



KEY POPULATION
ASSESSMENT IN THE NATIONAL
TUBERCULOSIS
RESPONSE IN CAMBODIA

December 2017



Disclaimer:

This report is, in part, made possible by the support of the American People through the United States Agency for International Development (USAID). The content is the sole responsibility of Stop TB Partnership, CENAT, and KHANA and does not reflect the view of USAID.

ACKNOWLEDGEMENTS

This assessment has been made possible by the contribution of many different people from KHANA ,other civil society organizations and individuals under the leadership of the National Tuberculosis Control Program(NTP). Thank you everyone for their valuable time and efforts.

We would also like to express our thanks to the Project Steering Committee and Sub-Technical Working Group for their valuable inputs and comments from the early design of the assessment to the writing report.

We would like to thanks Mr. Choub Sok Chamreun, Executive Director of KHANA and NTP team for their direction, guidance, and administrative supports throughout the assessment process.

Special thanks to Dr. Yi Siyan, Director of KHANA Center for Population Health Research, Mr. Tuot Sovannary, Manager of KHANA Center for Population Health Research and Dr. Sok Say and Mr. Chhoeun Chhunna for their technical lead in assessment design, data collection, and report writing.

We are very grateful to the representatives of the provincial health departments, civil society organizations; relevant United Nations agencies, development partners, national programs and ministries; together with communities for their involvement, especially for time and valuable inputs during the stakeholder and validation workshops.

We thank the operational health districts and health centers and all respondents who participated actively in this assessment.

Last but not least, our thanks go to Stop TB Partnership for the financial and technical support. In addition, our special thanks to Peter Mok for his technical advice and support.



Dr. Mao Tan Eang

Director

National Center for TB and Leprosy Control (CENAT)

MoH, Cambodia

LIST OF CONTENTS

● ● ● ●

ACKNOWLEDGEMENTS	1
LIST OF TABLES AND FIGURES	3
LIST OF ACRONYMS	4
EXECUTIVE SUMMARY	5
INTRODUCTION	7
GOAL AND OBJECTIVES	9
METHODOLOGY	10
Process of assessment	10
Establishment of project steering committee (PSC).....	10
Establishment of sub-technical working groups (STWG)	10
Project steering committee and sub-technical working group meeting.....	10
Consultative stakeholder workshop	11
Methods of data collection	11
Desk review.....	11
Key informant interview (KII).....	11
Focused group discussions (FGDs)	11
In-depth interview (IDIs)	12
Key population size estimation	12
Data collection team.....	12
Data collection training	12
Data management and analyses.....	12
Validation workshop of research findings	12
Report writing.....	13
Application, dissemination, and transposition of findings.....	13
Ethical considerations.....	13
RESULTS	14
Prioritized TB key populations.....	14
Definitions of TB key populations	14
People living with HIV	14
TB contacts.....	14
Elderly people.....	15
People with diabetes	15
Prisoners	15
People who use drugs.....	15
People who inject drugs	15
Barriers in Access to Quality TB Services.....	15
People living with HIV	15
TB contacts.....	16
Elderly people.....	18
People with diabetes	18
Prisoners	19
People who use drugs (PWUD)	20

People who inject drugs (PWID).....	21
National size estimation of prioritized KP.....	22
Data gaps.....	24
Population size estimation	24
TB prevalence among KPs	24
Data needed for TB programs in key populations	24
RECOMMENDATIONS.....	25
Operational definition for key populations	25
Program recommendations for key populations.....	25
Further research/data collection.....	27
REFERENCES.....	28
ANNEX	30

LIST OF TABLES

Table 1. TB risks and barriers in access to quality TB services among people living with HIV	16
Table 2. TB risks and barriers in access to quality TB services among TB contacts	17
Table 3. TB risks and barriers in access to quality TB services among elderly people.....	18
Table 4. TB risks and barriers in access to quality TB services among people with diabetes	19
Table 5. TB risks and barriers in access to quality TB services among prisoners	20
Table 6. TB risks and barriers in access to quality TB services among people who use drugs.....	20
Table 7. TB risks and barriers in access to quality TB services among people who inject drugs.....	22
Table 8. Estimated national population size of the prioritized key populations in Cambodia.....	23

LIST OF FIGURES

Figure 1. List of the prioritized key populations as result from the consultative stakeholder	14
---	----

LIST OF ACRONYMS



AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Treatment
CDHS	Cambodia Demographic and Health Survey
CENAT	National Center for Tuberculosis and Leprosy Control
DOT	Direct Observed Treatment
FGD	Focus Group Discussion
GDP	General Department of Prison
HCV	Hepatitis C
HEF	Health Equity Fund
HIV	Human Immunodeficiency Virus
IDI	In-depth Interview
INGO	International Non-Governmental Organization
KII	Key Informant Interview
KP	Key Populations
MDG	Millennium Development Goals
MoWA	Ministry of Women's Affair
NAA	National AIDS Authority
NACD	National Authority for Combating Drugs
NCHADS	National Center for HIV/AIDS, Dermatology and STDs
NGO	Non-Governmental Organization
NIS	National Institute of Statistic
NSP	National Strategic Plan
NTP	National Tuberculosis Program
PLHIV	People Living with HIV
PSC	Project Steering Committee
PWID	People Who Injecting Drugs
PWTB	People living with tuberculosis
PWUD	People Who Use Drugs
SDG	Sustainable Development Goal
STWG	Sub-Technical Working Group
TB	Tuberculosis
TOR	Term of Reference
UN	United Nations
USAID	United States Agency for International Development
VHSG	Village Health Support Group
WHO	World Health Organization

▶ EXECUTIVE SUMMARY



BACKGROUND

Cambodia has made great strides in tuberculosis (TB) control and achieved the millennium development goals (MDGs) target to halve TB deaths and prevalence by 2015. However, the country remains one of the 30 countries in the world with high-burden TB. To overcome the remaining challenges, the National Strategic Plan for Control of Tuberculosis (2014-2020) has introduced a package of activities for both active and passive case finding strategies among key populations (KPs) that include people living with HIV, TB contacts, people aged 55 and older, diabetics, migrant workers and prisoners. The priority and definitions of these populations need to be reviewed in light of the changes in the epidemic and global directions. The KP assessment in national TB response programs would help to identify barriers to services related to KP issues as well as specific needs of key and marginalized populations in specific contexts of an individual country. Such assessment would also form part of the process to reinforce political commitment and build civil society capacity to better respond to these barriers and needs.

GOAL AND OBJECTIVES

The goal of this assessment is to identify and prioritize KPs in Cambodia and address the needs in understanding the gaps in the national TB response programs among these KPs in the country. The main objectives of the assessment included:

1. Review the list of TB KPs in Cambodia that were included in the most recent National Strategic Plan (NSP) for Control of Tuberculosis and identify additional potential KPs that were not included in the NSP.
2. Revisit the definition of each identified KP in comparison with the global definitions and existing literature, and through consultative meetings with different stakeholders;
3. Document intervention programs that have been implemented among KPs and explore service gaps through desk reviews, consultative meetings with

key stakeholders as well as field data collection;

4. Estimate the national population size of prioritized KPs: people living with HIV, TB contacts, people aged 55 years and older, diabetics, prisoners, people who use drugs and people who inject drugs using multiplier method; and
5. Provide the recommendations for improvement of intervention programs for KPs in the national TB responses.

ASSESSMENT PROCESS

This assessment was conducted in Cambodia between October to December 2017. To process the assessment, five core activities were carried out including:

1. Establishment of a Project Steering Committee (PSC) and a Sub-Technical Working Group (STWG);
2. A consultative stakeholder workshop to identify and prioritize KPs and explore the availability of potential sources of information and data to be used for the assessment;
3. A desk review to map intervention programs in the national TB response related to KPs in the country;
4. Collection of additional information and data necessary to address the research questions proposed for the assessment; and
5. A validation workshop aiming to seek for agreement and additional inputs from stakeholders from government bodies, development partners, non-governmental organizations (NGOs) as well as community representatives.

Methods to collect information and data for this assessment included: (1) a desk review of several existing documents related to national TB response available in the national programs; (2) 15 key informant interviews (KIIs) with representatives of key stakeholders and TB affected communities; and (3) 20 focus group discussions (FGDs) and four in-

depth interviews (IDIs) with representatives of TB-affected communities and KPs in six municipality and provinces.

RESULTS

Through the assessment process, a PSC and a STWG were established and eight consultative meetings among groups were held. Furthermore, approximately 70 representatives of key stakeholders and TB-affected communities participated in the stakeholder consultative workshop and the validation workshop. PSC and STWG with support from participants in the consultative and validation workshop identified and prioritized seven TB KPs in Cambodia that included people living with HIV, TB Contacts, people aged 55 and older, people with diabetes, prisoners, people who use drugs, and people who inject drugs. The definition of these KPs was also proposed and agreed, and a wide range of TB risks and barriers in access to quality TB services among individual KP have been identified.

Using the existing data best available in the country, we used a multiplier method to estimate a national population size of individual KP. After a simple exercise with agreement and support from the members of PSC and STWG as well as participants in the consultative and validation workshop, the national population size of the KPs in Cambodia in 2016 was estimated 72,607 for people living with HIV, 79,585 for TB household contacts, between 221,070-331,605 for TB close contacts, 1,795,415 for elderly people aged 55 years and older, between 205,502 to 418,90 for people with diabetes, 22,801 for prisoners, 13,000 for PWUD and 1,303 for PWID.

The assessment also identified several data gaps in the reporting systems that should be improved. We found that there were no official estimates of the national population size of TB KPs at the moment, and the precision of the estimates we proposed needs to be periodically verified. Although NTP has conducted two national TB prevalence surveys in the general population, no prevalence and behavioral surveys have been conducted among the KPs. Given the gaps of the data for both size estimation and TB prevalence among the KPs, the national TB program and the stakeholders have agreed to consider to include these research questions as part of the national TB surveys.

