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People-centred  
framework for  
tuberculosis  
programme planning  
and prioritization

User guide

People-centred framework for tuberculosis programme planning and prioritization - User guide  
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## Abbreviations and acronyms

CXR	chest X-ray
DHIS2	district health information system 2
DHS	demographic health survey
DR-TB	drug-resistant TB
DST	drug susceptibility testing
DS-TB	drug-susceptible TB
EMR	electronic medical record
HCW	health care worker
HEUS	health expenditure and utilization survey
KELIN	Kenya legal and ethical issues network
M&E	monitoring and evaluation
MDR/RR-TB	multidrug-resistant TB or rifampicin-resistant TB
MDR-TB	multidrug-resistant TB
MOH	ministry of health
NSP	national strategic plan
NTLDP	national TB, leprosy and lung disease programme
NTP	national TB programme
PhilSTEP 1	Philippines national strategic TB elimination plan
PPM	public-private mix
R/R	recording/reporting
SDG	sustainable development goal
TA	technical assistance
TB	tuberculosis
TIBU	treatment information from basic unit (Kenya's TB electronic recording and reporting system)
UHC	universal health coverage
USAID	United States Agency for International Development
WHO	World Health Organization
WRD	WHO-recommended rapid diagnostic
XDR	extensively drug-resistant

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Following pilot work in Kenya, the Philippines and Ghana, the framework and country case studies were presented and further discussed during an October 2018 meeting which was attended by representatives from partner agencies and several national TB programmes (NTPs). Based on feedback received as well as a further country application in Pakistan, this user guide was developed to facilitate expanded use of the framework in the context of TB programme planning and prioritization.

The writing team thanks the NTPs of Ghana, Kenya, Pakistan and the Philippines for their willingness to pilot the framework and for the feedback provided. Thanks are also due to WHO staff in regional and country offices for their assistance with pilot work and contributions to associated in-country workshops.

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## Executive summary

In 2017, tuberculosis (TB) caused an estimated 1.6 million deaths, making it the leading cause of death from a single infectious agent worldwide and the tenth cause of death overall. Of the estimated 10 million new cases of TB that occurred in 2017, only 6.4 million (64%) were diagnosed and notified to national authorities, leaving a gap of 3.6 million cases who were either diagnosed but not reported, or not diagnosed. The WHO End TB Strategy and the United Nations (UN) Agenda for Sustainable Development share the common aim of ending the TB epidemic; the former includes ambitious milestones (2020, 2025) and targets (2030, 2035) for reductions in TB cases and deaths. In September 2018, the UN held its first-ever high-level meeting on TB.

In recent years, there has been substantial improvement in the availability of quality data to track the TB epidemic and progress in response efforts, at national and global levels. This follows major investments in national surveys, improvements in surveillance and programmatic data, and other studies. However, the greater availability of data has not always resulted in systematic analysis and use of data for national strategic and operational planning for TB, or in associated prioritization for programmatic impact. In addition, evidence generation has sometimes been driven by top-down planning rather than by key programmatic priorities and questions.

In this context, WHO and partners developed the “people-centred framework for TB programme planning and prioritization” (hereafter the people-centred framework) in 2018. The framework’s aim is to facilitate a systematic approach to country-led, data-driven and people-centred planning, prioritization and decision-making.

The people-centred framework consists of three main components. First, it is based on the continuum of care. Second, it uses three major types of data: epidemiological, people-centred and system-related. Third, it is based on three planning steps: problem prioritization, root cause analysis and optimization of interventions. Use of consolidated data along the continuum of care in the three planning steps provides the basis for planning, prioritization and resource allocation using a people-centred approach.

The people-centred framework is most effectively applied during the development of a national strategic plan (NSP). However, there are other possible applications of the framework within a country’s planning and policy cycle. These include prioritization of how to use additional funding; facilitating evidence-informed discussions during national TB programme reviews and annual or quarterly review meetings; and to inform setting priorities for research.

In 2018 and early 2019, four countries piloted the use of the people-centred framework. The national tuberculosis programme (NTP) in Kenya used the framework to initiate the development process for a new NSP (2019-2023). In the Philippines, the mapping of technical assistance along the continuum of care was used to harmonize proposals for technical assistance with the country’s priorities for TB. In Ghana, the framework was used during a workshop with representation from all regions to develop tailored strategic interventions to close the gap between estimated incidence and reported notifications; results informed an application to the Global Fund for additional funding. The NTP in Pakistan used the framework to support a situational analysis prior to a national TB programme review; this helped to highlight provincial and region-specific challenges and guided the focus of the subsequent programme review.

The aim of the people-centred framework is to help countries to develop fully prioritized and budgeted NSPs based on a culture of making full use of the available data, which are aligned with national planning cycles and which provide the basis for a robust national response that can accelerate progress towards the goal of ending TB. In addition, applying the framework for other possible applications according to the country’s planning and policy cycle encourages the culture of data utilization and evidence translation into decision-making and planning.

# CHAPTER 1.

## OVERVIEW

### 1.1 Background

In 2017, tuberculosis (TB) caused an estimated 1.6 million deaths, making it the leading cause of death from a single infectious agent worldwide and the tenth cause of death overall. Of the estimated 10 million new cases of TB that occurred in 2017, only 6.4 million (64%) were diagnosed and notified to national authorities, leaving a gap of 3.6 million cases who were either diagnosed but not reported, or not diagnosed.<sup>1</sup>

The WHO End TB Strategy and the United Nations (UN) Agenda for Sustainable Development share the common aim of ending the TB epidemic; the former includes ambitious milestones (2020, 2025) and targets (2030, 2035) for reductions in TB cases and deaths. In September 2018, the UN held its first-ever high-level meeting on TB.

Ending the TB epidemic has been defined as reducing the levels of the disease burden globally to the current level of countries with a low TB burden. At the current pace of progress, with the global TB incidence rate declining by about 2% per year, the goal of ending the global TB epidemic by 2030 is unlikely to be achieved. Achieving such a dramatic impact will require major advances in universal health coverage in general, universal access to quality TB services in all countries, action on the social and economic determinants of TB, and technological breakthroughs from the research and development pipelines.

Despite the global call for radically stepping up national TB responses, funding for TB remains insufficient, particularly for low- and middle-income countries, where most people with TB live. There was an estimated gap of US\$ 3.5 billion for TB prevention, diagnosis and treatment in low- and middle-income countries in 2018. A substantial increase in funding and significant upfront investments are required to reach the targets and milestones of the End TB strategy.<sup>2</sup> In addition, it is important that national TB programmes (NTPs) make efficient use of the available resources by prioritizing high-impact interventions and promoting multisectoral engagement.

Globally, there has been concerted work to increase the availability of high-quality data and to ensure that this is used in decision-making and planning. Since the launch of the Millennium Development Goals,<sup>3</sup> progress in achieving key TB outcomes has been more intensively tracked and measured, and investment in surveillance systems, surveys and tools has resulted in a substantial increase in the availability of national and subnational data.<sup>4</sup> This has been guided by the WHO Global Task Force on TB Impact Measurement, which also promotes the analysis and use of TB data at country level.<sup>5</sup>

1. Global tuberculosis report 2018. Geneva: World Health Organization; 2018. ([https://www.who.int/tb/publications/global\\_report/en/](https://www.who.int/tb/publications/global_report/en/), accessed 8 July 2019).
2. The Global Plan to End TB, 2016–2020. Geneva: Stop TB Partnership; World Health Organization; 2015.
3. United Nations Millennium Declaration. New York: United Nations, General Assembly; 2000. A/RES/55/2. (<http://www.un.org/millennium/declaration/ares552e.pdf>, accessed 8 July 2019).
4. The millennium development goals report 2015. New York: United Nations; 2015. ([http://www.un.org/millenniumgoals/2015\\_MDG\\_Report/pdf/MDG%202015%20rev%20\(July%2015\).pdf](http://www.un.org/millenniumgoals/2015_MDG_Report/pdf/MDG%202015%20rev%20(July%2015).pdf), accessed 8 July 2019).
5. World Health Organization Global Task Force on TB Impact Measurement. See: [https://www.who.int/tb/areas-of-work/monitoring-evaluation/impact\\_measurement\\_taskforce/en/](https://www.who.int/tb/areas-of-work/monitoring-evaluation/impact_measurement_taskforce/en/)

These developments provide the basis for greater use of data by NTPs to inform strategic planning for TB. However, the increasing availability of data on the epidemiology of TB, patient behaviour and health system capacity have not been translated consistently into evidence-based planning and decision-making to increase the impact of programmes. For example, findings on patterns of patient care-seeking behaviour and health system capacity<sup>1</sup> have not yet been routinely incorporated into planning and priority-setting processes. In addition, there has been no systematic, comprehensive approach to extracting data relevant for programmes and incorporating them into planning that puts people at the heart of service delivery. Furthermore, evidence generation has sometimes been driven by top-down planning rather than by key programmatic priorities and questions.

## 1.2 Objectives

The “people-centred framework for TB programme planning and prioritization” (hereafter the people-centred framework) was developed in 2018. Its aim is to facilitate a systematic approach to country-led, data-driven and people-centred planning, prioritization and decision-making.

This approach includes three major components:

- 1. Evidence is reviewed and analysed with a people-centred perspective along the continuum of care.** This is to ensure that priority gaps and opportunities are identified according to community and patient perspectives, as a basis for designing and providing high-quality services for TB prevention, diagnosis and care that are accessible to all who need them.
- 2. TB programme planning is based on data and priorities are set to optimize the impact of investments.** Extraction and review of all relevant data for use in planning should help countries to identify programmatic priorities and to design effective, evidence-based interventions.
- 3. Evidence is generated according to programme needs.** Countries identify programmatic gaps and generate/compile evidence that will help them to decide how best to allocate resources and to use data to continuously and critically assess and improve their work.

## 1.3 Purpose of the user guide and target readership

The purpose of this user guide is to clearly describe and explain the concept of the people-centred framework and to provide practical guidance on how it can be applied to optimize the use of data for TB programme planning and prioritization. This includes consolidation of available data along the continuum of care to prioritize problems, how to conduct root cause analysis, and the optimization of strategic interventions to address root causes and priority problems.

[Chapter 2](#) explains the framework; [Chapter 3](#) describes six contexts in which it is useful to apply the framework. [Annex 1](#) provides three country case studies in which the framework was applied in different contexts (national strategic plan [NSP] development, an application for additional funding for an existing NSP, and prioritization of technical assistance). [Annex 2](#) explains how to consolidate and map the data required to use the framework. [Annex 3](#) provides details about how the content and organization of workshops in which the framework can be applied.

1. Examples include service availability readiness assessments, health facility master lists, catastrophic cost surveys and national TB prevalence surveys.



The target users of the user guide are NTPs and their stakeholders and partners. In using the framework, NTPs are encouraged to involve colleagues working at subnational level, other relevant programmes in the public sector such as those responsible for HIV and noncommunicable diseases, national and international stakeholders and partners, the private sector, nongovernmental and civil society organizations, and representatives of communities and TB patients. This is a way to promote inclusive dialogue and collaborative action towards achieving the milestones and targets of the End TB Strategy, and the goal of ending the TB epidemic.

The user guide is complementary to WHO's *Toolkit to develop a national strategic plan for TB prevention, care and control: methodology on how to develop a national strategic plan*<sup>1</sup> and the *Compendium of data and evidence for use in TB planning and programming*.<sup>2</sup> It has been informed by pilot-testing in four countries: Ghana, Kenya, the Philippines and Pakistan.

1. Toolkit to develop a national strategic plan for TB prevention, care and control: methodology on how to develop a national strategic plan. Geneva: World Health Organization; 2015. [https://apps.who.int/iris/bitstream/handle/10665/153811/9789241507974\\_eng.pdf?sequence=1](https://apps.who.int/iris/bitstream/handle/10665/153811/9789241507974_eng.pdf?sequence=1)
2. Compendium of data and evidence for use in TB planning and programming. Geneva: World Health Organization; 2018 (Draft)



# CHAPTER 2.

## THE PEOPLE-CENTRED FRAMEWORK FOR TB PROGRAMME PLANNING AND PRIORITIZATION

The people-centred framework provides a structure for organizing data for decision-making and planning in an NTP. The framework has three main components: the continuum of care; the use of three major types of data - epidemiological, people-centred and system-related; and three planning steps: problem prioritization, root cause analysis and optimization of interventions (Fig. 1).

**Fig. 1. Components of the people-centred framework**



Along the **care continuum**



**Three** types of data



Epidemiological data

+



People-centred data

+

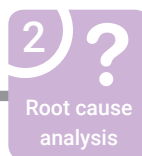


System-related data

**Three** planning steps



What are the biggest problems?



Why are these happening?



What are priority solutions to optimize impact?

Implement the best solutions



## 2.1 The continuum of care

The continuum of care provides the structure for extracting, reviewing and mapping relevant data, prioritization of problems that need to be addressed and analysis of their root causes, and identification of priority interventions to address root causes.

The structure of the continuum is based on the TB “onion” model,<sup>1</sup> in which the needs of people with TB or at risk of developing TB are assessed systematically, covering people who do not access the health care system, people with TB who seek health care but are either not diagnosed or not notified, and people with TB who are notified but not successfully treated. Fig. 2 illustrates how data, usually from national TB or health system surveys and assessments of TB surveillance systems, is consolidated along the continuum of care (further details are provided in Annex 2).

**Fig. 2. Conceptual framework for consolidation and mapping of data along the continuum of care**

	People not accessing the health system			People with TB seeking care but either not diagnosed or not notified			People notified as a TB case but not successfully treated		
	People with TB infection, high-risk for disease	Asymptomatic disease, not seeking care	Symptomatic disease, not seeking care	Presenting to health facilities, not diagnosed	Diagnosed by non-NTP, not notified	Diagnosed by NTP, not notified	Diagnosed, not started on treatment	Notified, not successfully treated	Successfully treated, not relapse free
Epidemiological data									
People-centred data									
System-related data									

Review of data along the continuum of care provides a broad overview of the current situation. The approach is also in accordance with the concept of integrated patient-centred care and prevention, as envisioned in the End TB Strategy.<sup>2</sup> Application of this approach is expected to reveal gaps in the availability and accessibility of diagnostic, preventive and treatment services that correspond to patient care-seeking behaviour and needs, which in turn inform discussions to identify ways of improving TB prevention and care.




1. Assessment of surveillance data – workbook. Geneva: World Health Organization; 2012. ([http://www.who.int/tb/advisory\\_bodies/impact\\_measurement\\_taskforce/resources\\_documents/workbook.pdf](http://www.who.int/tb/advisory_bodies/impact_measurement_taskforce/resources_documents/workbook.pdf), accessed 5 July 2019).
2. The End TB Strategy: Global strategy and targets for tuberculosis prevention, care and control after 2015. Geneva: World Health Organization; 2014. ([https://www.who.int/tb/strategy/End\\_TB\\_Strategy.pdf?ua=1](https://www.who.int/tb/strategy/End_TB_Strategy.pdf?ua=1), accessed 5 July 2019).



