

Cross-border Tuberculosis Control along the Viet Nam and Cambodia Border



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LIST OF ABBREVIATIONS AND ACRONYMS

ASEAN	Association of Southeast Asian Nations
CDC	Centre for Disease Control
CENAT	Centre National Anti-Tuberculeuse
CHC	Cambodian Health Committee
CHWs	Community health workers
CNR	Case notification rate
GIS	Geographic Information System
GMS	Greater Mekong Sub-region
HBMM	Health Border and Mobility Management
HCMC	Ho Chi Minh City
HIV	Human Immunodeficiency Virus
IEC	Information, education and communication
IOM	International Organization for Migration
KHR	Cambodian Riel
MDR-TB	Multi-Drug Resistant TB
MHWG	Migrant Health Working Group
MMPs	Migrants and mobile populations
NGO	Non-governmental organization
NTP	National TB Control Programme
OpASHA	Operation ASHA
PPM	Public and private mix
TB	Tuberculosis
USD	United States Dollar
VHSG	Village health support groups
VND	Viet Nam Dong
WHA	World Health Assembly
WHO	World Health Organization

EXECUTIVE SUMMARY

Tuberculosis (TB) remains a major global health problem. Despite the availability of treatment, the disease is one of the top 10 causes of death worldwide.¹ Global TB control faces a significant challenge in detection and treatment of Multi-Drug Resistant TB (MDR-TB), with its threat to a patient's life due to delayed diagnosis and lack of an effective regimen for treatment particularly acute in resource-constrained countries.^{2,3}

TB infection occurs through person-to-person transmission,⁴ often people living in unhygienic and overcrowded conditions.⁵ Among at-risk groups, migrants have emerged as particularly vulnerable. It is estimated that many millions of TB cases are missed by health systems, with vulnerable populations most at risk of contracting the disease—particularly migrants, including internally displaced persons, refugees and other marginalized groups.¹ Migrants typically encounter crowded living and working conditions and face delayed diagnosis due to financial constraints and language barriers.^{6,7} Lack of health insurance, stigma, discrimination and undocumented legal status also prevent migrants from accessing diagnosis and treatment of TB.^{8,9} These factors are compounded by the mobile nature of migrants, who even when tested for TB, often move to another location before results are available.

In the case of positive tests or the need for follow-ups, this can have detrimental effects on the individual involved and their future community, especially given the connection between failure to complete TB treatment and the emergence of MDR-TB.³ Thus, it is crucial for health-care providers to identify TB patients, ensure they receive the Directly Observed Treatment Short-course (DOTS), complete the standard six-month treatment and facilitate the continuation of treatment in the event the migrant moves to a new location.

In 2020, Viet Nam was one of 30 highest-burden countries globally with TB and MDR-TB, whereas Cambodia was one of 30 highest-burden countries with TB.¹ While both nations have made significant progress in reducing TB rates in recent years, they lack the financial resources needed to end TB as a public health problem.^{10,11} Within this context of strained health resources, migrant populations – internal migrants within each of the two countries and cross-border migrants on the Viet Nam–Cambodia border – can easily be missed or overlooked in national efforts to detect TB.

Although cross-border migrants are at high risk of contracting TB,¹² there remains a scarcity of data to support development of national guidelines and policy for TB control among migrants in Viet Nam and Cambodia. The absence of exploratory studies on barriers faced by cross-border migrant populations along the Viet Nam–Cambodia border to access TB diagnosis and treatment further compounded this acute knowledge gap.

In response, this landmark study aimed to deliver a better understanding of barriers and enabling factors to accessing and utilizing TB diagnostic and treatment services among cross-border migrants. At the same time, it set out to identify challenges in TB control, focusing on areas of interaction and collaboration efforts between governmental and non-governmental agencies along the Viet Nam–Cambodia border.

This research focuses on two southern provinces in Viet Nam (An Giang and Tay Ninh) with high notification rates of TB and two Cambodian provinces (Svay Rieng and Takeo), which together witness cross-border movement.

To deliver these much needed insights, two sets of in-depth interviews and analysis were conducted from August 2020 to March 2021 in the four study sites. The first of the two cohorts interviewed were 123 cross-border migrants (nearly one-fifth Vietnamese) who were infected with TB – including those who had recovered in the past 12 months. The second group comprised 139 stakeholders involved in TB diagnosis and treatment in these border areas – including health-care providers from public and private health-care facilities. To help paint a more complete picture of the situation on the ground, a

mapping exercise was also conducted to collect health infrastructure and available services data within districts in both countries that share the international border.

Key Findings

Key findings from this research, with policy implications, are grouped into the dimensions of “Monitoring Migrants’ Health”, “Migrant-Sensitive Health Services”, “Policy and Legal Frameworks” and “Partnerships, Networks and Multi-Country Frameworks”, based on an operational framework for migrant health outlined by Resolution 61.17 of the World Health Assembly (WHA).

Monitoring Migrants’ Health

This study revealed a lack of systematic data collection on migration status, such as nationality and migration history, in both countries. To deliver migrant-centered cross-border TB services, it is essential health-care providers collect information – encompassing nationality, language preference(s), ethnicity, histories of migration and any interruptions to TB treatment – to populate and be accessible from health information systems. National TB prevalence surveys and other relevant surveillance mechanisms should include migrant populations and account for migration-related variables.

Some stakeholders in both countries raised concerns about patients lost to follow-ups due to high mobility, fragmented information sharing and the absence of a cross-border patient tracking system. To track patients, it is essential to develop an official bilateral referral mechanism for TB patients who cross the Viet Nam–Cambodia border.

Migrant-Sensitive Health Services

User-friendly and quality health-care services in Viet Nam were found to have encouraged Cambodian respondents to access health-care. While some Vietnamese stakeholders were not cognizant of language barriers faced by Cambodian patients, some Cambodian interviewees highlighted limited Vietnamese language proficiency which led to poor understanding of doctors’ instructions. Some reported asking Vietnamese interpreters to accompany them on medical visits in Viet Nam. While favourable views on health-care services in Viet Nam were reported by migrants, the need for bilingual and culturally competent health-care staff, interpreters and translated documents were pinpointed as necessary to achieve more migrant-friendly health-care services and communication with cross-border migrants.

The study revealed that a sizeable number of participants in both countries rarely paid attention to public posters, leaflets or health sessions about TB or other health issues in their communities as information, education and communication (IEC) materials were not well-designed to capture patients’ attention and sporadically placed in communities. Amid the current COVID-19 pandemic, some stakeholders in Viet Nam expressed concern that the crisis might drive migrants with TB to hide their health condition to avoid discrimination as both infectious diseases display similar symptoms, such as coughs, fevers and breathing difficulties.

Policy and Legal Frameworks

Although the National TB Control Programme (NTP) Viet Nam is committed to treating TB patients regardless of nationality, a degree of misunderstanding was evident among some stakeholders in Viet Nam. Some health-care providers in An Giang reported not treating non-Vietnamese patients due to loss of follow-up risks. In Cambodia, the majority of stakeholders were willing to treat non-Cambodian patients, although few migrants crossed the border for TB diagnosis and treatment in Cambodia. Fragmented policy implementation at local level might cause delays in early diagnosis and treatment for cross-border migrants with TB.

Cambodian stakeholders and cross-border migrants with TB reported repetitive diagnosis procedures in Cambodia, despite patients already being diagnosed with TB in Viet Nam. Similarly, health-care providers faced challenges in provision of continuous treatment to cross-border TB patients due to a lack of synchronization of country protocols on TB treatment.

Partnerships, Networks and Multi-Country Frameworks

One of the key challenges reported by study participants was limited trans-border collaboration and partnerships between health-care organizations. Addressing pressing issues, such as limited communication and collaboration with hospitals and health authorities across the border, requires efforts at all three levels: local, national and bilateral.

Cross-border migrants were also found to encounter non health-related challenges, such as a lack of ID cards and complex administrative procedures pertaining to the residential registration book system in Viet Nam, that prevented migrants from purchasing health insurance. Addressing such challenges requires collective efforts from health and non-health sectors at national and bilateral levels.

Recommendations

Through interviews of cross-border migrants and stakeholders in four Viet Nam–Cambodia border provinces, a range of dynamic factors were revealed that prevent migrants from accessing and utilizing TB diagnosis and treatment. Results also highlighted limited bilateral stakeholder collaboration and partnerships that have significant scope for development to tackle TB more effectively. Encouragingly, health-care providers participating in the study expressed a broad willingness to work together to improve transnational collaborative mechanisms.

This study and its results also provide a platform for policymakers and stakeholders to develop practical interventions for collaborative TB controls in Viet Nam–Cambodia border areas. The study team proposes the following multiple actions in each key theme in line with recommendations of Resolution WHA 70.15 on promoting the health of refugees and migrants:

Monitoring Migrants' Health

- Collect data on nationality, migration status (permanent residents, internal and international migrants), origin hometown/district, migration history, language preference, ethnicity and history of treatment interruption in routine health information systems of Viet Nam and Cambodia. Migrant data analysis and reporting mechanisms must be put in place.
- Develop a referral mechanism to track cross-border referral cases, with potential to be integrated into a regional database in accordance with data protection rules in Greater Mekong Sub-region (GMS) countries. The mechanism should be established in multiple languages.
- Conduct a pilot test of this proposed cross-border referral mechanism and reporting to national and regional databases through interviews with health-care providers and cross-border migrants with TB in the two countries.
- Establish a feedback system between health authorities from both sides of the border to follow-up cross-border referral cases by phone calls, emails and regular meetings upon cross-border transfers of cases.
- Undertake a study of TB and MDR-TB hotspots in border areas with a spatial epidemiological approach for systematic screening of TB among patients and people with close contacts with TB patients.
- Re-assess migration flows of cross-border TB patients and migrants in general between Viet Nam and Cambodia once international travel resumes following the pandemic.
- Integrate TB testing into pre-departure COVID-19 screenings to strengthen active case finding of TB in border areas.

Migrant-Sensitive Health Services

- Train health-care providers, including health system officials and NGO workers, in cultural competency for provision of migrant-friendly health-care services.
- Develop IEC materials and other relevant documents with cultural and linguistic sensitivities,

such as doctor's instructions on medication given to cross-border patients, into multiple languages common in respective geographical areas.

- Increase the number of bilingual health-care workers, including ethnic minority health-care ones, in border areas.
- Use multiple communication channels – such as television, radio and loud speakers, social media platforms – in multiple languages to raise awareness of TB in border communities.
- Amplify health information about TB along with public health messaging about COVID-19 in multiple languages in border communities.
- Apply information technology to remind cross-border migrants with TB of doctors' appointments for continuous TB treatment.
- Empower cross-border migrant communities through social mobilization and health communication policies with a participatory approach to TB prevention and control.

Policy and Legal Frameworks

- Conduct regular monitoring and evaluation of policy implementation at local level to assess service delivery gaps in cross-border TB controls.
- Review and harmonize country protocols on diagnosis and treatment for cross-border migrants with TB in Viet Nam and Cambodia.
- Develop a portable health insurance system for cross-border migrants to improve access to essential health-care services, including diagnosis and treatment of TB, between Viet Nam and Cambodia with possible expansion to GMS countries.
- Develop a national and transnational policy to financially support cross-border migrants with TB through mobilizing resources from multi-sectors, civil society organizations and community-based organizations.

Partnerships, Networks and Multi-Country Frameworks

- Establish a cross-border TB/HIV taskforce to improve a coordination mechanism for cross-border management of migrant TB patients, with taskforce roles and responsibilities defined by development of a terms of reference by provincial and district health-care providers in partnership with National TB Control Programmes (NTPs).
- Hold quarterly meetings among cross-border TB/HIV taskforce members to share information about TB/HIV epidemiological trends, discuss issues related to cross-border TB control and review a cross-border referral system.
- Organize bilateral dialogues between NTPs to formalize, review and improve not only a cross-border referral mechanism, but synchronization of country protocols on diagnosis and treatment for cross-border migrants with TB.
- Encourage engagement of the Migrant Health Working Group (MHWG), academic networks, professional associations and other relevant networks to promote health and human rights of cross-border migrants.
- Work closely with non-health sectors, including employers and border authorities, whose policies and systems impact TB-related outcomes for cross-border migrants.



CHAPTER 1

INTRODUCTION

Background

Tuberculosis and migrants

Globally, tuberculosis (TB) remains a major health problem. Despite the availability of TB treatment, the disease is one of the top 10 causes of death worldwide.¹ An estimated 10 million people developed TB in 2019, with 1.2 million deaths worldwide.¹ A global total of 206,030 people were diagnosed with Multi-Drug Resistant TB (MDR-TB) in 2019. Global TB control faces a significant challenge in detection and treatment of MDR-TB. While curable, MDR-TB threatens the patient's life due to delayed diagnosis and lack of an effective regimen for treatment in resource-constrained countries.^{2,3}

TB infection occurs through person-to-person transmission.⁴ Persons living in unhygienic and overcrowded conditions, in which most poor and vulnerable populations live, are more likely to contract TB.⁵ Malnourished individuals are susceptible to latent or primary TB infection.¹³ People living with HIV/AIDS are 26 to 31 times more likely to be infected with TB.¹⁴ Those who have low immune systems are at high risk of developing TB.² Also, TB is one of the most life-threatening diseases in vulnerable populations, such as homeless people, refugees, and migrants.¹⁵

Migrants often encounter crowded living conditions.⁶ Poor health-seeking behaviour, delayed diagnosis due to financial constraints and language barriers make migrants vulnerable to TB infection.^{6,7} Lack of health insurance, stigma, discrimination and undocumented legal status also prevent migrants from accessing diagnosis and treatment of TB.^{8,9} Likewise, economic burden-related TB diagnosis and treatment can have negative impacts on migrants and their families.^{8,9}

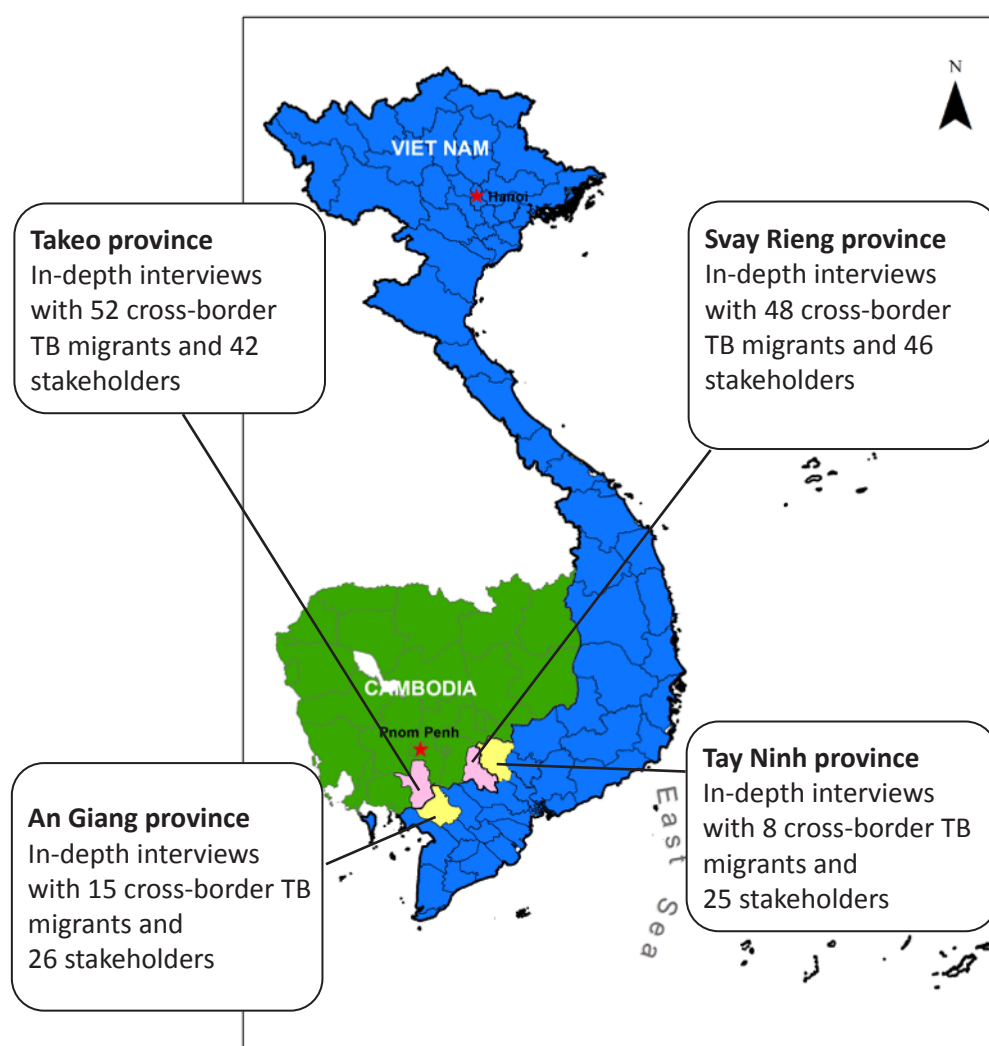
Due to the mobile nature of migrants, even when tested for TB, they may have moved to another location before test results are available. In the case of positive tests or the need for follow-ups, this can have detrimental effects on the individual involved and for their future community, especially given the connection between failure to complete TB treatment and the emergence of MDR-TB.³ It is crucial for health-care providers to identify TB patients and support treatment adherence for those with potential to move to new locations and facilitate continuation of treatment. Health-care organizations play a key role in addressing shortfalls in follow-ups and improving migrants' access to TB care as many have difficulties receiving the Directly Observed Treatment Short-course (DOTS) and completing standard six-month treatment at the same health-care organization due to the high level of population mobility, limited access to services and financial insecurity. Health-care organizations may also face challenges in TB control efforts due to fluid population movements, resource constraints and insufficient coordination mechanisms for implementing cross-border collaboration. The degrees of collaboration among stakeholders might depend on personal relationships, informal mechanisms, and circumstances between organizations.¹⁶

Tuberculosis and cross-border migrants on the Viet Nam–Cambodia border

In 2020, Viet Nam was one of 30 highest burden countries globally with TB and MDR-TB, whereas Cambodia was one of 30 highest TB burden countries.¹ While Viet Nam and Cambodia have made significant progress in reducing TB rates in recent years, they lack the financial resources needed to end TB as a public health problem. Within this context of strained health resources, migrant populations – internal migrants within each of the two countries and cross-border migrants on the Viet Nam–Cambodia border – can easily be overlooked in national efforts to detect TB.

This research focuses on two southern provinces in Viet Nam (An Giang, located in the Mekong Delta and Tay Ninh, north-west of Ho Chi Minh City) with high notification rates of TB and two Cambodian provinces (Svay Rieng and Takeo), which together witness regular cross-border movement (Figure 1). Table 1 shows the TB estimates for Viet Nam and Cambodia. The two Vietnamese study provinces had higher notification rates of TB than their national respective rates in Viet Nam and Cambodia (Table 2).

Figure 1. Map of study sites in Viet Nam and Cambodia



Source: Map produced by IOM. This map is for illustration purposes only. The boundaries and names shown and the designations used for this map do not imply official endorsement or acceptance by the International Organization for Migration.

Table 1. Estimates of Tuberculosis burden in Viet Nam and Cambodia, 2019

	Viet Nam	Cambodia
Population	96 million	16 million
Total TB incidence rate	176 (112-255)	287 (186-410)
HIV-positive TB incidence	5.8 (3.7-8.3)	7.6 (4.9-11)
MDR/RR-TB incidence	8.8 (5.5-13)	6.1 (3-10)
HIV-negative TB mortality	9.8 (6.1-14)	17 (11-25)
HIV-positive TB mortality	2 (1.3-2.9)	2.5 (1.6-3.6)
Total TB notification rate	106	181

*Rate per 100,000 population.

Source: WHO. Tuberculosis profile: Viet Nam and Cambodia. Available at https://worldhealthorg.shinyapps.io/tb_profiles/

Table 2. Tuberculosis notification rates in study provinces in 2020

	Viet Nam		Cambodia	
	An Giang	Tay Ninh	Takeo	Svay Rieng
Total TB notification rate	213.1	202.7	188	363

* Rate per 100,000 population.

Sources: NTP Viet Nam. National Annual TB Report in 2020.

CENAT Cambodia National Annual TB Report in 2020.

In An Giang and Tay Ninh, there is a considerable ethnic minority population, such as the Khmer Krom, Cham and Hoa minorities. The Khmer Krom are the largest non-Vietnamese group in An Giang (comprising 75% of the ethnic minority population).¹⁷ Cambodia also hosted about 38,000 registered migrants from Viet Nam in 2019.¹⁸ There is likely to be significant under-reported irregular migration taking place between Viet Nam and Cambodia.¹⁹ Given their informal legal status, cross-border migrant populations within the border area are more vulnerable to TB and yet less likely to be targeted by national health systems.

Although cross-border migrants are at high risk of contracting TB,¹² there remains a scarcity of data to support development of national guidelines and policy for TB control among migrants in Viet Nam and Cambodia, with no exploratory study on barriers to accessing TB diagnosis and treatment in cross-border migrant populations. Likewise, little is known about synchronization of country protocols, case reporting, contact tracing and referral mechanisms for cross-border migrant patients among health-care facilities along this border. Notification data for TB disaggregated by migration status are also not available under the National TB Control Programme (NTP) Viet Nam database nor CENAT Cambodia database, although incidences of TB among migrants appears to be higher than the national rate.