CONCLUSIONS AND RECOMMENDATIONS

This assessment has identified and prioritized seven TB KPs in Cambodia that included people living with HIV, TB Contacts, people aged 55 and older, people with diabetes, prisoners, people who use drugs and people who inject drugs. The definition and national population size estimation of these KPs have been proposed and agreed, and a wide range of TB risks and barriers in access to quality TB services among individual KP have been identified. Given the gaps of the data for both size estimation and TB prevalence among the KPs, the national TB program and development partners should consider to include these research questions as part of the national TB survey and reporting systems. To achieve these goals, a strong multi-disciplinary collaboration from the relevant stakeholders are required to tackle the data gaps.



▶ INTRODUCTION



Globally, the incidence and mortality of tuberculosis (TB) have been significantly reduced in the last 15-year period (2000 to 2015) of the Millennium Development Goals (MDGs) of the United Nations (WHO, 2015; WHO, 2016). As a result, in the Sustainable Development Goals (SDGs), it has been agreed that TB should be eliminated within 15 years between 2016 and 2030 (UN-SDG, 2015). However, it is estimated that it will take decades from now to eliminate this largely curable disease if the current global annual reduction of 1.5% continues (WHO, 2016). In addition to inadequate programmatic and service delivery issues that impact the effectiveness of TB response, a large proportion of people with active TB across the world have not been reached by the existing intervention programs (WHO, 2016). These people are likely to be disproportionately concentrated among TB key populations who are at higher risks of TB (WHO, 2016). Moreover, the SDG of TB elimination by 2030 could be threatened by the global rise of TB drug resistance and the complexity of the TB epidemic in key populations including socially marginalized populations (WHO, 2016). Therefore, tailor-made response strategies must be in place to overcome the emerging challenges.

Cambodia has made great strides in TB control and achieved the MDG target to halve TB deaths and prevalence by 2015 (WHO, 2016). In 2016, the incidence rate of all forms of TB was 345/100,000, a significant reduction from 580/100,000 in 1990 (WHO, 2017 and CENAT 2017). In 2016, newly detected TB cases of all forms were 33,736, of whom 15,336 were women (CENAT, 2016). The death rate was 20/100,000 in 2016, decreasing from 157/100,000 in 1990 (WHO, 2017 and CENAT, 2017). However, TB in children increased from 1,600 cases in 2007 to 6,857 cases in 2015 (Tieng, 2016). HIV zero-prevalence among TB patients also soared from 2.5% in 1995 to a peak of 12.0% in 2003 and dropped to 6.3% in 2009, constituting a significant TB/HIV co-epidemic (Tieng, 2016). And the country remains one of the 30 countries in the world with high-burden TB (WHO, 2016). To overcome the remaining challenges, the National Strategic Plan for Control of

Tuberculosis (2014-2020) has introduced a package of activities for both active and passive case finding strategies among key populations that include people living with HIV, TB contacts, people aged 55 and older, diabetics, pregnant women, migrant workers and prisoners (CENAT, 2014). The priority and definitions of these populations need to be reviewed in light of the changes in the epidemic and global directions.

In HIV programs, UNAIDS developed the HIV Gender Assessment Tool in 2010 in response to the need for more systematic data collection on gender equality and HIV (UNAIDS, 2014). The tool has been used in several assessments in different countries including Cambodia (UNAIDS, 2014). The tool aims to support countries with the assessment of their HIV epidemic, context and response from a gender perspective, and to inform the development of gender-sensitive national strategic plans and country investment cases.



Recognizing the need for similar tools in TB responses, Stop TB Partnership and UNAIDS have established a partnership to develop the Action Framework for Tuberculosis Key Populations (Stop TB Partnership & UNAIDS, 2017a) and Gender Assessment Tool for National HIV and TB Responses (Stop TB Partnership & UNAIDS, 2017b), building on the UNAIDS HIV Gender Assessment Tool. The tools are intended to assist countries to assess their TB epidemic and national responses from a key population and gender perspective. These tools are designed to support the countries to make their intervention programs key population and gender sensitive and reduce the burden of TB through the increase of new case notification and access to TB services among key and marginalized populations.

A few countries have used the Gender Assessment Tool to assess the national TB responses in the gender perspective and provide recommendations

for gender-sensitive interventions (Nashandi et al., 2017; Niger Country Coordinating Mechanism, 2017). However, to the best of our knowledge, no key population assessment has been conducted in any other countries since the tool has been disseminated. The key population assessment in the national TB response programs would help to identify barriers to services related to key population issues as well as specific needs of key and marginalized populations in specific contexts of an individual country. Such assessment would also form part of the process to reinforce political commitment and build civil society capacity to better respond to these barriers and needs. Cambodia is one of the countries in which key population interventions need to be systematically assessed. The assessment is critically important for exploring potential strategies that could be used to address the key population-related issues and integrate them into the national intervention programs.



▶ GOAL AND OBJECTIVES



The goal of key population assessment is to identify and prioritize key populations in Cambodia and address the needs in understanding the gaps in the national TB response programs among these key populations in the country.

The main objectives of the assessment included:

1. Review the list of TB key populations in Cambodia that were included in the most recent National Strategic Plan (NSP) for Control of Tuberculosis and identify additional potential key populations that were not included in the NSP.
2. Revisit the definition of each identified key population in comparison with the global definitions and existing literature, and through consultative meetings with different stakeholders;
3. Document intervention programs that have been implemented among key populations and explore service gaps through desk reviews, consultative meetings with key stakeholders as well as field data collection;
4. Estimate the national population size of prioritized key populations: people living with HIV, TB contacts, people aged 55 years and older, diabetics, prisoners, people who use drugs and people who inject drugs using multiplier method; and
5. Provide the recommendations for improvement of intervention programs for key populations in the national TB responses.





PROCESS OF ASSESSMENT

This assessment was conducted in Cambodia between October to December 2017. To process the assessment, five core activities were carried out including:

1. Establishment of national multi-stakeholder working groups for key population assessment that included a Project Steering Committee (PSC) and a Sub-Technical Working Group (STWG);
2. A consultative stakeholder workshop to identify and prioritize key populations and explore the availability of potential sources of information and data to be used for the assessment;
3. A desk review to map intervention programs in the national TB response related to key populations in the country;
4. Collection of additional information and data necessary to address the research questions proposed for the assessment; and
5. A validation workshop aiming to seek for agreement and additional inputs from stakeholders from government bodies, development partners, non-governmental organizations (NGOs) as well as community representatives.

Establishment of Project Steering Committee (PSC)

The key population assessment was conducted under the direction of the Director of the National Center for Tuberculosis and Leprosy Control (CENAT) and technically lead by KHANA Center for Population Health Research. To ensure the technical leadership and involvement from relevant stakeholders and beneficiaries, the assessment was conducted through a close collaboration between several relevant stakeholders, communities and beneficiaries. A PSC was formed (Annex 1) to oversee and guide the preparation and implementation of the assessment. Members of the committee included representatives

from:

- CENAT/National Tuberculosis Program (NTP) (Chair of the Committee)
- National Center for HIV/AIDS, Dermatology and STD (NCHADS)
- Ministry of Women Affairs (MoWA)
- NGOs working on TB (Cambodia Anti-Tuberculosis Association, Cambodian Health Committee, Catholic Relief Services, FHI 360, Health Poverty Action, KHANA, Operation ASHA, Reproductive and Child Health Alliance, Reproductive Health Association of Cambodia)
- United Nations and donor agencies (WHO and USAID)
- TB communities and key populations

Establishment of Sub-Technical Working Group (STWG)

A STWG was also established for assisting the preparation, implementation and reporting, together with support from national and international technical assistants (Annex 1). Members of the STWG were invited to regular meetings at least once every two weeks and as needed to get informed about the progress of and discuss emerging issues related to the assessment. In order to implement the assessments effectively, two international and two local consultants were employed. The consultants were responsible for supporting the development of key population definitions and size estimation protocol and tools, desk reviews, reviews of the preliminary data and validation of the results.

Project Steering Committee and Sub-Technical Working Group Meeting

To get an agreement from the stakeholders and endorsement from the national TB program, findings from the stakeholder consultative workshop were presented and discussed at the meetings of the PSC and STWG. The list of prioritized TB key populations identified through the stakeholder consultative

workshop was presented to the PSC and STWG separately for a review and endorsement.

CONSULTATIVE STAKEHOLDER WORKSHOP

To gather the information required for the assessment, a consultative stakeholder workshop was conducted. Core activities in the workshop included a review and prioritization of TB key populations in Cambodia, a review of the Key Population Assessment Tool introduced by Stop TB Partnership, and identification of TB risks and barriers in access to TB services among key populations in the country.

Participants of the workshop included approximately 70 representatives from the national TB programs at different levels, development partners, national and international NGOs working on TB programs, community people and beneficiaries from across the country. To identify and prioritize key populations in Cambodia, the participants were divided into small groups to discuss each key population listed in the National Strategic Plan for Control of Tuberculosis 2014-2020 (CENAT, 2014). The template for discussion was adapted from the Key Population Assessment Framework introduced by Stop TB Partnership (Annex 2).