## 2.2 Three types of data

To promote holistic people-centred analysis and discussion, the people-centred framework uses three major types of data (Table 1).

**Table 1. Summary of three types of data used in the people-centred framework**

 <b>Epidemiological data</b> <i>"Know your epidemic"</i>	<p>This includes data about the burden of TB disease, including its distribution (such as by age and sex) and trends, for both drug-susceptible TB (DS-TB) and drug-resistant TB (DR-TB).</p> <p><u>Examples of sources of data:</u> TB epidemiological reviews, national surveillance systems, global TB reports, national surveys of TB prevalence and drug resistance, national TB inventory studies, mortality studies and national vital registration systems.</p>
 <b>People-centred data</b> <i>"Know your people"</i>	<p>This includes the risk profiles (such as age, sex, socioeconomic status, HIV status), knowledge, perceptions, expectations and behaviour of people with TB or at risk of developing TB.</p> <p><u>Examples of sources of data:</u> Adherence studies, patient pathway analysis, national surveys of TB prevalence, demographic health surveys (DHS), national surveys of costs faced by TB patients and their households, surveys on nutrition and other risk factors, health expenditure and utilization surveys (HEUSs) and World Bank data on economic and poverty.</p>
 <b>System-related data</b> <i>"Know your system"</i>	<p>This includes the capacity, performance, limitations and distribution of health and social services, both TB-specific and general.</p> <p><u>Examples of source of data:</u> Health system reviews, service availability and readiness assessment mapping, HEUSs, patient pathway analysis and national TB inventory studies.</p>

As illustrated in Table 1, some sources may provide more than one type of data. For example, recent national TB prevalence surveys can be used not only to estimate the burden of TB but also to assess the health care-seeking behaviour of people with TB or symptoms suggestive of TB; HEUSs provide data not only on health service utilization but also about out-of-pocket spending and the health care-seeking behaviour of households.

There have been previous efforts to use these three types of data for programme planning and decision-making. For example:

- A national TB epidemiological review provides a comprehensive overview of the epidemiology of TB and programmatic situation based on TB surveillance systems and data, national and subnational surveys of TB and more general health system and non-health data.
- Patient pathway analysis can be used to assess the extent to which patient care-seeking behaviour and the availability of TB diagnostic and treatment services are aligned. It also uses three types of data, since it requires data on surveillance, care-seeking behaviour and the availability of diagnostic and treatment services.

- A national survey of costs faced by TB patients and their households (hereafter TB patient cost survey) is used to measure the economic burden on TB patients and their households associated with accessing TB services and staying in care. It requires a situation assessment prior to the implementation of the survey, which includes gathering sufficient information about TB epidemiology, health financing, health insurance programmes, health care fee structures, health care delivery models and social protection schemes. The findings from such surveys demonstrate the economic barriers to care, issues related to health and social services, including social protection, and how people with TB cope with economic hardship during and after their illness.

Holistic understanding of the TB situation, from the viewpoints of epidemiology, people and systems, can form the basis for discussions to design and provide integrated health care solutions that meet people's needs.



## 2.3 Three planning steps

The third element of the people-centred framework is the three planning steps: problem prioritization, root cause analysis and optimization of interventions, which are summarized below.



1. **Problem prioritization:** The first step is to assess the magnitude and scope of problems by systematically reviewing existing data along the continuum of care, to identify the **priority focus areas**. Assessment of data from the perspectives of epidemiology, people and systems along the care continuum can help to identify key gaps that limit progress in accessing, diagnosing and treating all people with TB or at risk of developing TB. Priorities are ideally set at both national and subnational levels, as the distribution of TB disease, the populations at risk, TB services and socioeconomic factors are heterogeneous, with substantial subnational variation.<sup>1</sup>



2. **Root cause analysis:** Once the main programmatic priorities have been identified, including missed opportunities to reach people with TB or at risk of developing TB, the root causes of the problems should be analysed. Published and official data, locally disaggregated data, the “grey” literature and expert opinion can build a body of evidence to explore why certain patterns emerge, whether any positive trends could be sustained or problem areas to be addressed. For each priority problem identified, potential **areas of action** and how these vary at subnational level can be assessed.



3. **Strategic intervention optimization:** The identified **potential areas of action** inform the focus for **strategic interventions**. These will likely include multisectoral, locally differentiated responses indicated by contextualized root cause analysis. The priorities set in the first step do not preclude differentiated responses but allow programmes to assess their level of effort and intervention budgets against their identified priorities. In the end, priority problems and strategic interventions will be aligned with the evidence, with a commensurate budget.

Detailed explanations of the three steps are provided in [Annex 3](#).

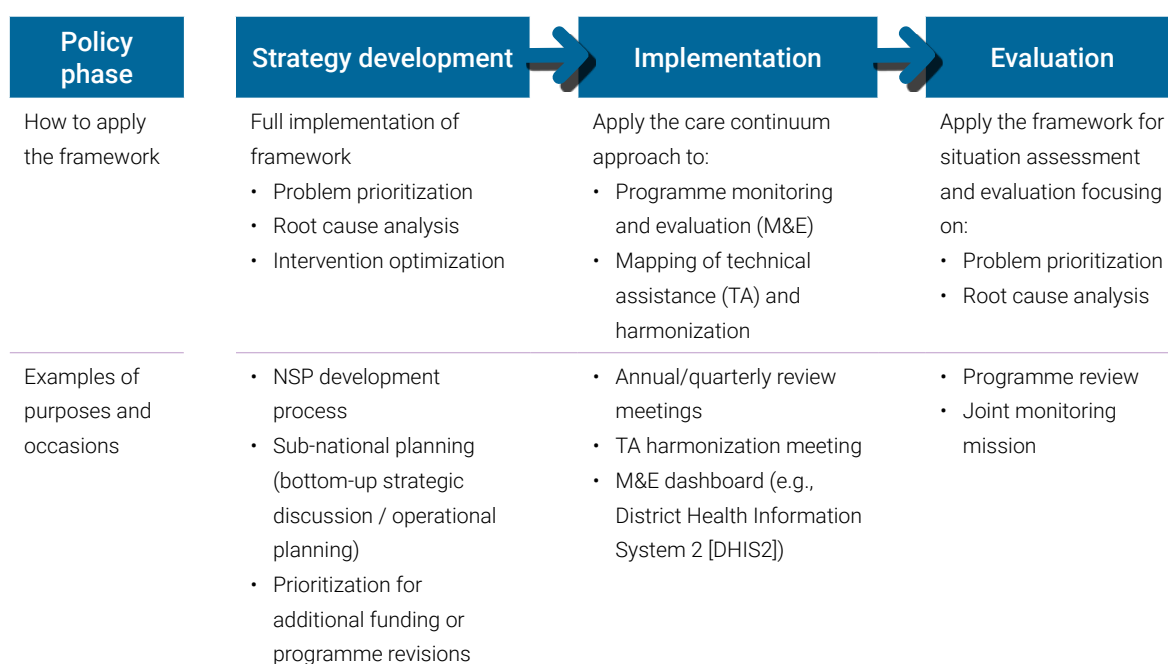
1. TB REACH, TB CARE and Challenge TB case-finding monitoring and evaluation, experiences and lessons learned provide much of the evidence base.

# CHAPTER 3.

## APPLICATION OF THE PEOPLE-CENTRED FRAMEWORK FOR TB PROGRAMME PLANNING AND PRIORITIZATION

To optimize use of data for TB programme planning, application of the people-centred framework should be aligned with the purpose and timing of the country’s planning and policy cycle. The framework is most effectively applied during NSP development; however, countries that are in the implementation phase of the NSP can use the framework for other purposes. Fig. 3 lists possible applications of the framework.

**Fig. 3. Suggested applications of the people-centred framework**



The following subsections provide six major examples of situations in which the people-centred framework can be used.

## 3.1 Preparation of a national strategic plan

The NSP defines national TB policies and priorities, guides the country's work against TB during a specified period (usually five years) and is in line with both national health policies and the global TB control strategy. Interventions and initiatives to reduce the burden of TB in a country are therefore guided by reference to the NSP. A robust NSP is important for attaining the ambitious goal of ending the TB epidemic.

Use of the people-centred framework during preparation of an NSP may help a country to use the relevant data in an organized, people-centred manner for planning and programming, thus ensuring an evidence-based NSP. The framework can be applied during a workshop attended by all relevant stakeholders and partners early in preparation of the NSP. This is to ensure that national data as well as expert opinion are considered in identifying priorities and gaps, and that they are used to analyse the root causes of problems as the basis for setting priorities for interventions. Prioritization during each planning step may help countries to decide on strategies, interventions and activities that will optimize the impact of investments, particularly in the context of funding gaps for NSPs. The Kenya example of using the framework in the context of NSP preparation is described in [Annex 1](#).

## 3.2 Prioritization for additional funding or programme revisions

In many low- and middle-income countries, both domestic and external funding for TB programmes is limited. Obtaining external funding requires a strong proposal to convince donors that the allocated grant will be used efficiently and effectively with the greatest impact. As funding requests should be based on the NSP, a country may have to review its plans and identify unfunded priorities. If programmatic gaps and strategic interventions in the NSP have not yet been prioritized, the people-centred framework can be helpful in this regard. With consolidated data, a country can quickly review programmatic gaps along the continuum of care and design and prioritize interventions. An example of an application of the framework in this context from Ghana is provided in [Annex 1](#).

## 3.3 National TB programme review

National TB programme reviews are conducted periodically to assess progress in achieving the goals, objectives and targets specified in the NSP. The review usually consists of three phases: planning and preparation; conducting the review in the field; and writing and finalizing the report, which should include recommendations to improve the managerial and technical performance of the programme.<sup>1</sup> The people-centred framework can be used during preparation of the review for prioritizing problems and conducting root cause analyses to identify gaps and domains for action, thus using the framework to assess the situation. The results of this exercise can inform the focus of field visits.

During field visits, the review team can validate the priority gaps and domains for action identified during the situation assessment and identify the best ways to address the gaps. The findings of field visits will allow the team to quickly review and refine the programmatic gaps and actions domains identified during the situation assessment and move to the third step of planning. Optimization of interventions should be based on standard recommended interventions along the continuum of care and best practices, including the findings of field visits. Applying the framework to support a programme review can help to ensure that recommendations are evidence-based, prioritized and people-centred.

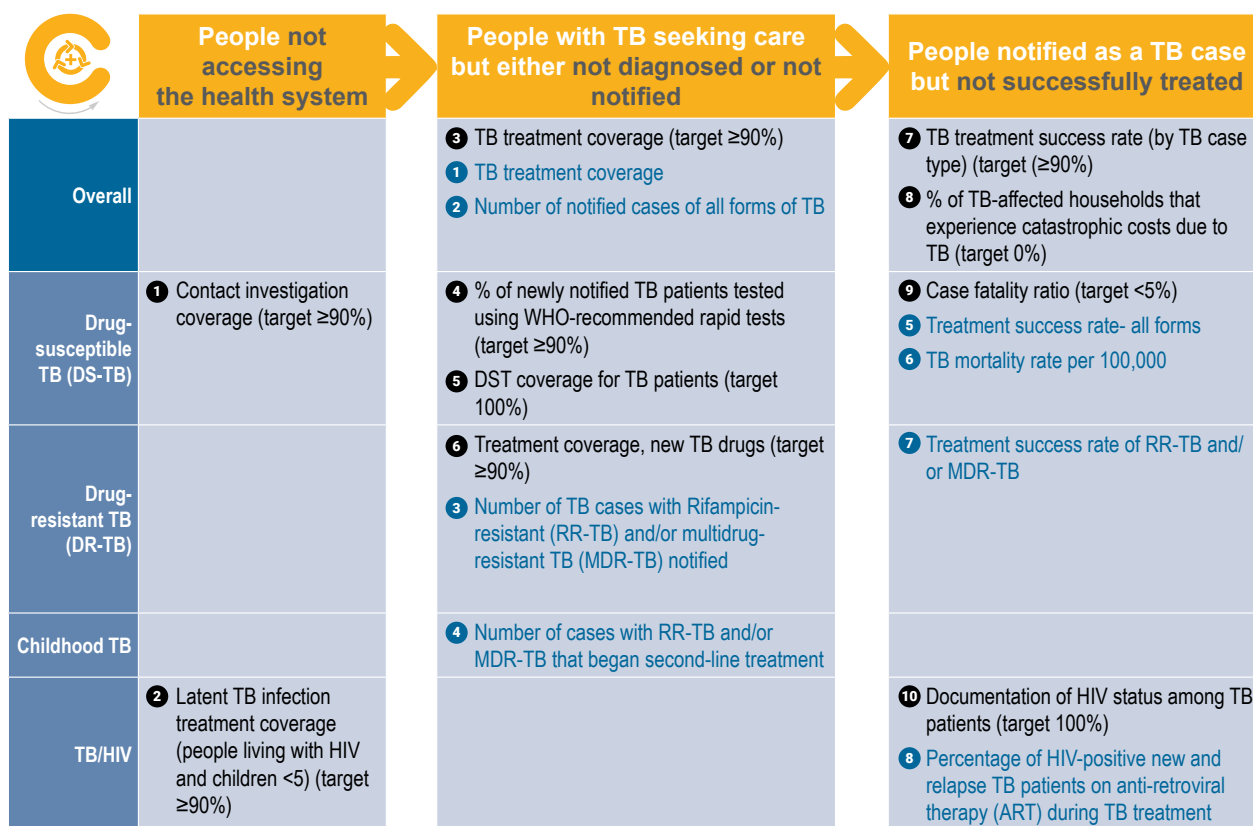
1. Framework for conducting reviews of tuberculosis programmes. Geneva: World Health Organization; 2014. (<https://www.who.int/tb/publications/framework-tb-programme-reviews/en/>, accessed 5 July 2019).



### 3.4 Annual/quarterly review meetings

The continuum of care component of the people-centred framework can be used to monitor programme performance at regular (e.g. annual or quarterly) NTP review meetings to promote discussion about programme performance from the perspective of integrated, people-centred care. With the NSP as a basis, the country can monitor progress by mapping programme indicators along the continuum of care. This is illustrated in Fig. 4, which shows a mapping along the continuum of care of the WHO list of top ten operational indicators for monitoring implementation of the End TB Strategy as well as the mandatory indicators of the Global Fund. Other priority indicators included in an NSP can be mapped in the same way. Mapping of disaggregated data, for example for subpopulations or geographical areas, can be used in monitoring and evaluation to ensure an adapted response, particularly in countries with decentralized systems of government.