This study, therefore, aimed to provide a better understanding of barriers and enabling factors to accessing and utilizing diagnosis and treatment of TB among cross-border migrants and their enabling factors. Migration histories of cross-border migrant TB patients were explored to assess health-care-seeking behaviour in border areas. This study also set out to identify challenges in TB control, focusing on current and potential areas of interaction and collaboration between governmental and non-governmental agencies working in TB control on the Viet Nam–Cambodia border. Through the Health Border and Mobility Management (HBMM) approach,* mapping of health-care facilities including government hospitals and commune/town health posts was conducted within target districts to ensure a better understanding of primary health-care networks and capacities alongside precise radiology, diagnostics and treatment capabilities.²⁰ Research questions of this study are as follows:

Research questions

1. What challenges have cross-border migrants faced in accessing TB diagnosis and treatment?
2. What has helped cross-border migrants access and utilize services related to TB diagnosis and treatment?
3. What are migration and mobility patterns of cross-border migrants with TB?
4. Where have cross-border migrants first accessed TB services?
5. How much time had passed from the onset of TB symptoms to the first medical check-up?
6. Where are health-care facilities, that provide TB services to cross-border migrants, located in border areas?
7. What relationships and coordination mechanisms for cross-border TB control exist within health-care organizations/health-care providers?
8. What challenges have health-care providers faced in cross-border TB control?

* IOM defines HBMM is a conceptual and operational framework with the goal of improving prevention, detection and responses to the spread of diseases along the mobility continuum and its spaces of vulnerability where migrants and mobile populations interact with stationary, local communities.

Methodology

Study design

The study team used a qualitative approach to answer the research questions. The study was undertaken from August 2020 to March 2021 through semi-structured in-depth interviews with cross-border migrants and stakeholders involved in cross-border TB control. A mapping exercise was also conducted to collect information about the migration histories of cross-border migrants and data on locations of health-care organizations in the study areas.

Study setting and populations

The study was conducted in the provinces of An Giang and Tay Ninh in Viet Nam, and Svay Rieng and Takeo in Cambodia. Figure 1 highlights the study sites. The research team interviewed two groups of study populations: cross-border migrants and stakeholders involved in cross-border TB control.

Cross-border migrants

A purposive sampling approach was applied for the study. Purposive sampling is based on selection criteria of participants relevant to a particular research question. The sample size for the research followed the concept of saturation since there was no exact way of determining the sample size in qualitative research.²¹ For this study, cross-border migrants infected with TB, including those who had recovered from TB in the 12 months prior to the study, were the target population.

Study participants were bacteriologically-confirmed TB patients who: (1) reported crossing the Viet Nam–Cambodia border for any reason in the past 12 months prior to the interview and (2) were on TB treatment at the time of interview. All participants were aged 18 years and above. The study also included cross-border migrants who: (1) completed TB treatment within 12 months prior to the interview, (2) reported crossing the Viet Nam–Cambodia border for any reason in the past 12 months prior to the interview and (3) were aged 18 years and above at the time of interview. Medical records stored at health-care organizations were used to justify the inclusion criteria. In the study, bacteriologically confirmed TB included pulmonary TB and other forms of TB. Migrant patients who did not meet these criteria were not included in the study.

Public health officials and health-care providers

For TB stakeholder analysis, up to two health-care providers from each governmental and private health-care facility, including non-governmental organizations (NGOs), involved in TB control in border areas were approached to participate in the study. Stakeholders were identified in consultation with the NTP Viet Nam and CENAT Cambodia. The interviewees included health-care providers involved in TB control at service provision levels in both countries.

Research tools

There were two interview guides for TB patients and health providers. The needs assessment questions explored perceived barriers encountered by cross-border migrants to TB diagnosis and treatment as well as responsive actions. Patients' retrospective migration histories were also explored, including the timing of movements, durations of stay, number of people with whom housing was shared during migration, and histories of symptoms. Interviews with stakeholders aimed to assess relationships, responsibilities and challenges among health-care providers working in cross-border TB control. The questionnaires were translated from English into Vietnamese and Khmer, and back into English by different translators to assure the validity and quality of questionnaire items. Annex 1 presents the interview questions. Interview questionnaires were adapted from those used in previous research on TB control along the Thailand and Myanmar border.^{22,23}

Data collection

1. Cross-border migrants with or a history of TB

Interviews with cross-border migrants were conducted individually at either their home or health-care facility. Socioeconomic status and migration histories of migrant patients were collected before interviews, which lasted approximately one hour each. Interviews with Vietnamese- and Khmer-speaking participants were conducted in their respective languages. Interview appointments were made based on the interviewees' convenience and arranged via telephone or by local health officers. The study team requested commune health stations to assist in recruiting cross-border migrants who met the study criteria. To ensure the safety of both parties, interviews took place during daytime. A participant information sheet and consent form were given and obtained before each interview. No personally identifiable information was retained.

2. Stakeholder interviews

Interviews with stakeholders took place at their workplace. Senior staff who had worked in each organization for at least five years in the field of TB were selected. To invite stakeholders into the study, a list of potential participants based on TB management levels was compiled by the research team and sent to NTP and CENAT. Before interviews were conducted, a brief meeting between the IOM research team and leaders of local health authorities at provincial level was conducted to introduce the aims and outcomes of the study. Involvement of stakeholders was opened to people who have worked on TB control in border areas, but were not included in the original list.

Interviewees were initiated by an introductory email or phone call. A participant information sheet and consent form were presented on site and all consenting interviewees were included in the study. All in-depth interviews were conducted individually to protect the privacy and integrity of stakeholders. Each interview was undertaken face-to-face at a workplace to gain insight into a respondent's perceptions, experiences and reflections.

All interviews with TB patients and health-care providers were recorded electronically through an audio recorder after the researcher gained a written informed consent form for participation in this study as well as consenting to audio being recorded. The researcher also took handwritten field notes to document the following information: casual and structured observations, verbatim quotes, paraphrases of participant responses, interview backup documentation, researcher's questions, conclusions and observations discussed during the debriefing sessions. Field notes gave the researcher an opportunity to include validation steps in qualitative research. After an on-site interview, the research team transcribed an audio recording to computer files.

As the study was undertaken amid the COVID-19 pandemic, interviewers and interviewees wore masks to protect against TB as well as COVID-19, while all interviews were held in an open space.

The list of interviewers features on page iv. No interviewer had any form of relationship with study participants prior to the study. Mock interviews were conducted between researchers to prepare for the study. The study team also conducted a pre-test of the questionnaires before data collection.

3. Mapping of health facilities

Through the HBMM approach, the mapping of health-care facilities was conducted within 26 studied districts of An Giang and Tay Ninh provinces in Viet Nam, and Svay Rieng and Takeo provinces in Cambodia. The mapping of health-care facilities reflects the respective national TB management systems at three levels: provincial, district, and commune. In addition to public health facilities and management units, private hospitals at district and provincial levels were also mapped as findings from in-depth interviews revealed that numerous cross-border patients attended private hospitals and/or clinics during their first and regular health-care visits. However, private clinics and pharmacies located within the studied districts were not included in this mapping exercise due to the large number and

the non-provision of TB diagnosis and treatment. A data collection Global Positioning System (GPS) device was used to collect location coordinates of health facilities. Data were exported directly to a Geographic Information System (GIS) format for mapping.

Compensation

After each interview, VND 100,000 or KHR 30,000 was given to each participant in Viet Nam and Cambodia, respectively in exchange for their time on the day the study team conducted the interview. Each recipient signed confirmation of receiving the funds. The compensation amount was calculated based on an estimated wage for cross-border migrants in the study provinces.

Data analysis

The study team used thematic content analysis to identify key themes in text. Key themes were accessed to answer research questions. NVivo software (Version 11) was used for qualitative data analysis, which allowed the researcher to be inductive and holistic in coding. Analysis focused on reviewing segments with similar codes and examining relationships among different codes.²⁴ Coding also developed categories which summarized the raw data and led key themes.²⁵ Once the researcher analysed data, other colleagues were requested to read and analyse the same set of transcripts and then compare results. If the results of the data analysis reached the same answers, the study team concluded the information was reliable and consistent.²⁶ The analysis was further tested during discussions with other researchers and stakeholders. The Standards for Reporting Qualitative Research Checklist, developed by O'Brien et al. 2019, were used to ensure the quality of research and reporting.²⁷

Descriptive analysis was also performed to present characteristics of the interviewed cross-border migrants.

ArcGIS software was used to assess the density of health-care facilities in target districts and closeness to a national border. Migration pathways of interviewed patients were also mapped using ArcGIS.

Ethics statement

The study team obtained ethical approval of the proposed study-project from the Ethics Committee of the National Lung Hospital, Ministry of Health in Viet Nam as well as the Cambodian National Ethics Committee for Health Research. Steps were taken to address the ethical risk of breaking confidentiality and anonymity when the researcher interviewed study participants, as visits to an interviewee's home could arouse community attention. To address this concern, the researchers explained the purpose of research and obtained participants' agreement to be interviewed through a written informed consent form. The researcher acknowledged that participants had the right to decline participation or discontinue interviews at any time. The researcher also emphasized that the research team kept interview data confidential through the anonymized transcripts. The researcher informed participants about a future publication plan as participation in the project was solicited and emphasized participants' anonymity. All data were stored and used in accordance with the IOM Data Protection Manual relating to Data Protection. The findings of the study do not include any personal identifiable information.

Definitions of terminology

For the purposes of this study, the following terminology was used:

Migration: The movement of a person or a group of persons, either across an international border, or within a State. It is a population movement, encompassing any kind of movement of people, whatever its length, composition and causes. It includes migration of refugees, displaced persons, economic migrants, and persons moving for other purposes, including family reunification.²⁸

Migrants: At the international level, no universally accepted definition for "migrant" exists. The term migrant was usually understood to cover all cases where the decision to migrate was taken freely

by the individual concerned for reasons of “personal convenience” and without intervention of an external compelling factor.²⁸

Internal migration: A movement of people from one area of a country to another area of the same country for the purpose or with the effect of establishing a new residence. This migration may be temporary or permanent. Internal migrants move, but remain within their country of origin (e.g. rural-to-urban migration).²⁸

Inbound migrants: Foreign immigrants regardless of their immigration status (e.g. regular/ documented or irregular/undocumented) and purpose (e.g. work or pleasure, temporary or permanent).²⁹

Outbound migrants: Citizens of a country who are temporary or permanent emigrants that travel or travelled out of the country regardless of duration or residency status.²⁸

Migrants and mobile populations (MMPs): Either inbound, outbound or internal migrants regardless of: (1) a person’s legal status, (2) whether the movement is voluntary or involuntary, (3) what the causes for the movement are or (4) what the length of the stay is. MMPs include cross-border migrants.²⁸

Cross-border migration: A process of movement of persons across international borders. Cross-border migrants move across a border between two countries.²⁸ Cross-border migrants are persons who reported crossing a border for any reason in the past 12 months prior to the interview regardless of nationality.

Undocumented migrants: A non-national who enters or stays in a country without the appropriate documentation. This includes, among others, a person who: (a) has no legal documentation to enter a country but manages to enter clandestinely, (b) enters or stays using fraudulent documentation, (c) after entering using legal documentation, has stayed beyond the time authorized or otherwise violated the terms of entry and remained without authorization.²⁸

Stateless person: A person who is not considered as a national by any State under the operation of its law.²⁸



CHAPTER 2 RESULTS

Findings from interviews with cross-border migrants with Tuberculosis or a history of Tuberculosis

The characteristics of the 123 cross-border migrants who participated in the study are highlighted in Table 3. The majority of interviewees (100) were Cambodian. Two respondents interviewed in Tay Ninh were reported as stateless. The number of males was 1.5-fold higher than females, with the average age of participants at 53.2 years. In Tay Ninh, there was only one female respondent. Half of the interviewees had monthly incomes of USD 200 or less, while 13.01 per cent had no income. The majority of participants in Svay Rieng and Takeo earned USD 200 or less per month. The average years of education* per respondent was 4.03. Vietnamese cross-border migrants had more years of schooling on average (5.95 years), compared to 3.6 years for Cambodian counterparts. Only one participant attained a university-level education, while 34.14 per cent had never attended school – mostly Cambodians. Nearly 14 per cent could speak two languages. Only one-quarter of interviewees had health insurance and 34.15 per cent had ID poor cards.³⁰ The majority were engaged in manual labour, such as farming and construction. Around half of cross-border migrants were farmers and 22 (17.89%) were retired or unemployed. Most participants in Viet Nam were of Kinh ethnicity and four (3.25%) were from the Khmer, Cham and Hoa ethnic groups. All Cambodian interviewees were Khmer. More than half of participants (n=13) from An Giang and Tay Ninh could speak Khmer as their second language, while one-quarter of Cambodian respondents could speak Vietnamese.

Table 3. Sociodemographic characteristics of cross-border migrants stratified by study sites in Viet Nam and Cambodia, 2020 (n=123)

Characteristics	An Giang, Viet Nam n=15	Tay Ninh, Viet Nam n=8	Takeo, Cambodia n=52	Svay Rieng, Cambodia n=48	All % (n) n=123
Sex					
Female	6	1	23	19	39.8 (49)
Male	9	7	29	29	60.2 (74)
Age (years)					
18–30	2	0	6	3	8.94 (11)
31–40	2	1	2	7	9.76 (12)
41–50	6	2	9	13	24.39 (30)
51–60	3	4	8	14	23.58 (29)
< 61	2	1	27	11	33.33 (41)
Mean	48.3	51	57.3	50.6	53.20
Nationality					
Vietnamese	15	6	0	0	17.07 (21)
Cambodian	0	0	52	48	82.11 (100)
Stateless	0	2	0	0	1.63 (2)
Ethnicity					
Kinh	11	8	0	0	15.45 (19)
Khmer	1	0	52	48	82.93 (101)
Cham	1	0	0	0	0.81 (1)
Hoa	2	0	0	0	1.63 (2)
Primary language					
Vietnamese	13	8	0	0	17.07 (21)
Khmer	1	0	52	48	80.49 (99)

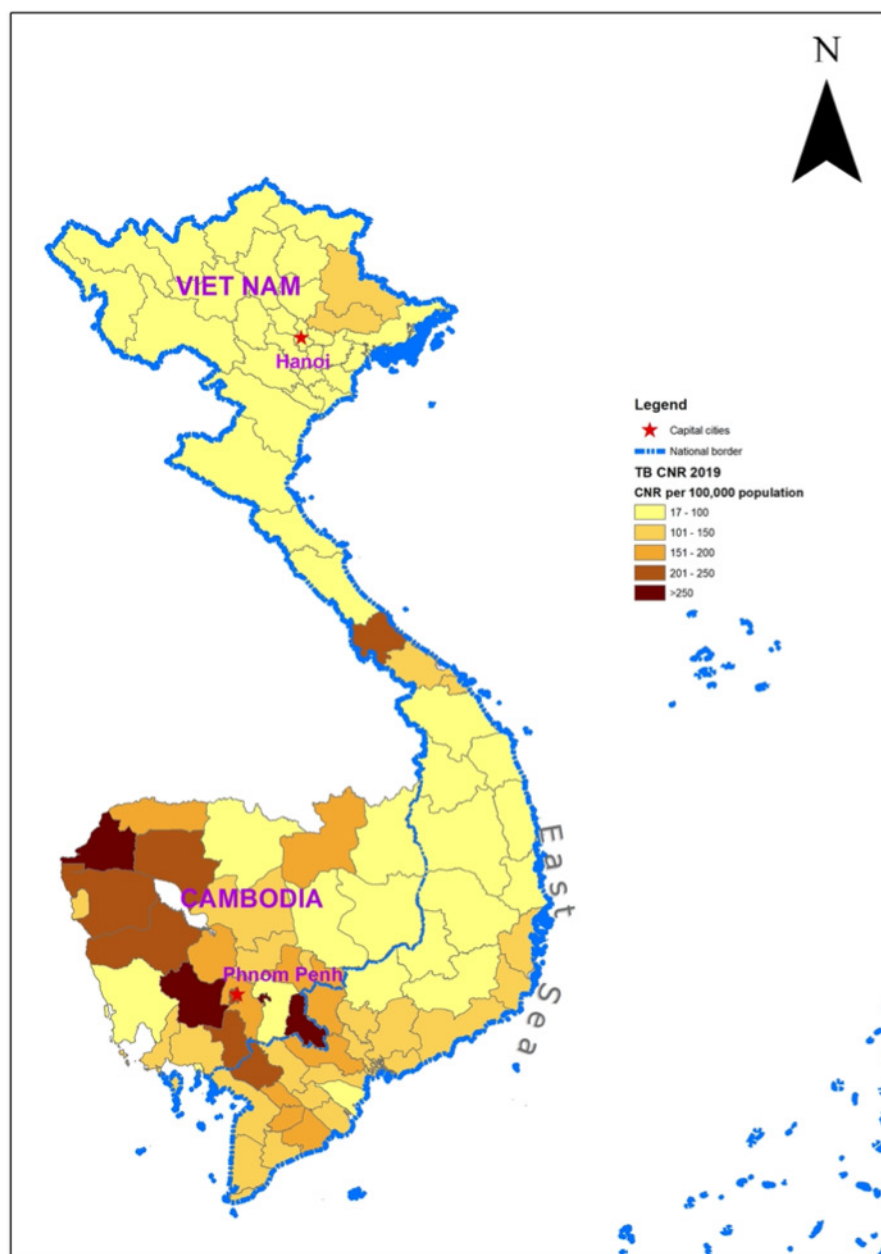
* Primary level to undergraduate school.

Characteristics	An Giang, Viet Nam n=15	Tay Ninh, Viet Nam n=8	Takeo, Cambodia n=52	Svay Rieng, Cambodia n=48	All % (n) n=123
Cham	1	0	0	0	0.81 (1)
Second language					
Vietnamese	2	0	16	13	25.20 (31)
Khmer	8	5	0	0	10.57 (13)
Others	1	0	1	1	2.44 (3)
Have health insurance					
No	5	3	42	42	74.80 (92)
Yes	10	5	10	6	25.20 (31)
Have a poverty card in the origin country					
No	14	8	19	40	65.85 (81)
Yes	1	0	33	8	34.15 (42)
Income per month					
No income	5	4	4	3	13.01 (16)
1–200 USD	2	1	34	25	50.41 (62)
201–400 USD	3	2	11	13	23.58 (29)
401–600 USD	1	0	3	4	6.50 (8)
Over 601 USD	0	0	0	0	0
Occupation					
Farmer	2	0	33	30	52.85 (65)
Construction worker	0	0	4	2	4.88 (6)
Vendor	4	2	3	1	8.13 (10)
Taxi driver	0	1	1	1	2.44 (3)
Others	1	2	5	9	13.82 (17)
Unemployed Retired	8	3	6	5	17.89 (22)
Years of education (mean)	5.6	6.3	2.8	4.4	4.03

Mobility patterns of cross-border migrants

Understanding mobility patterns of cross-border TB patients is critical for TB control. It helps stakeholders examine how far cross-border migrant patients with TB travelled and the risk of TB transmission in host communities. Cross-border migrants, who move from high to low TB case notification rate (CNR) areas, may pose TB transmission risks to host communities if they do not take preventive measures. To help determine mobility patterns, the research team asked study participants where they crossed the border and approximate distances between their origin hometown and destination. Some participants were unable to recall and provide information about distances and the names of the destination province, district and commune. Of the 123 cross-border migrants interviewed, 102 respondents (82.93%) provided approximate distances between their origin and destination, distances to the border and/or names of the destination. Most participants reported visiting places across the border relatively close to their origin hometowns. Figure 2 presents the TB CNRs in Viet Nam and Cambodia. Southern provinces of Viet Nam that share a border with Cambodia have higher TB CNRs than other provinces of Viet Nam.

Figure 2. Tuberculosis case notification rate in Viet Nam and Cambodia in 2019



Source: Map produced by IOM. This map is for illustration purposes only. The boundaries and names shown and the designations used for this map do not imply official endorsement or acceptance by the International Organization for Migration.

With the closure of international land border gates between Viet Nam and Cambodia in March 2020 to prevent the spread of COVID-19, it is important to re-assess migration trends once international borders re-open as flows might not return to pre-pandemic levels.

The study team generated maps of destinations for cross-border migrants based on its estimation by taking into account interview locations, distances to the border and/or destination, and the purpose of cross-border migration. The study team presented estimated migration flows as clusters in maps rather than individual flows. For example, 14 migrants living in Kirivong district reported crossing the border to Chau Doc, Tinh Bien, Tri Ton and Long Xuyen of An Giang Viet Nam. However, only four lines were depicted on the map.

Cross-border migrants from Viet Nam reported crossing the border within 30 kilometres of their origin for working, trading and playing in a casino. There were exceptions, with two migrants in Long

Xuyen city, An Giang, and one migrant in Tan Bien district, Tay Ninh who travelled to Phnom Penh city, Cambodia. The majority of Cambodians crossed the border to nearby districts for medical check-ups, shopping, trading and working. A small number of Cambodian migrants also travelled long distances to cities such as Long Xuyen, Tay Ninh, and Ho Chi Minh City for medical check-ups or shopping.

Figures 3 and 4 present the flows of cross-border migrants included in this study. Figure 3 reveals the flows of Vietnamese cross-border migrants from An Giang, Viet Nam to Cambodian provinces (Takeo, Kandal, Prey Veng and Phnom Penh) and movements of Cambodian migrants from Takeo to An Giang. Figure 4 presents flows of Vietnamese cross-border migrants from Tay Ninh to Svay Rieng and Tboung Khnum provinces and Cambodian migrants from Svay Rieng to Tay Ninh and Ho Chi Minh City, Viet Nam.

Figure 3. Pre-COVID-19 pandemic migration flows of Vietnamese cross-border migrants between An Giang province, Viet Nam and Takeo, Kandal, Prey Veng, and Phnom Penh provinces, Cambodia



Source: Map produced by IOM. This map is for illustration purposes only. The boundaries and names shown and the designations used for this map do not imply official endorsement or acceptance by the International Organization for Migration.