METHODS OF DATA COLLECTION

Desk Review

We comprehensively reviewed several existing documents and data from national programs at different levels (CENAT, provincial health departments, operational districts, health centers, clinics, etc.) to obtain necessary information on key-population-related policies and intervention programs in the national TB response in Cambodia and relevant NGOs working on TB programs. Key sources of the information for desk review included:

1. National Strategic Development Plan 2014-2018
2. Health Strategic Plan 2008-2015 and 2016-2020
3. National Strategic Plan for Comprehensive and Multi-Sectoral Response to HIV and AIDS III 2011-2015 and 2016-2020
4. Cambodia Inter-censal Population Survey, 2013

5. Population Projection of Cambodia 2013-2023
6. National Strategic Plan for Control of Tuberculosis 2014-2020
7. Strategic Plan For HIV/AIDS and STI Prevention and Control in the Health Sector in Cambodia 2015-2020
8. Cambodia Demographic and Health Survey 2014
9. Action Framework for Tuberculosis Key Population
10. Gender Assessment Tool for National HIV and TB response
11. Reports from NGOs, provincial health departments, operational districts, health centers, clinics, etc.
12. Database of CENAT, provincial health departments, operational districts, health centers, clinics, relevant NGOs working on TB and HIV, etc.
13. Progress report of NCHADS and CENAT 2016

Key Informant Interviews (KIIs)

In addition to the desk review and stakeholder consultative workshop, additional information and data were also collected through KIIs with representatives of:

1. National Center for Tuberculosis and Leprosy Control (CENAT)
2. National Center for HIV/AIDS, Dermatology and STD (NCHADS)
3. Provincial Health Departments, Operational Districts and Health Centers
4. NGOs and INGOs working on TB programs
5. United Nations and donor agencies (WHO and USAID)
6. TB affected communities and key populations

Focused Group Discussions (FGDs)

Data were also collected through FGDs with representatives of TB-affected communities and key populations in six municipality and provinces including Phnom Penh, Banteay Meanchey, Kampong Chhnang, Prey Veng, Siem Reap and Takeo. In each province, a FGD was conducted for each key population with six

to eight members in each group. The key populations included people living with HIV, TB contacts, elderly people aged 55 and older, diabetics, prisoners, people who use drugs and people who inject drugs.

In-depth Interviews (IDIs)

Data were also collected through IDI with people who use drugs and people who inject drugs. The individual interview was conducted to dig out and explore the details of the information and perception in regards to their live experience.

Key Population Size Estimation

To better understand TB burden in each key population, multiplier method was used to estimate the national population size of the following key populations based on the best available data:

1. People living with HIV
2. TB contacts
3. People aged 55 and older
4. Diabetics
5. Prisoners
6. PWID
7. PWUD

Data Collection Team

Data collection was performed by well-trained and experienced enumerators and supervisors with a consideration of gender balance. In addition, given the strong leadership and commitment from the TB national program, the data collection was also involved from the staff of CENAT. The enumerators and supervisors worked under the direction of the lead investigators. One of the lead investigators was also performed as a field coordinator. Data collection was facilitated by a thorough collaboration with relevant authorities at different levels under coordination roles of CENAT.

Data Collection Training

The lead investigators conducted a two-day training for the data collection enumerators and supervisors at KHANA Center for Population Health Research. The training focused on the survey protocol, data collection procedures, research ethics including sensitivity and

confidentiality of the study, and how to conduct FGDs, IDIs and KIIs. Data collection tools were pretested at a TB clinic of CENAT and the Phnom Penh Municipal Health Department. Individuals participating in the pre-test were excluded from the main study. A consultative meeting was also held with PSC and STWG to validate the tools before developing the final version of the tools for use in the field data collection.

Data Management & Analyses

The information and data analysis plan were developed in consultation with the PSC and the STWG. The analysis plan aimed to respond to the main objectives of the assessments:

- The assessment team with technical support from National and International Consultants reviewed the existing list of key populations in the National Strategic Plan for Control of TB 2014 -2020 (CENAT, 2014).
- In order to answer additional questions that emerged during the design of the assessments and the stakeholder workshops, existing program data available from the intervention programs were analyzed using excel spreadsheet, SPSS, or Stata statistical software as appropriate.
- Content analyses were performed using Nvivo to categorize themes by pulling out the core available service packages, accessibility to TB services among each key population, TB risks and exposure, TB risk drivers and existing TB intervention programs for each key population. A five-category scale was used (very low, low, medium, high, and very high) to estimate the burden of TB, and a no (0) and yes (1) category were used to score TB risks and TB risk drivers among each key population (Annex 2). A simple sum was then calculated for the results of prioritization and discussion through the consultative stakeholder workshops, FGDs, IDIs and KIIs.

VALIDATION WORKSHOP OF RESEARCH FINDINGS

A two-day validation workshop was organized in Phnom Penh from 7-8 December with representatives from:

1. National Center for Tuberculosis and Leprosy Control (CENAT)

2. National Center for HIV/AIDS, Dermatology and STD (NCHADS)
3. National AIDS Authority (NAA)
4. Ministry of Women Affairs (MoWA)
5. Provincial Health Departments
6. NGOs working on TB (Cambodia Anti-Tuberculosis Association, Cambodian Health Committee, Catholic Relief Services, FHI 360, Health Poverty Action, KHANA, Operation ASHA, Reproductive and Child Health Alliance, Reproductive Health Association of Cambodia)
7. United Nations and development partners (WHO and USAID)
8. TB affected communities and key populations

In total, 63 people participated in the workshop. The research team presented key findings from the desk review, consultative meetings and field data collection (FGDs, IDIs and KIIs) and opened to the floor for questions, comments and inputs. The participants were then divided into six groups to discuss the findings for each key population with about 10 participants per group.

Key discussion and validation points for the individual group included:

1. Definition of the key population
2. TB risks and barriers in access to quality TB services among the key population
3. Estimation of the national population size of the key population
4. Recommendations to the national programs for filling the identified gaps in TB services among the key populations based on the findings from the assessments.

A representative from each discussion group presented findings from discussion within their group and opened to the floor for questions and comments.

REPORT WRITING

Under the leadership of PSC, KHANA Center for Population Health Research as Technical Lead, in

consultation with the taskforce developed the report outlines. Consultative meetings with stakeholders including TB affected communities and key populations, relevant NGOs/INGOs working on TB programs, as well as United Nations and donor agencies (WHO and USAID) were consecutively held from the assessment process development to the final report. The final report was reviewed and validated through consultations with the PSC and the STWG. Based on comments from Committee and Group, the report was revised and finalized with the endorsement of the CENAT.

APPLICATION, DISSEMINATION AND TRANSPOSITION OF FINDINGS

We have planned to share findings from this assessment to relevant stakeholders, development partners and communities at local, regional and international levels through different means. We will collaborate with national institutions, such as the CENAT and NCHADS in Cambodia, who have been aware of and involved in this project, to disseminate the findings from this study locally. We would invite stakeholders from all provincial health departments to a disseminating workshop in order to share our results. We have also planned to share the findings to regional and international audiences particularly to researchers, policymakers and development partners working on TB programs in other developing countries with high burden of TB through regional and international meetings and conferences as well as through peer-reviewed journal article publications.

ETHICAL CONSIDERATIONS

The study protocol and tools were approved by the National Ethics Committee for Health Research (Ref 226 NECHR.) of the Ministry of Health in Cambodia. Permission and supports were also obtained from relevant authorities and institutions. Each participant in FGDs, IDIs and KIIs provided a verbal informed consent prior to the data collection. To protect the privacy of the respondents, we conducted the interviews in private places, and confidentiality of the information and data were strictly protected by removing all personal identifiers from the questionnaires and field notes.

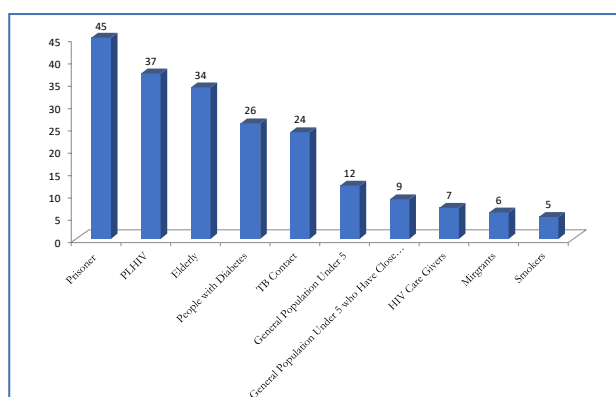
▶ RESULTS

In total, 20 FGDs and four IDIs were conducted with the seven key populations included in this study – people living with HIV, TB contacts, elderly people, people with diabetes, prisoners, PWUD and PWID. Additional 15 KIIs were conducted with government TB officials at provincial, district and community levels. Furthermore, a wide range of stakeholders including health center staff, TB program supervisors, TB affected communities and community-based organizations participated in the stakeholder consultative workshop and the validation workshop.

PRIORITIZED TB KEY POPULATIONS

The decision on what particular key populations would be included in this assessment was guided first by key populations already included in the National Strategic Plan for Tuberculosis Control (CENAT, 2014). Key populations included in the National Strategic Plan for Tuberculosis Control are people living with HIV, TB contacts, elderly people, diabetics, pregnant women, prisoners and migrants. Figure 1 summarizes the votes among the participants at the consultative stakeholder workshop. The figure shows that the top five populations voted by the workshop participants to be TB key populations included prisoners, people living with HIV, elderly people (aged 55 years and older), people with diabetes (diabetics) and TB contacts.

Figure 1. List of the prioritized key populations as result from the consultative stakeholder workshop



Note: Scores of 5 teams (max 50)

In addition to the above five key populations prioritized through the stakeholder workshop, people who use drugs and people who inject drugs were added to the list after thorough discussions within the PSC and STWG. Therefore, we proposed seven TB key populations to be included in this assessment and prioritized for national TB response programs in Cambodia. Without a particular order of priority, the final list of TB key populations in the country included:

1. People living with HIV
2. TB Contacts
3. People aged 55 and older
4. Diabetics
5. Prisoners
6. People who use drugs
7. People who inject drugs

DEFINITIONS OF TB KEY POPULATIONS

According to the results of the desk reviews and agreement in the consultative stakeholder workshops and consultative meetings among the PSC and STWG, the definition of each TB key population is as follows.