**Fig. 4. Example of a mapping of indicators along the continuum of care**



① WHO Top 10 TB indicators      ② Global Fund TB mandatory indicators

Mapping of indicators during monitoring and periodic evaluation of programme performance will help countries to identify problems that prevent achievement of planned targets and facilitate prompt, effective and efficient changes to policy, strategy and interventions.

### 3.5 Harmonization of support for the NTP

In order to minimize duplication of work, implementation of NSP activities must be harmonized with technical assistance provided by other stakeholders and partners. The continuum of care element of the people-centred framework can be used to support this harmonization process. By mapping technical assistance along the continuum of care, countries can identify areas of overlap or insufficient support. Such mapping can be done at a meeting or in a workshop, when overlapping support can be identified and resolved immediately, and the NTP may directly request additional

support. The roles of the NTP, other stakeholders and partners can be clarified during such meetings, resulting in synergies and more efficient and effective work to achieve the country's TB targets. An example of how the framework was used to help to harmonize support for the NTP in the Philippines is provided in [Annex 1](#).

## 3.6 Setting research priorities and routine data collection

The people-centred framework can be used to facilitate discussions about national research priorities that are aligned with the needs of the NTP. When the NTP, stakeholders and partners review and analyse data along the continuum of care, they can assess the quality of the data and determine whether it is sufficient to identify programmatic gaps, to find the root causes of gaps, to optimize interventions and to set priorities. Identifying these gaps stimulates data collection to expand body of evidence for future NTP policies. Furthermore, setting research priorities that directly respond to gaps identified by national stakeholders will make it more likely that research findings will be used to inform policy. This approach can also help to ensure the efficient use of resources and optimize the impact of investments.

# Annex 1.

## CASE STUDIES

### A1.1. Adaptation of the people-centred framework for TB programme planning and prioritization: the Philippines experience

The national TB prevalence survey in 2016 indicated that the estimated prevalence of TB was almost 2.5 times higher than that estimated by WHO prior to the survey. The estimated incidence was revised upwards, from 322 to 554 per 100 000 population. Of an estimated 573 000 new cases of TB in 2016, only 345 144 (60%) were notified to the NTP, indicating that 230 000 were underdiagnosed or underreported. Furthermore, based on a comparison of results from the 2016 prevalence survey with those from the previous survey in 2007, TB incidence per 100 000 population was assessed to have been stable. A plausible explanation included persistent gaps in case detection. In 2016, Philippines was included in the WHO lists of 30 high-burden countries for TB and DR-TB.

The Philippines national strategic TB elimination plan (PhilSTEP 1) for the period 2017–2022 set out the major programmatic challenges and the strategies for reaching medium-term targets (for 2022) on the path towards TB elimination. These included decreasing the number of TB deaths by 50% from 22 000 to 11 000 between 2017 and 2022, decreasing the TB incidence rate by 23% (from 554 per 100 000 population per year to 427 per 100 000 population per year) and reducing the proportion of TB patients and their households facing catastrophic costs as a result of TB disease from 35% in 2016 to 0% by 2022. Since various stakeholders and partners support these activities, the NTP organizes an annual meeting to harmonize technical assistance according to the NTP's programmes and activities.

#### *Use of the people-centred framework for prioritizing technical assistance*

In 2017, 66 of 92 (72%) proposals for technical assistance were completed. In this context, the NTP considered it necessary to prioritize the technical assistance to be provided in 2018. They decided to use the people-centred framework for this purpose during the meeting.

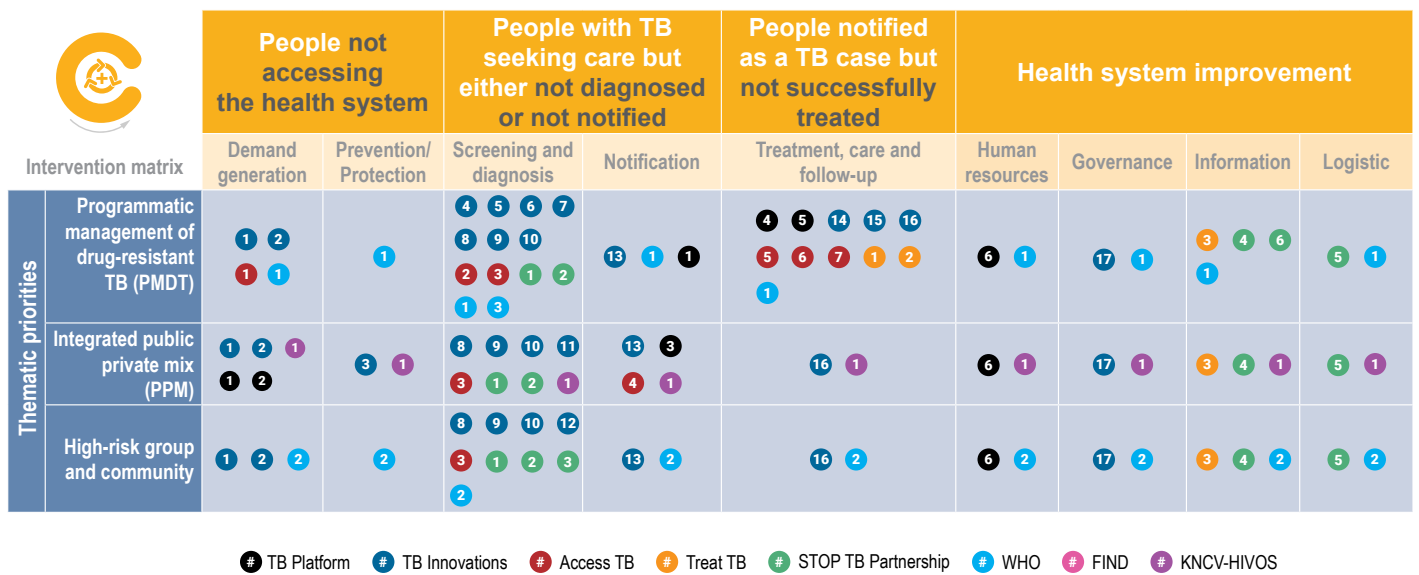
During the first exercise, participants mapped more than 100 technical assistance proposals according to the seven strategies outlined in the PhilSTEP 1. Participants identified NTP strategies for which there was no technical assistance and also identified areas of overlap. These overlaps were discussed to determine whether the agencies providing technical assistance were in a lead or supporting role and to increase collaboration among them.

To further determine priorities based on a people-centred framework, proposals for technical assistance were mapped along the continuum of care. The NTP and meeting organizers adjusted the care continuum matrix and added health system improvement as a category, to bring together technical assistance related to human resources, governance, information and logistics. [Fig. A1.1](#) shows the distribution of technical assistance along the continuum of care and the thematic priorities. This mapping indicated that, along the continuum of care, most technical assistance was for improving diagnosis, while among the thematic priorities more technical assistance was considered necessary to support the national response to DR-TB.

Since about 40% of all cases of TB and 85% of DR-TB cases are underdiagnosed or underreported, technical assistance for activities that will contribute directly to better case detection and case notification of DS-TB and DR-TB were prioritized, comprising proposals to support demand generation, diagnosis and notification. Technical assistance that could be provided before the end of December 2018 was also prioritized.

Of over 100 proposals for technical assistance, 41 were prioritized for implementation within six months. The priorities included assistance for improving the diagnostic algorithm, optimizing the diagnostic network (with development of a sputum transportation system), improving detection and management of cases of DR-TB, strengthening monitoring and evaluation, mandatory notification and strengthening of linkages between the public and private sectors (public-private mix [PPM]). This was consistent with the country's priority of identifying cases of TB and particularly DR-TB.

**Fig. A1.1. Populated technical assistance along the continuum of care**



### Other uses of the people-centred framework

The WHO Country Office for the Philippines took a leading role in the development of a dashboard for subnational profiles in which summaries of regional data could be analysed and visualised. As in other countries, the Philippines has conducted various national TB surveys, assessments and analyses, including national surveys of TB prevalence and drug resistance, a TB patient cost survey, a TB epidemiological review and a patient pathway analysis. Together with an improved TB surveillance system, these efforts have resulted in the extensive availability of national and subnational data to support evidence-based decision-making and programme planning.

The dashboard has been organised in alignment with the framework, where data are outlined along the continuum of care and according to the three planning steps of the framework. A preliminary draft of the dashboard was shared during the meeting to harmonize technical assistance. This demonstrated regional variations in the TB burden and in performance, different estimates of the numbers of TB cases missed and misalignment between the initial care-seeking behaviour of people with TB, and the availability of diagnostic and treatment services. The dashboard could be used in discussions related to geographical prioritization, including the selection of region-specific target populations, the design of region-specific interventions to reach people with TB and identification of stakeholders and partners to address barriers in specific regions.

## Conclusion

Use of the people-centred framework had two benefits. First, it situated the proposed technical assistance within the continuum of care, which facilitated people-centred prioritization. Second, it helped to structure the subnational profile dashboard, which could in turn facilitate strategic discussion on geographical prioritization for differentiated interventions and decision-making. Use of the framework for both purposes demonstrated its flexibility and usefulness for countries. Introduction of the framework, the subnational profiles dashboard and continuous support from stakeholders and partners should promote a culture of data generation and use in national and subnational planning cycles in the Philippines.

## A1.2. Use of the people-centred framework to support Global Fund funding application: the experience of Ghana

The Ghana NTP prepared a national TB health sector strategic plan for 2015–2020, with targets to reduce the prevalence of TB by 20% by 2020 compared with levels in 2013 and to reduce the TB mortality rate by 35% during the same period. The main programmatic gaps were treatment coverage (in terms of the ratio of notifications of new cases to estimated incidence), insufficient laboratory capacity for the bacteriological confirmation of TB cases, adverse treatment outcomes, weak programmatic management and monitoring and evaluation systems, and suboptimal collaboration with civil society and the private sector.

As in several other countries, the national TB prevalence survey in 2016 resulted in an increased estimate of the burden of TB disease in Ghana and an associated reduction in the estimated treatment coverage (from 88% to 33% in 2014). While the results of a national TB epidemiological review in 2017 indicated potential underreporting of detected cases in both the public and the private sector, a patient pathway analysis in 2017 showed that the delivery of services needed to be better aligned with the initial health-seeking behaviour of people with TB to improve access to TB diagnosis and treatment.

In 2018, the Ghana NTP was due to receive an additional US\$ 3.2 million from the Global Fund, which would give the country an opportunity to implement high-impact interventions. The results of the national TB prevalence survey, the national TB epidemiological review, the patient pathway analysis and other data were expected to be used as the basis for strategic interventions to close diagnostic and treatment gaps for people with TB. To plan tailored interventions, the NTP decided to involve regional representatives in a three day workshop to design operational plans using the people-centred framework.

The workshop was attended by 76 participants, including representatives from all of country's 10 regions, civil society, the prison department, the Global Fund, the country coordinating mechanism (CCM) for the Global Fund, the United States Agency for International Development (USAID) and WHO. Throughout the workshop, participants were grouped by region, with the corresponding national focal point facilitating the group discussion. Two regions with similar geographical characteristics or TB epidemiology worked together as one group. Discussions were held not only within but among regions.

The workshop was structured according to the three planning steps of the people-centred framework. However, to ensure time to prepare an operational plan, which was the main objective of the workshop, the application of the framework was adjusted. In the first session, the TB situation in Ghana was assessed at national and subnational levels, resulting in region-specific, evidence-

based problem prioritization. Based on the prioritized problems, the second session focused on the identification and prioritization of interventions with an emphasis on finding people with TB who were not accessing health care or who were accessing services but not being diagnosed or reported. The last session focused on how to operationalize the proposed interventions.


### Region-specific problem prioritization

Although gaps were clearly identified in the NSP, subnational areas faced distinct programmatic challenges. The national TB epidemiological review of 2017 and results from both the patient cost survey and patient pathway analysis provided an opportunity to consolidate and make better use of subnational data.

In preparation for the workshop, 10 national monitoring and evaluation focal points mapped data along the continuum of care for the 10 regions of Ghana. During the process, they clarified data and interpretation, resulting in better understanding of the TB situation while also enhancing discussions during the workshop.

During the workshop, the regional groups used the consolidated data to identify and prioritize programmatic problems, as shown in [Table A1.1](#). Low treatment coverage was commonly prioritized. Some regions also mentioned problems in diagnosing TB in children and certain special populations, inadequate testing for TB among people with HIV and testing for HIV among people with TB, low coverage of antiretroviral therapy among patients with TB/HIV coinfection, and poor TB treatment outcomes, particularly among TB patients coinfecting with HIV.

**Table A1.1 Priority problems by region**

	People not accessing the health system	People with TB seeking care but not diagnosed	People with TB diagnosed but not notified	People notified as a TB case but not successfully treated
Ashanti	43% of TB patients seek initial care at the pharmacy where there is no diagnostic capacity			
Volta	25% of patients seek care at the informal private sector where there is no diagnostic capacity			
Eastern		Inadequate TB diagnostic facilities in the public sector (health centers)		
Greater Accra		Inadequate diagnostics in the region, only 5% (54/1,044) facilities with capacity to diagnose TB		
Western		Low diagnostic capacity at the health centers		
Upper East		Low capacity of clinicians and expansion of diagnostic facilities		
Upper West		Low index of suspicion by clinicians		
Northern		Inadequate diagnostic capacity at level 0 & 1 facilities where 32% seek initial care		
Central	25% of patients seek care at the informal private sector where there is no diagnostic capacity	Inadequate diagnostic capacity at level 0 & 1 facilities where 27% seek initial care		
Brong Ahafo	Low case detection (pediatric, high risk groups e.g. prisoners, pupils & students, etc.)			

## Optimization of interventions

Once the gaps had been prioritized, the regions identified potential interventions according to WHO recommended policies and interventions, the recommendations of the 2017 TB epidemiological review and the potential role of civil society organizations. The results of intensive case finding (TB screening) activities at both national and regional levels were assessed in detail. Attrition in the patient screening–treatment cascade was acknowledged, and challenges to implementation were identified. Some consistent findings were found at both national and regional levels, including high yields of TB screening in hospital wards and some HIV clinics. The groups were also asked to consider these findings in planning interventions and detailed activities.

Table A1.2 lists the proposed region-specific interventions. Some interventions were proposed in almost all regions, such as engagement of the informal private sector, strengthening referral and sputum transportation systems, and strengthening and expanding intensive case finding activities. The proposed interventions were considered likely to increase levels of TB case detection and treatment and were therefore aligned with the main prioritized problem.