Figure 4. Pre-COVID-19 pandemic migration flows of Vietnamese cross-border migrants between Tay Ninh province, Viet Nam and the provinces of Svay Rieng and Tberculosisoung Khmum, Cambodia

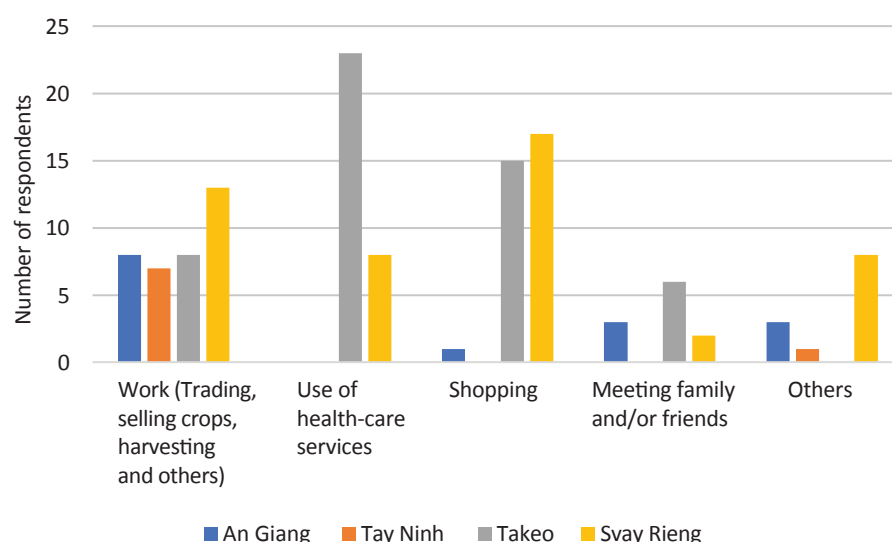


Source: Map produced by IOM. This map is for illustration purposes only. The boundaries and names shown and the designations used for this map do not imply official endorsement or acceptance by the International Organization for Migration.

Primary reasons for crossing the border

Employment opportunities were the key driver for cross-border migration among Vietnamese participants. Most migrants reported crossing the border for trading and selling crops (Figure 5). Likewise, some participants in Cambodia also crossed the border for harvesting, selling crops and livestock.

Figure 5. Primary reasons for crossing the border by study site



While no Vietnamese study participant in Viet Nam referenced health-care services as a primary reason for crossing the border, nearly half of respondents in Takeo (n=23) and eight interviewees (7.2%) in Svay Rieng highlighted the use of health-care services as the key motivation. Friendly health-care providers, better quality health-care and close proximity to health-care facilities in Viet Nam were the main reasons Cambodian respondents visited Vietnamese health-care facilities. Of this group, 14 Cambodian participants (45.16%) reported having TB symptoms – such as weight loss, coughs and night sweats – prior to medical visits. Half of these respondents were diagnosed with TB in Viet Nam. One participant reported visiting two health-care facilities in Viet Nam for second opinions after being diagnosed with TB in Cambodia.

“I was diagnosed with [an active] TB infection at Chi Phu referral hospital [in Cambodia], but I didn’t believe it as I didn’t have any cough or TB symptom. Then I went to a private clinic in Viet Nam to test for TB again. The result from that clinic was TB detection. I still did not believe it. I went to a public hospital in Viet Nam for TB diagnosis and the result was the same. At the end, I decided to come to Chi Phu referral hospital to reconfirm my TB infection and seek treatment.” Female cross-border patient with TB, 37 years old (Svay Rieng, Cambodia)

Of those diagnosed with TB in Viet Nam, two Cambodian patients reported that the Vietnamese hospital transferred their cases to Cambodia. However, the interviewees did not mention how they were transferred administratively to Cambodia after TB detection in Viet Nam, while five Cambodian respondents did not explain whether they were officially transferred to Cambodian hospitals by Vietnamese health-care providers. Limited language proficiency prevented Cambodian patients from understanding Vietnamese doctors’ instructions, including TB diagnosis and treatment.

“I was sick and had symptoms like fever and cough and decided to go to Viet Nam. They [health-care providers in Viet Nam] diagnosed me with TB and transferred me to Ang Krouch health post [in Cambodia].” Male cross-border patient, 30 years old (Takeo, Cambodia).

“I crossed the border for TB diagnosis because I had bleeding, vomiting and chest pains and wanted to know the disease. But it was not easy as I don’t speak Vietnamese, so I did not know what they [Vietnamese health-care providers] told me.” Male cross-border patient, 37 years old (Takeo, Cambodia)

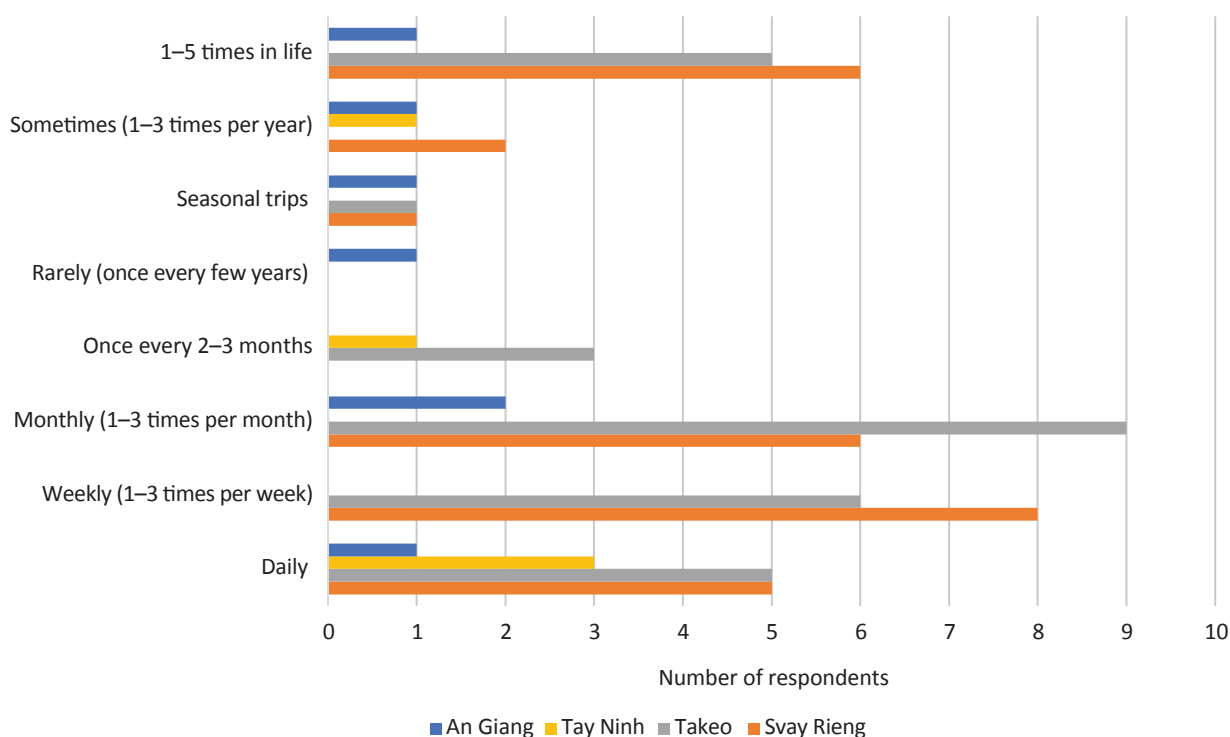
In addition to 31 Cambodian respondents who reported use of health-care services as one of the reasons for crossing the border, two Cambodian respondents also reported receiving TB treatment at health-care facilities in Viet Nam as the main reason to cross the border. However, one of the patients returned to Cambodia due to the COVID-19 pandemic-enforced border closure, while the other could not afford to continue purchasing TB treatment in Viet Nam.

Shopping was also a common reason for border crossings by respondents in Cambodia (28.82%), as was meeting families and friends for some respondents in Viet Nam (3%) and Cambodia (7%).

Frequency of cross-border migration

Figure 6 highlights the frequency of cross-border migration among study participants prior to their respective TB diagnosis.

Figure 6. Frequency of cross-border visits by study site

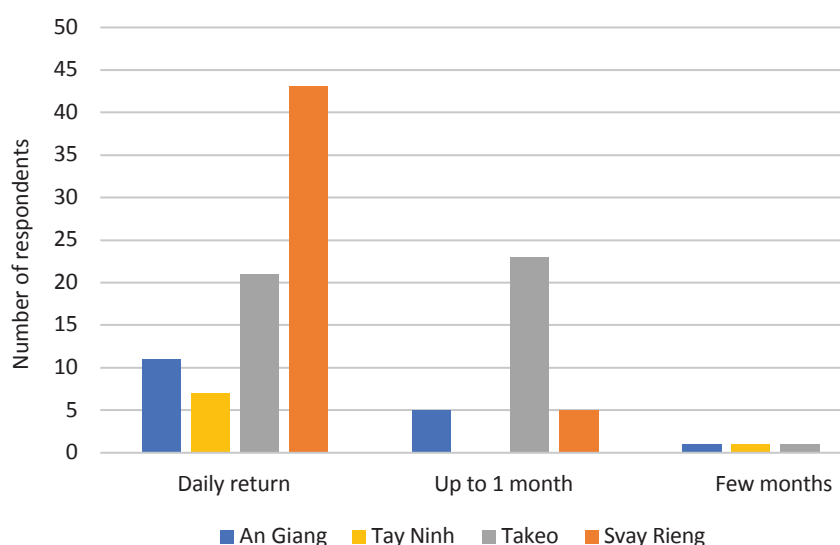


More than half (69 out of 123) of total participants provided detailed answers on the frequency of border crossings. Regarding the frequency of daily, weekly and monthly visits, 45 out of the 69 were farmers and 39 were Cambodians. Only three migrants crossed the border to work in the dry or mango seasons (seasonal trips).

Duration of stay across the border

Figure 7 presents durations of stay across the border. About two-thirds of respondents from both countries completed return journeys within a day, while nearly 30 per cent (n=33) from both nations stayed across the border for up to one month. Of 33 respondents, 16 cross-border migrants reported staying for medical check-ups. Only three male participants at the study sites, except Svay Rieng, stayed for a few months. The number of female participants with daily returns was double that of female respondents staying up to one month.

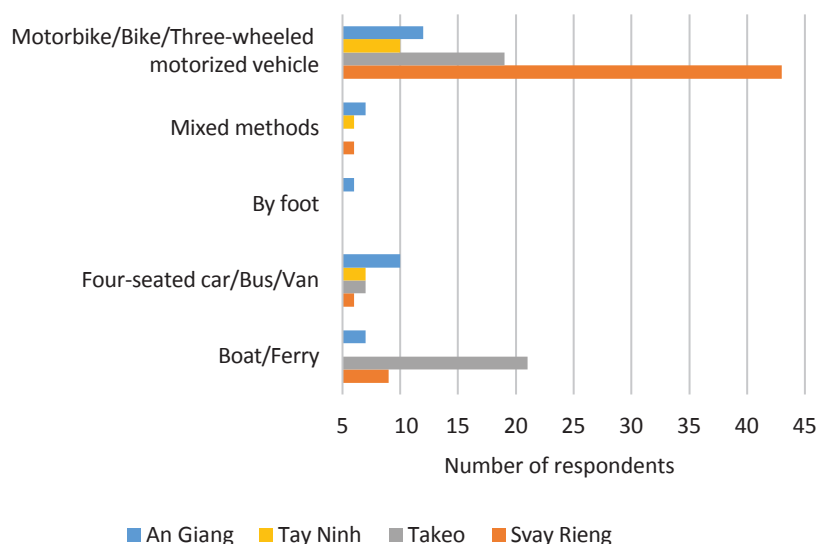
Figure 7. Duration of stay across the border by study site



Mode of cross-border transport

Around half of all study respondents crossed the border by motorbike, bicycle, or three-wheeled motorized vehicles,* while only 8.1 per cent went by four-seated car, bus, or van (Figure 8). Around 20 per cent travelled by boat and ferry on waterways. Among 49 female respondents interviewed, half rode by motorbike or bicycle. Only five females from An Giang and Takeo went by car and seven travelled by boat. One female participant from An Giang walked across the border every day with a trolley to sell products in Cambodia. Among 74 males interviewed, half travelled by motorbike, bicycle, or three-wheeled motorized vehicle. Only five males reported using a four-seated car, bus or van, and one-fifth went by boat. Four participants used a combination of vehicles on roads and waterways.

Figure 8. Mode of cross-border transport by study site



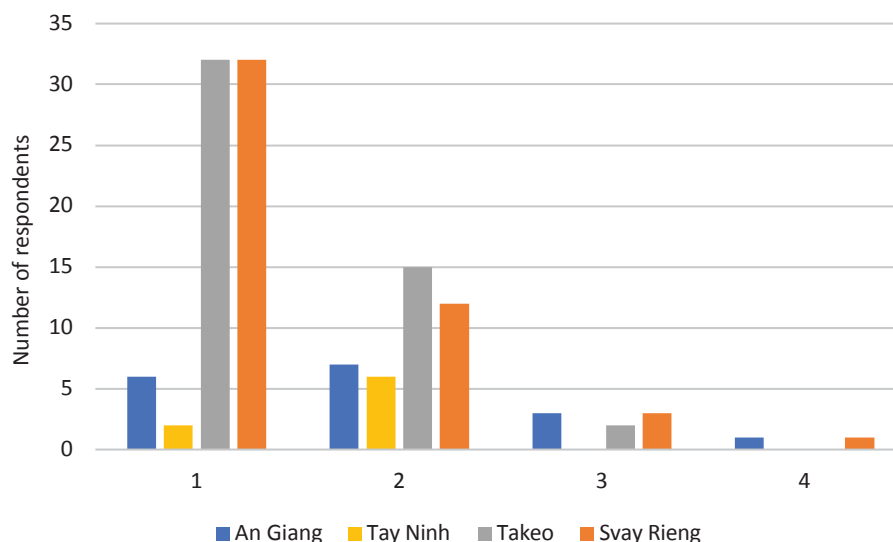
Number of health-care facilities that respondents visited prior to Tuberculosis diagnosis

Most participants were diagnosed with TB at the first health facility visited. Others in both countries first called on a commune health centre or clinic, before being transferred to a district or provincial-level hospital for TB diagnosis. Only a few participants reported visiting more than three health-care facilities before being diagnosed. For instance, a Vietnamese interviewee reported seeing a doctor at a

* Three-wheeled motorized vehicles are known as “Tuk Tuks” in Cambodia.

private clinic near her home in Viet Nam, but her symptoms persisted. She visited two more hospitals for second opinions in Viet Nam, before her TB was detected at a provincial hospital with a respiratory department. Figure 9 presents the number of health-care facilities that respondents visited prior to their respective TB diagnosis.

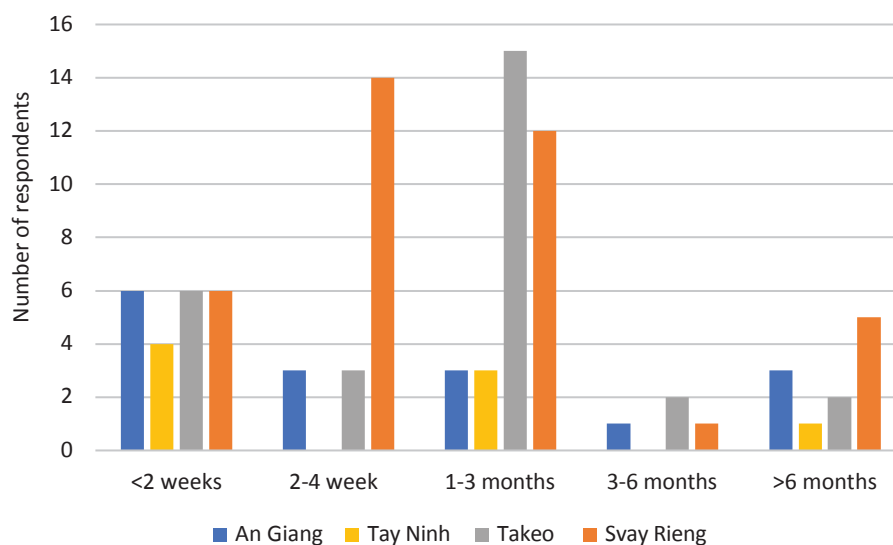
Figure 9. Number of health-care facilities that respondents visited prior to Tuberculosis diagnosis by study site



Duration of TB symptoms prior to TB diagnosis

In Viet Nam, half of interviewed patients were diagnosed with TB within two weeks of developing symptoms (Figure 10). However, in Takeo the majority of patients endured TB symptoms for at least one to three months. In Svay Rieng, 14 respondents waited for two to four weeks prior to TB diagnosis. It also took some study participants in Viet Nam and Cambodia more than three to six months from the onset of TB symptoms to diagnosis.

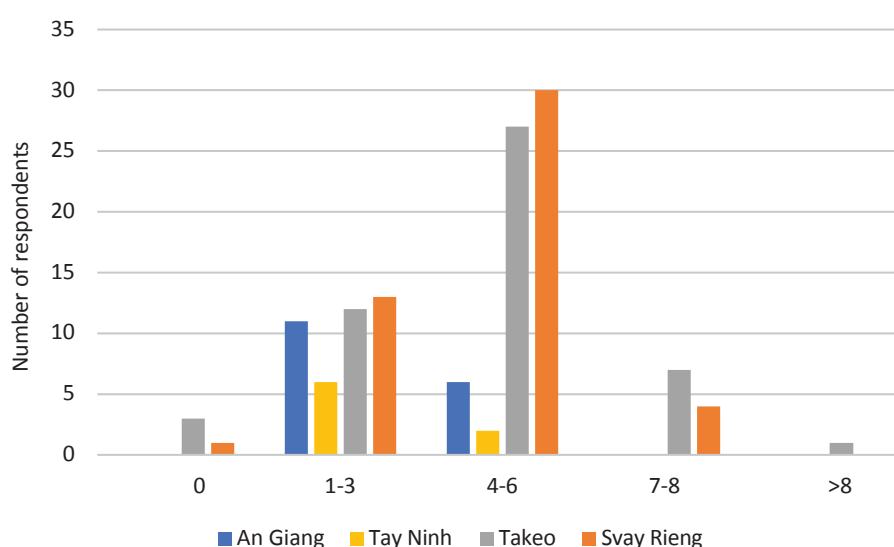
Figure 10. Duration of Tuberculosis symptoms prior to Tuberculosis diagnosis by study site



Number of respondents who shared accommodation prior to TB diagnosis

Prior to study participants being diagnosed with TB, 36 respondents at study sites except Tay Ninh reported sharing accommodation with at least one to three family members, friends or co-workers (Figure 11).

Figure 11. Number of respondents who shared accommodation prior to Tuberculosis diagnosis by study site



Sharing accommodation with a large number of persons could be more common for Cambodian cross-border migrants. Some 30 respondents in Svay Rieng and 27 in Takeo reported that four to six persons stayed with them at the same residence. In Takeo, eight reported sharing accommodation with more than seven people.

Barriers to Tuberculosis diagnosis and treatment

The study identified three major challenges faced by cross-border migrants in terms of access and utilization of TB diagnosis and treatment (Table 4). These challenges were classified under three major barriers to health-care service access: (1) structural, (2) cognitive and (3) financial.

Table 4. Barriers to Tuberculosis diagnosis and treatment based on perspectives of cross-border migrants, Viet Nam and Cambodia, 2020 (n=123)

Key theme	Category	Reported by respondents in Viet Nam	Reported by respondents in Cambodia
Structural barriers	Limited health communication programmes	8	30
	Location of health-care facilities	1	4
	Lack of interpreters	1	4
	Excessive waiting times	2	0
	Lack of guidance from health-care providers	1	3
Financial barriers	Lack of health insurance	10	84
	Financial burden on cross-border migrants	4	4
	Out-of-pocket costs associated with TB diagnosis and treatment across the border	1	2
	Lack of legal documents	2	0
Cognitive barriers	Lack of knowledge about TB	4	3
	Discrimination	2	1

Structural barriers

This category encompasses institutional and organizational barriers. Migrants were found to have encountered challenges at every step of the health-care-seeking process inside or outside health-care facilities. The study team found four challenges associated with structural barriers as subcategories.

Limited health communication programmes

A number of migrants in Cambodia (30) and Viet Nam (eight) reported they rarely paid attention to public posters, leaflets or health sessions about TB or other health issues in their communities. As such, TB was not a well-known disease among interviewees before contracting it. In contrast, with the study team conducting interviews amid the COVID-19 pandemic, many participants were aware of COVID-19 infection risks and preventive measures.

“I noticed there are such activities, but did not pay much attention to them. I did not think that I would have TB, so I did not care. With COVID-19 infection, people talk about it a lot, so I am well aware of how dangerous it is. But as for TB, I only found out about it if people talked about it.” Female cross-border migrant, 28 years old (An Giang, Viet Nam)

Location of health-care facilities, lack of interpreters and excessive waiting times

Some participants in Cambodia and a participant in Viet Nam faced obstacles in visiting health-care facilities due to limited availability in their localities and long distances. Among Cambodian patients who visited a health-care facility in Viet Nam, they reported being accompanied by an interpreter due to limited Vietnamese language proficiency.

“I go to Go Dau [Tay Ninh province] around two to three times for [medical] follow-ups. I go there in the morning and return in the afternoon. I go with my husband and two children. I also have one translator [who] accompanied me there.” Female cross-border migrant, 39 years old (Svay Rieng, Cambodia)

A Vietnamese cross-border migrant patient who was diagnosed in Cambodia also faced language barriers in understanding administrative procedures at a hospital in Cambodia and relied on support from a Vietnamese relative and long-term resident in Cambodia.

“My Vietnamese auntie often translated Khmer for me. She talked to doctors, helped me with X-ray tests and other things. She had lived in Cambodia for many years. She travelled with me, helped me, talked to people on my behalf. I could understand simple sentences (in Khmer), but not something too complicated since I was not that fluent.” Female cross-border migrant, 34 years old (An Giang, Viet Nam)

Excessive waiting times in hospitals also negatively affected health-care-seeking behaviour of cross-border migrants. Losing a day's potential income may have made some reluctant to seek health-care services.

“Generally, going to a hospital is very time-consuming, whereas a private clinic would just give me an injection and I would get better immediately. If I had given up work to jump through all those hoops just to get an examination, I would have lost a day's income.” Male cross-border migrant, 47 years old (An Giang, Viet Nam)

Lack of guidance from health-care providers

Some cross-border patients received limited instructions on TB diagnosis and treatment from health-care providers when visiting hospitals in the neighbouring country. Insufficient guidance on TB treatment might lead to interruptions of TB treatment and loss of follow-up care for cross-border TB patients.