People living with HIV

Individuals who have been diagnosed as having infected with HIV, regardless of whether the infection has progressed to acquired immune deficiency syndrome (AIDS) or being on antiretroviral treatment (ART) or not (WHO, 2017).

TB Contacts

Household contacts

A person who shared the same closed living space for one or more nights or for a frequent or extended period during the day with the index cases during the

three months before the commencement of current treatment episode (WHO, 2012).

Close contacts

A person who is not in the household but shares in a closed space, such as a social gathering place, workplace or facility, for an extended period during the day with a TB patient during the three months before the commencement of current treatment episode (WHO, 2012).

Elderly people

People who are aged 55 years and older (CENAT, 2014).

People with diabetes

Adults aged 25-64 years who have a fasting blood glucose ≥ 6.1 mmol/L, or who are currently on medication for diabetes (Ministry of Health, 2013).

Prisoners

Prisoners refer to individuals who are incarcerated in a prison facility under the management of the General Department of Prison (GDP) or has recently been released from such a facility back to the community (NCHADS, 2012).

People who use drugs

People who use drugs (PWUD) are defined as people who have used any types of illicit drugs, defined by the Cambodian Drug Control Law, in any routes of administration other than injection in the past 12 months (Chhea et al., 2014).

People who inject drugs

People who inject drugs (PWID) are defined as people who have injected any types of illicit drugs, defined by the Cambodian Drug Control Law, in the past 12 months (Chhea et al., 2014).



BARRIERS IN ACCESS TO QUALITY TB SERVICES

This section provides a summary of what TB service officials (in KIs), representatives of key populations (through FGDs, IDIs) and key stakeholders (through a validation workshop) told the research team about TB risks and barriers in access to quality TB service each of the key populations included in this assessment might face.

People Living with HIV

Table 1 shows TB risks and barriers in access to quality TB services among people living with HIV in Cambodia found in this assessment. People living with HIV themselves, TB service officials and other key stakeholders all agreed that crowded living conditions and reduced immunity, which may be caused by inadequate adherence to HIV medication, increase TB risks for people living with HIV. Participants in all five focus groups mentioned these two TB risks among people living with HIV. In addition, TB service officials, people living with HIV (two of the five focus groups) and stakeholders all pointed to a lack of TB knowledge and awareness, particularly the fact that TB is a common opportunistic infection among people living with HIV. They recommended that all individuals newly diagnosed with HIV should undergo TB screening. A major barrier to accessing TB services mentioned by people living with HIV in two focus groups and a stakeholder is a long travel distance between home and the closest clinic for TB services. In rural areas, focus group participants reported that an average distance from their home to the nearest TB clinic was about 3-5 km – a distance that would require about 45 minutes to an hour on foot or 5-10 minutes by motorbike or car. Without a motorbike or the money to hire a motorbike makes it difficult for people living with HIV to visit the nearest TB clinic. Participants in one focus group mentioned locating TB service in the same clinic where they are already going for HIV services would help. But stakeholders disagreed with this suggestion arguing that TB services are widely available across the country, and they should be available in all public health facilities where HIV services are provided. In terms of TB service quality, participants in two focus groups mentioned the experience of TB clinics running out of TB medicines, and this was also disagreed by the stakeholders who concluded that TB clinics never ran out of TB medicines. They suggested that further investigations or clarifications are needed since there might be misunderstanding or misinformation on this.

Table 1. TB risks and barriers in access to quality TB services among people living with HIV

	TB Service Officials	FGD-1	FGD-2	FGD-3	FGD-4	FGD-5	Stakeholders
TB risks							
Living in crowded condition	✓	✓	✓	✓	✓	✓	✓
Poor ART adherence	✓	✓	✓	✓	✓	✓	✓
Barriers in access to TB services							
Lack of TB knowledge and not aware of the needs for TB screening	✓	✓		✓			✓
TB clinic is not located nearby and travel costs too high					✓		✓
Perceived service quality							
Not co-located with HIV services			✓				X
TB drug stock out			✓	✓			X

Abbreviations: ART, antiretroviral treatment; FGD, Focus group discussion; HIV, human immunodeficiency syndromes; TB, tuberculosis.

TB Contacts

As shown in Table 2, TB service officials, TB contacts themselves (all five focus groups) and stakeholders identified both living with someone with active TB in a poorly ventilated space and reduced immunity associated with poverty-driven poor diet increase TB risks among TB contacts. Stakeholders also identified people with TB and their families lack the ability to implement infection control as instructed by health service providers. However, participants in the validation workshop challenged that it may also be true that knowledge on TB prevention among people with TB and their families or communities is not sufficient suggesting further actions to fill in the knowledge gap. These may include refresher training for TB staff emphasizing the importance of the routine education for people with TB on prevention of the transmission to people in their family and communities. More attention

is required for TB supervisors at all levels to reinforce these important practices.

Table 2 also presents conditions identified in this assessment as barriers that make it difficult for TB contacts to access TB services. These included a situation in which TB clinics are not located near to the place where TB contacts live (mentioned by TB service officials and one TB contact focus group) and TB contacts are not able to afford taking time off from work to go to a TB clinic for screening (mentioned by two TB contact focus groups, but not by stakeholders). Stakeholders pointed to long waiting time at TB clinics and side effects of TB treatment as barriers demotivating TB contacts from access to TB services. In terms of TB service quality, TB service officials and two TB contact focus groups (but not the stakeholders) mentioned that TB clinics are not open during non-business hours, and this could be

a factor that limits TB contacts' use of TB services. Stakeholders instead suggested a range of issues that may have negative impacts on TB service quality including unavailability of TB specialists on standby

during non-business hours, lack of health staff, stigma and discriminatory behaviors towards people with TB among health providers and both TB diagnostic committee (which confirms TB cases) and contact investigation not functioning well.

Table 2. TB risks and barriers in access to quality TB services among TB contacts

	TB Service Officials	FGD-1	FGD-2	FGD-3	FGD-4	FGD-5	Stakeholders
TB risks							
Live with people with TB in dwellings with poor ventilation	✓	✓	✓	✓	✓	✓	✓
Poor socio-economic conditions leading to poor dietary intake and in turn poor immune systems	✓	✓	✓	✓	✓	✓	✓
Lack of knowledge or inability to implement infection control measures among people with TB and their family members							✓
Barriers in access to TB services							
Inconvenient location of TB	✓		✓				X
Unaffordability to take time off from work to go to TB clinics				✓		✓	X
Long waiting time to get TB services							✓
Longtime treatment and side effects of TB medicines							✓
Perceived service quality							
Public TB clinics not open outside office hours	✓		✓	✓			X
No TB specialists on standby during non-business hours							✓
Lack of health staff							✓
Stigma and discrimination of health staff towards people with TB							✓
Diagnostic Committee not functioning well							✓
TB contact investigation not functioning well							✓

Abbreviations: FGD, Focus group discussion; TB, tuberculosis.

Elderly people

TB risks and barriers in access to quality TB services among elderly people are shown in Table 3. TB service officials, elderly aged 55 or older (all five focus groups) and stakeholders all agreed that living in crowded dwellings in poor areas is a key TB risk among elderly people. Stakeholders also pointed to other health conditions elderly people may have would make them more prone to TB. Elderly people (two of the five focus groups) and stakeholders mentioned that elderly people have to work to make a living and cannot afford to take time off to go to TB clinics, even if they know that TB services are free. The stakeholders further identified the lack of knowledge about TB

services and misconception of TB risks among elderly people coupled with stigma and discrimination from communities and health service providers against people living with TB may pose barriers for elderly people to access TB services. Both stakeholders and elderly people themselves (two focus groups out of five) reported that some elderly people do give up TB treatment due to severe side effects. All participants in the assessment including those who participated in technical working group meetings, consultative meetings and validation workshop agreed that many elderly people do not care much about their health thinking that it is a waste of time and money to seek for health care as they are going to die soon.

Table 3. TB risks and barriers in access to quality TB services among elderly people

	TB Service Officials	FGD-1	FGD-2	FGD-3	FGD-4	FGD-5	Stakeholders
TB risks							
Living in crowded condition (poor areas)	✓	✓	✓	✓	✓	✓	✓
Other underlying diseases							✓
Barriers in TB services							
Can't afford economically to take time off from work to visit government TB clinic				✓	✓		✓
Lack of knowledge about TB services and misconception of TB risks							✓
Stigma and discrimination from community and service providers							✓
Perceived service quality							
Strong side effects of TB drugs				✓	✓		✓

Abbreviations: FGD, Focus group discussion; TB, tuberculosis.

People with diabetes

Table 4 shows TB risks and barriers in access to quality TB services among people with diabetes in the assessment. TB service officials, diabetics (one of the two focus groups) and stakeholders all pointed to the

fact that diabetes reduces immune systems against infectious diseases among people with diabetes making prone to TB. Diabetics (both focus groups), TB service officials and stakeholders also highlighted the space where diabetic patients meet one another (e.g., clinics) may increase TB risks among these

vulnerable people if space lacks air ventilation (e.g., private clinic's waiting areas without windows or fans). Two diabetic focus groups and stakeholders also agreed that cigarette smoking and alcohol drinking would increase TB risks among diabetics. A key barrier for diabetics to access TB services reported by TB service officials, diabetics (both focus groups) and stakeholders was a general lack of awareness and knowledge of TB among diabetics. Stakeholders and both diabetic focus groups also indicated a lack of economic means to travel to TB clinics may also limit their access to quality TB services. Stakeholders further identified a lack of referral systems between

diabetes and TB services as a key barrier for diabetic patients in getting TB services. Stakeholders further commented that public diabetes clinics are not widely available in Cambodia nationwide (only 24 clinics across the country's 25 capital and provinces) and some necessary diabetic drugs are not available. Diabetics may feel demotivated to seek TB services due to their financial burden as, among the vast majority of people with diabetes, the financial resources to cover the treatment and care for diabetes are out-of-pocket. Since TB treatment is also long, they may feel uncomfortable having TB treatment in addition to their lifelong diabetes treatment and care.