**Table A1.2 Summary of region-specific prioritized interventions, Ghana**

Region	Informal private sector engagement	TB screening introduction	Targeted screening	TB diagnostic services expansion	Referral and sputum transport system improvement	Intensive case finding strengthening	Intensive case finding expansion	Contact investigation improvement	Quality of care improvement
Ashanti	✓	✓	✓		✓	✓	✓		
Volta	✓		✓		✓	✓	✓		✓
Eastern	✓			✓	✓	✓	✓		
Greater Accra	✓	✓	✓	✓	✓	✓	✓		
Western	✓		✓	✓	✓	✓	✓		
Upper East				✓	✓	✓	✓		
Upper West				✓	✓	✓	✓	✓	✓
Northern	✓				✓	✓	✓		
Central	✓		✓			✓	✓	✓	✓
Brong Ahafo	✓	✓	✓	✓	✓	✓	✓		✓

## Operationalization

On the last day of the workshop, the interventions proposed at regional level were translated into a workplan, with detailed activities, outputs, roles, implementation level and timelines completed by all regions. The regional plans were then compiled into a national budgeted action plan.

## Conclusion

The participatory and evidence-based discussions at the workshop resulted in tailored strategic interventions. Involvement of the national monitoring and evaluation focal points during the preparatory phase was perceived to be important both for the discussions during the workshop and for encouraging future use of data for programme planning at both national and regional levels.

Overall, the participants welcomed the use of the people-centred framework as a method for achieving the objectives of the workshop. The approach ensured better understanding of regional data and enhanced discussions. The regional representatives expressed appreciation for the participatory nature of the workshop, which allowed them to identify gaps in their regional programmes and to propose solutions and interventions.

This use of the framework demonstrated an opportunity to promote evidence-based decision-making and programme planning at subnational level. The workshop was part of the pilot work to test use of the people-centred framework and was the first subnational application of it.

### A1.3. People-centred framework for TB programme planning and prioritization in action: The Kenyan NTP experience

In 2014, when the country prepared its NSP for TB, leprosy and lung health (2015–2018), the national tuberculosis, leprosy and lung disease programme (NTLDP) conducted planning over several months, involving all relevant stakeholders. The resulting NSP was aspirational but was not fully funded. Less than a year later, planning had to be repeated to prioritize domestic funding and to make a request to the Global Fund for additional funding.

When the NTLDP initiated the preparation of its NSP for 2019–2023, the planning secretariat decided to use the people-centred framework. The continuum of care was used to review data, identify and prioritize programmatic gaps, analyse their root causes and design a set of priority interventions. A workshop was held for this purpose.

#### *Day 1: Problem prioritization*

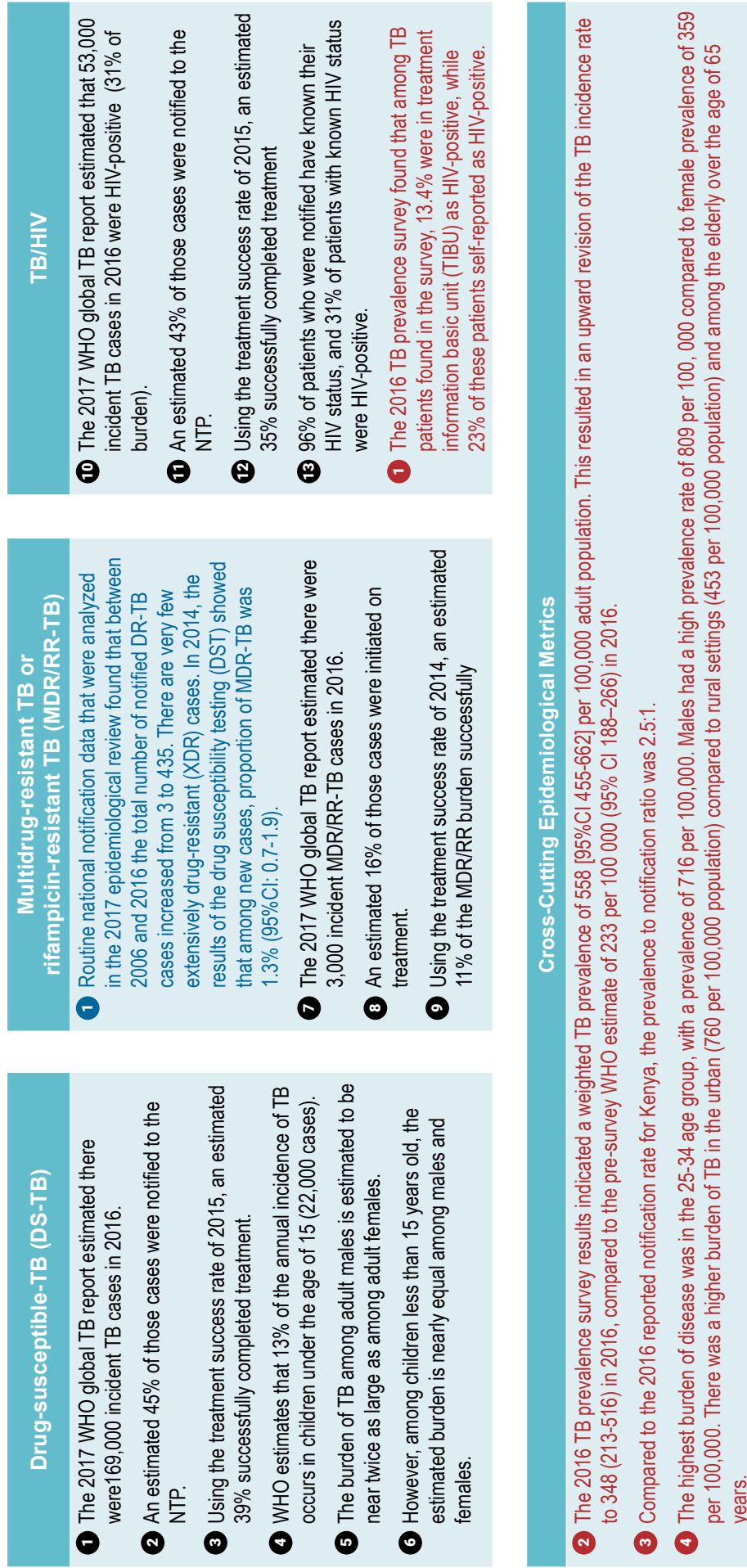
Before the workshop, a monitoring and evaluation team consolidated key findings from recent studies, reports, reviews and analysis. These included TB-specific data from a national TB prevalence survey, the WHO Global TB report, a patient pathway analysis, a national TB epidemiological review and a national TB inventory study to assess the level of underreporting of detected TB cases; and data from more general surveys, such as a DHS and a national survey of health expenditure and utilization.

Fig. A1.2 to Fig. A1.8 show data mapped according to an epidemiological profile and along the continuum of care. This consolidated data was used to support the discussions during the workshop.





**Fig. A1.2. Example of consolidated data for epidemiological profile, Kenya**







**Fig. A1.4. Example of consolidated data for the second block of the framework ‘People with TB seeking care but either not diagnosed or not notified’ for problem prioritization session, Kenya**



**Presenting to health facilities, not diagnosed**

- 1 A 2017 patient-pathway analysis found that only 43% of people who seek care are likely to visit a health facility with capacity to diagnose DS-TB on their first contact with the health care system. Even fewer are likely to receive a diagnosis of DR-TB on their first contact.
- 1 The 2016 TB prevalence survey found that among the prevalent cases who had sought prior care for their respiratory symptoms, 80% had not been diagnosed with TB at the time of the survey.

**Diagnosed, not notified**

- 1 The 2016 inventory study to measure underreporting of TB found that the highest level of underreporting was in the Nairobi region (33%), while the lowest was in the north-eastern region (12%).
- 2 The prevalence survey in 2016 found that the gap between prevalence and notification rates was highest among males, those aged 25-34 years, and the older age group of 65 years and above.
- 1 Routine national notification data in 2016 that were analyzed in the 2017 epidemiological review found the ratio of children under 5 to children aged 5-14 years was 1.0:1.0. This was lower than the expected range of 1.5-3:1 indicating underdiagnosis and/or underreporting in this age group.

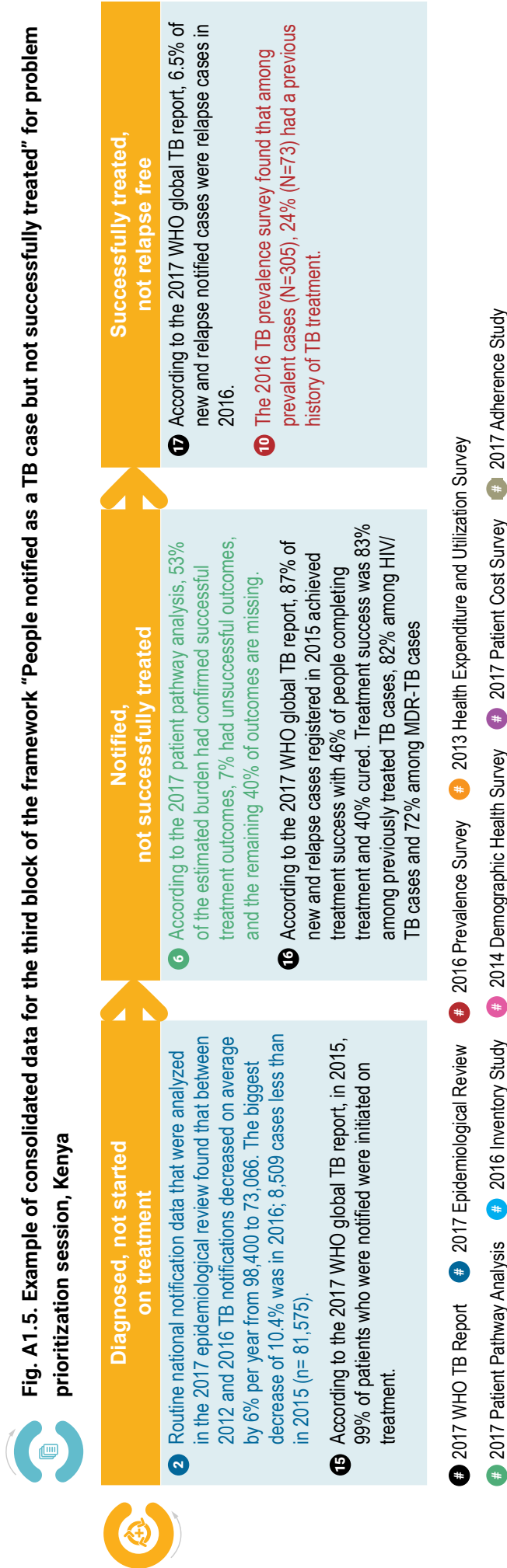
**Diagnosed by non-NTP, not notified**

- 2 A patient-pathway analysis in 2017 found that diagnostic capacity exists in the private sector. However, notifications from the private sector only account for 12% of estimated incidence.
- 3 The analysis found that 41% of people initiate their care-seeking journey in private (formal or informal) facilities.
- 2 In multivariable analysis of the 2016 inventory study, unreported cases were significantly more likely to have been diagnosed at a private facility (aOR 2.6, 95%CI 1.8–3.9)

**Diagnosed by NTP, not notified**

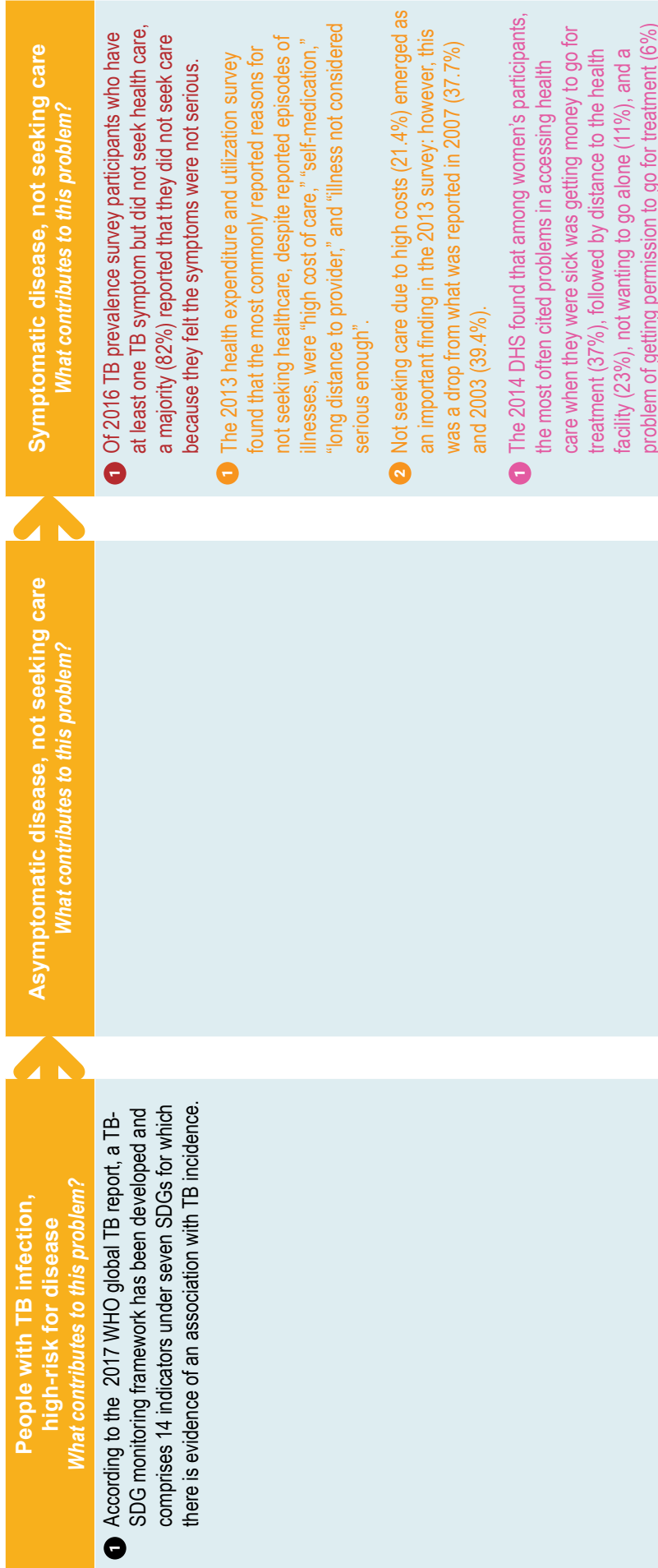
- 4 A patient-pathway analysis in 2017 found that diagnostic capacity exists in levels 2-5 of the health care system, and notifications from the public sector accounted for approximately 47% of the estimated incidence.
- 5 The analysis found that 58% of people initiate their care seeking journey in public facilities.
- 3 The 2016 inventory study found that of the unreported cases, 81% were in public health facilities.