“Cambodian people gave me no instructions at all. Here [in Viet Nam], there are people helping me, giving me instructions. There was no one there giving me any instructions.” Female cross-border migrant, 34 years old (An Giang, Viet Nam)

Similarly, a Cambodian patient who visited a clinic in Viet Nam also highlighted the limited follow-up care after several prescriptions.

“When I went to check my health in Viet Nam, they did not find TB. They only sent me for a chest x-ray and checked my kidney status. A doctor there only checked these and then gave me medicines three or four times. They didn’t make any follow-up appointment.” Male cross-border migrant, 47 years old (Svay Rieng, Cambodia)

Financial barriers

Challenges related to health insurance and costs of care are classified under financial barriers. Financial barriers explain the reasons why migrants were unable to pay health-care fees and or were uninsured.^{31,32} Four obstacles were identified under this category after data analysis.

Lack of health insurance and legal documents

Migrants who do not have health insurance face a greater financial burden as they must cover all direct medical costs prior to TB diagnosis. Thus, potential financial impacts may result in delays in migrants seeking TB diagnosis and treatment.

Some participants in Viet Nam and the majority in Cambodia reported not having health insurance. Two participants in Tay Ninh did not have a national identification card which precluded purchasing health insurance. One study respondent in An Giang was unable to purchase health insurance due to high premiums and lack of residential registration. The household registration book system in Viet Nam created a barrier for the patient to obtain health insurance as she needed to register her residence in a new area.

“My father’s place of residence is still registered at his parent’s address and my younger sister is still insured by her school. To buy it [health insurance] only for myself would be costly.” Female cross-border migrant, 18 years old (An Giang, Viet Nam)

Financial burden on cross-border migrants

TB requires at least six consecutive months’ treatment to make a full recovery. Although Viet Nam and Cambodia are committed to providing TB treatment free of charge, TB patients were found to face financial challenges from the pre-diagnosis to recovery stages, with direct and indirect costs associated with treatment. Direct costs included those for transportation to health-care settings and for hospital food. Indirect costs were lost earnings from work due to illness. Non-treatment costs, such as food and transportation, are typically borne by patients and families. The monthly income for most interviewees was below USD 200. Some were unemployed due to poor health conditions associated with TB.

“I was too poor. I did not know where to go. And my symptoms would come and go. We lost a few days’ income [because of doctor’s examinations]. My father had to take care of me. So, nobody was working.” Female cross-border migrant, 18 years old (An Giang, Viet Nam)

Loss of daily income and transportation costs were common burdens faced by study participants in both countries. In general, hospitals provide free-of-charge TB treatment in Viet Nam and Cambodia irrespective of nationality. However, patients without health insurance must pay hospital admission fees. In Viet Nam, two participants outlined financial difficulties in paying accommodation and hospital meal costs. There is a social programme to financially support poor households in the two countries. 30When study participants were asked whether any financial aid was received from the government and/or local authorities, only one participant in Viet Nam reported having a poverty card that permitted free health insurance and other social benefits. In contrast, more than 30 respondents in Takeo and eight in Svay Rieng received such benefits as members of poor households.

Out-of-pocket costs associated with TB diagnosis and treatment across the border

Although NTP Viet Nam is committed to treating TB patients regardless of nationality, two Cambodian cross-border migrants reported being unable to pay treatment costs at hospitals in Viet Nam upon TB diagnosis. As a consequence, they returned to Cambodia to seek TB treatment.

“I crossed the border for medical check-ups twice to check my lung infection. They [health-care providers in Viet Nam] gave normal medicines. But I crossed the border again for a lung x-ray and was diagnosed with TB. They wanted me to buy medicines in Viet Nam, but I did not want to. So I decided to come to Kirivong referral hospital in Cambodia for another lung x-ray and I was diagnosed with TB again.” Male cross-border migrant, 48 years old (Takeo, Cambodia)

Similarly, a Vietnamese patient diagnosed with TB in Cambodia also reported paying medical costs and returned to Viet Nam as she could not afford to continue paying in Cambodia.

Cognitive barriers

Cognitive barriers encompass knowledge and communication. The study identified two obstacles under this category.

Lack of knowledge about TB

Some participants in both countries were not aware of TB prior to diagnosis. Some cross-border migrants reported not being cognizant of TB risks and ways of transmission as they were not surrounded by friends or family with the disease. Even after TB diagnosis, an interviewee in Cambodia interrupted treatment due to not fully understanding its importance.

“No one in my family had TB. So I did not even think of that.” Male cross-border migrant, 55 years old (Tay Ninh, Viet Nam)

“I interrupted my TB treatment in February or March 2019 because I believed that I was cured as I had no more TB symptoms. I did not want to take TB medication again because I was not sick.” Female cross-border migrant, 67 years old (Takeo, Cambodia)

Discrimination

Indifferent attitudes of health-care providers at hospitals might make cross-border migrants reluctant to seek TB diagnosis and treatment. Such unprofessional attitudes could reflect low-quality health-care. Discrimination and stigma against TB patients in communities might also discourage cross-border migrants from seeking medical support in a timely manner.

“Staff at hospitals don’t have a good attitude, especially the way they spoke to me and also they don’t want to come to close to me because I have TB.” Female cross-border migrant, 39 years old (Svay Rieng, Cambodia)

“When we talk about TB, a lot of people still discriminate against those with TB. Therefore, people usually refrain from getting tested so they are not subject to any sort of discrimination. They would not go because of discrimination, not because they are lazy.” Female cross-border migrant, 50 years old (Tay Ninh, Viet Nam)

Facilitators to Tuberculosis diagnosis and treatment

The study revealed some supportive factors that helped cross-border migrants access and utilize services related to TB diagnosis and treatment. Table 5 presents three key themes and categories that facilitated access and utilization of TB services for cross-border migrants.

Table 5. Facilitators to Tuberculosis diagnosis and treatment based on perspectives of cross-border migrants in Viet Nam and Cambodia, 2020-2021 (n=123)

Key theme	Category	Reported by respondents in Viet Nam	Reported by respondents in Cambodia
Structural support	Awareness-raising strategies deliver mixed results	10	14
	Friendly health-care workers	2	2
	Quality of health-care	1	2
	Close proximity to health-care facilities	2	3
Financial support	Free medication	4	0
	Reasonable costs of health-care	0	1
Social support	Help and advice from families, friends and community leaders	5	5

Structural support

Awareness-raising strategies deliver mixed results

While only a few participants in the two countries were aware of posters, leaflets and other information, education and communication (IEC) materials about TB at public facilities in their communities, some respondents in Viet Nam and a respondent in Cambodia said television and radio programmes helped provided information knowledge about TB.

“I heard about the national tuberculosis control programme. Because I was sick and tried to look after my health and limit outside interaction, I stayed at home and followed precautions so as not to spread TB to others. I heard about it via a health programme and also news on TV.” Female cross-border migrant, 48 years old (An Giang, Viet Nam)

In Viet Nam a sizeable number of participants received information on TB through loud speakers located in their communities, which disseminated public health messaging about TB symptoms and health-care services from commune health stations and NGOs. Some Vietnamese participants also reported trucks with loud speakers drove in communities to deliver health messages, including information about TB. On the other hand, Cambodian respondents were more likely to be exposed to health education campaigns about TB run by local NGOs and health-care facilities in their communities.

“I heard announcements about TB from mobile loudspeakers. They had a truck carrying the loudspeakers going around.” Male cross-border migrant, 47 years old (Tay Ninh, Viet Nam)

“There were TB education activities in my village, so I was aware of the symptoms. When I was sick and had a cough and chest pain, I decided to get tested for TB at a health-care centre.” Male cross-border migrant, 62 years old (Takeo, Cambodia)

Friendly health-care workers, quality of health-care and close proximity to health-care facilities

Some Cambodian participants shared their positive views on the attitudes of health-care workers and the quality of health-care in Viet Nam. In addition, some Cambodian patients reported crossing the border to use health-care services in Viet Nam due to their close proximity.

“The clinic in Viet Nam is very friendly to Cambodian people and the system there is much better than it is in Cambodia. Services in Viet Nam are much better than in Cambodia. They bring all documents and do everything for patients.” Female cross-border migrant, 50 years old (Svay Rieng, Cambodia)

Financial support

Free medication and reasonable costs of health-care

Some participants in Viet Nam expressed gratitude for the free-of-charge TB diagnosis and treatment supported by the Government of Viet Nam. One participant in Cambodia highlighted the reasonable costs of health-care in Viet Nam as the key reason to visit a doctor there.

“Everything was free-of-charge because I have health insurance. I only needed to show my insurance card and the whole thing went quite smoothly.” Male cross-border migrant, 45 years old (An Giang, Viet Nam)

Social support

Help and advice from families, friends, and community leaders

Families, friends and community leaders are often sources of information about TB and support. Study participants in both countries said family members and friends, especially those who were TB patients before, advised participants to see a doctor for TB diagnosis after developing symptoms. Some people in Cambodia reported hearing about TB from a community leader.

“I was coughing every night, until 3–4 am before I could sleep. I heard from my friends and on the radio that it could be a symptom of TB.” Male cross-border migrant, 49 years old (An Giang, Viet Nam)

Findings from interviews with stakeholders

The number of public health officials and health-care providers who participated in the study is presented in Table 6 and the list of participants can be found in Annex 2. A total of 139 in-depth interviews were conducted among selected government and non-government health-care providers who were involved in cross-border TB control in the study provinces.

Table 6. Number of study participants from in-depth interviews, 2020–2021 (n=139)

	Viet Nam		Cambodia		Total
	An Giang	Tay Ninh	Svay Rieng	Takeo	
Provincial level	8	5	4	4	21
District level	11	10	01	4	26
Commune level	6	11	41	34	92
Total		51		88	139

This section presents findings of a stakeholder analysis informed by the interviews following five key themes developed during the data analysis stage and agreed by two independent researchers. The key themes link to an overriding objective to identify stakeholders' challenges in implementing cross-border TB control activities from perspectives of coordination and partnership, service delivery, organizational structure, communication programmes and stakeholders' perceived barriers to migrant TB health-care services. Table 7 summarizes key themes, sub-key themes, and categories found in the stakeholder analysis.

Table 7. Challenges in cross-border Tuberculosis control based on perspectives of stakeholders

Key theme	Sub-key theme	Category	Viet Nam (n=51)	Cambodia (n=88)
Coordination and partnerships		Lack of an official cross-border referral mechanism	10	17
		Need for an official communication mechanism between Viet Nam and Cambodia	8	15
		Weak public and private mix/ stakeholders' coordination within a country	7	6
		Lack of information about cross-border TB treatment regimens	2	4
Service delivery		Lack of data on migration status of TB patients	17	56
		Shortage of medication for TB treatment	6	22
		Inadequate diagnostic tools	10	15
		Lack of free TB treatment for non-citizens	9	12
		Weak TB monitoring system	0	13
		Poor TB-related health-care services	0	11
		Lack of consistent guidance and provision of TB treatment for undocumented patients	9	0
		Insufficient infrastructure to provide TB diagnostics and treatment	6	2
		Language barriers	1	3
		Lack of disaggregation data on TB patients' ethnicity	2	0
		Capacity-building for medical personnel	10	24
		Limited funding for carrying out TB-related activities	20	13
		Shortage of trained human resources	17	1
Organizational structure		Heavy workloads	15	1
		Limited transportation options	0	16
		Inaccessibility of health-care facilities	6	9
		Lack of effective communication programmes	25	25
Communication programme		Limited languages in communication materials	7	20
		Lack of funding for TB awareness-raising activities	16	7
		Unavailability of cross-border migrants for TB communication activities	6	2

Key theme	Sub-key theme	Category	Viet Nam (n=51)	Cambodia (n=88)
Migrants' challenges from stakeholders' perspectives	Tuberculosis medication	Adverse effects of TB medication	14	15
		Limited TB awareness among cross-border migrants	10	14
		Delays in seeking care	5	1
		Stigma against TB patients	1	4
	Financial barriers	Poor socioeconomic status of cross-border TB patients	20	8
		Lack of health insurance	6	0
	Mobility	Mobility of cross-border TB patients	12	7
		Unavailability of patients for TB treatment and examinations	8	3

Coordination and partnerships among stakeholders

Lack of an official cross-border referral mechanism between Viet Nam and Cambodia

A number of Cambodian patients seek health-care in Viet Nam via the Moc Bai-Ba Vet, Xa Mat-Trapang Thlong, Tinh Bien-Phnom Den and Khanh Binh-Chrey Thom border gates in the four study provinces. Cambodians often access general health-care services in Viet Nam and some are diagnosed with TB. However, an official referral mechanism between the two countries has yet to be established. Viet Nam-based health officers usually give all diagnosis documents to Cambodian patients and guide them to access their national public health facilities. From the Cambodian side, health officers who receive such cases encounter obstacles as documents are in Vietnamese language, while official referral documents to verify diagnoses are often missing.

Twenty-seven stakeholders in this study underlined the need to establish an official cross-border referral mechanism between Viet Nam and Cambodia to assist governments in controlling TB within border areas.

"If they have difficulty following treatment here and would like to go to Cambodia for work, we would give them their case files, including medical records and TB diagnosis confirmation, to present to a Cambodian health facility for continuing treatment. In other cases, if they are halfway through their treatment in Viet Nam and would like to leave for Cambodia, we will give them a letter of referral, specifying their personal information, treatment regimen and progress so far. The patient will take the letter to the relevant Cambodian health facility and start receiving their next round of TB medication there." Medical doctor (An Giang, Viet Nam)

"Some Khmer people were diagnosed in Viet Nam and found [to be] TB positive, but when they returned to Cambodia, the patients did not accept the test results and asked for testing again." Head of health centre (Svay Rieng, Cambodia)

According to stakeholders, bilingual official referral forms, sharing of patient data and synchronization of treatment protocols were essential to refer TB cases and ensure follow-ups.

"If they want to go back to Cambodia before the treatment finishes, we will write them a letter of referral so they can continue getting treatment there. But in such cases, we often do not hear back from them whether they follow through with the treatment." Medical doctor (An Giang, Viet Nam)

"For my point of view, for cross-border people to Viet Nam, they think the distance to a health-care

facility in Viet Nam is closer than going to one in Cambodia. Crossing the border to Viet Nam was also easy and had not closed like today [due to Covid-19 restrictions]. Therefore, I would like to suggest working with Viet Nam to have a referral form in Khmer and Vietnamese languages so if a TB case is found, it is referred for treatment in Cambodia. If we can accept the referral form and Ministry of Health accepts its diagnose, we can treat a patient much easier and do not need to diagnose again.” Head of health centre (Svay Rieng, Cambodia)

Vietnamese who sought health-care in Cambodia often lived or worked there, while others also commonly returned to Viet Nam for health-care. According to interviews with Cambodian stakeholders, some Vietnamese patients were diagnosed with TB in Cambodia and began treatment, but interrupted treatment and returned to Viet Nam. An official cross-border referral mechanism would benefit both countries in controlling TB in border areas and ensure optimal outcomes for patients.

“They went to Viet Nam themselves. They might come from Ho Chi Minh City or have difficulties we didn’t know about or had difficulties in taking TB medicine. They escaped and returned to Viet Nam.” Medical doctor (Svay Rieng, Cambodia)

Need for an official communication mechanism between Viet Nam and Cambodia

There is no official communication mechanism between Viet Nam and Cambodia to manage cross-border TB patients. As a result, stakeholders on both sides were found to not know how to communicate with relevant authorities to exchange information on TB cases nor are national TB control activities and outcomes officially communicated between these countries. Moreover, cross-border TB diagnosis results are not accepted by health authorities of either nation. If an official TB control partnership between Viet Nam and Cambodia is established, the mutual acceptance of diagnostic results by both countries would allow patients to immediately access treatment without requiring further diagnosis upon return to origin countries.

“A partnership would certainly be a good thing. After it is established, I think it would be best if Cambodia can accept results of TB tests conducted by Viet Nam and provide treatment accordingly, rather than having to repeat sub-clinical tests, even when they are not well-equipped to do so. Otherwise, it will be too time-consuming and troublesome for patients and our counterparts in Cambodia.” Medical doctor (An Giang, Viet Nam)

In cases of Vietnamese and Cambodian patients interrupting TB treatment in origin or destination countries to cross the border, health authorities reported not knowing how to communicate with cross-border counterparts to approach patients. A mutually accessible platform could allow authorities of each country to share TB cases detected and data for monitoring. If a cross-border partnership was established, study respondents said additional information on TB patients, such as migration status, could be collected and shared with counterparts across the border in accordance with privacy protection regulations in both countries.

“The best method for communication would be via the internet, it is fast and effective, especially for monthly reports. Then again, the reports only provide general updates and statistics, rather than specific information of cases, so we cannot rely solely on those reports. For example, if we identify a Cambodian TB patient, we must share full details about the patient with our Cambodian counterparts for subsequent treatment. But we are not currently collecting full personal information of every patient who comes in for examinations. We would have to change our whole process.” Medical doctor (An Giang, Viet Nam)

“We should develop network in Viet Nam and Cambodia and establish committee to work on these issues. Having NGO support for finance and materials for health centres [would be important].” Head of health centre (Takeo, Cambodia)

“We don’t have any good cooperation between Viet Nam and Cambodia on TB yet. We should build better cooperation. We should follow the Thai form. We could negotiate the form and use one language or both languages (Thai and Khmer). We need to organize a system for case referrals between Cambodia, Viet Nam and Thailand.” Medical doctor (Svay Rieng, Cambodia)

Weak public and private matrix and stakeholders’ coordination within a country

Health-care systems in Viet Nam and Cambodia comprise a public and private mix (PPM). The former consists of public curative and preventative medicine sectors.

In Viet Nam, PPM procedures are regulated under Circular No.02/TT-BYT issued in 2013. According to Decision No.979/QĐ-BYT (24 March 2003) and Decision No.2357/QĐ-BYT (5 July 2011), registered health facilities within the NTP can provide TB diagnosis and/or treatment. Health facilities not in the TB network can engage in TB diagnosis and treatment, but must be certified by corresponding competent authorities and NTP Viet Nam. As per Circular No.02/TT-BYT, the majority of small- and medium-sized private health clinics nationwide may not meet required criteria to provide TB diagnosis and treatment. Suspected TB cases admitted to these clinics are referred to appropriate public hospitals or health centres. In Cambodia, potential TB cases and patients are referred, registered, diagnosed and treated at public health centres or hospitals.

However, in reality, TB patients can still be treated at private clinics if they are willing to pay for medicines in both countries. Moreover, private clinics could keep patients, for example up to a week, to see how TB symptoms evolved before referrals to relevant public health facilities. Thirty study participants underlined the necessity to improve PPM coordination among stakeholders to limit holding suspected TB cases at private clinics.

“We face certain challenges in the early detection stage. People with symptoms, such as fever and prolonged cough, would usually go to private practices either here or in Chau Doc district first, rather than public hospitals. Most private practices would refer the patients to public hospitals when they notice any TB-related symptoms, whereas some will provide treatment and monitor patients for a few days, up to a week to see if patients indeed have TB, and only then refer them.” Medical doctor (An Giang, Viet Nam)

“Some switched to treatment at private practices instead. The patients said private health providers gave them different types of TB medicines, which were not as strong. They would go there for treatment by themselves, although we have always advised that they should not.” Medical doctor (An Giang, Viet Nam)

Strengthening PPM is needed to reduce the financial burden on TB patients who must pay for services at private clinics. Study participants in both countries raised concern about the high rates of first visits to private health facilities and out-of-pocket health-care expenditure.

“As I have said before, we want to mobilize private clinics involved in TB prevention and control activities, limit private physicians from keeping patients at their clinics, instead of sending them here for treatment. The provincial Department of Health [has] already issued a letter which regulates that private clinics do not hold TB patients for treatment at their clinics. Nonetheless, because private clinics want the patients, they do not say that the patients have TB.” Medical doctor (An Giang, Viet Nam)

“They seek treatment at other places until they did not want to go anymore or they spent all their money, so they came here for treatment. This means I am the last choice.” Head of health centre (Takeo, Cambodia)

“With the current situation, the patients are mobile. When they first come to see us, we do not identify their symptoms immediately. During treatment, they just come for drugs one time and disappear. They abandon the treatment and go to see a doctor at a private clinic as they believe there is a good doctor there. However, after they visited private clinics many times, they did not feel better and still had a serious cough. Then they return to see us. We refer them for an x-ray test.” Head of health centre (Takeo, Cambodia)

Lack of information about cross-border TB treatment regimens

Information about TB treatment regimens applied in each country would allow health officers to provide appropriate care when patients frequently crossed the border. A prolonged duration of TB treatment, mobility of patients and lack of information on treatment regimens may hinder TB cross-border management.

A full understanding of TB treatment history is important for doctors to provide a continuum of care and prevent MDR-TB. In this study, health officers in Viet Nam reported that TB patients were usually asked to sign a commitment form by health-care providers before commencement of TB treatment. Only those who signed the form would be given TB treatment to prevent any interruption to their medication. However, health officers in Viet Nam stated that TB patients who signed the form still interrupted their treatment without informing health-care providers. As such, it was unknown whether patients sought TB treatment across the border. Furthermore, if patients sought TB care without providing previous TB treatment documents, health authorities may be unable to provide optimum proper treatment.

“The difficulty is we do not know the full spectrum of health-care management over there to see the treatment regimen through for the whole six months as regulated. Whether they follow the procedure correctly or not, we have no way of observing. Especially in cases where the bacteria resists treatment. In Viet Nam, depending on how much resistance the tuberculosis bacteria is putting up, we follow nine-month, 12-month and even 20- and 24-month treatments. In those cases, we are not able to treat them because the medication must be retrieved at medical centres daily.” Medical doctor (An Giang, Viet Nam)

“We treat TB based on national guidelines, meaning we have a standard treatment. But I don’t see Viet Nam has a standard one for our patients or maybe patients get treated at private clinics.” Head of health centre (Takeo, Cambodia)

Service delivery

Lack of data on migration status of TB patients

Due to the dynamic nature of cross-border and mobile populations in border areas, inclusion of migration status (migrant or non-migrant) in any transboundary TB monitoring system is needed to strengthen TB control along the Viet Nam–Cambodia border. This practice will allow health authorities to map the mobility of patients and maintain a full course of follow-ups.