Table 4. TB risks and barriers in access to quality TB services among people with diabetes

	TB Service Officials	FGD-1	FGD-2	Stakeholders
TB risks				
Reduced immunity	✓		✓	✓
Living in the same room with other diabetics with TB	✓	✓	✓	✓
Smoking and alcohol drinking		✓	✓	✓
Barriers in access to TB services				
Lack of information on TB	✓	✓	✓	✓
Lack of economic means to travel to TB services		✓	✓	✓
Lack of referral mechanism TB/diabetes				✓
Perceived service quality				
Diabetes clinics not available nationwide (only 24 clinics across the country's 25 capital and provinces)				✓
Necessary diabetic drugs not available				✓

Abbreviations: FGD, Focus group discussion; TB, tuberculosis.

Prisoners

TB risks and barriers in access to quality TB services among prisoners identified in this assessment are presented in Table 5. TB service officials, prisoners (only one focus group was conducted) and stakeholders all pointed to the crowded living conditions and the lack of windows and air ventilation in prisons that

increase TB risks among prisoners. While TB service officials and stakeholders noticed that prisoners have little knowledge of how to prevent TB in prisons, the prisoner focus group and stakeholders reported prisoners were not always screened for TB as stated in the guidelines when they entered the prison. They further reported prisoners with TB would get noticed by prison guards until they get very sick.

Table 5. TB risks and barriers in access to quality TB services among prisoners

	TB Service Officials	FGD	Stakeholders
TB risks			
Small living space and poor ventilation	✓	✓	✓
Barriers in access to TB services			
Little prevention knowledge	✓		✓
Perceived service quality			
No TB screening upon entry in the prison/ correction center		✓	✓
Not screened for TB until getting very sick		✓	✓

Abbreviations: FGD, Focus group discussion; TB, tuberculosis.

People who use drugs (PWUD)

As shown in Table 6, PWUD (in one focus group and one in-depth interview) and stakeholders raised a situation in which PWUD inhale and exhale smoke into their fellow PWUD's mouth commonly taking place in drug dens (small space without windows and little air ventilation). Such condition increases TB risks among PWUD. The PWUD focus group and stakeholders further highlighted that even if there are windows, PWUD would choose to close them to hide from the law enforcement officials and maximize the effects of the smoke from the drugs. Both PWUD (focus group) and stakeholders also agreed that alcohol drinking is common among PWUD and would reduce their likelihood of taking prevention measures against TB such as asking their fellow PWUD with TB to wear a mask or not to inhale from or exhale into the mouth of the PWUD with TB. Such condition further increases their risks of getting TB.

TB service officials and stakeholders highlighted the poor diet among PWUD is common and would result

in the poor immune system. This would also increase TB risks among this vulnerable population. TB service officials, PWUD (one focus group) and stakeholders raised the issue of the lack of awareness on TB transmission risks and the need to get tested for TB among PWUD. PWUD (focus group) and stakeholders also mentioned that PWUD are usually busy looking for money to pay for drugs and wait until they are very sick before seeking TB services. Stakeholders also recognized that PWUD may try to hide from health services because they are afraid that their illegal drug use would be reported to the police via the health system. PWUD in the in-depth interview, confirmed by stakeholders, further reported PWUD's pre-occupation with looking for money for drugs limits their access to TB services, particularly when there is a long queue at TB clinics. For those on TB treatment, PWUD interviewed and stakeholders agreed that the requirement to visit a TB clinic frequently to collect TB medicines and follow-ups, as well as the strong side effects of the medicines, often leads to PWUD quitting TB treatment.

Table 6. TB risks and barriers in access to quality TB services among people who use drugs

	TB Service Officials	FGD	IDI	Stakeholders
TB risks				
Drug use with friends (inhaling and/or exhaling into each other's mouth) in windowless or poorly ventilated space		✓	✓	✓

Windows closed to hide from police and maximize drug effects		✓		✓
Weak immune systems due to poor diet and co-infections	✓			✓
Poor TB prevention measures due to alcohol drinking during drug use		✓		✓
Late access to TB services leading to transmission to their family and peers in the communities		✓		✓
Barriers in access to TB services				
Unaware of TB transmission risks and the need for TB screening and treatment	✓	✓		✓
Pre-occupation with looking for money for drugs with less attention to health care		✓		✓
Hidden from health services due to the illegality of drug use				✓
Perceived service quality				
Requirement to visit a TB clinic frequently to collect TB medicines and follow-ups			✓	✓
Strong side effects of the medicines			✓	✓

Abbreviations: FGD, Focus group discussion; IDI, in-depth interview; TB, tuberculosis.

People who inject drugs (PWID)

Table 7 shows TB risks and barriers in access to quality TB services among people who inject drugs in this assessment. TB service officials, PWID (one focus group, in-depth interview) and stakeholders agreed that immune systems are poor among PWID due to common HIV and/or hepatitis C infection (resulted from sharing injection equipment) and poor diet among this population. This condition makes PWID more prone to TB. The participants also highlighted the lack of awareness of TB transmission risks and the need to get TB screening and treatment among this high-risk population. As a result, most of PWID will seek TB services only when they have become already very sick and may have transmitted to disease to their family or peers in the communities. A PWID in an in-depth interview was in an agreement with stakeholders that PWID with TB often skip taking TB medicines as they find it difficult to visit a TB clinic frequently as required by the TB clinic to collect their TB medicines and follow-ups. This situation reduces

the effectiveness of the TB treatment and may lead to drug resistance which is more complicated and difficult to treat. Another problem with taking TB medicines raised by PWID in the focus group with support from stakeholders is that PWID may stop taking TB medicines due to the severe side effects.



Table 7. TB risks and barriers in access to quality TB services among people who inject drugs

	TB Service Officials	FGD	IDI	Stakeholders
Risks				
Low immune system due to HIV/HCV infections and poor diet	✓	✓		✓
Sharing drug use equipment with friends		✓	✓	✓
Late access to TB services leading to transmission to their family and peers in the communities		✓		✓
Barriers				
Lack of awareness of TB transmission risks and the need to get TB screening and treatment	✓		✓	✓
Service quality				
Difficulty in a frequent visit to a TB clinic as required to collect their TB medicines and follow-ups			✓	✓
Strong side effects of the medicines		✓		✓

Abbreviations: FGD, Focus group discussion; HIV, human immunodeficiency virus; HCV, hepatitis C virus; IDI, in-depth interview; TB, tuberculosis.

NATIONAL SIZE ESTIMATION OF PRIORITIZED KP

Multiplier method, which is based on the use of existing benchmarks, was used to estimate the size of prioritized key populations in this assessment including people living with HIV, TB contacts, elderly people, people with diabetes, prisoners, people who use drugs and people who inject drugs. Generally, this method requires two figures: a benchmark and its corresponding multiplier, and it is therefore highly dependent on the quality of existing data. The benchmark being used in this assessment has been reviewed and validated with the key stakeholders through consultative meetings and a validation workshop before it can be used to produce the estimates. The main sources of data in the multiplier method were from the larger scale survey and WHO data focusing on the populations whose size is being estimated. To get the consensus from the relevant stakeholders, the number of size in each key population was validated during the consultative meetings and validation workshop. The estimated population size of the prioritized key populations is shown in Table 9.

In 2016, NCHADS estimated the national population size of PLHIV using Asia Epidemic Model (AEM) (NCHADS, 2016). They estimated that there were 72,607 people living with HIV in the country in 2016.

Two main sources of data were used to calculate the national population size of the TB contacts – total number of TB index cases (smear+ in the last two years 2015 and 2016) is 22,107 (CENAT, 2017) and an average number of household members in the country of 4.6 according to the most recent Cambodia Demographic and Health Survey (CDHS 2014). Based on this calculation, the total number of TB household contacts in the country was 79,585. Moreover, WHO estimated that in average an index case could spread TB to 10-15 people who are in physical contact with them. Based on these figures, the estimated number of TB close contacts in the country would be between 221,070 and 331,605.

The National Institute of Statistics (NIS) projected that a total of 1,795,415 (12%) male and female Cambodian people are in the group of 55 years and older (NIS, 2017).

To estimate the national population size of people with diabetes, the total number of people in the age group at risk for diabetes (25 to 64 years old) and the prevalence of diabetes among the general population in the age group is required. According to the NIS, the total number of people in the age group of 25 to 64 was 7,086,277 (NIS, 2017), while the WHO STEPwise approach to Surveillance (STEPS) on Risk Factors (UHS, 2010) estimated prevalence of people with diabetes in the general population aged from 25-64 years was 2.9%. Based on these figures, the estimated number of people with diabetes age 25 to 64 was 205,502. However, WHO has recently reported an estimated prevalence of diabetes in the Cambodian general population aged 25 to 64 at 5.9 % (WHO, 2017). Based on this estimate, the estimated population size of people with diabetes in the age group

of 25 to 64 was 418,090. We, therefore, concluded that the estimated population size of people with diabetes aged 25 to 64 in Cambodia ranged from 205,502 to 418,090. In 2016, the Department of Preventive, the Ministry of Health reported that 41,958 diabetic cases were registered in diabetic clinics across the country.