- # 2017 WHO TB Report # 2017 Epidemiological Review # 2016 Prevalence Survey # 2013 Health Expenditure and Utilization Survey
- # 2017 Patient Pathway Analysis # 2016 Inventory Study # 2014 Demographic Health Survey # 2017 Patient Cost Survey # 2017 Adherence Study



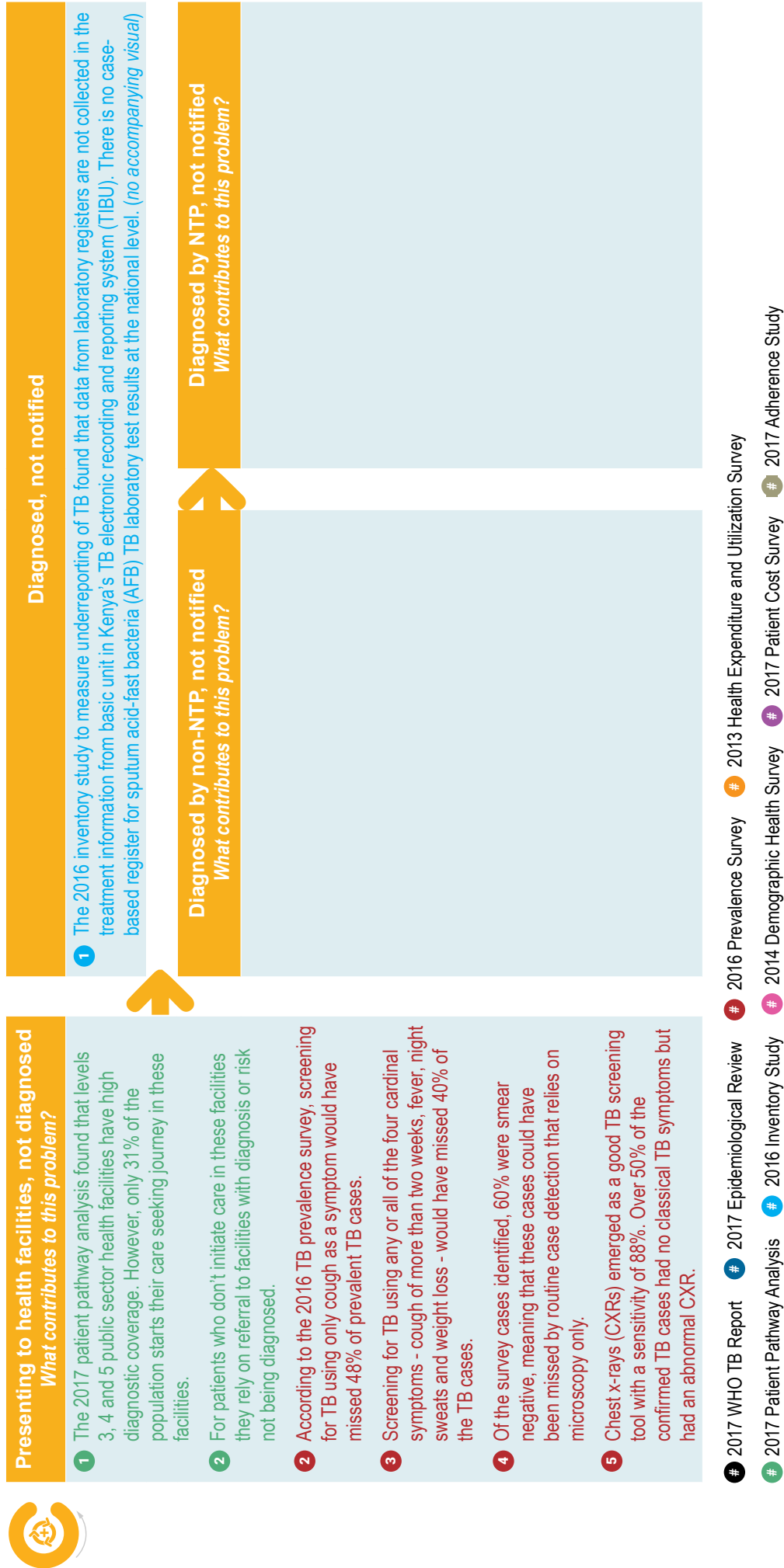


**Fig. A1.6. Example of consolidated data for the first block of the framework “People not accessing the health system” for root cause analysis session, Kenya**



- # 2017 WHO TB Report    # 2017 Epidemiological Review    # 2016 Prevalence Survey    # 2013 Health Expenditure and Utilization Survey
- # 2017 Patient Pathway Analysis    # 2016 Inventory Study    # 2014 Demographic Health Survey    # 2017 Patient Cost Survey    # 2017 Adherence Study

**Fig. A1.7. Example of consolidated data for the second block of the framework “People with TB seeking care but either not diagnosed or not notified” for root cause analysis session, Kenya**







**Fig. A1.8. Example of consolidated data for the third block of the framework “People notified as a TB case but not successfully treated” for root cause analysis session, Kenya**



**Diagnosed, not started on treatment**  
*What contributes to this problem?*

**Notified, not successfully treated + Successfully treated, not relapse free**  
*What contributes to this problem?*

- 1 The 2017 WHO TB Report # 2017 Epidemiological Review # 2016 Prevalence Survey # 2013 Health Expenditure and Utilization Survey
- 2 2017 Patient Pathway Analysis # 2016 Inventory Study # 2014 Demographic Health Survey # 2017 Patient Cost Survey # 2017 Adherence Study

- 1 The 2017 patient cost survey found that direct non-medical costs are overwhelmingly the largest share of costs borne by TB patients.
- 2 In DR-TB patients, indirect costs are, at the median, more than 100 times greater than direct medical costs.
- 3 Overall the median time lost while seeking diagnosis by TB patients was 4.2 hours respectively with no difference reported between drug-susceptible TB and DR-TB patients.
- 4 However, during both intensive and continuation treatment, DR-TB patients lost more hours than DS-TB patients.
- 1 The 2017 adherence study found that there was a statistically increased risk of non-adherence in the groups 25-34, 35-44 and 55-64 years compared to age group 18-14 years ( $p < 0.05$ ).
- 2 Males were 25% less likely to be adherence to TB treatment than their female counterparts (OR 0.758, 95% CI 0.578-0.993).
- 3 HIV-negative respondents were less adherent to TB treatment than their HIV-positive counterparts (OR 0.749, 95% CI 0.565-0.99).
- 4 Respondents with extra pulmonary TB were less adherent to TB treatment than those with pulmonary TB. (OR 0.69 95% CI 0.50-0.93).
- 5 Patients in the continuation phase were 2.5 times more adherent compared to those in the intensive phase. (CI 93-3.19).
- 6 Patients who reported side effects from anti-TBs medication had lower levels of adherence (OR 0.717(95%, CI 0.56-0.91).
- 7 Patients who reported to have no directly observed treatment, short-course (DOTS) support were 1.4 times more adherent than those who had a household member as their supporter ( $p < 0.05$ ).
- 8 There was a significant and progressive decreased level of adherence as the cost of transport to the health facility increased.

As the groups reviewed the consolidated data, they identified missing data and categories that were not adequately represented. For example, instead of looking exclusively at the epidemiology of TB in terms of people affected, several groups noted the importance of including data on the burden of disease, including mortality and health systems costs, which made an important difference in setting priorities for topics such as MDR-TB.

In some areas, the paucity of data was an overriding consideration. With regard to pediatric TB, although the contribution of childhood TB to the overall national TB burden was relatively low, groups thought that childhood TB should be prioritized because of low case detection among children. The issue should be better characterized with more data. Similarly, although the incidence of TB in special populations was unknown, the groups considered that it would be unacceptable to exclude them. More research on the extent of TB in these populations was set as a priority, with inclusion of these groups as targets for priority interventions.

Each group consolidated and heat-mapped the rankings of priorities at the end of day 1. [Fig. A1.9](#) shows the summarized findings from the session on problem prioritization.

There was strong convergence among groups, with full consensus that high priority areas included pediatric TB and cases diagnosed in the public sector but not notified, and strong agreement that other priorities included people with TB symptoms who were not seeking care and people with TB presenting to health facilities but not being diagnosed.

There was also some notable divergence of views. For example, a group of subnational participants did not consider DR-TB to be priority, while it was a high priority for national participants. This difference may have been due to the small number of cases in the county overall.

### *Day 2: Root cause analysis*

The working groups reviewed and considered the consolidated data, additional studies and surveys in the context of their own experience. They then conducted root cause analysis to identify and categorize the determinants of issues (see [Fig. A1.10](#) and [Fig. A1.11](#) for examples). Notable overlaps emerged, indicating potential cross-cutting interventions to address the needs of patients holistically, and potential collaboration with other sectors. Common themes included inadequate access to care, lack of a patient-centred approach in service delivery, sub-optimal quality of care, financial constraints to care-seeking and an overall lack of resources for facilities. The groups also identified gaps in the data that prevented an adequate analysis of root causes. For example, the group that assessed TB/HIV noted that additional evidence was required on barriers to uptake of TB/HIV services at community level.





**Fig. A1.9. Summarized priority rankings, Kenya**

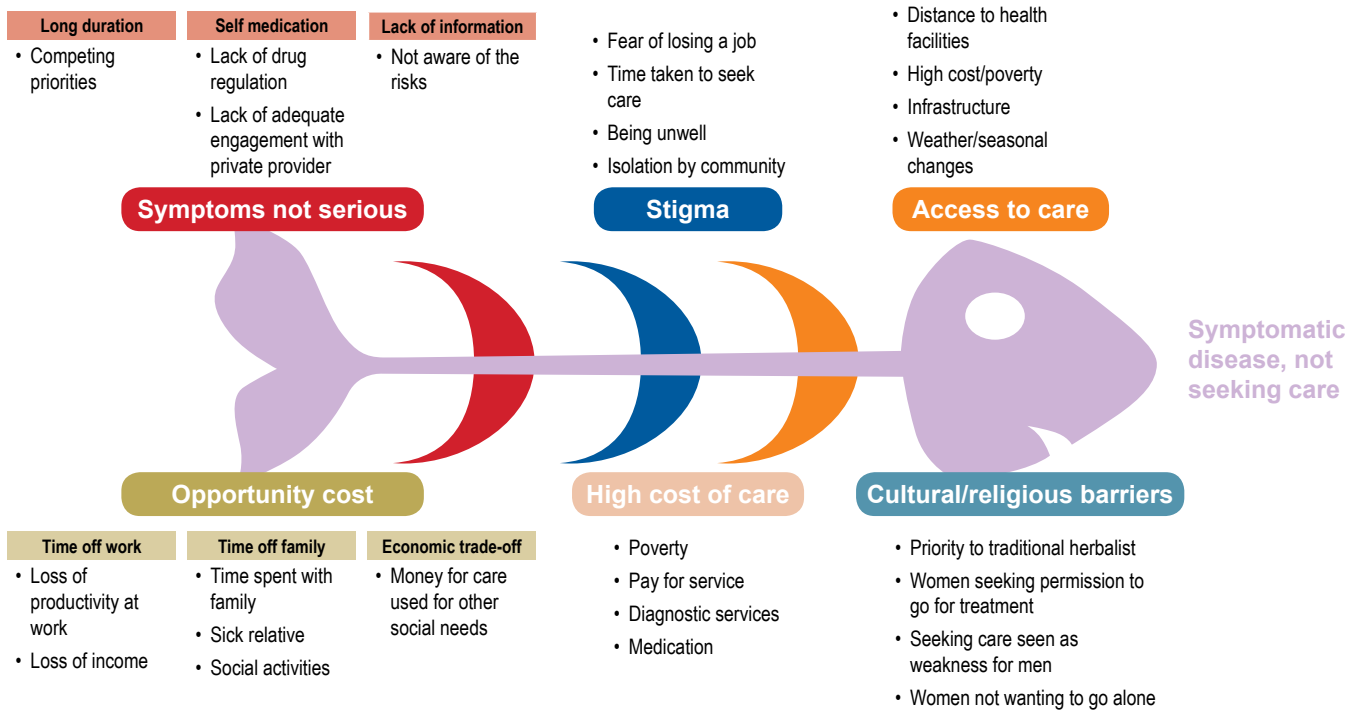
Sessions	Category	Sub-Category	Problem - How big a problem is this within the context of the overall TB burden?	Progres - To what extent is there progress against this challenge	Priority - What level of priority should be given to filling the remaining gaps related to this challenge?
Session 1 - Epidemiology	DS-TB	Pulmonary			
		Extrapulmonary			
		Pediatric			
		Special populations			
		Other			
	DR-TB				
	TB HIV				
Session 2 - People not accessing the health system	People with TB infection, high-risk for disease				
	Asymptomatic disease, not seeking care				
	Symptomatic disease, not seeking care				
Session 3 - People with TB seeking care but either not diagnosed or notified	Presenting to health facilities, not diagnosed				
	Diagnosed by non-NTP, not notified				
	Diagnosed by NTP, not notified				
Session 4 - People notified as TB case but not successfully treated	Diagnosed, not started on treatment				
	Notified, not successfully treated				
	Successfully treated, not relapse free				