Currently, the migration status of TB patients is recorded on an ad-hoc basis for monitoring and surveillance. A number of stakeholders (73) reported that data on a TB patient’s migration status was not disaggregated as it was not required by NTP Viet Nam and CENAT, Cambodia. Some commune level health officers in both countries recorded the migration status of TB patients, albeit in an unsystematic manner.

“We do not put that information in the patient’s case files, but I do note it down for future reference and patient management purposes.” Commune health officer (An Giang, Viet Nam)

“We don’t disaggregate by migrant types in my statistical systems. We only have a patient profile. Last quarter we had five cases and they were all bacilloscopically positive (BK+).” Head of health centre (Takeo, Cambodia)

Shortage of medication for TB treatment

Around 20 per cent of study participants in both countries reported insufficient medicines to treat patients. In Cambodia, this shortage includes types and quantities of medicines for TB treatment and prevention in adults and children. Stakeholders in Cambodia reported that patients’ treatment was often interrupted by shortages of medication. Some local health authorities stopped providing preventive treatment for latent TB patients.

While numerous health staff reportedly sought help from neighbouring health centres or district hospitals, this shortage appeared to be nationwide. As a result, many patients took medication for up to a month, before waiting for new supplies. This interruption of TB treatment can be dangerous and later might result in developing MDR-TB.

“The majority of new cases here are found from active case finding that we conducted. Sometimes it is difficult for us because we can only provide one week’s medication and cannot dispense anymore.” Head of health centre (Svay Rieng, Cambodia)

“Not many cases of childhood TB, but TB medication for adults sometimes runs out of stock. We occasionally borrow it from other health centres. We will return it when we receive new ones. This August, for example, we submitted a TB drug supply plan due to increases in client visits. [But] we [did] receive not enough TB medicine.” Head of health centre (Svay Rieng, Cambodia)

In Cambodia, TB preventative treatment is available to those aged five years and above, who share houses with people with bacteriologically-confirmed pulmonary TB as well as those who are infected with latent TB based on an appropriate clinical evaluation. TB prevention treatment is also available in the two study provinces of Viet Nam for children and adults, but not nationwide. For example, Chau Thanh and Trang Bang are only two of nine districts in Tay Ninh offering TB prevention treatment. An Giang, in contrast, applies TB prevention treatment province-wide.

“One challenge, they came to get TB services here and asked if their children should come to get services too. I told them we provided prevention drugs for all close contact members and they asked if we provide prevention drugs for them. I responded that we would give if we have enough in stock. If we don’t, we cannot give it to them as we need to consider who [we] give it to. They were concerned about this.” Head of health centre (Svay Rieng, Cambodia)

A shortage of medication was also reported in An Giang and Tay Ninh, but not as severe as in Cambodia. Only three provincial level health officers reported limited substitutes for drugs some TB patients were allergic to and a few types of pills. Although the Department of Health could purchase pills, the process was complicated. As a result, some patients bought such medication at pharmacies by themselves.

“Sometimes the programme runs out of medication, like one or two types of pills. This is an issue because the provincial health authority would have to buy these medicines. However, this requires bidding and requesting additional budget. This process is usually very complicated and time-consuming. For that reason, our medication supplies sometimes run out.” Medical doctor (An Giang, Viet Nam)

“We usually have a regular supply, but right now we only have Ethambutol and INH, because PZA and Rifampicin recently ran out. Hence, we must give patients a prescription so they can buy them elsewhere. For example, if the patient is allergic to all anti-TB drugs except R (Rifampicin), they will have to buy it elsewhere. For people who can afford, it’s not a big problem. But for financially struggling patients, paying VND 2,000 for a Rifampicin tablet can be a challenge.” Medical doctor (Tay Ninh, Viet Nam)

Inadequate TB diagnostic tools

Findings from this study revealed that the study provinces face challenges related to TB diagnostic tools, including general diagnosis tools and high technology equipment. Up to 25 stakeholders highlighted the dearth of TB diagnostic tools, with Cambodia facing a more severe shortage than Viet Nam. TB management models differ between the two countries. In Viet Nam, the Acid-Fast Bacillus smear tests, x-ray examinations, Mantoux tests and prescriptions are performed by district health centres or higher, while in Cambodia TB smear tests are conducted by health centres, others at district level or higher.

Participants in An Giang and Tay Ninh reported a shortage of appropriate diagnostic tools at district level, which hindered health professionals from providing adequate tests for patients and diagnoses. Samples are sent outside the district for TB diagnosis. TB patients can present with complications or underlying conditions that require specialized tests, not available at district level.

“In terms of laboratory diagnosis, only sputum examinations are conducted here. For example, if people want more advanced tests such as sputum culture we do not have.” Medical doctor (An Giang, Viet Nam)

District health centres in the two Vietnamese study provinces are often equipped with X-ray machines, microscopes and Rivalta reactions. Some districts have GeneXpert machines, with An Giang having seven installed at four districts (Chau Doc, Chau Phu, Phu Tan and Tan Chau), Centre for Disease Control (CDC), and An Giang provincial hospital. Tay Ninh has four GeneXpert machines, with two installed at Tan Chau and Trang Bang districts and two at Tay Ninh TB hospital. Neighbouring districts send sputum samples to these districts to run GeneXpert tests (assigned by CDC in An Giang and the provincial TB and Lung Hospital in Tay Ninh). A number of study participants from district health centres in Viet Nam requested installation of GeneXpert machines to reduce travel times and maximize TB diagnoses, as they felt the Ziehl-Neelsen stain method was out-dated and X-rays were essential.

“Another difficulty is with our out-of-date diagnostic tools. We do not have an advanced testing system like the GeneXpert, so we are sticking with manual tests such as the Ziehl-Neelsen stain method like the old days. GeneXpert is much faster with 98 per cent accuracy, whereas we have to look painstakingly to find TB bacteria with our current stain method. Without the technology, it is a real struggle for us to screen TB cases.” Medical doctor (An Giang, Viet Nam)

“I mean for diagnosis purposes, I am saying we do not have GeneXpert here so we struggle with the current manual staining method, which offers a very low accuracy level.” Medical doctor (An Giang, Viet Nam)

Cambodian health officials faced challenges to acquire adequate TB diagnostic tools and urgently had to replace or fix out-dated machines. Not every Operational District (OD) has an X-ray machine, a key TB screening tool. Similar to Viet Nam, GeneXpert machines in Cambodia are installed at referral hospitals where sputums were sent for testing. Cambodian health authorities also face transport system challenges on page 45, as it takes time to send tests and return results. At commune level, a shortage of test kits and materials led to delays in testing and treatment for patients.

“I think if we want to have a good implementation, we should have good material and kits as well as a GeneXpert machine installed here.” Head of health centre (Takeo, Cambodia)

In some cases in Cambodia, sputums were sent to other health centres for testing by microscope or to the nearest OD for GeneXpert tests. Cumulative tests for a health centre or OD were sometimes overloaded, resulting in delays.

“We do not have a microscope, we just collect phlegm and send to Nhor health centre to examine by microscope.” Head of health centre (Svay Rieng, Cambodia)

“At our health centre, we diagnose based on first base symptoms and second we have a microscope to run testing and third if we are unclear, we can collect phlegm to test at Chi Phou or Svay Rieng OD on the GeneXpert.” Head of health centre (Svay Rieng, Cambodia)

Lack of free TB treatment for non-citizens

As regulated by NTP Viet Nam and CENAT Cambodia, TB treatment is available to all people regardless of citizenship and legal status documents. “Citizens” in this study were defined as people who have citizenship of an origin country. A majority of participants in Cambodia claimed they would provide TB treatment for Vietnamese patients. However, one health officer declined to accept Vietnamese patients due to insufficient legal documents.

In Viet Nam, TB treatment is free-of-charge. However, a patient is required to register a mailing address, a local contact and provide an identification and/or a residential book for monitoring. Most stakeholders in Viet Nam reported they would provide free TB treatment for Vietnamese citizens only. Seven health officers from An Giang and Tay Ninh said they would refer Cambodian patients to Cambodia for treatment due to risks of interrupted follow-ups and treatment. Some Vietnamese

health officers reported that Cambodian TB patients could access services and treatment in Viet Nam with payment.

“The NTP does not offer treatment to non-Vietnamese patients. A patient must have a Vietnamese permanent residence and identity card to be accepted into the programme. Otherwise, we would not know where they are to effectively manage their case, provide care and counsel them throughout treatment.” Medical doctor (An Giang, Viet Nam)

“In the last couple of years there were a few Vietnamese, but we did not accept [them] because they didn’t have sufficient or legal documents. So we already sent them to nearest hospital for diagnosis in Viet Nam.” Head of health centre (Takeo, Cambodia)

Weak TB monitoring system

Stakeholders from Viet Nam and Cambodia reported cases of fractured TB treatment and follow-ups. Currently, these countries have different monitoring systems at grassroots level. While there are few variations in reporting systems, surveillance and monitoring of TB treatment differed.

Health officers in Viet Nam monitor adherence to TB prescriptions through health officers’ twice monthly home visits. In addition, a family member of TB patients will observe or remind a patient to take medicine regularly. Patients are often provided with seven to 15 days’ worth of medicines at a time based on a patient commitment (for non-MDR TB patients, seven days’ medication during attack treatment and 10 to 15 days’ medication during follow-up treatment) and one to seven days for MDR-TB patients (one day during attack treatment and three-seven days during follow-up treatment). The number of days of medication provided to a patient is decided by local health officers. Regular health officers’ visits to patients’ homes helps assess whether closer monitoring or adjustments are needed.

In Cambodia, health officers are entitled to a travel allowance to monitor MDR-TB patients at home, but not for standard TB cases. Health officers in Cambodia monitor patients at home irregularly. A village health support group (VHSG) or community member engages in monitoring daily medicine intakes of TB patients, who must take medicine at a pre-agreed location. Monitors include village chiefs, nuns, monks or family members. Patients living close to health-care centres can take medicine each morning in front of health staff members. Health officers periodically visit patients at home during the treatment period. Each patient is provided with a form to record medicine intake. Health officers cross-check records against prescriptions. However, patients were often found not to follow instructions. Similar to Viet Nam, TB patients in Cambodia received medication at health centres or referral hospitals for one to 15 days for TB and MDR-TB cases. Stakeholders in Cambodia underlined the need to enhance the monitoring system to ensure full-term follow-ups.

“Yes, many challenges such as loss of follow-ups, giving up treatment. We do not have a good monitoring system, so we don’t know when they stop taking medicine. We cannot collect sputum from them because no one follows-up and because of side effect and the elderly, they have a high rate of loss of follow-ups.” Head of health centre (Takeo, Cambodia)

“Border provinces should pay attention to suspected TB patients who cross the border. If you don’t keep track of them, there will be a transmission risk.” Medical doctor (Takeo, Cambodia)

“Some patients relocated to other provinces and we lost track. They used to come asking for drugs for many days, but when they did not return for additional drugs we lost them from our monitoring system.” Head of health centre (Svay Rieng, Cambodia)

Poor TB-related health-care services

Health officers in Svay Rieng and Takeo raised various aspects of poor quality TB services. Quality services are important to retain patients and introduce services to those with suspected symptoms. Health officers in the two Cambodian provinces struggled to provide appropriate services to patients. One of the biggest challenges was delayed test results, which slowed delivery of treatment for patients.

The need for health officers to travel to get test results increased an already heavy workload as opposed to being delivered electronically.

“Referral hospitals should improve laboratory systems, especially documents and results. The turn around of results takes too long.” Head of health centre (Takeo, Cambodia)

Lack of consistent guidance on the provision of treatment for undocumented TB patients

This barrier is specific to Viet Nam. In accordance with NTP Viet Nam, TB patients should be provided with treatment and monitored regardless of their legal status and nationality. With respect to the two Vietnamese provinces, undocumented TB patients in this study are people recognized as Vietnamese, but do not possess a legal document (registration book, national identification card or temporary residency card). According to participants, one of these documents was needed to monitor patients for at least six months and patients must sign a commitment document to follow the duration of treatment. Without a legal document, following up patients is challenging.

The majority of health officers in An Giang reported they would not provide treatment to TB patients without one of the aforementioned documents. Most interviewed health officers in Tay Ninh, on the other hand, provided free TB treatment regardless of patients' legal status.

“As I have said before, even among Vietnamese TB patients in this district who have returned from Cambodia, we can only receive those who have a household register and a definite address. If they do not have a residential address, we cannot admit them to the programme.” Medical doctor (An Giang, Viet Nam)

“Migrants also come here for TB treatment including those who return from Cambodia without a resident book in Viet Nam. If these people get TB and come here or are referred here, they are eligible to free TB treatment.” Medical doctor (An Giang, Viet Nam)

A motivation for Tay Ninh to treat undocumented TB patients is the need to deal with the flow of undocumented migrants returned from Cambodia. The local authority agreed to allow patients without ID cards to get free TB treatment by requesting they register their legal status, a mailing address and contact person with the relevant local authority and signing a commitment document. Half of the patients interviewed in Tay Ninh for the study did not have an ID card.

“Yes, [they have] temporary residence. I have asked [for] directive opinions from higher levels about migrant patients because this is a border area. However, from the time of the pandemic until now, there have been only a few people. Before the pandemic, migrants who did not have the eligible household registration book, but they rented a room and registered for TB treatment here, we would still treat them without a resident's book.” Medical doctor (Tay Ninh, Viet Nam)

Insufficient infrastructure to provide TB diagnostics and treatment

Inadequate infrastructure is a barrier to provide effective TB diagnostics and treatment for patients in both countries. Eight participants in Viet Nam reported a need for upgraded infrastructure. Such as TB patients with underlying health conditions are required to be treated at advanced health facilities.

Regarding the TB management systems, Cambodia only has one national TB hospital, CENAT in Phnom Penh. Viet Nam, on the other hand, has a National Lung Hospital in Ha Noi and 45 provincial TB and lung hospitals (49 out of 63 provinces). In the remaining provinces, TB is managed by provincial CDCs. Each province has a TB unit to treat complicated cases.

At the four study provinces, Tay Ninh was the only one with a TB and lung hospital. Despite this TB specialized hospital, it is not equipped with specialized beds for complicated cases.

“Our province does not have a specialized hospital for tuberculosis and lung diseases, despite the relatively high number of tuberculosis cases in An Giang. Hence, it can be quite a struggle sometimes

for agencies in charge of treatment to effectively coordinate with agencies responsible for prevention.”
Medical doctor (An Giang, Viet Nam)

Each district in Viet Nam has a health centre (preventative unit and hospital) and one to three districts share the same OD in Cambodia. The number of districts to share an OD in Cambodia is based on the population size (Table 8). Each district often has a TB unit with three staff at a district health centre (Viet Nam) and one health staff member per OD (Cambodia). The main need, as reported by respondents, was to have a separate TB treatment unit or at least a separate room housed with district hospitals (Viet Nam) or referral hospitals (Cambodia).

“In terms of human resources, in general, the locality is not currently separated, meaning there is no separate TB department. TB and infectious [diseases] departments are still common.” District health officer (Tay Ninh, Viet Nam)

Table 8. Operational districts versus administrative districts in Cambodia and Viet Nam

Operational districts/District health centres	Administrative management districts	Total population
Takeo, Cambodia^a		
Bati	Bati, Samraong	284,875
Doun Kaev	Krong Doun Kaev, Treang	144,655
Kaoh Andaet	Borei Cholsar, Kaoh Andaet	66,467
Kiri Vong	Kiri Vong	87,673
Prey Kabbas	Prey Kabbas, Angkor Borei	138,981
Tram Kak	Tram Kak	170,931
Svay Rieng, Cambodia^{aa}		
Svay Rieng	Svay Chrum, Krong Svay Rieng	162,905
Romeas Haek	Romeas Haek	108,770
Bavet	Bavet, Kampong Rou, Chantrea	140,848
Svay Teab	Svay Teab, Ramduol	108,235
An Giang, Viet Nam^{b,d}		
Long Xuyen	Long Xuyen	268,638
Chau Doc	Chau Doc	111,173
An Phu	An Phu	179,978
Tan Chau	Tan Chau	172,450
Phu Tan	Phu Tan	208,004
Tinh Bien	Tinh Bien	122,134
Tri Ton	Tri Ton	134,930
Chau Phu	Chau Phu	248,831
Cho Moi	Cho Moi	348,206
Chau Thanh	Chau Thanh	170,967
Thoai Son	Thoai Son	182,282
Tay Ninh, Viet Nam^{c,d}		
Ben Cau	Ben Cau	69,849
Chau Thanh	Chau Thanh	126,399
Duong Minh Chau	Duong Minh Chau	128,061
Go Dau	Go Dau	152,473
Hoa Thanh	Hoa Thanh	150,020
Tan Bien	Tan Bien	104,625

Operational districts/District health centres	Administrative management districts	Total population
Tan Chau	Tan Chau	134,700
Tay Ninh	Tay Ninh	138,233
Trang Bang	Trang Bang	178,148

Sources: ^a Population data was extracted from General Population Census of the Kingdom of Cambodia, 2019, National Institute of Statistics, Ministry of Planning, October 2020. ^b Population data was provided by Centre for Disease Control, An Giang province, Viet Nam. ^c Population data was provided by Tay Ninh Tuberculosis and Lung Hospital, Tay Ninh, Viet Nam. ^d Population data was updated to 2019. An operational district (OD) indicates the district level of TB management unit. One OD can cover one or more administrative management districts.

At a grassroots level, Viet Nam has a health station per commune to implement basic health-care and treatment, including TB. These stations generally have sufficient equipment and infrastructure to manage TB cases and send sputum samples to district health centres. In Cambodia, based on the size of population, one health centre can cover one or more communes. These centres reported a shortage of fridges to store sputum tests which affected screening and sending samples of suspected TB cases. Furthermore, TB smear tests are conducted at commune level health centres in Cambodia, however, health officers faced challenges in even finding space to set a microscope to observe sputum.

“For example, we collect sputum only on Tuesday and send as we don’t have a fridge. There is only one fridge to keep vaccinations. Even space for running microscopes, we don’t have.” Head of health centre (Takeo, Cambodia)

Language barriers

While cross-border migrants with TB indicated language barriers were commonplace, they did not appear to be a major challenge for stakeholders in either country based on findings from in-depth interviews. According to interviewees, patients often came with a translator such as a friend, relative, or driver. Additionally, some employees are bilingual as are many patients.

However, some patients may not fully understand messages from health officers if the language ability of translators was limited. Only four health officers reported language barriers in communicating with patients who visited without an interpreter.

“They speak Khmer, whereas I cannot speak that language. However, I have a sound understanding of the national TB control programme, so I usually provide guidance following the NTP.” Medical doctor (An Giang, Viet Nam)

“There are Vietnamese, but I do not know where they come from. But I am sure they are Vietnamese, because they could not speak Khmer.” Head of health centre (Svay Rieng, Cambodia)

Lack of disaggregated data on TB patients’ ethnicity

In Viet Nam, An Giang and Tay Ninh are home to a number of ethnic minority groups, with Cham and Khmer most common. However, the disaggregation of patients’ data by ethnicity is not practiced. Ethnic TB patients may face different challenges to access TB diagnosis and treatment compared to the dominant Kinh population. Lack of data on TB patients’ ethnicity may be a barrier to authorities developing an appropriate prevention programme, especially when language was reported as a minor barrier. If the rate of TB is high among ethnic minority groups, development of a target programme may be necessary.

Organizational structure

Capacity-building for medical personnel

Human resource is a backbone of a nation's health system with workers' capacity to ensure the quality of health services. Nearly a quarter (n=34) of study participants underlined a staff expectation to receive appropriate training with scope to build their knowledge and capacity, especially for those new to a TB programme. Some district level stakeholders admitted concerns about staff capacity. Especially, many health stations (Viet Nam) and health centres (Cambodia) in the study provinces did not have medical doctors to conduct tasks requiring requisite medical expertise. Therefore, non-medical doctors sometimes carried work of a medical doctor. Additionally, training would help TB-specialist officers work more efficiently.

"CENAT should provide new or refresher training for health centre staff about sputum collection, diagnosis and treatment of TB." Head of health centre (Takeo, Cambodia)

"We also hope training for TB officers can be organized more regularly because new knowledge becomes available every day, but our health officers at district and commune levels have little opportunity to keep up-to-date. To do our jobs better, we require training to review old knowledge and keep up with new information. Our expertise and skills need to be regularly honed, so it would be great if greater emphasis can be put into training." Medical doctor (Tay Ninh, Viet Nam)

Many study participants suggested provision of training for community health networks, including community health workers (CHWs) in Viet Nam and VHSGs in Cambodia. Stakeholders stated that CHWs and VHSGs were in direct contact with TB patients and identified cases for TB screening. In Cambodia, VHSGs also monitored TB patients. In An Giang and Tay Ninh, each village could have up to two CHWs depending on its population.

"We should organize training for our officers and also our health workers at commune health stations because they deliver TB communication messages directly to our residents. They are an essential part of the communication programme, but they are not adequately equipped for the job." Medical doctor (An Giang, Viet Nam)

"CENAT should increase more training to centre staff and VHSG, as all the work is a burden for the centre." Head of health centre (Takeo, Cambodia)

Limited funding to carry out TB-related activities

Lack of funding was a major challenge in carrying out TB-related activities, according to interviews with stakeholders in both countries. Thirty-three participants reported not having sufficient funds to conduct TB-related activities. Financial constraints included insufficient travel allowances to make home visits (Viet Nam) and limited funding to develop and disseminate communication materials, support collaborators (CHWs and VHSG) and active case detection. These difficulties were encountered province-wide, not just in border areas. However, stakeholders at border areas dealt with further challenges as populations were dispersed and mobile. For example, for patient home visits, health officers had to travel longer and more time-consuming distances. Travel allowances, on the other hand, were paid inconsistently by districts, sometimes leaving health officers to bear travel costs.

