effective drug treatments were first developed in the 1940s. The latest WHO guidelines<sup>77</sup> include a strong recommendation for a six-month regimen of isoniazid (H), rifampicin (R), ethambutol (E) and pyrazinamide (Z) for people with drug-susceptible TB (both pulmonary and extrapulmonary): all four drugs for the first two months, followed by H and R for the remaining four months. They also include newer recommendations that people aged 12 years and older with drug-susceptible pulmonary TB may be treated with a four-month regimen of rifapentine (P), H, Z and moxifloxacin (M), and that children and adolescents between 3 months and 16 years of age with non-severe TB (and without suspicion or evidence of resistance to R and H) may be treated with a four-month regimen (two months

of H, R, Z and sometimes also E, followed by two months of H and R). Treatment success rates of at least 85 percent for people enrolled on the six-month regimen are regularly reported to WHO by its 194 Member States.

Treatment for people diagnosed with R-resistant TB (RR-TB) and multidrug-resistant TB (MDR-TB, defined as resistance to H and R) requires other regimens. The latest WHO guidelines<sup>78</sup> prioritize a new six-month regimen consisting of bedaquiline (B), pretomanid (Pa), linezolid (L) and moxifloxacin (M), referred to as BPaLM; for people who have pre-extensively drug-resistant TB (pre-XDR-TB, defined as TB that is resistant to R and any fluoroquinolone), the regimen can be used without moxifloxacin (BPaL). Based on currently available safety data, this regimen is recommended only for people aged 14 years and above. For people not eligible for the six-month regimen, other nine-month or longer regimens can be used.<sup>79</sup> Nationally, treatment success rates for RR-TB reported to date have typically been in the range of 50 percent to 75 percent; the global average has been improving in recent years, reaching 63 percent in the most recent patient cohort for which data are available. This may further improve with expanded use of BPaLM, for which clinical trial data showed a treatment success rate of 89 percent.<sup>80</sup> Treatment for XDR-TB (resistance to R, any fluoroquinolone and at least one of bedaquiline or linezolid) remains much more difficult, and treatment success rates are typically low.

A global modeling study published in 2016 estimated that about a quarter of the world's population had been infected with *M. tuberculosis*.<sup>81</sup> Recent analyses and commentary suggest that the number of those currently infected is lower, given that some people will clear the infection.<sup>82,83</sup> An older modeling study published in 2000 estimated that about 5 percent to 10 percent of people infected with TB will go on to develop TB disease at some point during their lifetime.<sup>84</sup> The probability of developing TB disease is much higher among people living with HIV, and those affected by risk factors such as undernutrition, diabetes, smoking and alcohol consumption.

Preventive treatment is available for people with TB infection. Recommended options include: a weekly dose of H and P for three months (3HP), a daily dose of H and R for three months (3HR), a daily dose of H and P for one month (1HP), a daily dose of R for four months (4R), and a daily dose of H for six months (6H) or longer.<sup>85</sup>

The only licensed vaccine for prevention of TB disease is the bacille Calmette-Guérin (BCG) vaccine. The BCG vaccine was developed almost 100 years ago. It prevents severe forms of TB in children, and is widely used. There is currently no licensed vaccine that is effective in preventing TB disease in adults, either before or after exposure to TB infection; however, results from a Phase II trial of the M72/AS01E candidate are promising.<sup>86</sup>

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- **Dr Aleksandar Arnikov**, Senior Programme Officer, International Organization for Migration, Switzerland
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