Average Evaluation Value

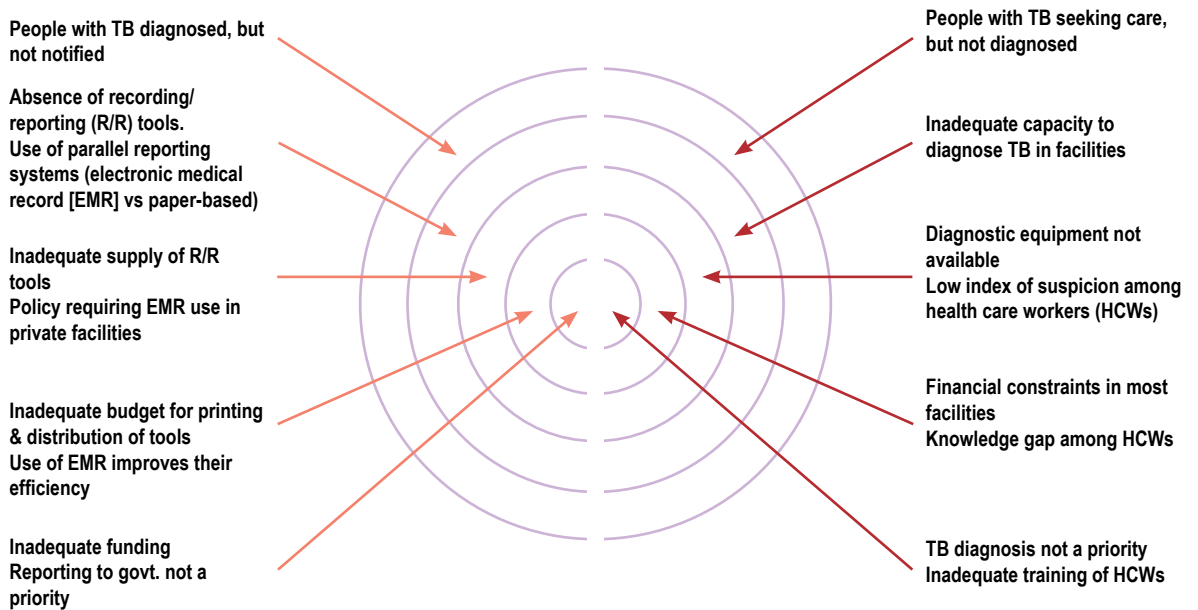




**Fig. A1.10. “Fishbone” root cause analysis of “People with symptomatic disease, not seeking care”**



**Fig. A1.11. “ 5-Whys” root cause analysis of “People with TB seeking care but either not diagnosed or not notified”**

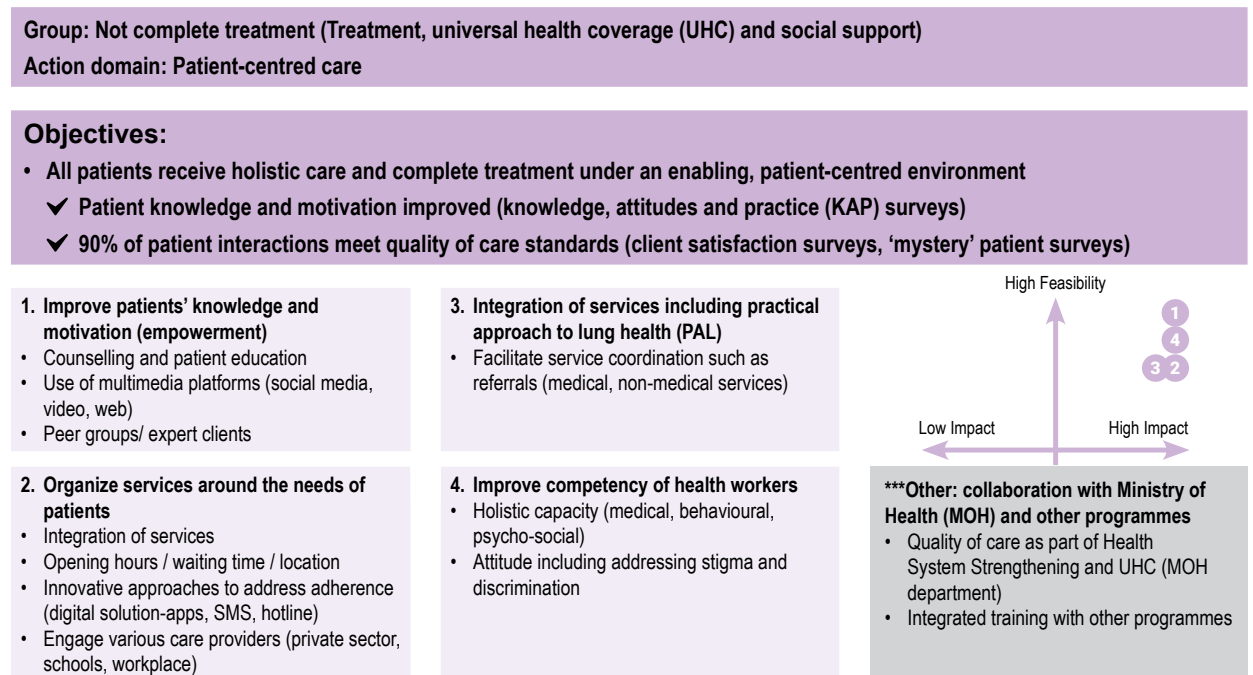


The groups discussed potential strategic interventions to address the root causes and mapped the feasibility and potential impact of interventions as a basis for prioritizing them. The groups also considered the roles of other sectors and partners in the interventions (see Fig. A1.12 for an example).

As in the root cause analysis, potential cross-cutting and multi-sectoral interventions emerged. The central themes were ensuring universal access to diagnosis and treatment, reducing the financial burden of TB patients, providing patient-centred care, including decentralized services, service integration and coordination, and the capacity of HCWs to provide holistic care.



**Fig. A1.12. Interventions to address gaps in patient-centred care**



### Conclusion

While the workshop was a pilot application of the framework, the participants found it productive as a starting-point for the process of the NSP development. Many appreciated the participatory, people-centred, evidence-based approach, and the NTP leadership indicated that they would use the findings as a basis for the new NSP. They considered that alignment of data analysis and planning with the continuum of care is an important means for achieving a truly people-centred TB response. It takes discipline to use data in a programmatic setting while maintaining objectivity and adhering to guiding principles and values; the Kenyan NTLDP demonstrated the promise and practicality of the people-centred framework for TB programme planning and prioritization.



# Annex 2.

## ORGANIZING DATA TO SUPPORT PROGRAMME PLANNING AND PRIORITIZATION

Organizing data along the continuum of care is an important component of the people-centred framework for TB programme planning and prioritization. This process is called **data consolidation** and consists of two steps:

1. conducting an inventory of national and subnational TB and health system surveys, assessments, analysis and data from surveillance; and
2. mapping key findings from those data sources along the continuum of care.

### A2.1. Inventory of data sources

Data and evidence should not be limited to health but also include non-health data that are related to TB. For better organization, data sources can be classified into the following categories:

- surveillance, surveys and studies;
- analysis;
- reviews and reports; and
- policy documents.

The data sources should also be classified according to their potential use in the three planning steps i.e. problem prioritization, root cause analysis, and optimization of interventions.

[Table A2.1](#) shows the inventory of available data sources in Kenya and their classification into the three planning steps. Note that some sources can be used in more than one discussion.



#### Hint:

Data that can be used for better identification and assessment of problems that limit progress in accessing, diagnosing and treating people with TB should be classified and used in the discussion on problem prioritization.

Data that can be used for better analysis of causes of programmatic challenges should be classified and used in the discussion on root cause analysis.

Data that can be used to address priority issues or domains for action, including WHO-recommended policies and interventions, should be classified and used in the discussion on optimization of interventions.



**Table A2.1. Inventory of data sources, Kenya**

Resource title	Year	Problem prioritization	Root cause analysis	Interventions optimization
<b>Surveillance, surveys and studies</b>				
TB surveillance data – TIBU	All	x	x	
TB prevalence survey	2016	x	x	
Adherence survey	2017		x	
TB patient cost survey	2017		x	
Inventory study	2015	x	x	
Drug resistance survey	2015	x		
Delay in diagnosis	2014		x	
Kenya demographic and health survey	2013	x	x	
Kenya AIDS indicator survey	2012	x	x	
GeneXpert impact survey	2017		x	x
Community survey	2017		x	
Keheala study to improve treatment adherence	2017		x	x
Service availability and readiness assessment mapping survey	2013	x	x	x
Health expenditure utilization survey	2016	x	x	
<b>Analyses</b>				
Patient pathway analysis	2017	x	x	
Legal environment assessment by Kenya legal and ethical issues network (KELIN)	2017		x	x
Data for action for key, vulnerable and underserved population by KELIN	2018	x	x	
Gender barriers to TB by KELIN	2018		x	
TB/DM by academic model providing access to health-care (AMPATH)	2017		x	
<b>Review/reports</b>				
WHO global TB report	2017	x		
The global fund concept note	2017			x
NTLDP annual report 2017	2018	x		
Mid-term review	2017		x	x
Epidemiological review	2017	x	x	
Active case-finding experience-sharing report	2017		x	x
Green Light Committee (GLC) Regional Office for Africa (AFRO) mission Kenya report	2017		x	
<b>Policy documents</b>				
Kenya health sector strategic and investment plan 2013-2017	2013			x
End TB strategy	2015			x
Isolation policy	2018			x
Social protection policy	2018			x
Sustainability framework	2017			x
Investment case	2017			x
National strategic plan 2015-2018	2015			x

## A2.2. Mapping key findings along the continuum of care

The key findings of major surveys, studies and assessments are identified (Table A2.2) and are mapped along the continuum of care.

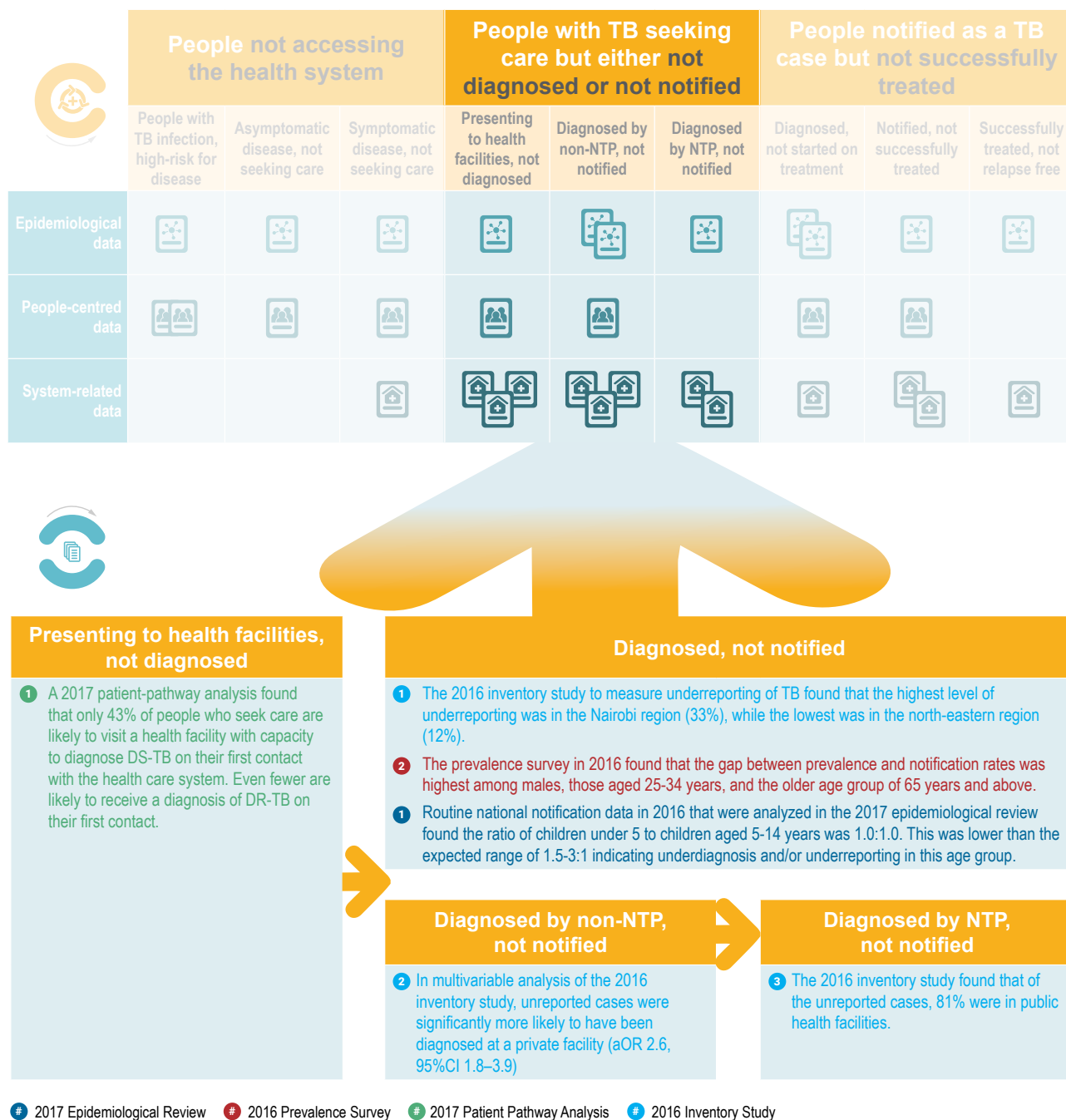


**Table A2.2. Potential key findings from identified data sources**

Data source	Key findings
TB surveillance data	Trends in notifications for DS-TB, DR-TB, TB/HIV coinfection
	Trends in the proportion of TB patients with documented HIV status
	Trends in the notification ratio for the age groups 0-4 and 5-14 years
	Share of notifications from the private sector and community referrals
	Trends in the treatment success rate for DS-TB, DR-TB, TB/HIV coinfection
	Relationship between the population screening rate and the positivity testing rate
Patient pathway analysis	Estimates of the proportion of people with TB who initially seek care in the informal private sector (such as pharmacies and drugstores), the formal private sector and the public sector
	Percentage of people with TB who had access to TB diagnostic or treatment services on their first contact with the health care system
	Coverage of diagnostic or treatment availability for different types of health facility
Demographic Health Survey	Coverage of bacille Calmette-Guerin (BCG) vaccination
	Proportion of the population that is malnourished (children and adult)
	Care-seeking behaviour
National survey of TB prevalence	Percentage of symptomatic or asymptomatic presumptive/prevalent TB patients not seeking care
	Percentage of prevalent TB patients who sought care but had yet received a diagnosis prior to the survey
	Ratio of prevalent to notified TB patients
National survey of TB drug resistance	Percentage of new laboratory-confirmed pulmonary TB patients with RR-TB or MDR-TB
	Percentage of previously treated laboratory-confirmed pulmonary TB patients with RR-TB or MDR-TB
	Risk factors for MDR/RR-TB in laboratory-confirmed pulmonary TB patients
National TB inventory study	Percentage of patients who are diagnosed by public and private providers, but not notified to the NTPs
	Factors associated with underreporting of detected TB cases
National TB patient cost survey	Total cost borne by TB patients and their households (direct medical costs, direct non-medical costs and indirect costs)
	Analysis of factors associated with catastrophic patient costs

Fig. A2.1 illustrates how key findings from available data sources can be mapped along the continuum of care, using the example of Kenya. The figure shows a summary slide that was used to illustrate data consolidation for the second block of the continuum of care “People with TB who seek health care but are either not diagnosed or not notified”, with limited findings and data sources. More detailed summary slides are shown in the Kenya case study, in Annex 1.

**Fig. A2.1. An illustration of consolidated data and evidence for the second block of the framework “People with TB seeking care but are either not diagnosed or not notified”, using an example from Kenya**



Whenever possible, a data slide should be prepared for each key finding outlined in the summary slides. Data slides provide detailed information in the form of graphs, tables and images as well as the source of the findings. To facilitate cross-referencing between the summary and data slides, each key finding is numbered and colour-coded according to the source and its inclusion. For illustrative purpose, Fig. A2.2 shows a simplified summary slide that outlines some key findings from three sources of evidence on “People with TB seeking care but either not diagnosed or not notified”, followed by the corresponding data slides.