"Funding is rather tight. For example, we are required to visit TB patients in their homes twice a month to check if they have been taking their medication correctly. But, there is no travel allowance so we have to pay the travel expenses out of our own pockets." Commune health officer (Tay Ninh, Viet Nam)

"We have a lot of problems related to financial support. We need financial support for health-care workers. NGOs play a crucial role and have a responsibility to control TB transmission by migrants and the general population. We have more NGOs working on TB, so we have more activities and can find more TB cases." Head of health centre (Takeo, Cambodia)

Additionally, many health officers highlighted the need for support for community networks such as mass organizations (Women's Union or Red Cross) or CHWs in Viet Nam and VHSBs in Cambodia. According to participants, CHWs and VHSBs often knew who crossed borders from their localities and assisted health officers to organize communication activities, connected with local residents and raised awareness of TB in border communities.

"Three years ago, we had established a community network for TB control, consisting of volunteer collaborators who were members of mass organizations such as the Women's Union, Veterans' Association, Red Cross. They would visit every TB patient to talk to them, encourage them, bring them medication, and advise their family members to come in for screening. However, due to a lack of funding, we could not maintain the network." Medical doctor (An Giang, Viet Nam)

"We do not have financial support for VHSBs as the funding is finished. Although USD 2.5 or USD 5 makes them very happy and collaborative." Head of health officer (Takeo, Cambodia)

In Cambodia, NGOs play an important role in contributing to TB control, however, they do not provide TB treatment. Normally NGOs focus efforts on targeted communes, not nationwide. For example, Cambodian Health Committee (CHC) is a local NGO in Svay Rieng and Operation ASHA (OpASHA) is an international NGO in Takeo dedicated to eradicating TB.

"The project we implemented only covered target areas, not the whole province. There are many areas along the border, but we covered only one or two communes. For instance, we selected Thnot commune. So, our activities were only in one commune. There were also people in other communes crossing the border. Our target group was people who stayed more than two weeks or one month. We didn't cover those who made daily returns." Medical doctor (Svay Rieng, Cambodia)

Shortage of trained human resources

Labour shortages hindered TB management in border areas. Eighteen participants reported that health facilities did not have sufficient staff, particularly doctors who worked on TB at provincial and district levels. This difficulty to recruit medical doctors to work in TB treatment and management led to a heavy workload for TB-focussed staff, especially health officers in border areas required to visit patients at home. The issue appeared more acute in Cambodia, where only one staff member is allocated to manage the TB programme at district level, in contrast to three in Viet Nam. Importantly, participants in Cambodia reported a lack of qualified radiologists to interpret X-rays that impacted the diagnosis and provision of treatment to TB patients.

"It is difficult in terms of human resources, especially when we are required to directly visit TB patients at their homes in such an expansive area. It is even more challenging for our health officers in border communes since the majority of TB patients are located in remote areas." Medical doctor (Tay Ninh, Viet Nam)

"We have microscope tests, but not a GeneXpert. We have an x-ray machine, but no radiologist to read film." Medical doctor (Takeo, Cambodia)

"We only have two people in charge, so we cannot cover everything. There are so many TB-related activities, for example, we have drug-resistant TB, TB preventive treatment for children, screening children for TB, common TB. Moreover, our technical expertise is rather inadequate for the job. I only have an Associate Degree, but many tasks now require doctor-level qualifications." District health officer (An Giang, Viet Nam)

While Tay Ninh province in Viet Nam has a TB hospital, it does not have sufficient medical staff to fill positions, even with active support from the Tay Ninh People's Committee and Department of Health. For example, the committee agreed to equip Tay Ninh Tuberculosis and Lung Hospital with TB diagnostic tools if it had a sufficient number of doctors to operate them. The committee also issued preferential policies to attract doctors to work in the TB field, however, many graduate medical students elect to work at private hospitals.

“Lack of labour is our main challenge. It has become a permanent issue that applies to the whole public health sector, but we have not been able to overcome it. This is partly due to the increasing availability of private health-care institutions. There is a ‘brain drain’ from the public health sector to the private health sector. Despite adjustments and efforts made in recent years to rebuild our human resources, new stocks of young health professionals have yet to complete their training, whereas older generations are already retiring from their posts. Since we have yet to address this difficulty, our TB efforts are affected by the lack of staff.” Medical doctor (Tay Ninh, Viet Nam)

Heavy workloads of TB health providers

Around 11 per cent (16) respondents described their workloads as “heavy”. This resulted from human resource shortages and complicated administrative procedures. As a result, many TB officers undertake multiple tasks which affects their quality of work.

“Our workload is quite heavy. We have to keep up with paperwork, manage treatment of several patients, monitor activities at commune level, participate in training, and a lot of other activities. When an activity requires the participation of two officers from the TB team, we even have to close the centre for the day.” Medical doctor (An Giang, Viet Nam)

During the COVID-19 pandemic, the workloads of staff also increased. TB officers were deployed to COVID-19 prevention and control in both countries. Many staff did not have weekends and found the workloads overwhelming at times.

“Due to the pandemic, we have to deal with a lot of guidance documents from the ministry level, whereas our responsibilities with other health programmes remain the same. We have to work weekends and we are still unable to handle the overwhelming workload. The government recently started allowing professionals to enter the country. Although there are no active COVID-19 cases in Tay Ninh province, we still struggle with paperwork for immigration entries of these foreign professionals. The workload keeps growing. If it does not go away soon, I am afraid I will be stressed.” Medical doctor (Tay Ninh, Viet Nam)

Limited transportation options

A lack of transport options is a serious issue in Cambodia that hinders TB-related activities in Svay Rieng and Takeo, especially in border communes and districts. Neither of the two provinces have public transport networks. MDR-TB patients have travel costs subsidized by CENAT and patients who live in CHC or OpASHA target areas can benefit from travel allowances. Others pay for travel (taxi or tuk-tuk) or go by foot to health centres and hospitals. Limited transport hinders patients’ access to TB services as travel can be comparatively costly, as some patients cannot even buy a bicycle. These challenges are compounded by the rainy season.

“This is a point I would like to raise. They are very poor and don’t even have one bicycle, so we give them [one] for few days to reduce their travel and explain that TB treatment will bring side-effects. I want to see them having the drug in front of me and make sure they want to recover. If they confirmed yes, they need to take the drug regularly. Then for a second [dose] I give them five days to a week as I am afraid of the side effects of the drug. If they get a reaction to the drug they may not take any more. We have to follow up with them and if we cannot follow up by ourselves, we can inform the village chief or VHSG to help us.” Head of health centre (Takeo, Cambodia)

“We call the village chief to ask the name of people absent who didn’t come to centre and what are reasons. Some said they were busy. If someone said they don’t have transport, we ask the village chief to drive them to the health centre and if they need to be referred to the provincial hospital, the village chief can drive them there and CHC will pay their transportation cost.” Head of health centre (Svay Rieng, Cambodia)

Some health officers reported that neither travel allowances nor means of transport were provided for TB health officers to carry out activities in communities, such as following-up patients during treatment.

“We would like to request transportation support as we need to travel to work in communities and follow-up patients as sometimes they have side-effects with the drug. So we need to visit them to see their situation to follow-up. I rarely stay here, normally I visit a patient at their home.” Head of health centre (Svay Rieng, Cambodia)

Inaccessibility of health-care facilities

Fifteen stakeholders from both countries revealed that patients living in remote areas encountered limited access to health-care services due to long distances to health centres. Such distances hindered patients from visiting for TB monitoring tests during treatment or screening for diagnosis. Even when patients experienced adverse effects from TB medication, they chose to visit health clinics rather than district health centres for monitoring.

“We face problems too because some villages under this health centre are in remote areas and it is difficult for a patient to come to seek services here during the rainy season. So the number of care-seekers also decreased.” Head of health centre (Takeo, Cambodia)

“For cross-border cases, we also educate them about seeking help if they have any suspected symptoms but they find it difficult to come to visit our centre as they live closer to Viet Nam. So Viet Nam is closer than if they come to us. They would spend more money for a boat to cross the river, so mostly they went to Viet Nam and returned.” Head of health centre (Takeo, Cambodia)

“The most distant cases live about 13km from Vinh Xuong commune. It is a challenge for us to convince them to come in for monitoring tests during the treatment period. Even if adverse events emerge, they would not inform us and go to other health-care facilities instead.” Medical doctor (An Giang, Viet Nam)

Communication programme

Lack of an effective communication programme

One-third of stakeholders considered TB communication programmes to have several limitations and underlined the need for effective ones. Common forms of local level communication included via loudspeakers, group awareness-raising events, leaflets, banners and home visits. However, none of these means reached a wide audience. A majority of communication events happened around World TB Day (24 March). Home visits, common practice in Viet Nam, mainly targeted patients. Communities remained passive about access to TB services. This means health authorities found patients rather than people with suspected TB symptoms actively sought care. Patients came to health clinics at a late stage or when found through active surveillance or screening programmes.

“In order to enhance TB control efforts in border areas, I think we should first improve our awareness-raising activities. Once people are equipped with sound knowledge about the dangers of the disease, I am certain they will take better care of their health. That is the most important aspect in my opinion.” Medical doctor (An Giang, Viet Nam)

“We need more education activities especially for high-risk populations, [those with] HIV, diabetes and the elderly to screen and find TB.” Head of health centre (Takeo, Cambodia)

Coverage of TB communication activities was often small-scale, infrequent and rarely reached mobile and cross-border populations and those in remote areas.

“I think we should push for a more robust communication programme like those for endemics, such as viral hemorrhagic fever or hand-foot-and-mouth disease. Although they are both class B infectious diseases just like TB, why do we limit TB control efforts to household level instead of a more aggressive awareness programme like for the other two diseases. At the moment, for TB, we still limit monitoring, screening and providing guidance on prevention to individual households of TB patients.” Medical doctor (An Giang, Viet Nam)

A diversified communication channel to reach various population groups is highly important, with the study's findings underlining the need for communication activities targeted at subgroup populations. Communication activities at border gates, for instance, could aim at mobile and cross-border migrants, while those at schools could target students to act as "message transmitters" to lowly educated and illiterate parents. Mass and social media were two effective channels to disseminate communication messages, according to interviews with study participants. However, TB communication through these channels was currently uncommon.

"The number of illiterate people is small. Some Cambodians or ethnic minority people here cannot read, but their children are all literate because they go to school in Viet Nam. Children of Cambodian people who have lived here for about 10–20 years can go to school here." Medical doctor (Tay Ninh, Viet Nam)

"It would be better if the health sector reached out to people via mass or social media channels, but right now we are only able to deliver direct counseling to people who come to us for health checks or collecting medication. It is not easy to spread messages widely across the population." Medical doctor (Tay Ninh, Viet Nam)

"That could be a good idea. Even better if we can produce materials in two or three languages. Because people would have to stop there (at border gates) for entry/exit procedures, so they would have time to read materials. Posters and videos would work very well." Medical doctor (Tay Ninh, Viet Nam)

Limited languages in communication materials

One factor blunting the effectiveness of communication programmes was limited languages, with materials mainly written in Vietnamese and Khmer in Viet Nam and Cambodia, respectively with no bilingual IEC materials produced in either country.

"The communication materials are in Vietnamese. We simply receive what is provided by the NTP, we do not design nor develop any materials." Medical doctor (Tay Ninh, Viet Nam)

"We do it at public buildings in the village, pagodas and deliver key messages in Khmer language as most Vietnamese are not keen to come for education sessions. But since they closed the border, we see many migrants coming to services here." Head of health centre (Takeo, Cambodia)

"To address TB in border areas, the communication programme must use languages of the neighbouring countries. For instance, our district is adjacent to Cambodia, so communication materials should be in Khmer." Medical doctor (An Giang, Viet Nam)

Lack of funding for TB awareness-raising activities

Numerous health officers at all levels recognized that TB awareness-raising activities were highly important to educate communities about TB prevention and increase active health-care-seeking behaviours. However, production of information and education communication (IEC) materials and community communication events was restricted by limited funding in both countries. Even broadcasting TB messages by loud speakers came at a financial cost.

"No, we don't have budget for printing IEC materials. Also, we don't have awareness-raising in villages as we don't have budget to rent the audio system. We only do [it] with CHC to target villages for BK+ patients." Head of health centre (Svay Rieng, Cambodia)

Unavailability of cross-border migrants for TB communication activities

Due to the mobile nature of the cross-border population, it is regularly absent from localities – especially during the day. This means TB communication activities often fail to reach cross-border people.

“Since a lot of people go to work away from the locality, it is difficult for us when they give up on their treatment. It is also not easy to carry out communication outreach activities here because people are often not at home when we travel to a community.” Medical doctor (An Giang, Viet Nam)

“People here often go to work from 4-5am and not return until late afternoon or early evening. So it is difficult for us to approach them to talk about TB.” Medical doctor (An Giang, Viet Nam)

Migrants’ challenges from stakeholders’ perspectives

Adverse effects of TB medication

Reflecting similar findings from patients’ interviews, 29 health officers highlighted the adverse effects of TB medication on patients. Common side effects reported included dizziness, convulsions, exhaustion and loss of appetite, with the intensity ranging from mild to severe. Some officers reported cases of severe convulsions that interrupted patients’ treatment. Convulsions were the most common side effect linked to interrupted treatment of TB patients, particularly the elderly and those with poor health.

“However, in certain cases a patient’s condition is too severe to withstand the side effects of TB medication and they quit the treatment. We encounter cases like this every once in a while.” Commune health officer (Tay Ninh, Viet Nam)

“On the other hand, for treatment, some patients have side effects and do not want to continue treatment. When we know about it, we send our staff to their home and educate or counsel them about TB medication. The biggest challenge for us is the patient does not accept the drug side effects so they decide to give up.” Head of health centre (Takeo, Cambodia)

In many cases, patients were too exhausted to tolerate the combination of TB drugs which often leads to side effects or too poor to afford nutritious foods to boost their immunity and counter any potential side effects. In response, health officers often recommended financially poor TB patients improve their health to reduce drug side effects.

“I want to request support for food or money for TB patients to encourage them to access services.” Head of health centre (Svay Rieng, Cambodia)

“We can provide them with milk or some nutritious food for example, so they can improve their health because when patients come here, they look so thin. They all struggle financially. I advise them to eat nutritious food, but when we visit them at home we find out their meals are rather meager.” Commune health officer (Tay Ninh, Viet Nam)

Health officers interviewed for this study worked to boost patients’ confidence in TB medication and address any concerns. Strategies included visiting patients’ homes and underlining the short-term side effects of drugs. Also, patients who had overcome convulsions were invited to meet and support current patients encountering such challenges. In many cases, patients listened to health officers and continued treatment, however some gave up due to adverse side effects.

“Every time a patient cannot stand the convulsions caused by TB medication and wanted to quit I would visit, talk and encourage them to persevere through the difficult times by telling them they will feel much healthier when TB finally goes away. Sometimes I would ask one or two people who used to have TB to accompany me and to show patients how they can also regain their body weight and become healthy after treatment.” Commune health officer (Tay Ninh, Viet Nam)

“The big challenge for us is patients who suffer from drug side effects they cannot bear. Even though we have provided intensive counseling and education, they still give up their treatment.” Head of health centre (Takeo, Cambodia)

Fatalities among TB patients who were old, in poor health or with underlying health conditions were reported, either during or after interrupting TB treatment.

“They rarely quit treatment, unless they have underlying health conditions which makes them physically weak and cannot stand the side effects of TB medication any longer. There have been two cases of drug-resistant TB who discontinued treatment. One eventually died from exhaustion.” Commune health officer (Tay Ninh, Viet Nam)

“Some elderly patients already stayed at referral hospitals for TB treatment for a while. They were then sent to health centres for treatment. They came to our health centre to take the drugs for few days and then died. Hence it is difficult for us to provide treatment to elderly people and we don’t have enough equipment to help them. They should receive treatment at the referral hospital and after they recover, they just come to the centre to continue taking the drug then it will be fine.” Head of health centre (Takeo, Cambodia)

“But there are also some cases, for example, of elderly patients with an underlying medical condition, they cannot tolerate medication, they often get tired. For example, some patients who had TB medicine for a few days had to be hospitalized again because of fatigue.” Medical doctor (An Giang, Viet Nam)

Limited TB awareness among cross-border migrants

Limited awareness was a significant challenge preventing patients from accessing immediate health-care and committing to TB treatment. Many TB patients had low education attainment. Therefore, patients had limited capacity to absorb TB communication information, according to stakeholders. Patients also failed to follow prescription-related instructions provided by health officers and did not fully understand the importance of completion of TB treatment for at least six months. According to participants, more time and effort were needed to instruct low-educated patients.

“Our main difficulty is the majority of people here are very poor, with limited education and low levels of awareness. In poor households, older people usually stay at home and look after their grandchildren, while younger adults go to work at factories. These people usually do not know much about diseases.” Commune health officer (Tay Ninh, Viet Nam)

“Now they understand and come for services. Before they didn’t even tell us their name and sometimes blamed us when a case was found. Their knowledge was limited and explanations were difficult due to low education levels. So after many explanations, they understood and came to the hospital. With support from CHC for awareness-raising sessions at the village, they can ask about TB.” Head of health centre (Svay Rieng, Cambodia)

“It depends on knowledge of the individual. Some patients are explained to once, some many times.” Head of health centre (Svay Rieng, Cambodia)

Delays in seeking health-care

A vicious circle between patients’ socioeconomic condition, health-care-seeking postponements and commitment to TB treatment is apparent. TB patients in both countries were often poor and did not have health insurance. Moreover, they often postponed their first admission to a health clinic until a late stage. Some health officers believed patients might transmit TB to close contacts upon visits to hospitals. Additionally, many patients had been admitted to a private clinic and taken non-TB medication before being diagnosed with TB and commencing appropriate treatment. Patients who delayed seeking health-care often lived in remote areas with limited access to health support. The findings suggested that an effective communication programme to reach remote and border populations was needed to promote health-care-seeking behaviour among these groups.

“The majority of people with TB are poor. Since most poor people are from remote areas not town centres, their access to health-care is limited compared to those well-off. Moreover, poor people usually go to private practices first and if they feel healthy enough afterwards, they will not get themselves

checked thoroughly. Thus, it may take longer for them to finally be diagnosed with TB.” Medical doctor (An Giang, Viet Nam)

“The main challenge is people here pay little attention to their health. For example, they rarely get themselves checked unless they become so sick they have to be hospitalized, and subsequent tests show they have TB.” Commune health officer (An Giang, Viet Nam)

In Cambodia, delays in seeking care often resulted from limited transportation and long distances to health facilities. During the rainy season, flooding in Svay Rieng and Takeo prevented people from accessing health-care in time.

“We face problems too because some villages, under this health centre, are in remote areas. It is difficult for patients to seek services here during the rainy season. So the number of care seekers also decreased. Other challenges related to knowledge of patients as some patients have little knowledge about TB and sometimes they don’t participate in education events because they said they are old and cannot move around.” Head of health centre (Takeo, Cambodia)

“The majority of patients who come for TB diagnosis are always at later stages of TB. So health centres refer them to receive care and treatment at referral hospital.” Head of health centre (Takeo, Cambodia)

Stigma against TB patients

Health officers perceived a degree of stigma against TB patients that prevented them from seeking health-care at public facilities, attending education sessions or even believing they could contract TB. Effective education strategies are needed to address this barrier.

“Our people do not understand what TB is. Elderly people thought it is a genetic illness, not a communicable disease. That’s why we do awareness-raising to share information as elderly people have stigma and refused to get checked as they said their family did not have a TB genetic profile. Awareness-raising by VHSG and partners at the village is successful. If we just wait at the centre for clients, maybe we only find one per year. Like this month, we just found two cases.” Head of health centre (Svay Rieng, Cambodia)

“We need to raise public awareness, otherwise, people will still carry stigmas or will not understand the TB control programme. We need to step-up our communication efforts. At the moment, we are employing the “2X Strategy” (X-ray and Gen Expert), which I think it is working well. However, it needs more publicity. If people do not know about what we are doing, it will be pointless. Hence, we need additional funding to raise public awareness.” Medical doctor (Tay Ninh, Viet Nam)

Poor socioeconomic status of cross-border migrants

As reported earlier in this study, TB cross-border patients often have a poor socioeconomic status – a major barrier to accessing health-care, according to 26 stakeholders in this study. Stakeholders in both countries said that making a living likely outweighed the perceived benefits of TB treatment among poverty-hit cross-border migrants, which may lead to TB treatment interruptions. Many patients in this group did not have health insurance. A number of stakeholders also expressed concern that poor diets and health conditions of TB patients heightened their likelihood of experiencing adverse side effects from TB medication. Some patients could not afford to travel to hospitals for TB check-ups.

“TB patients are often very thin because they do not have any money for a decent diet. Some do not even have health insurance cards.” Commune health officer (Tay Ninh, Viet Nam)

“In general, the people here are very poor. Most would struggle to travel that far, and often their transportation options are limited. There were cases where people could not afford travel expenses, so we gave them money to travel for a medical examination. But, they just brought the money home and spent it on food. Afterwards, when they started coughing out blood, they came back here. Again, we

gave the mother and child money to travel to district level, including two-way transportation and meal expenses. That's how poor they are." Commune health officer (Tay Ninh, Viet Nam)

Lack of health insurance

Progress towards universal health coverage is starkly different between the two countries. According to Viet Nam Social Insurance, by the end of 2019, 89.3 per cent of Viet Nam's population (85.95 million people) was insured. Health insurance in Viet Nam is mandated to people who have an employment contract of at least three months and is optional for the remainder. Cambodia has three types of health insurance schemes, comprised of a health insurance scheme for poor people and children, a community-based health insurance scheme operated by NGOs and a private health insurance scheme. Less than 10 per cent of Cambodia's total population was enrolled in one of these schemes in 2020.³³

Six stakeholders from the two countries revealed health insurance-related barriers to health-care access. Participants suggested that uninsured patients were likely to delay seeking care. Many patients were too poor to afford health insurance, yet they were not registered as a poor household to receive health insurance.