According to the General Department of Prisons, Ministry of Interior, a total number of 22,801 prisoners was reported in 2016 (GDP, 2016). This number included both those aged under 18 and 18 and older. From the latest size estimation conducted in 2012, there were a total of 13,000 of people who use drugs (include non-injecting and injecting drug) and 1,303 of people who inject drugs were estimated respectively (NACD, 2012).

Table 8. Estimated national population size of the prioritized key populations in Cambodia

Key Populations	Size Estimate	Estimate reliability	Source
People living with HIV	72,607	High	NCHADS, 2016
TB contacts (household contact)	79,585	Medium	Average household size: 4.6 (CDHS, 2015) Index case for the last two years of Smear+ (2015 and 2016): 22,107 (CENAT, 2017)
TB contacts (close contact)	Lower bound: 221,070 Upper bound: 331,605	Medium	A person with active TB may have interaction with on average 10-15 people if untreated (WHO, 2017) Index case of Smear+: 22,107 (CENAT, 2017)
Elderly people	1,795,415	High	NIS, 2017
People with diabetes	Between 205,502-418,090]	Medium	2.9% of 25-64 (STEP, 2010) 5.9% of 30-69 (WHO, 2016) 7,086,277 aged 25-64 (NIS, 2017)
Prisoners	22,801	High	GDP, 2016
PWUD	13,000	High	NACD, 2012
PWID	1,303	High	NACD, 2012

Abbreviation: PWUD, people who use drugs; PWID, people who inject drugs; GDP, General Department of Prison; NACD; National Authority for Combating Drugs; CDHS, Cambodia Demographic and Health Survey

DATA GAPS

Population Size Estimation

In Cambodia, there are no official estimates of the national population size of TB key populations at the moment. The precision of the estimates presented in the previous section needs to be periodically verified. For example, the upcoming release of PWID and PWUD IBBS and size estimation conducted in 2017 should inform the update of the population size estimates for PWID and PWUD.

TB prevalence among KPs

From the literature review, NTP has conducted two national TB prevalence surveys in the general population (2002 and 2011), which aimed to assess disease prevalence and behavior among the general

population in the country. However, data on prevalence and risk behaviors among TB key populations were scarcely available.

Data needed for TB programs in key populations

Given the gaps of the data for both size estimation and TB prevalence among the key populations, the national TB program would consider to include these research questions as part of their national TB surveys. To achieve these goals, a strong multi-disciplinary collaboration from the relevant stakeholders are required to tackle the data gaps. Gaps also remained in the number of the people who have been referred to correction centers as we were actually able to only access the number from prisons.



▶ RECOMMENDATIONS

OPERATIONAL DEFINITION FOR KEY POPULATIONS

Based on the desk reviews and inputs from stakeholders through the validation workshop, we would like to recommend the operational definitions of the prioritized TB key populations as below:

People living with HIV

Individuals who have been diagnosed as having infected with HIV, regardless of whether the infection has progressed to acquired immune deficiency syndrome (AIDS) or being on antiretroviral treatment (ART) or not.

TB Contacts

Individuals who had been in contact (within the household or other close contacts) with the index case during the three months before the commencement of current TB treatment episode.

Index case: Individuals confirmed bacteriologically or clinically diagnosed. Clinically diagnosed means active TB diagnosed by a clinician or other medical practitioners who have decided to give the patient a full course of TB treatment. This definition includes cases diagnosed on the basis of X-ray abnormalities or suggestive histology and extra-pulmonary cases without laboratory confirmation.

Household contacts: People who had shared the same closed living spaces for one or more nights or for a frequent or extended period during the day with the index case during the three months before the commencement of current treatment episode.

Close contacts: People who had not been in the household with the index case but shared a closed space, such a social gathering place, workplace or facility, for extended periods during the day with the index case during the three months before the commencement of current treatment episode.

Elderly people

Individuals who are aged 55 or older.

People with diabetes

Adults aged 25-64 years who have a fasting blood glucose ≥ 6.1 mmol/L, or who are currently on medication for diabetes.

Prisoners

Individuals who are currently incarcerated in a prison or correctional facility under the management of the General Department of Prison (GDP) or have recently been released from such a facility back to the community in the past 12 months.

People who use drugs

People who have used any type of illicit drugs, defined by the Cambodian Drug Control Law, in any routes of administration other than injection in the past 12 months.

People who inject drugs

People who have injected any types of illicit drugs, defined by the Cambodian Drug Control Law, in the past 12 months.

PROGRAM RECOMMENDATIONS FOR KEY POPULATIONS

Based on inputs from TB government officials and key populations through focus groups and interviews and inputs through consultative meetings and the validation workshop, we would like to make the following recommendations to strengthen TB programs for key populations who have already been included in the NSP (people living with HIV, TB contacts, elderly people, people with diabetes, and prisoners) and key populations who have not been included in the NSP but proposed to add during this assessment (PWUD and PWID).

People living with HIV

1. Strengthen referrals, including the capacity of health service providers, between HIV and TB services, particularly faster TB test results (e.g., GeneXpert).
2. Link NGOs and village health support group (VHSG) working with people living with HIV to TB services to increase knowledge of TB among people living with HIV including the need to get tested for TB and provide TB treatment literacy information such as side effects and support for of TB treatment adherence.
3. Ensure health service providers provide people living with HIV with information on TB testing and treatment.
4. Provide transportation subsidy (e.g., HEF, ID poor) for people living with HIV for travel to TB testing and treatment.

TB Contacts

1. Ensure all TB contacts are screened and subsequently tested (ideally with GeneXpert).
2. Conduct evaluation of current practices of contact investigation and decision process of the Diagnostic Committee to improve both effectiveness and efficiency of case finding and diagnosis.
3. Ensure TB specialists on standby during non-business hours or initiate alternative operating hours of government TB clinics (e.g., having a weekday off to allow the clinic to stay open on Saturdays).
4. Educate health service providers on TB stigma and discrimination.
5. Conduct assessment of workload of health staff to ensure TB services are properly resourced in both staff and financial terms.

Elderly people

1. Target elderly living in densely populated urban poor districts and poor rural villages with small dwellings in which family members share beds, with elderly with other health conditions in particular.
2. Educate health service providers and VHSG on TB stigma and discrimination.
3. Community campaigns/outreach in poor urban

and rural areas to increase TB awareness - TB prevention, symptoms and treatment process, clinic location - and community and counseling support to manage treatment side effects

4. Provide transportation subsidy (e.g., HEF, ID poor) for elderly and their caregivers for travel to TB clinics for TB testing and treatment
5. Provide subsidy (e.g., HEF, ID poor) to elderly diagnosed with TB if they are the only source of income in their family.

People with diabetes

1. Target diabetes clinics with poor ventilation focusing on patients who also smoke or abuse alcohol.
2. Engage diabetes patient support groups and strengthen support for VHSG to include TB awareness, symptom spotting, treatment literacy (side effects) and adherence support in their services.
3. Strengthen referral system between diabetes and TB services.
4. Provide transportation subsidy (e.g., HEF, ID poor) for diabetes patients and their caregivers for travel to TB clinics for TB testing and treatment.
5. Provide free diabetes treatment (e.g., HEF, ID poor) to diabetes patients diagnosed with TB.

Prisoners

1. Prioritize prisons with the highest density (number of residents per occupancy limit) for active case finding.
2. Separate rooms in prisons for those diagnosed with TB until the individual is no longer infectious.
3. Initiate standard chest X-ray for all new entrants into prisons
4. Annual facility-wide X-rays for all in prisons.
5. Train all prison staff to spot TB symptoms, educate prisoners on TB and support DOTS in prison and referrals to NGOs upon release (temporary to hospitals or permanently back to the community).
6. Ensure adequate nutrition in food for prisoners with TB.

7. Link those released from prisons (including those temporarily transferred to hospitals for TB treatment) but still on TB treatment to NGOs/health facilities that support ex-prisoners to ensure TB treatment adherence.

People who use drugs

1. Target PWUD using peer approach that has been shown to be success for other programs, including leveraging community knowledge of HIV/harm-reduction NGOs serving PWID (e.g., mapping of locations drug dens, ex-drug users as peers for outreach and treatment support)
2. TB services to work with NGOs serving PWUD (HIV and harm reduction) and task shift (DOTS observation and TB medicine distribution) to NGOs.
3. Expand TB services offered by NGOs serving PWUD (particularly those already doing work on HIV and HCV) to include outreach to PWUD, raise TB awareness (symptoms and prevention messages among PWUD), accompany PWUD to TB services for testing, provide treatment literacy and adherence support, observe DOTS and distribute TB medicines (task shifting).
4. Provide transportation subsidy (e.g., HEF, ID poor) for PWUD for travel to TB testing and treatment.
5. TB services to secure high-level political support for TB services to align with law enforcement officials to ensure NGO workers and peers' safety when they work with PWUD.

People who inject drugs

1. Target PWID using peer approach that has been shown to have successfully reached out to PWID for HIV programs, including leveraging community knowledge of HIV/harm-reduction NGOs serving PWID and PWUD (e.g., mapping of locations drug dens)
2. Integration of TB services with other community-based services for PWID (HIV and harm reduction, DOTS observation, TB medicine distribution)
3. Expand TB services offered in partnership with NGOs serving PWID (particularly those already doing work on HIV and HCV) to include outreach to PWID not in drug rehabilitation centers, raising TB awareness, symptoms and prevention messages

among PWID, taking PWID to TB services for testing, providing treatment literacy and adherence support, observing DOTS and distributing TB medicines.

4. Provide transportation subsidy (e.g., HEF, ID poor) for PWID for travel to TB testing and treatment.
5. TB services to secure high-level political support for TB services to align with law enforcement officials to ensure NGO workers and peers' safety when they work with PWID.