**Fig. A2.2. Example of summary slide shown in Fig. A2.1 and data slides for individual key findings using an example from Kenya**

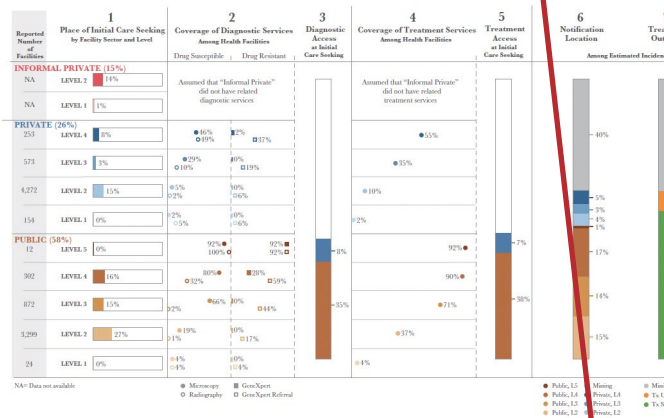
**Presenting to health facilities, not diagnosed**

1 A 2017 patient-pathway analysis found that only 43% of people who seek care are likely to visit a health facility with capacity to diagnose DS-TB on their first contact with the health care system. Even fewer are likely to receive a diagnosis of DR-TB on their first contact.

**Diagnosed, not notified**

- 1 The 2016 inventory study to measure underreporting of TB found that the highest level of underreporting was in the Nairobi region (33%), while the lowest was in the north-eastern region (12%).
- 2 The prevalence survey in 2016 found that the gap between prevalence and notification rates was highest among males, those aged 25-34 years, and the older age group of 65 years and above.
- 1 Routine national notification data in 2016 that were analyzed in the 2017 epidemiological review found the ratio of children under 5 to children aged 5-14 years was 1.0:1.0. This was lower than the expected range of 1.5-3:1 indicating underdiagnosis and/or underreporting in this age group.

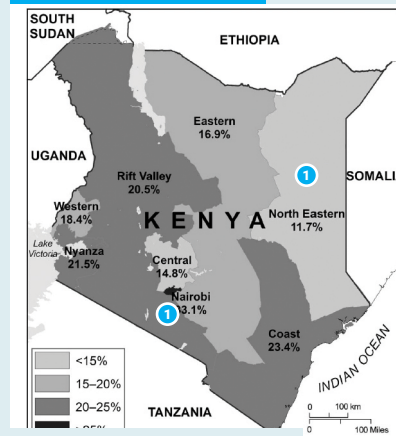
**2017 Patient Pathway Analysis**



Note: The patient pathway analysis was completed based on 2016 data so may differ from data presented in the 2017 WHO report

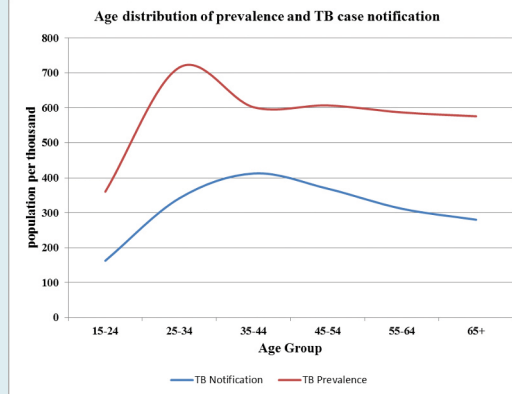
1 A 2017 patient-pathway analysis found that only 43% of people who seek care are likely to visit a health facility with capacity to diagnose DS-TB care system. Even fewer are likely to receive a diagnosis of DR-TB on their first contact.

**2016 Inventory Study**



1 The 2016 inventory study to measure underreporting of TB found that the highest level of underreporting was in the Nairobi region (33%), while the lowest was in the north-eastern region (12%).

**2016 Prevalence Survey**

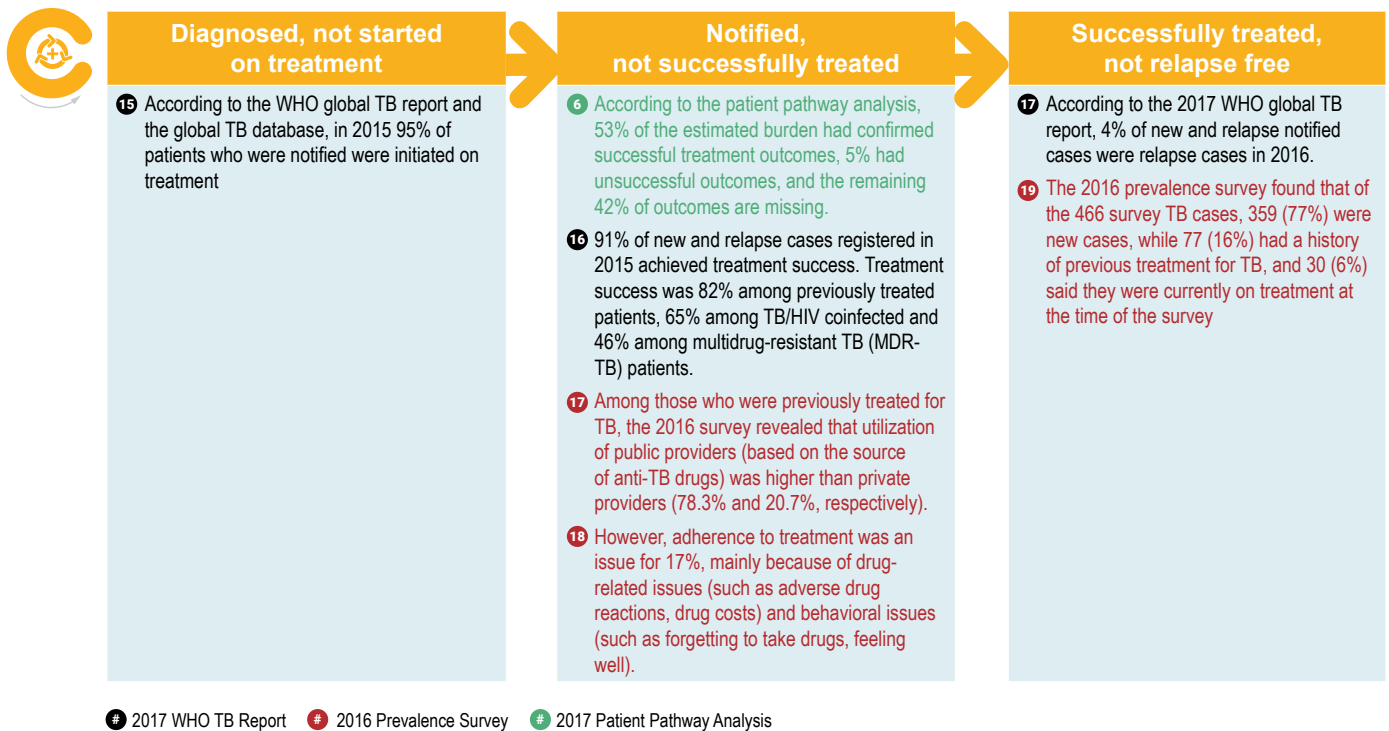


2 The prevalence survey in 2016 found that the gap between prevalence and notification rates was highest among males, those aged 25-34 years, and the older age group of 65 years and above.

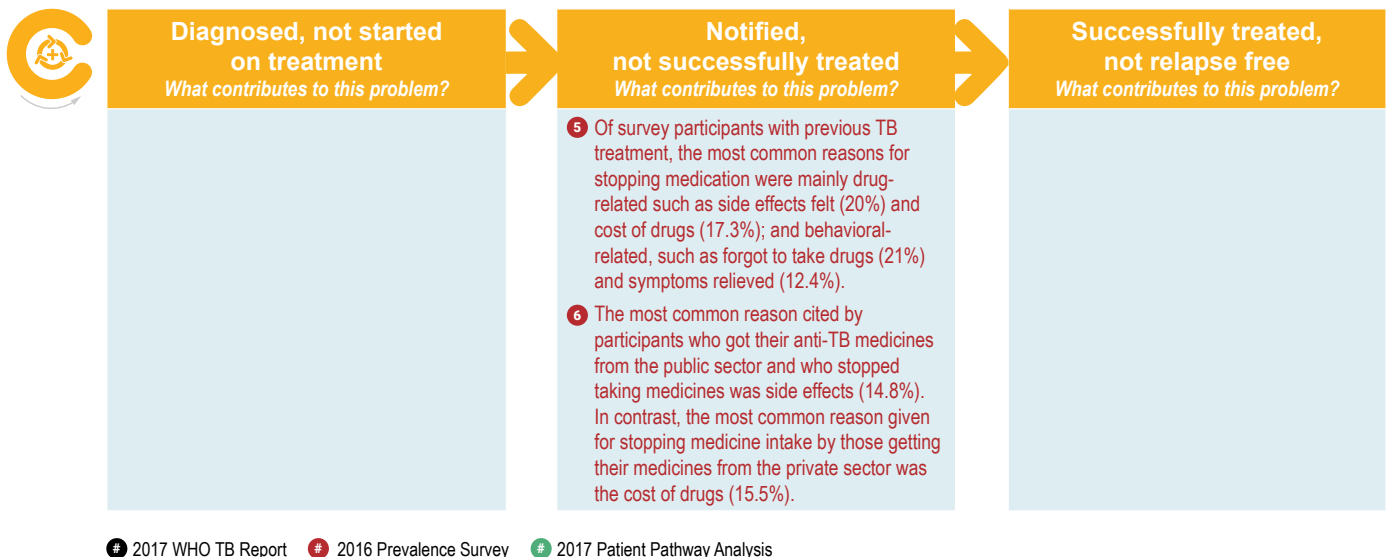
Consolidated data for discussions of problem prioritization and root cause analysis should be prepared separately. During the inventory, data sources are classified according to the planning step in which they may be used. Fig. A2.3 and Fig. A2.4 show examples of summary slides for problem prioritization and root cause analysis discussions for the first block of the care continuum "People not accessing the health care system". The same data sources can be used to support discussions during problem prioritization and root cause analysis (although different findings from the same data source can be used as appropriate). If no data are available, the diagram is left blank.



**Fig. A2.3. Summary of consolidated data for discussion of problem prioritization for the third block of the care continuum “People notified as a TB case but not successfully treated” using an example from the Philippines**



**Fig. A2.4. Summary of consolidated data for discussion on root cause analysis for the third block of the care continuum “People notified as a TB case but not successfully treated” using an example from the Philippines**



An epidemiological profile of the TB burden at national and/or subnational level should be generated to support discussions about problem prioritization. This profile, consisting of summary and data slides, is essential when determining the magnitude of the problem. Fig. A2.5 shows an example of a summary slide for an epidemiological profile that was used during the workshop in the Philippines.



**Fig. A2.5. Summary of epidemiological profile, the Philippines**

Drug-susceptible TB (DS-TB)	Multidrug-resistant TB or rifampicin-resistant TB (MDR/RR-TB)	TB/HIV
<ul style="list-style-type: none"> <li>1 The 2017 WHO global TB report estimated there were 573,000 incident TB cases in 2016.</li> <li>2 An estimated 58% of those cases were notified to the national TB programme (NTP).</li> <li>3 Using the treatment success rate of 2015, an estimated 50% successfully completed treatment.</li> <li>4 WHO estimates that 12% of the annual incidence of TB occurs in children under the age of 15 (70,000 cases).</li> <li>5 The burden of TB among adult males is estimated to be around 2.7 times higher than among adult females.</li> <li>6 However, among children less than 15 years old, the estimated burden is nearly equal among males and females</li> </ul>	<ul style="list-style-type: none"> <li>7 The 2017 WHO global TB report estimated there were 30,000 incident MDR/RR-TB cases in 2016.</li> <li>8 An estimated 14% of those cases were initiated on treatment.</li> <li>9 Using the treatment success rate of 2014, an estimated 7% of the MDR/RR burden successfully completed treatment.</li> <li>1 The 2016 prevalence survey found that rifampicin resistance was detected by Xpert in 7.3% of 397 Xpert-positive sputum samples. Any type of rifampicin resistance by drug susceptibility testing of 230 culture-positive isolates was 5.6%, of which MDR-TB (rifampicin + isoniazid) accounted for 2.2%.</li> <li>2 Of those without a history of TB treatment (new cases), 14/385 (3.6%) were found to be rifampicin-resistant by Xpert. On the other hand, among those with previous TB treatment, 15/81 (18.5%) were rifampicin-resistant by Xpert.</li> </ul>	<ul style="list-style-type: none"> <li>10 The 2017 WHO global TB report estimated that 6,000 incident TB cases in 2016 were HIV-positive (1% of burden).</li> <li>11 An estimated 18% of those cases were initiated on treatment.</li> <li>12 Using the treatment success rate of 2015, an estimated 12% successfully completed treatment.</li> <li>13 According to the WHO report, only 19% of patients have known HIV status, and 81% of patients with known HIV status are HIV-positive.</li> </ul>

### Cross-Cutting Epidemiological Metrics

- 3 The 2016 prevalence survey results indicated a weighted bacteriologically-confirmed TB prevalence of 1,159 [95%CI 1,016-1,301] per 100,000 adult population. This resulted in an upward revision of the TB incidence rate to 550 (307-862) in 2015, compared to the pre-survey WHO estimate of 322 per 100 000 (95% CI 277-370) in 2015.
- 4 For smear-positive pulmonary TB as reported to the NTP registry in 2016, the highest prevalence to notification ratios were in the age groups 15–24 (4.2) and 45–54 years (3.3), and among men (3.3).
- 5 Prevalence significantly increased with age and was higher in males (1,713 per 100,000, 95% CI 1,482–1,943) compared to females (627 per 100,000, 95% CI 516–739). Among geographical area, stratum one had the highest bacteriologically TB prevalence (1,358 per 100,000 population), followed by stratum three, stratum two, and stratum four.
- 6 The prevalence of TB is almost 2.5 times what has been previously estimated from routine surveillance statistics.
- 7 Based on culture-positive pulmonary TB results, there was no evidence of a decline in the pulmonary TB prevalence rates in the 2016 compared to the 2007.

# 2017 WHO TB Report    # 2016 Prevalence Survey



# Annex 3.

## WORKSHOPS FOR APPLICATION OF THE PEOPLE-CENTRED FRAMEWORK FOR TB PROGRAMME PLANNING AND PRIORITIZATION

This section describes the application of the components of the people-centred framework in a workshop. As each of the three planning steps requires extensive discussion and group work, it is suggested that a workshop of three days is planned, with one day allotted for consideration of each step.