TB medication is free-of-charge in both countries. However, a patient had an additional health condition, this patient has to pay-for-service if without health insurance.

"TB medication is free-of-charge for all patients under the NTP, but those with health insurance can enjoy additional support for treatment of other illnesses and hospital accommodation, which costs a lot. Most TB patients have no money for food nor hospital fees. I feel sorry to see them in such destitute situations." Commune health officer (Tay Ninh, Viet Nam)

Voluntary health insurance in Viet Nam costs from VND 320,000 (USD 14) to VND 800,000 (USD 35) per person annually depending on the number of people per household. Compared to the monthly average income of TB patients, health insurance can be costly. Health officers suggested granting health insurance to poor TB patients to access insured health services.

"Since TB patients are often very poor, many cannot afford health insurance. If we can provide free health insurance for a year, that would be very helpful to them. We should also grant it quickly, so TB patients do not have to wait around too long." Commune health officer (Tay Ninh, Viet Nam)

"Another difficulty is that the majority of TB patients are poor, so health insurance is very important. Recently, the insurance inspector who checked the hospital's software on medical examinations and treatment for TB patients, found that the proportion of patients without health insurance was very high." Medical doctor (Tay Ninh, Viet Nam)

Mobility of cross-border TB patients

Many local health officers reported challenges in cross-border TB control due to the mobility of migrant patients. Officers had limited options and resources to approach mobile populations who regularly migrated across borders. It was also challenging to monitor patients at home due to their prolonged or sporadic absences. Some patients delayed collection of medication and samples.

"We find it more difficult to monitor treatment of TB patients who regularly travel across the border. TB treatment requires patients to take medication every morning." Medical doctor (Tay Ninh, Viet Nam)

"It can be challenging in terms of patient monitoring. Commune and hamlet levels are in charge of providing them with TB treatment, not us. But throughout the treatment period, these patients continue to travel across the border and stay in Cambodia." Medical doctor (An Giang, Viet Nam)

Mobility of patients links to patients' commitment to TB treatment and their socioeconomic status. One-fourth of interviewed stakeholders highlighted interrupted TB treatment of mobile cross-border

patients as a critical issue. Patients who migrate for work or extended periods mean local health officers are unable to resume contact and treatment.

The findings underline the importance of creating a cross-border network to allow mobile and cross-border patients to continue treatment if migrating for work. It is essential to minimize the number of patients who interrupt TB treatment as it may lead to MDR-TB. Within border areas, MDR-TB can be spread with patients' mobility.

"Recently, there was a patient with drug-resistant TB. During the pandemic, it asked to collect the entire share of medication before returning to Cambodia. But our TB team insisted on not giving it. Therefore, treatment was abandoned and we lost track [of the patient]." Medical doctor (An Giang, Viet Nam)

"For most patients here, we don't see any big issue because they come for treatment and do not have any barrier but we have few patients who they have relatives in HCMC, Viet Nam so they visit there and did not come back. We find it difficult to ask them back or follow up them." Head of health centre (Takeo, Cambodia)

Some stakeholders, often unsuccessfully, instructed patients to collect medication at their country of origin before migrating or when visiting home.

"They said that due to difficult financial circumstances, they had to go away to earn a living. I instructed the patient how they could continue to collect medication where they go to work, but they said they would be travelling around many different places. I said they could try to come back here to receive medication or ask family members to collect it on their behalf. But even then, they still did not agree to continue treatment." Commune health officer (Tay Ninh, Viet Nam)

This study also discovered that several cases were interrupted by internal migration by TB patients living in border areas. This trend suggests that an internal TB management procedure should be provided to allow patients to continue treatment if they left hometowns for work. Health officers in this study reported that internal migrant patients should have the ability to choose where to receive TB treatment within Viet Nam or Cambodia. Mobile populations often do not stay in one location for at least six months to finish treatment, while no sanctions against interrupted TB treatment are imposed.

"Many TB patients cannot afford to stay here for treatment because they need to make ends meet. We may treat a TB patient here in Chau Doc, but then they decide to quit in the middle of the treatment regimen because they find work in Binh Duong or Ho Chi Minh City. It is difficult to convince them to stay." Medical doctor (An Giang, Viet Nam)

To increase patients' commitment to TB treatment, health officers from Viet Nam suggested hospitalizing TB patients, particularly mobile and cross-border ones within the first four weeks of treatment. Four weeks' treatment in hospitals would reduce the likelihood of infection, foster patients' health status, and limit the mobility of patients during the contagious stage of TB.

"They need to work every day to make ends meet. As I said before, the only solution is if we find anyone with TB, we should admit them to hospital and pay all their expenses for four weeks. If we just tell them to stay home for treatment and forbid them from going outside to work, how could they put food on the table? They would have no choice but to go on working." Medical doctor (An Giang, Viet Nam)

Unavailability of patients for TB treatment and examinations

With many cross-border TB patients working from early morning to late afternoon and over weekends, health officers must visit patients at home outside working hours. As a result, they often fail to complete home visits twice a month as required by NTP Viet Nam. Moreover, many patients failed to present at health facilities for check-ups or to deliver sputum for examinations on time. Additionally, delivery of TB communication sessions to mobile and cross-border populations was challenging.

“After the two-month intensive phase, TB patients often go back to work to put food on the table, which makes it difficult for us to visit because most of the time they will not be home. When they are at home, we will visit them. Otherwise, we tell family members to remind and encourage them to take their daily medication. People here are so poor, they have to work all day.” Medical doctor (Tay Ninh, Viet Nam)

“We had some difficulties in getting TB patients to adhere to scheduled follow-up sputum tests. We provide full instructions and remind them, but after taking the sputum container home, they are too busy or away for work, so we don’t usually receive their sputum on time. But they still send in samples, just later than scheduled. There are also cases with people who are not aware and slow, which makes it difficult to carry out certain TB control activities.” Medical doctor (Tay Ninh, Viet Nam)

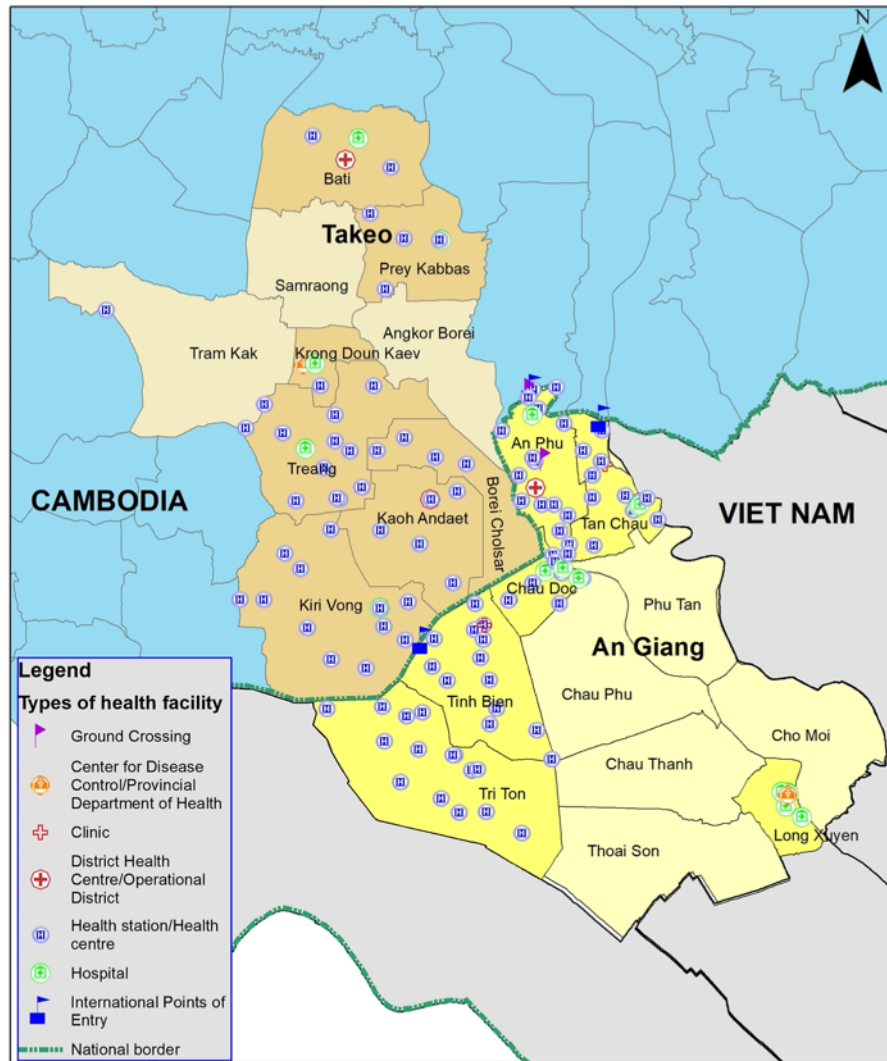
Mapping health-care facilities

The mapping exercise, conducted from August 2020 to December 2020, showed the distribution of health facilities in the 26 study districts. Figure 12 shows the distribution of health facilities across An Giang and Takeo provinces as does Figure 13 for Tay Ninh and Svay Rieng provinces. There were 260 health facilities in both countries mapped by this study. However, private clinics and pharmacies located within the studied districts were not included in this mapping exercise due to the large number and the non-provision of TB diagnosis and treatment.

Provincial-level mapping encompassed provincial health departments, hospitals and Centres for Disease Control. These bodies coordinate provincial-wide TB operations and control under direction of NTPs. At provincial level, provincial hospitals (Viet Nam) and provincial referral hospitals (Cambodia) have advanced diagnostic tools such as GeneXpert and provide treatment to TB patients who require intensive care and advanced treatment, including second-line drugs. At district level, district health centres (Viet Nam), operational districts (Cambodia), district and regional hospitals (Viet Nam), district referral hospitals (Cambodia), and private hospitals were included. In Viet Nam, district health centres and commune health stations comprise the primary health-care service delivery, including TB care services. District health centres are responsible for treatment of TB patients and monitoring. District hospitals play a role in provision of TB treatment to inpatients in Viet Nam.

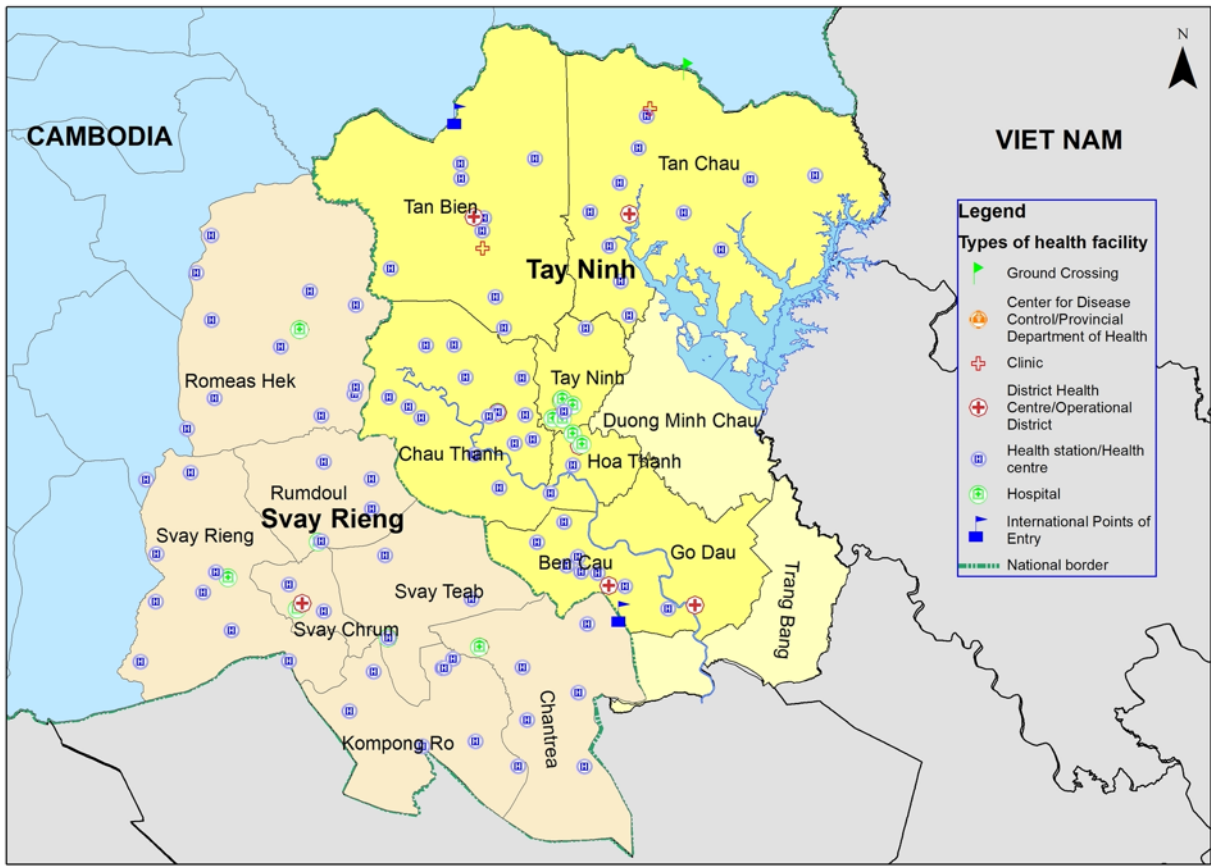
At commune level, health stations (Viet Nam) and health centres (Cambodia) were mapped. They operate at grassroots level in controlling and managing TB. In general, TB and MDR-TB patients in Viet Nam receive first-line drugs as well as second-line drugs at health stations, while health centres in Cambodia only provide first-line drugs to TB patients. MDR-TB patients in Cambodia receive second-line drugs at referral hospitals and operational districts. GIS data on health stations (Viet Nam) and health centres (Cambodia) were not fully provided for Hoa Thanh, Go Dau and Tay Ninh districts of Tay Ninh province, Long Xuyen city of An Giang province and Bati and Prey Kabbas districts of Takeo province.

Figure 12. Distribution of health facilities in An Giang province, Viet Nam and Takeo province, Cambodia



Source: Map produced by IOM. This map is for illustration purposes only. The boundaries and names shown and the designations used for this map do not imply official endorsement or acceptance by the International Organization for Migration.

Figure 13. Distribution of health-care facilities in Tay Ninh province, Viet Nam and Svay Rieng province, Cambodia



Source: Map produced by IOM. This map is for illustration purposes only. The boundaries and names shown and the designations used for this map do not imply official endorsement or acceptance by the International Organization for Migration.



CHAPTER 3

DISCUSSION

In this chapter, the study team first discussed findings of mobility patterns in these border areas among cross-border migrants. It then highlighted key findings with policy implications from the dimensions of “Monitoring Migrants’ Health”, “Migrant-Sensitive Health Services”, “Policy and Legal Frameworks” and “Partnerships, Networks and Multi-Country Frameworks”, based on an operational framework for migrant health outlined by Resolution 61.17 of the World Health Assembly (WHA). *

Mobility patterns of cross-border migrants

Through in-depth interviews with cross-border migrants, the study identified the uptake of health-care services as a key driver for cross-border migration by Cambodian study participants, while no Vietnamese participant mentioned health-care services as a primary reason for border crossings. Some participants in Cambodia reported having TB symptoms such as weight loss, prolonged coughs and night sweats before medical visits in Viet Nam. The majority of Cambodian patients endured TB symptoms for weeks or months from the onset of TB symptoms to diagnosis. The findings imply that cross-border migrants with TB who are contagious, particularly those who frequently cross the border with prolonged symptoms, could spread the disease across wide geographic areas along the mobility continuum (at origin, transit, destination, and return points). Living styles of cross-border migrants, such as sharing accommodation with a large number of persons in Cambodia, could also be optimal for the spread of TB. A more extensive study that explores hotspots of TB and MDR-TB in border areas through a spatial epidemiological approach could contribute to systematic screening for TB among cross-border migrants and people with close contact with TB patients.³⁴

This study was undertaken during the COVID-19 pandemic. As such, international land border gates between Viet Nam and Cambodia have been closed since March 2020 to prevent the spread of COVID-19. Therefore, it is important to re-assess migration trends once international borders re-open as flows might not return to pre-pandemic levels. Under the new normal of the pandemic, previous processes and requirements for cross-border travel are unlikely to return to normal. There will likely be widespread increased requirements for health checks, such as negative COVID-19 test results and potentially COVID-19 vaccination certificates as conditions for entry. TB testing was not a requirement for international travellers between Viet Nam and Cambodia as of March 2021. As previous research has suggested the effectiveness of pre-entry screening for TB in migrants for early diagnosis and management of TB, integrating TB testing with pre-departure COVID-19 screening could help detect TB in border areas.³⁵

Monitoring Migrants’ Health

Establishing migrant-focused monitoring systems could play an important role in understanding the situation of cross-border migrants with TB, which could inform the tailoring of effective interventions in cross-border TB controls. This study revealed a lack of systematic data collection about migration status, such as nationality and migration history, in both countries. To deliver migrant-centered cross-border TB services, it is essential for health-care providers to collect information encompassing nationality, language preference(s), ethnicity, histories of migration and any interruptions to TB treatment. An official mechanism to collect such data across countries and input it not only into a national database, but also a regional one for Greater Mekong Sub-region (GMS) countries currently under development by the University of Oslo, could facilitate effective information sharing about cross-border migrants with TB in the region. **

Stakeholders in both countries raised concerns about patients lost to follow-ups due to high mobility, unstructured information sharing and lack of a cross-border patient tracking system. To track patients, it will be important to develop an official bilateral referral mechanism for TB patients who cross the Viet Nam–Cambodia border. NTP Thailand and NTP Myanmar have jointly developed such an official referral

* WHA 61.17 on Health of migrants. https://apps.who.int/iris/bitstream/handle/10665/23533/A61_R17-en.pdf;jsessionid=CBFBC76B244CD8908164B647FD78551B?sequence=1.

**As of 1 March 2021, the University of Oslo is developing the Regional Migrant TB Data Warehouse for GMS countries based on WHO – DHIS2 standard configuration package.

mechanism by using a referral form written in English as well as the respective local language(s). Once the form reaches another health-care organization across the border, part of the form is designed to be sent back to the transferring organization (Annex 3). As international postal services are sometimes unreliable, the use of phone calls, emails and regular virtual meetings could help health-care providers track cross-border referral cases. As ASEAN commitments to promote information and communication technology (ICT) with digital health interventions have accelerated amid the COVID-19 pandemic, establishing an online regional platform featuring a transnational referral tool should be considered in accordance with data protection rules.^{36–38}

Migrant-Sensitive Health Services

In the study, user-friendly health-care services and quality health-care in Viet Nam were found to have encouraged Cambodian respondents to access health-care. While some Vietnamese stakeholders were not cognizant of language barriers faced by Cambodian patients, some Cambodian interviewees highlighted limited Vietnamese language proficiency which led to poor understanding of doctors' instructions. Some reported asking a Vietnamese interpreter to accompany them on medical visits in Viet Nam.

While favourable views on health-care services in Viet Nam were reported by migrants, the need for bilingual and culturally-competent health-care staff, interpreters and translated documents were pinpointed to achieve more migrant-friendly health-care services and communication with cross-border migrants. Training health-care providers in cultural competencies is a necessity for linguistically and culturally sensitive service delivery on both sides of the border.

Effective health communication programmes also contribute to provision of migrant-sensitive health information. In the study, a sizeable number of participants in both countries rarely paid attention to public posters, leaflets or health sessions about TB or other health issues in their communities. Television and radio programmes and loud speakers located in communities, however, appeared to be effective tools for raising awareness about TB in the study population. Applying multiple communication channels – such as television, radio and loud speakers in multiple languages – could help heighten awareness and knowledge about TB in target populations.

While TB was not a well-known disease among interviewed cross-border migrants before contracting it, study participants were aware of COVID-19 infection risks and preventive measures. Public health messaging about the COVID-19 pandemic could help to amplify information about TB in border communities. It is also important for health-care providers to ensure access to accurate health information for cross-border migrants amid the pandemic, as some stakeholders in Viet Nam expressed concern that the pandemic might drive migrants with TB to hide their health condition to avoid discrimination since both infectious diseases display similar symptoms, such as coughs, fevers and breathing difficulties.

Policy and Legal Frameworks

Although NTP Viet Nam is committed to treating TB patients regardless of nationality, a degree of misunderstanding was evident among some stakeholders in Viet Nam. In the study, some health-care providers in An Giang province reported not treating non-Vietnamese patients due to loss of follow-up risks. In Cambodia, the majority of stakeholders were willing to treat Vietnamese patients, although few patients crossed the border for TB diagnosis and treatment in Cambodia. Fragmented policy implementation at local level might cause delays in early diagnosis and treatment for cross-border migrants with TB. Monitoring and evaluating policy implementation at local level will help governments of both countries assess service delivery gaps in cross-border TB control, which in turn will lead to more effective and consistent policy implementation.

It is also important the two countries consider harmonization of national protocols on diagnosis and treatment for cross-border migrants with TB as some discrepancies are evident. Cambodian stakeholder and patient study participants reported repetitive diagnosis procedures in Cambodia despite patients

already being diagnosed with TB in Viet Nam. Similarly, health-care providers faced challenges in provision of continuous treatment to cross-border TB patients due to a lack of synchronization of country protocols on TB treatment. Legal frameworks and country protocols affecting TB services for cross-border migrants need to be reviewed and harmonized across the border.

From a regional GMS perspective, issuing portable health insurance for cross-border migrants could help reduce out-of-pocket expenditures and financial burdens on cross-border migrants and their families in the GMS region. This is evidenced by cases of study respondents who were forced to return to origin countries due to the high costs of TB treatment. Portability of health insurance in the region would ensure financial risk protection and improve access to essential health-care services, including TB diagnosis and treatment for cross-border migrants.