FURTHER RESEARCH/DATA COLLECTION

Based on desk reviews and stakeholders' input at the validation workshop, two broad areas where critical information is still needed to plan for programs for key populations. Although information and data gaps were also found in other key populations, the largest gaps were observed in three key populations including prisoners, PWID and PWUD. The second area is related to the improvement of the referral system between TB and diabetes and HIV services.

1. Prisoners, PWUD and PWID
 - a. Conduct more focus groups of these key populations to verify the risks, barriers, and service quality issues identified through this assessment (this assessment conducted only three focus groups between these four key populations).
 - b. Conduct representative sampling surveys to quantify TB prevalence and other information to inform program design.
 - c. Include these key populations in the country's TB surveillance system.
2. Health System Issues:
 - a. Conduct a further study to identify weaknesses in and strengthen the referral system between TB, diabetes and prison services.
 - b. Conduct a further study to identify weaknesses in and strengthen TB confirmation structure and process (diagnostic committee).
 - c. Conduct further studies to identify weaknesses and strengthen the current TB contact investigation system, including data processing.

▶ REFERENCES

1. Chhea C, Heng S, Tuot S. National Population size estimation, HIV related risk behaviours, HIV prevalence among people who use drugs in Cambodia in 2012. Phnom Penh, Cambodia: National Authority for Combating Drugs and KHANA; 2014.
2. Karim F, Islam MA, Chowdhury AM, Johansson E, Diwan VK. Gender differences in delays in diagnosis and treatment of tuberculosis. *Health Policy Plan.* 2007;22(5):329-34.
3. Nashandi J, Zvavamwe CS, James V. Gender Assessment of the National Response to HIV and TB in Namibia. UNAIDS & Stop TB Partnership; 2017.
4. National Center for HIV/AIDS, Dermatology and STD (NCHADS). Estimations and Projections of HIV/AIDS in Cambodia 2010-2015. Phnom Penh: NCHADS; 2010.
5. National Center for Tuberculosis and Leprosy Control (CENAT), Ministry of Health (MoH). The National Strategic Plan for Control of Tuberculosis (2014-2020). Phnom Penh: CENAT, MoH; 2014.
6. National Institute of Statistics (NIS). Population Projections for Cambodia 2013 to 2023. Phnom Penh: NIS; 2013.
7. National Center for HIV/AIDS, Dermatology and STD (NCHADS), Ministry of Health (MoH). The National Strategic Plan on HIV 2015-2020. Phnom Penh: NCHADS, MoH; 2014.
8. National Institute of Statistics. Cambodia Socio-Economic Survey, 2015: Phnom Penh; 2016.
9. National Strategic Plan for the Prevention and Control of Non-communicable Diseases
Cardiovascular Disease, Cancer, Chronic Respiratory Disease and Diabetes 2013-2020.
10. Niger Country Coordinating Mechanism (CCM), Stop TB Partnership. Gender assessment of the national HIV and TB responses in Niger. Niger Country Coordinating Mechanism (CCM), Stop TB Partnership; 2017.
11. University of Health Sciences. STEP Survey: Prevalence of Non-Communicable Disease Risk Factors in Cambodia. Phnom Penh: University of Health Sciences; 2010.
12. Stop TB Partnership/ UNAIDS – Joint United Nations Programme on HIV/AIDS. Action Framework for Tuberculosis Key Populations. Geneva: Stop TB Partnership & UNAIDS; 2017a.
13. Stop TB Partnership/ UNAIDS – Joint United Nations Programme on HIV/AIDS. Gender Assessment Tool for National HIV and TB Control. Geneva: UNAIDS & Stop TB Partnership; 2017b.
14. Tieng S. Progress Update on TB Control. Presentation at Sub-TWG for TB Control Meeting (ICC) on 28 June 2016 at CENAT. Phnom Penh: National Center for Tuberculosis and Leprosy Control (CENAT); 2016.
15. UNAIDS – Joint United Nations Programme on HIV/AIDS. GAP Report. Geneva: WHO; 2014. Available at: http://www.unaids.org/sites/default/files/media_asset/UNAIDS_Gap_report_en.pdf

16. UNAIDS – Joint United Nations Programme on HIV/AIDS. UNAIDS Gender Assessment Tool towards a gender-transformative HIV response: ISBN 978-92-9253-042-6; 2014
17. United Nations. Sustainable Development Goals. Geneva: United Nations; 2015. Available at: <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>
18. World Health Organization (WHO). Global Tuberculosis Report. Geneva: WHO; 2015. Available at: http://apps.who.int/iris/bitstream/10665/191102/1/9789241565059_eng.pdf
19. World Health Organization (WHO). Global Tuberculosis Report. Geneva: WHO; 2016a. Available at: <http://apps.who.int/iris/bitstream/10665/250441/1/9789241565394-eng.pdf?ua=1>
20. World Health Organization (WHO). Tuberculosis in Women. Geneva: WHO; 2016b. Available at: http://www.who.int/tb/challenges/hiv/tb_women_factsheet.pdf?ua=1
21. World Health Organization (WHO). WHO policy on collaborative TB/HIV activities:

Guidelines for national programmes and other stakeholders. Geneva: WHO; 2017b. Available at: http://www.who.int/tb/publications/2012/tb_hiv_policy_9789241503006/en/
22. World Health Organization (WHO). Tuberculosis in Prison. Geneva: WHO; 2017a. Available at: <http://www.who.int/tb/areas-of-work/population-groups/prisons-facts/en/>



ANNEX 1. TERM OF REFERENCE (TOR)

Implementation of a project: KP and Gender Assessment of the National TB intervention Programs in Cambodia

With the direction of the National Center for Tuberculosis and Leprosy Control (CENAT), KHANA together with other partners will conduct a key population and gender assessment in the national tuberculosis response in Cambodia. To support and monitor the assessment, the Project Steering Committee (PSC) and a sub-technical working group for key population (KPTWG) and gender (GTWG) assessment will be established.

PROJECT STEERING COMMITTEE (PSC)

The members of the committee will include representatives from:

1. CENAT/National Tuberculosis Program (NTP) (Chair of the Committee)
2. National Center for HIV/AIDS, Dermatology and STD (NCHADS) and Ministry of Women Affairs (MoWA)
3. TB non-governmental organizations (KHANA, CATA, RACHA, RHAC, CHC, FHI360, CRS, and Op-ASHA)
4. UN and donor agency (WHO and USAID)
5. Community and key population representative
6. Others

The PSC will help to steer a project from the beginning to the completion. The PSC will support to ensure the technical leadership and involvement from relevant stakeholders and beneficiaries. It is made up of key representative of the national programs, donor, organizations and community representative who have particular expertise to lend to the project. The

PSC's roles may include the following key tasks:

- Identifying the priorities in the project's expectations
- Providing advice about changes to the project as it develops
- Monitoring the quality of the project as it develops;
- Providing inputs to the development of the assessment protocol, tools and report
- Attending PSC's meeting (at least 5 times for the whole of project period)

SUB-TECHNICAL WORKING GROUPS FOR KP AND GENDER

The two sub-technical working group will combine. The key roles of the sub-national working are to assist the preparation, implementation and report, together with the support of the national and international technical assistants. Their key roles are to:

- Attend the working group meeting
- Provide technical inputs to the assessment's design, preparation, implementation and report at the working group meetings
- Assist in coordinating the assessment team to prioritize the needs
- Assist in rationally prioritizing recommendations according to results
- Support the assessment team in the collection of additional information and data as needed

Member of Sub-technical working group for KP and Gender

1. CENAT/National Tuberculosis Program (NTP) (Chair of the Committee) and another 4 members
2. National Center for HIV/AIDS, Dermatology and STD (NCHADS)- two representatives
3. General Department of Prison (GDP)

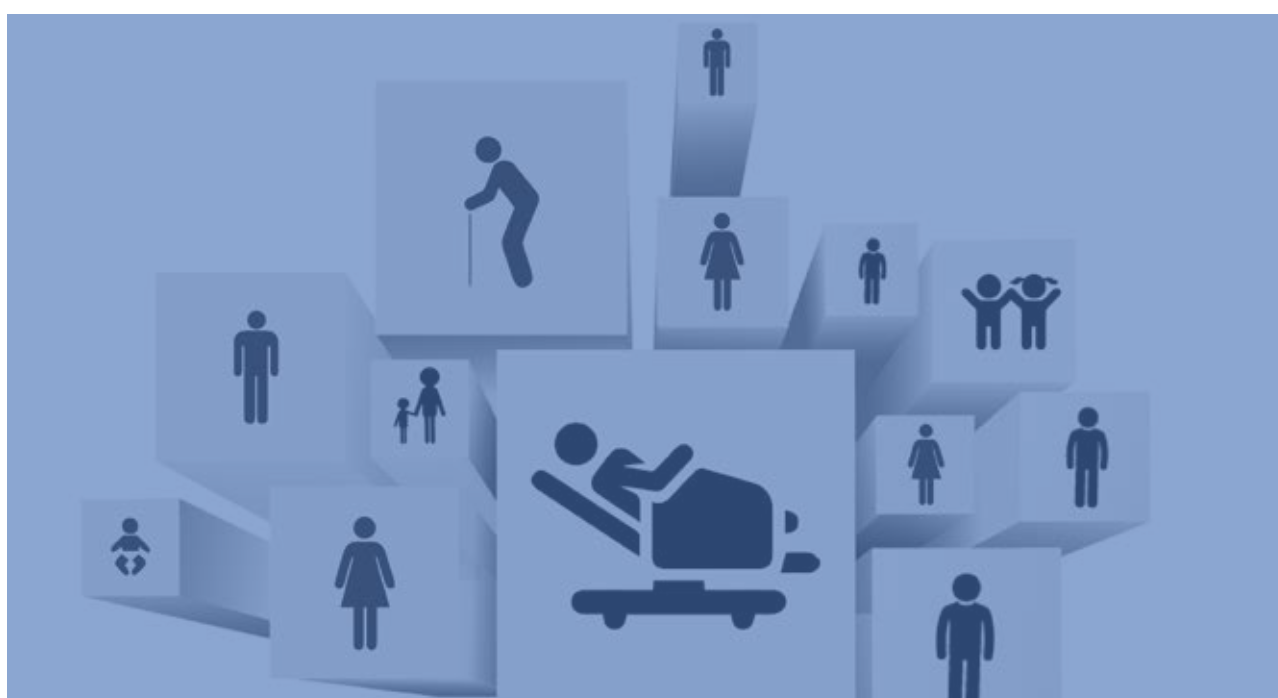
4. Ministry of Women Affairs (MoWA)- two representatives
5. TB non-governmental organizations (KHANA, CATA, RACHA, RHAC, CHC, FHI360, CRS, and Op-ASHA)
6. UN and donor agency (WHO and USAID)
7. Community and key population representative

8. Others

PSC AND SUB-TECHNICAL WORKING GROUP MEETINGS

The below are the suggested series of meetings for both PSC and sub-technical working groups. The ad-hoc meetings will be convened by the Chair of PSC.