Partnerships, Networks and Multi-Country Frameworks

One of the key challenges reported by study participants was limited trans-border collaboration and partnerships among stakeholders. Addressing pressing issues, such as limited communication and collaboration with hospitals and health authorities across the border, requires efforts at all three levels: local, national and bilateral.

These challenges can be effectively addressed by empowering local agencies to implement action plans adapting each nation's respective national strategy for prevention and control of TB to actual conditions on the ground. This would create more stakeholder engagement in case finding, treatment and better continuity of care. For instance, a cross-border TB/HIV taskforce has been established by relevant agencies to improve a coordination mechanism on the Thailand-Myanmar border.²² Public hospitals in the border area also entered into a memorandum of understanding for service provision. Recommendations made by at consultation meeting on TB and migration organized by the World Health Organization Regional Office in the Philippines and a study in the Democratic Republic of the Congo have also highlighted that cross-border coordination and referral of TB patients can be improved by establishing links between relevant stakeholders in border areas where human mobility is high and TB is endemic.^{16,39}

Establishment of a cross-border TB/HIV taskforce and bilateral agreement between public hospitals in border provinces of Viet Nam–Cambodia could improve any potential referral mechanism at local level. It will be important to formalize a partnership for consultations and dialogue among stakeholders in these border areas. Terms of reference could officially define roles and responsibilities of a cross-border TB/HIV taskforce. During dialogues, referral mechanisms could be reviewed and harmonized within the local context. This study has created a map of public health hospitals involved in TB control in border areas of Viet Nam and Cambodia. The map would contribute to listing health-care facilities aligned with the cross-border TB/HIV taskforce, taking into account the geographical proximity.

As highlighted in Policy and Legal Frameworks sub-section in this chapter, it is essential for NTP and CENAT in two countries to formalize, review and improve not only a cross-border referral mechanism, but also synchronization of country protocols on diagnosis and treatment for cross-border migrants through bilateral dialogues.

This study also revealed migrants' challenges associated with non-health issues, such as a lack of ID cards and complex administrative procedures of the residential registration book system in Viet Nam which prevented some cross-border migrants from purchasing health insurance. Addressing non-health issues facing cross-border migrants with TB requires collective efforts from not only health, but also non-health sectors. In Viet Nam, the Migration Health Working Group (MHWG) was officially approved by the Minister of Health on 26 December 2020. It is an inter-ministerial and inter-sectoral working group that serves as a national coordination mechanism to enable relevant departments across different ministries to manage migrant-related health issues and coordinate with relevant stakeholders to foster the design and implementation of more migrant-friendly health policies in Viet Nam. Harnessing the capacity of existing networks, such as MHWG, will help to effectively address migrant health issues and cooperation across sectors.

Study Limitations

This study faced a number of limitations. Firstly, as a qualitative approach was applied, the sample was limited in terms of the setting and number of participants. Therefore, it is not representative of the overall picture of TB diagnosis and treatment within cross-border migrant populations in Viet Nam and Cambodia. It was also challenging for the study team to identify cross-border TB patients due to border closures amid the COVID-19 pandemic. Some cross-border TB patients might not have been willing to disclose their migration status due to fear of arrest, deportation and discrimination.

Secondly, the majority of respondents in Cambodia and some in Viet Nam were unable to provide accurate information about the geographical location of their cross-border destination(s). The study team generated maps of destinations for cross-border migrants based on study team's estimations by taking into account interview locations, distances to the border and/or destination, and the purpose of cross-border migration. Due to the lack of accurate information, the study team presented estimated migration flows of migrant clusters in maps rather than individual flows.

Lastly, the study team was comprised of an international organization and a governmental agency. Potential interviewer and respondent bias needs to be considered.



CHAPTER 4

CONCLUSION AND RECOMMENDATIONS

The results of this landmark study described understandings of barriers faced by cross-border migrants in Viet Nam and Cambodia in accessing and utilizing diagnosis and treatment of TB as well as potential enabling factors to realize optimal health-care outcomes. The study also assessed the practical challenges in cross-border TB control faced by stakeholders at policy and service provision levels. Through interviews of cross-border migrants and stakeholders in two provinces bordering each of the two countries, a number of specific factors were revealed that prevent cross-border migrants from accessing and utilizing diagnosis and treatment of TB. The results also highlighted the limited collaboration and partnerships in border areas that have significant scope for development and improvement to tackle TB more effectively. Importantly, health-care providers participating in the study also expressed a broad willingness to work together to improve transnational collaborative mechanisms.

Importantly, this study and its results provide a platform for relevant public health officials of the two governments in charge of TB control to develop practical interventions for collaborative TB controls in Viet Nam and Cambodia border areas. The following opportunities for action, underpinned by the need for greater bilateral commitment and synchronization between the two countries, are presented for consideration by policymakers and stakeholders with a mutual purview over provinces along the Viet Nam–Cambodia border. These multiple actions are aligned with each key theme in line with recommendations of Resolution WHA 70.15 on promoting the health of refugees and migrants.* Although the study has several limitations, its results may also provide valuable insights in similar settings within other GMS countries.

Monitoring Migrants' Health

- Collect data on nationality, migration status (permanent residents, internal and international migrants), origin hometown/district, migration history, language preference(s), ethnicity and history of treatment interruption in routine health information systems for Viet Nam and Cambodia. Migrant data analysis and reporting mechanisms must be put in place.
- Develop a referral mechanism to track cross-border TB referral cases, with potential to be integrated into a regional database in accordance with data protection rules in GMS countries. The mechanism should be established in multiple GMS languages.
- Conduct a pilot test of this proposed cross-border referral mechanism and reporting to national database and regional database through interviews with health-care providers and cross-border migrants with TB in the two countries.
- Establish a feedback system between health authorities from both sides of the border to follow-up cross-border referral cases by means of phone calls, emails and regular meetings upon cross-border transfers of cases.
- Undertake a study of TB and MDR-TB hotspots in border areas with a spatial epidemiological approach for systematic screening of TB among patients and people in close contact with TB patients.
- Re-assess migration flows of cross-border TB patients and migrants in general between Viet Nam and Cambodia once international travel resumes following the pandemic.
- Integrate TB testing into pre-departure COVID-19 screenings to strengthen active case finding of TB in border areas.

Migrant-Sensitive Health Services

- Train health-care providers, including officials of health systems and NGO workers, in cultural competency for provision of migrant-friendly health-care services.
- Develop IEC materials and other relevant documents with cultural and linguistic sensitivities, such as doctor's instructions on medication given to cross-border patients, into multiple languages common in respective geographical areas.

*WHA 70.15 on promoting the health of refugees and migrants. https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/WHA_RES_70.15.pdf

- Increase the number of bilingual health-care workers, including ethnic minority health-care ones, in border areas.
- Use multiple communication channels – such as television, radio and loud speakers, social media platforms – in multiple languages to raise awareness of TB in border communities.
- Amplify health information about TB along with public health messaging about COVID-19 in multiple languages in border communities.
- Apply information technology to remind cross-border migrants with TB of a doctor's appointment for continuous treatment.
- Empower cross-border migrant communities through social mobilization and health communication policies with a participatory approach to TB prevention and control.

Policy and Legal Frameworks

- Conduct regular monitoring and evaluation of policy implementation at local level to access service delivery gaps in cross-border TB controls.
- Review and harmonize country protocols on diagnosis and treatment for cross-border migrants with TB in Viet Nam and Cambodia.
- Develop a portable health insurance system for cross-border migrants to improve access to essential health-care services, including diagnosis and treatment of TB, between Viet Nam and Cambodia with possible expansion to GMS countries.
- Develop a national and transnational policy to financially support cross-border migrants with TB through mobilizing resources from multi-sectors, civil society organizations and community-based organizations.

Partnerships, Networks and Multi-Country Frameworks

- Establish a cross-border TB/HIV taskforce to improve a coordination mechanism for cross-border management of migrant TB patients, with taskforce roles and responsibilities defined by development of a Terms of Reference by provincial and district health-care providers in partnership with NTPs.
- Hold quarterly meetings among cross-border TB/HIV taskforce members to share information about TB/HIV epidemiological trends, discuss issues related to cross-border TB control and review a cross-border referral system.
- Organize bilateral dialogues between NTPs to formalize, review and improve not only a cross-border referral mechanism, but synchronization of country protocols on diagnosis and treatment for cross-border migrants with TB.
- Encourage engagement of MHWG, academic networks, professional associations and other relevant networks to promote health and human rights of cross-border migrants.
- Work closely with non-health actors, such as employers and border authorities, whose policies and systems impact TB-related outcomes for cross-border migrants.

Annex 1.

Guide to interview cross-border migrants

Socioeconomic background

1. What is your nationality? Where were you born?
2. Have you ever crossed the Viet Nam and Cambodia border for any reason in the past 12 months?
3. How old are you? (end the interview if less than 18 years old)
4. What is your gender?
5. What is your ethnicity?
6. What language(s) do you speak?
7. How long have you lived in the study province? ____ years ____ months
8. What is your current occupation?
9. What was your former occupation (if applicable)?
10. How much do you earn per month? What is the main source of your income?
11. Do you have any family member(s) living with you?
12. How many children have you ever had? ____ children
13. How many years did you study at school? Years of education completed: ____ years
14. Do you have any health insurance?
15. Do you have any poverty card?

Personal experience with TB and migration histories

16. You reported crossing the border in the past 12 months. What made you cross the border?
17. If you crossed the border for TB diagnosis and treatment, explain the reason.
18. Walk me through a typical pattern you cross the border. When do you cross the border? Any month? Season? How often? How long do you stay in another side of the border? How do you cross the border? With whom? Family visit? Explain the reason. Where do you go when you cross border to another side (how far)?
19. What were your symptoms at diagnosis? What were you feeling? Where did you get diagnosis?
20. Where did you learn you needed to get tested for TB? What kinds of things did you learn?
21. When did you start having TB symptoms and for how long (e.g. cough, fever and losing weight, etc.)?
22. When did you start taking TB treatment? Where did you start TB treatment?
23. What made you start taking TB treatment?

24. Have you taken pills under medical staff observation and for how long? Who has observed you when taken pills? Where do you take pills?
25. Before treatment, how long and where did you travel while you were having the TB symptoms? What work did you do during that time?
26. How many people did you live during the migration period in Cambodia side and in Viet Nam side? Who are they?
27. Have you interrupted your TB treatment?
 - a. Why did you interrupt? Please explain the reason.
 - b. Have you had the chance to continue/re-start your treatment?
 - c. How long have you interrupted your treatment?
 - d. After what time from interruption have you continued your treatment?

Barriers and enablers to TB diagnosis and treatment

28. Where do you seek treatment when you are sick?
29. How did you find out about where to get TB diagnosis and treatment?
 - a. What information sources are there to find out about how to access services?
 - b. What information did you wish to know earlier?
30. What are your biggest challenges in accessing and utilizing TB services?
 - a. Medical costs, transportation cost, operational time, health professional attitude, distance from home, language barrier, migration status, administrative hurdles, cultural barriers, lack of information about entitlements?
31. Who/What helps you get health-care? Local organizations? Family members? Other migrants?
32. Have you ever changed a hospital for TB diagnosis and treatment? If yes, tell us your experience about the medical transfer. Why did you need to change your hospital? Any problem? How was the medical transfer completed?
33. What would you suggest helping you or other migrants to access and utilizing TB services better than now?
 - a. Health professionals' attitude, social/institutional discrimination toward migrants, health facilities, costs, support from governments/private facilities, language barriers, employer, laws and policy, etc.?
34. Are there any TB education campaigns/activities in this area/district in the past 6 months? What kind of TB campaigns/activities? Who developed and promoted TB information in this area?
35. Is there anything more you would like to add?

Interview guide for TB health-care providers

1. Have any migrants got health services here? What kind of health services do they get? Who are those migrants?

2. Do you implement the cross-border TB programme including any TB services to any type of migrants as a health service provider? If yes, which services do you provide?
 - a. Have you ever provided TB diagnosis and treatment for foreigners (e.g. Cambodians, Vietnamese etc.)?
 - b. Have you ever transferred foreigners (e.g. Cambodians, Vietnamese etc.) to other country to continue their treatment?
3. Are migrants included in your statistical systems, disaggregated by migrant types and migration related variables?
 - a. How many TB cross-border migrant are detected each year?
 - b. Please tell us the recent trend in the incidence of TB among cross-border migrants.
4. In your opinion, what aspects of the cross-border TB programs work well and what do not work well? Please explain the reason. What about provision of TB services to migrants in this side?
5. What programs, interventions and tools, etc., would you recommend be sustained and/or scaled up to address cross-border TB control? Please provide a justification for your response.
6. Are there any TB education campaigns/activities in this area/district in the past six months? What kind of TB campaigns/activities? In what languages? Who develop and promote TB information in this area?
7. What organizations are working on health of migrants in this district? Do they provide TB services?
8. What is your partnership and network with other organizations for cross-border TB control?
 - a. From your opinion, which organization should be involved in cross-border TB control?
9. How does your organization communicate with other organizations? And for which aspects?
 - a. How do you transfer non-national patients with TB to his/her country? How do you ensure other organizations receive your patients?
 - b. How do you diagnose your TB patients? Do you transfer samples to other organizations?
 - c. Does your organization provide first line and second line drugs? Do you transfer TB patients for further treatment?
10. What kind of coordination and communication has your organization had with each of these groups in the last six months?
 - a. Is there any obstacle in communications with other organizations?
 - b. Please explain the reason you contacted.
11. What kind of coordination and communication worked well in cross-border TB control with other organizations? Please elaborate.
12. What were some barriers if any, that you encountered working with other organizations for the cross-border TB control or providing TB services to any type of migrants?
13. How did you overcome the barrier(s)? In your view, how could the barrier(s) be overcome?

14. What recommendation do you have for future efforts in the cross-border TB control? In provision of TB services to migrants?
15. Is there anything more you would like to add?

Interview guide for health-care providers at community level

1. What TB control activities does your organization carry out?
2. How does your organization implement the TB control activities in the community?
 - a. Could you please share any successful activities in past 12 months?
 - b. Is there any challenge that your organization faces in its implementation of the activities?
3. In your opinion, what cross-border TB control activities work well and what do not work well? And why? Please explain the reason. What about provision of TB services to migrants?
4. What activities would you recommend be sustained and/or scaled up to address cross-border TB control or provision of TB services to migrants? Please provide a justification for your response.
5. Are there any TB education campaigns/activities in this area/district in the past six months? What kind of TB campaigns/activities? Who develop and promote TB information in this area?
6. What organizations are working on health of migrants in this district? Do they provide TB services?
7. What is your partnership and network with other organizations for the cross-border TB control?
 - a. From your opinion, which organization should be involved in cross-border TB control?
8. How does your organization coordinate and communicate with other organizations? And for which aspects? eg. Request of AFB test (smear and culture), DST and chest x-ray examination to another health-care organization.
 - a. How do you transfer non-national and suspected TB patients to his/her country? How do you ensure other organizations receive your patients?
 - b. How do you transfer samples to other organizations?
9. What kind of coordination and communication has your organization had with each of these groups in the last six months?
 - a. Is there any obstacle in communication with these organization?
10. What were some barriers if any, that you encountered working with other organizations for the cross-border TB control? What about provision of TB services to migrants?
11. How did you overcome the barrier(s)? In your view, how could the barrier(s) be overcome?
12. What recommendation do you have for future efforts in the cross-border TB control and provision of TB services to migrants?
13. Is there anything more would you like to add?

Annex 2.

List of stakeholders who participated in the study

Agency type	Title of participants	Number of participants
An Giang, Viet Nam		
<i>Provincial level</i>		
Department of Health	Vice Director of Department of Health	1
	Head of Health Services Department	1
Centre for Disease Control	Director of Centre for Disease Control (NTP leader)	1
	Medical doctor, Provincial TB coordinator	1
An Giang Provincial Hospital	Medical doctor, Head of Infectious Disease Division	1
	Medical doctor, TB unit	1
District level	Chau Doc, An Phu, Tan Chau, Tinh Bien, Tri Ton	
District Health Centre (District TB unit)	District TB coordinator	5
	Medical doctor	5
Community level		
Commune health station	Commune health officers	7
Private clinic	Medical doctor	3
Tay Ninh, Viet Nam		
<i>Provincial level</i>		
Department of Health	Vice Director of Department of Health	1
	Senior officer, Health Services Department	1
TB and Lung Hospital	Vice Director	1
	Medical doctor, provincial TB coordinator	1
	Medical doctor	1
<i>District level</i>	Ben Cau, Chau Thanh, Tan Bien, Hoa Thanh, Go Dau	
District Health Centre (District TB unit)	District TB coordinator	5
	Medical doctor	5
Community level		
Commune health station	Commune health officers	7
Private clinic	Medical doctor	3
Takeo, Cambodia		
<i>Provincial level</i>		
Provincial Health Department	Director of Provincial Health Department	1
Non-government Organizations (NGOs)	NGO officer	1
Provincial referral hospital	Medical doctor	2
<i>District level</i>	Kirivong, Koah Andaet, Borei Cholsar, Prey Kabbas, Treang	
Operational District	Director of Operational District	1
	District TB coordinator	2

District referral hospital	Medical doctor	1
Community level		
Health post	Head of health post	1
Health Centres	Head of health centre	33
Svay Rieng, Cambodia		
Provincial level		
Provincial Health Department	Director of Provincial Health Department	1
NGOs	NGO officer	2
Provincial referral hospital	Medical doctor	1
<i>District level</i>	Krong Svay Rieng, Romeas Haek, Chi Phu, Svay Teab,	
Operational District	Director of Operational District District coordinator	1
Community level		
Health Centres	Head of health centre	41
Total		139

Annex 3.

Cross-border TB patient referral form



แบบฟอร์มการส่งต่อผู้ป่วยวัณโรค (TB patient referral form)

TB09

โรงพยาบาล/สถานที่รักษา ที่ส่งต่อผู้ป่วย (Referring hospital/Agency) _____
 โรงพยาบาล/สถานที่รักษา ที่รับรักษาต่อ (Accepting hospital/Agency) _____
 ชื่อผู้ป่วย (Patient name) _____ อายุ (Age) _____ ปี (Years) เพศ (Sex) ☐ ชาย (M) ☐ หญิง (F)
 ที่อยู่ (Address) เลขที่ _____ หมู่ที่ _____ ชื่อหมู่บ้าน _____ ตำบล _____
 อำเภอ _____ จังหวัด _____ ประเทศ _____
 TB No. _____

- การวินิจฉัย (Diagnosis)**

☐ วัณโรคปอด (Pulmonary)
 ☐ วัณโรคนอกปอด (Extra Pulmonary)
- การขึ้นทะเบียน (Registration)**

☐ ใหม่ (New)
 ☐ กลับเป็นซ้ำ (Relapse)
- ผลการเอกซเรย์ (CXR result)**

☐ รักษาหายหลังล้มเหลว (TAF)
 ☐ รักษาหายหลังขาดยา (TAD)
- ผลการตรวจเสมหะ (AFB result)**

☐ รับโอน (Transfer In)
 ☐ อื่นๆ (Other)
 ☐ ไม่ได้ขึ้นทะเบียน (Not done)
- ระบบยา (Regimen)**

☐ ปกติ (Normal)
 ☐ ผิดปกติ มีแผลโพรง (Abnormal-Cavity)

☐ ผิดปกติ ไม่มีแผลโพรง (Abnormal-Non cavity) ☐ ไม่ได้ตรวจ (Not done)
☐ พบเชื้อ (Positive) ☐ ไม่พบเชื้อ (Negative) ☐ ไม่ได้ตรวจ (Not done)
☐ สูตรยาสำหรับผู้ป่วยใหม่ (New patient regimen)
☐ สูตรยารักษาซ้ำด้วยยาวัณโรคแนวที่ 1 (Re-treatment regimen with rst-time drugs)
☐ สูตรยาวัณโรคคือยาหลายขนาน (MDR regimen)
☐ ขนาดยาที่ได้รับ (Dose of regimen) _____
☐ อื่นๆ (Other) _____ ☐ ยังไม่ได้รักษา (Untreated)

6. เริ่มรักษาเมื่อ (Start on treatment at date) _____/_____/_____
 7. ได้รับยาไปแล้วตั้งแต่เริ่มรักษาถึงวันที่ (To receive drug from the start of treatment to date) _____/_____/_____
 จำนวนยาที่ได้รับไปแล้ว (The drug has already receive) _____ เดือน (Months) _____ วัน (Days)

หมายเหตุ (Remark) _____
 เมื่อได้รับแบบฟอร์มการส่งต่อผู้ป่วยวัณโรค (TB 09) เรียบร้อยแล้ว โปรดส่งคืนมาแจ้งถึงเจ้าหน้าที่ (The TB 09 form has already received, please send this form back to the contacts address below) ของทางติดต่อผู้ประสานการส่งต่อผู้ป่วยวัณโรค (Address contact of sender)
 โทรสาร (Fax) (ระบุ) _____
 อีเมลล์ (Email) (ระบุ) _____

ลงชื่อ (Signature) _____
 (_____)

วันที่ (Date) _____/_____/_____

แบบฟอร์มการยอมรับผู้ป่วยวัณโรค (TB Patient transferral form)

โรงพยาบาล/สถานที่รักษา ที่รับรักษาต่อ (Hospital/Health care unit of transferral) _____
 ชื่อผู้ป่วย (Patient name) _____ อายุ (Age) _____ ปี (Years) เพศ (Sex) ☐ ชาย (M) ☐ หญิง (F)
 วันที่ส่งต่อ (Date of referral) _____/_____/_____ วันที่รับรักษา (Date of transferral) _____/_____/_____
 District TB No. _____

หมายเหตุ (Remark) _____ ลงชื่อ (Signature) _____
 _____ (_____) _____
 วันที่ (Date) _____/_____/_____

สำนักวัณโรค กรมควบคุมโรค กระทรวงสาธารณสุข ประเทศไทย (Bureau of Tuberculosis, Department of Disease Control, Ministry of Public Health, Thailand)

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