No	Key activity	When
1	Review and finalize the term of reference of the committee and sub-technical working groups. Technical guidance on the assessment framework and tools on KP and Gender	25 Sept 2017
2	Attending the stakeholder meeting to review protocol, framework and tools	27 Sept
3	Review protocol, tools and framework before submission to NECHR	29 Sept
4	Review and input to the prioritization of KP resulted from the stakeholder meeting	20 Oct 2017
5	Review and provide technical guidance and inputs on the report outline	17 Nov
6	Attend the mid-field reflection on the data collection	30 Nov
7	Review and provide technical advice and inputs on the preliminary findings	5 Dec
8	Attending the validation workshop on the assessment results	7-8 Dec



ANNEX 2. SCORING OF PRIORITIZATION KEY POPULATION

	Score 1	Score 2	Score 3	Score 4	Score 5	Score 6	Combined Score to Facilitate Prioritization Discussion	
Key Populations to Consider	Estimated Contribution to the Country's TB Disease Burden (Active TB cases of all forms)	Faced with Environment Risks (Overcrowded poorly ventilated space, reside in zoonotic TB areas)	Faced with Biology Risks (Reduced immunity, poor nutrition)	Faced with Behavior Risks (In/Exhaling from/into other's mouth, sharing smoking equipment)	Legal & Economic Barriers to Accessing Services (Criminalization, poverty)	Human Right & Gender Barriers to Accessing Services	Total Score (Sum of Scores 1-6, Max 10)	Prioritization Discussion and Rationale for Prioritized Key Populations
	1- Very Low (<1%) 2- Low (1-3%) 3- Medium (3-5%) 4- High (5-10%) 5- Very High (>10%)	0- No 1- Yes	0- No 1- Yes	0- No 1- Yes	0- No 1- Yes	0- No 1- Yes		
People Living with HIV								
Miners								
Migrants								
Prisoners								
People who Use Drugs								
People with Alcohol Dependency								
Smokers								

Sex Workers								
Lesbian, Gay, Bisexual & Transgender								
People with Mental or Physical Disabilities								
Urban Poor								
Rural Poor								
People with Diabetes								
Children								
Elderly								
Prison workers								
Community Health/ Outreach Workers								
Hospital Visitors								
Prison Visitors								
People who Use Drug								
Family Members								

ANNEX 3. SUMMARY OF PARTICIPANT BY FGD, IDI AND KII

	FGD	IDI	KII	Total
PLHIV	39			39
TB Contact	30			30
Elderly	41			41
Diabetics	5			5
Prisoner	8			8
PWUD	11	2		13

PWID	9	2		11
Service official			15	15
Stakeholder	63			63
Total				225

ANNEX 4. ASSESSMENT TOOLS

FGD tool with key populations

TB risk infection				TB Risk Drivers	Remark/Comments
Environment (Over-crowded, poor ventilation)	Biology (Reduced immunity)	Behavior (Prone to transmission)	Limited Access to Services (Health, social and economic)	Legal & Economic (criminalization, poverty) Human Rights & Gender (stigma, discrimination)	<ul style="list-style-type: none"> Awareness of TB treatment facility Avoid TB TB symptom identification

1. What socio-cultural norms and practices may contribute to increased risk of TB transmission among women and girls, men and boys, and/or transgender people? List them.
2. What socio-cultural norms and practices may contribute to gender differences in any of the issues described in the answers you provided for Question 1 (e.g. knowledge, condom use, stigma, discrimination, early or unwanted pregnancy)?
3. Identify gender-related impediments to accessing, using and/or adhering to prevention services for women, girls, men, boys, transgender people and KPs that should be considered and addressed.
4. Is there any indication of discriminatory or coercive practices in health-care settings that may impact access and utilization of TB-related services by women living with HIV, including those from key and marginalized populations?
5. Is there any indication of discriminatory practices by the judiciary or law enforcement personnel (including the police) that may prevent women, girls or any other key or marginalized populations from accessing their rights? If so, please describe.
6. Do treatment services respect, promote and protect the rights of women, girls, men, boys, transgender population and KPs in a way that is independent of marital status, profession and age,

or are there indications that these principles have been violated?

7. Do care and support services respect, promote and protect the rights of women, girls, men, boys, transgender people and KPs in a way that is independent of marital status, profession and age, or are there indications that these principles have been violated?

GUIDE FOR INTERVIEWS WITH KEY INFORMANT:

1. Are there any legal frameworks or policy, basic health policies, and other general government policies that include any of the following: women and girls, men and boys, transgender people and key populations (KPs) in relation to TB, HIV/TB, or DR-TB? If so, what aspect of their lives may be affected?
2. Are there legal frameworks that specifically protect the rights of people living with TB, HIV/TB, DR-TB, women and girls, and other KPs in the country?
3. Do the existing laws and policies translate into equitable access to services for women, girls, men, boys, transgender people and KPs?
4. Are all KPs protected equally? Please specify. (Question on KPs)

5. Do both the executive and legislative branches of government work towards implementing the international treaties and declarations on which the country is a signatory? Please give examples of laws approved and services provided according to the 2011 Political Declaration on HIV/AIDS, the Beijing Declaration and the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW). Also consider regional commitments by governments.
6. Is there a formal system of accountability for the TB response that allows civil society, UN agencies and citizens to monitor the spending on gender equality within the TB response? If yes, how does it work?
7. Are there formal mechanisms (e.g. partnership forums, TB technical working groups, National Stop TB Partnership, TB advisory committee and or CCM) that ensure the views, needs and rights of KPs are taken into account in decision-making processes in the response to TB? If so, please describe how this is ensured with a particular focus on gender issues (provide examples, if possible).
8. Is civil society—particularly civil society organizations working on TB, representatives of identified KPs, and groups working on gender equality and women's rights issues—officially included in any of the above coordination mechanisms?
9. Is this commitment matched with a budget to undertake the implementation of gender-responsive and transformative initiatives and services? If yes, has this budget been translated into actual initiatives and services? Please provide examples.
10. Are there indications that those involved in the TB response—including decision-makers and service providers—demonstrate awareness and knowledge of the consequences of gender inequality between men and women and/or the marginalization of some populations in the context of TB?
11. Does the pre-service curriculum of health-care workers include sensitivity training in gender, human rights, stigma and discrimination?
12. Is there an accessible system of information that documents expenditures (national and external) on gender and TB in the country?
13. Based on the type of epidemic and the affected populations groups, are the specific needs of women, girls, men, boys and transgender people considered in the budget allocated to the national TB response?
14. Does the TB response disaggregate financial data collection and reporting by sex and age?
15. Are organizations representing TB affected populations meaningfully engaged in decision-making at different stages, levels and sectors of the country TB response (including design and implementation)? (About KPs)
16. What (legal, political and financial) provisions exist for capacity building and the allocation of resources to support the participation of KPs in the TB response? (Question on KPs)
17. Do treatment services respect, promote and protect the rights of women, girls, men, boys, transgender population and KPs in a way that is independent of marital status, profession and age, or are there indications that these principles have been violated?
18. Is there a policy on addressing gender-based violence? If yes, does it address TB in sectorial programmes, initiatives or services on gender-based violence? Please explain, and indicate if the policy is multi-sectorial in nature.
19. Does the TB response address condoning attitudes of society about violence against women and gender-based violence? If yes, please explain.
20. Are there partnerships between government and partners— such as UN agencies and networks or organizations representing women's rights, patients' rights, TB affected communities, and KPs—to develop and implement programs and initiatives that address GBV and violence against women in the TB response? (About KPs)
21. What are the most common gender-related barriers and challenges to accessing integrated TB and SRHR services and commodities?

22. Does the national TB and/or gender policy guide the TB response to work with men and boys in addressing gender-related cultural norms (e.g. smoking and alcohol abuse) and expectations that may negatively impact both TB vulnerability and access/adherence to TB services?

23. Has this guidance resulted in national programmes or initiatives? If yes, please provide examples.

24. Are the specific TB risks and vulnerabilities of the elderly recognized and addressed in the national gender policy, national TB policy or the national strategic plan on TB? If so, please explain.

Thank you for your participation!



Street 278/288/95, Sangkat Boeng Keng Kang 2,
Khane Chamkamonn, Phnom Penh

Tel: 023 219 274 / 023 224 971 | Fax: 023 218 090 / 023 224 671

Email: info@cenat.gov.kh