This annex consists of four parts. Part one describes workshop preparation, while parts two to four cover organization of the workshop, as follows:

- **overview:** daily organization of the workshop, with the schedule and expected duration of each session, daily objectives and key messages for all participants;
- **presentations:** the aims and content of the presentations;
- **group discussion:** the aim and outcomes of group work, how the groups can be divided, the tasks of the groups and how the prioritization process should be taken;
- **plenary sessions:** organization, presentation of the results of group work, time allocated, what should be presented, organization of the discussion and summary of all presentations; and
- **model examples of group results:** examples of individual group work outcomes for each exercise and summaries of all group work.

### A3.1. Preparation

The NTP may wish to appoint a preparation team consisting of NTP staff and stakeholders or partners, who would meet initially to agree on the purposes and expected outcomes of the workshop. Preparation may take 6–8 weeks, depending on whether the workshop is to be national or subnational and the number and availability of the team responsible for preparations.

Before the workshop, a concept note should be prepared that includes the background, rationale, objectives, expected outcomes, methods, participants and agenda of the workshop. Consolidated data along the continuum of care (see [Annex 2](#)) should be prepared before the workshop. The level of consolidated data will depend on the purpose and level of the workshop. Sharing the concept note and consolidated data prior to the workshop should enhance the quality of the discussion during the workshop.

The NTP should ensure that all relevant stakeholders and partners are invited. While these may depend on the purpose and level of the workshop, the following types of participants should be considered:

- NTP staff at national and subnational levels;

- relevant departments of ministries of health and other multisectoral government agencies, such as those related to social protection, poverty reduction, labour, and prisons.;
- community groups, such as TB patients and peer support or patient groups;
- the private sector;
- national partners, including civil society and nongovernmental organizations; and
- international partners.

### *Pre-workshop meeting*

A meeting should be held one or two days before the workshop. The purpose of the meeting is to ensure that the workshop objectives and outcomes are clear and can be achieved, and that the concept of the people-centred framework, workshop methods and roles and responsibilities of facilitators are clearly understood. The meeting should be attended by the NTP core team, the preparatory team and stakeholders or partners who will support the workshop.

The following activities need to be conducted during this meeting:

- **Review and finalization of the workshop objectives, expected outcomes and agenda:** Participants should review the workshop objectives, expected outcomes and agenda, as well as the allocated time, moderators and/or facilitators for each session.
- **Allocation of people to groups and organization of group work:** In allocating people to groups and organizing group work, it is important to ensure a participatory approach. The group should consist of no more than eight or a maximum of ten people, so that everyone can contribute to the discussion. If possible, the composition of the groups should be decided during this preparatory meeting and adjusted if necessary on the first day of the workshop. The leader assigned to each group should preferably have a good understanding of and familiarity with the data. The composition of groups may be changed between the discussions on problem prioritization (step 1) and root cause analysis (step 2) but, in view of the close linkages between steps 2 and 3 (optimization of interventions), it is suggested that the composition of groups remains the same at this stage. In subnational workshops, participants from the same region or area should be grouped and the group composition should remain the same throughout the workshop. NTP staff should be present in each subnational group.
- **Assignment of facilitators:** Facilitators should have a good understanding of the data and the people-centred framework and should circulate among groups to ensure that everyone understands the assigned task and to answer any questions.
- **Arrangement of logistics:** Handouts and workshop materials such as flipcharts, sticky notes and markers should be available, with a print-out of consolidated data.

Depending on the purpose, the workshop may be national or subnational ([Table A3.1](#)).

**Table A3.1. National versus subnational workshop**

	National	Subnational
<b>Aim or purpose of workshop (example)</b>	The country wants to prepare their next NSP or apply for funding from a donor.	The country wants to plan tailored interventions or prioritize resources.
<b>Participants</b>	<ul style="list-style-type: none"> <li>Usually national stakeholders and partners.</li> <li>May include representatives of subnational policy-makers.</li> </ul>	<ul style="list-style-type: none"> <li>Local stakeholders and partners.</li> <li>Should include policy-makers at the respective subnational level.</li> </ul>
<b>Workshop preparation</b> <ul style="list-style-type: none"> <li>Preparatory team</li> </ul>	<ul style="list-style-type: none"> <li>Mainly NTP staff, stakeholders and/or partners.</li> </ul>	<ul style="list-style-type: none"> <li>Requires involvement of subnational TB programme staff who understand subnational data.</li> </ul>
<ul style="list-style-type: none"> <li>Source of data for consolidation</li> </ul>	<ul style="list-style-type: none"> <li>Generally, extensive national data are available.</li> <li>For discussions during the workshop, consolidated national data are sufficient.</li> <li>If data on subnational variation are available, they can be included in national consolidated data.</li> </ul>	<ul style="list-style-type: none"> <li>Data usually limited to subnational TB surveillance data or results of TB epidemiological reviews.</li> <li>Data should be consolidated for each subnational level.</li> <li>National level consolidated data should also be generated.</li> </ul>
	More complex.	Simpler.
<ul style="list-style-type: none"> <li>Care continuum content</li> <li>Length of preparation</li> </ul>	Usually 3–4 weeks.	May require > 1 month. The more subnational levels, the longer the preparation time required.

## A3.2. Problem prioritization (Day 1)

### Overview

This section describes the organization of day 1 of the workshop, which includes welcoming the participants, outlining the objectives and organization of the workshop, introducing the people-centred framework and a group discussion on identification and prioritization of programmatic gaps.

Session	Expected duration (minutes)
Welcome and introduction	60
Presentations:	
• Setting the scene	60
• Introduction to the people-centred framework for TB programme planning and prioritization	30
• Concept of problem prioritization	30
Group discussion	120
Plenary session	120
<b>Total time</b>	<b>420 (7 hours)</b>

### Objectives

- Introduce the people-centred framework for TB programme planning and prioritization.
- Introduce and apply the problem prioritization planning step.
- Obtain evidence-based consensus on the priorities that should be the focus of the national TB response.

### Key messages

- Outline the current TB situation and progress in ending TB at global and national levels to help participants understand national achievements and challenges in the TB response as compared with the global situation, which may help in aligning goals and priorities and resource allocation.

- Present major national findings to create an environment of evidence-based programme planning.
- Application of the people-centred framework fosters data generation and use for practical, programmatically relevant evidence for policies, prioritization and resource allocation.
- Problem prioritization involves assessing the magnitude and scope of problems based on the country's epidemiology, patient behaviour and health and social systems, and identification of the main priorities.
- The notion of prioritization may cause discomfort, indicating that programmes should categorize certain gaps and interventions as more important than others. Prioritization of resources, time and patient needs is, however, critical in the absence of sufficient resources to do everything necessary to end TB.
- All workshop participants should be encouraged to contribute knowledge and evidence that may not have been captured by TB and health system data sources. For example, participants from subnational areas may provide information on local TB epidemiology and patient experience.

#### **Welcome and introduction**

- Ask participants to introduce themselves, so that everyone is aware of the audience and the expertise available during the workshop.
- Outline the structure, agenda, objectives and expected outcomes of the workshop.
- Explain the participatory, evidence-based approach, including use of consolidated data for discussions.
- Invite remarks from stakeholders or partners attending the workshop.



#### **Hint:**

All participants must have a common understanding of the objectives and expected outcomes of the workshop. Some expectations may be different.

### *Presentations*

The following presentations are given to ensure that all participants have the same level of understanding of the current TB situation and to introduce the concept of the people-centred framework, which will be applied throughout the workshop.

#### **Setting the scene:**

The aim of the session is to familiarize participants with the current global and national TB situation.

- The WHO representative presents the status of the TB epidemic, achievements, challenges and targets at global level.



- The NTP representative presents the current national TB response, including:
  - \* Data on the TB disease burden (prevalence, incidence, mortality) in terms of numbers, rates and trends, including DS-TB, DR-TB, childhood TB, extrapulmonary TB and TB/HIV coinfection, and how the burden varies geographically;
  - \* Current strategies, goals, achievements and challenges, including trends in performance indicators; and
  - \* Major findings of recent national studies, analyses and reviews, such as surveys of TB prevalence and drug resistance, TB inventory studies to measure the level of underreporting of detected TB cases, patient cost surveys, patient pathway analysis and TB epidemiological reviews.



**Hint:**

Critical evidence should be presented very concisely. Allow participants to ask questions.

**Introduction to the people-centred framework:**

The aim of the session is to introduce the people-centred framework (see [chapter 2](#)):



- Use of the continuum of care to review the three types of data at each planning step. The continuum of care comprises: people not accessing the health care system; people with TB who seek health care but are either not diagnosed or not notified; and people with TB who are notified but not successfully treated.



- Three types of data: epidemiological, people-centred and system-related.



- Three planning steps: problem prioritization, root cause analysis and optimization of interventions.

**Group discussion**

The aim of the session is to prioritize programmatic gaps or challenges in a systematic, people-centred way. The meeting organizer should describe the group work and the expected outcomes, and allow participants to ask questions. The expected outcome is a heat map that highlights the areas of programmatic priorities along the care continuum. It should be based on the consolidated data and participants' knowledge and experience.

The group discussion would proceed as follows:

<b>Group division</b>	<ul style="list-style-type: none"><li>• Divide the participants into groups of 8–10, with input from participants, and ensure that group members have varied expertise and work at different institutions.</li><li>• One or two groups can be allocated for participants from subnational level, as they may have different views of the magnitude of problems, which could result in different priorities from those of national-level participants.</li><li>• A separate group to discuss vulnerable populations might be considered.</li></ul>
<b>Group task</b>	<ul style="list-style-type: none"><li>• Ask the groups to review and interpret pre-populated consolidated data on epidemiological profiles and problem prioritization along the continuum of care.</li><li>• Ask group members to identify programmatic gaps or challenges based on the consolidated data and from personal experience and knowledge.</li><li>• Encourage the groups to comment on the quality of the data and to identify data gaps.</li><li>• Compile critical information gaps to inform future data collection and operational research.</li></ul>
<b>Prioritization</b>	<ul style="list-style-type: none"><li>• Ask the groups to prioritize the programmatic gaps or challenges qualitatively along the continuum of care.</li><li>• Prioritization is not necessarily associated with the largest number of people affected; the criteria could include severity (such as the mortality rate), cost implications, and ethical considerations (e.g. addressing childhood TB regardless of the burden). The groups should be asked to score each identified programmatic gap or challenge on a scale of 1–5 using the following guiding questions:<ul style="list-style-type: none"><li>* How severe is the problem in the context of the overall TB burden? (rank 1–5; 1, not a severe problem, low priority; 5, top priority)</li><li>* What progress is there against this challenge? (1, no progress; 5, excellent progress)</li><li>* What priority should be given to filling the remaining gaps? (1, not a severe problem, low priority; 5, top priority). (1=not a big problem, low priority; 5= top priority)</li></ul></li></ul>
<b>Group organization</b>	<ul style="list-style-type: none"><li>• The group leader should ensure that all members understand the instructions and the expected outcomes of the group work and should encourage the use of the consolidated data and the expertise of all group members during the discussions.</li><li>• Assign a rapporteur to document the group's rationale for assigning scores during prioritization.</li></ul>

### *Plenary session*

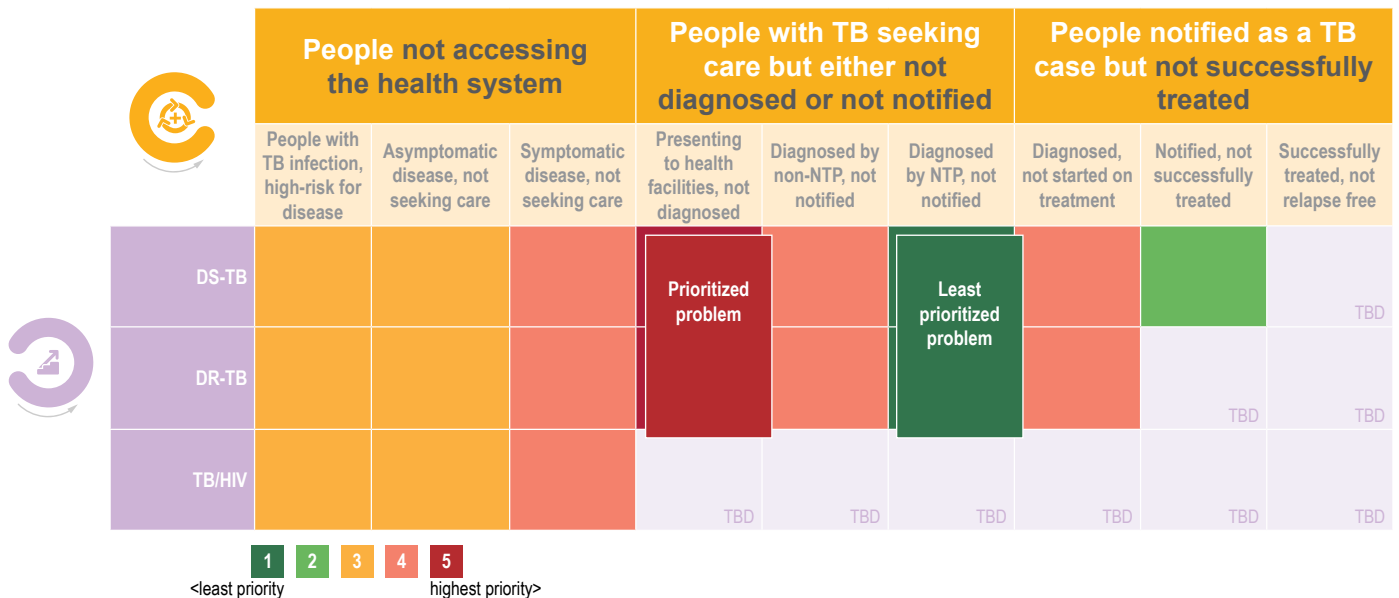
- Each group summarizes its work on evidence-based priority problems, which can be presented as a heat map along the continuum of care (Fig. A3.1).
- Each presentation should last 5–10 minutes.
- Groups should briefly explain the reasons for prioritization.
- Groups should also present data gaps that prevented them from prioritizing problems.
- After all the groups have presented their conclusions, the NTP representative should summarize the presentations and note the areas of agreement or disagreement among groups. The moderator should lead a discussion to reach consensus on country priorities, which will be used in the next session, on root cause analysis.
- Allow interactive discussion during this plenary session.

## Model examples of group results

### Individual groups:

Fig. A3.1 illustrates the results of a group discussion. It shows that mapping a systematic analysis of TB programme performance to the continuum of care can reveal both major gaps and successes. The figure shows that the priorities are diagnosing cases of DS-TB and DR-TB in patients who have presented to health facilities. It also indicates good performance in notification of these patients in the public sector.

**Fig. A3.1 An example of the outcome of a group discussion on problem prioritization**



### Summary of group work:

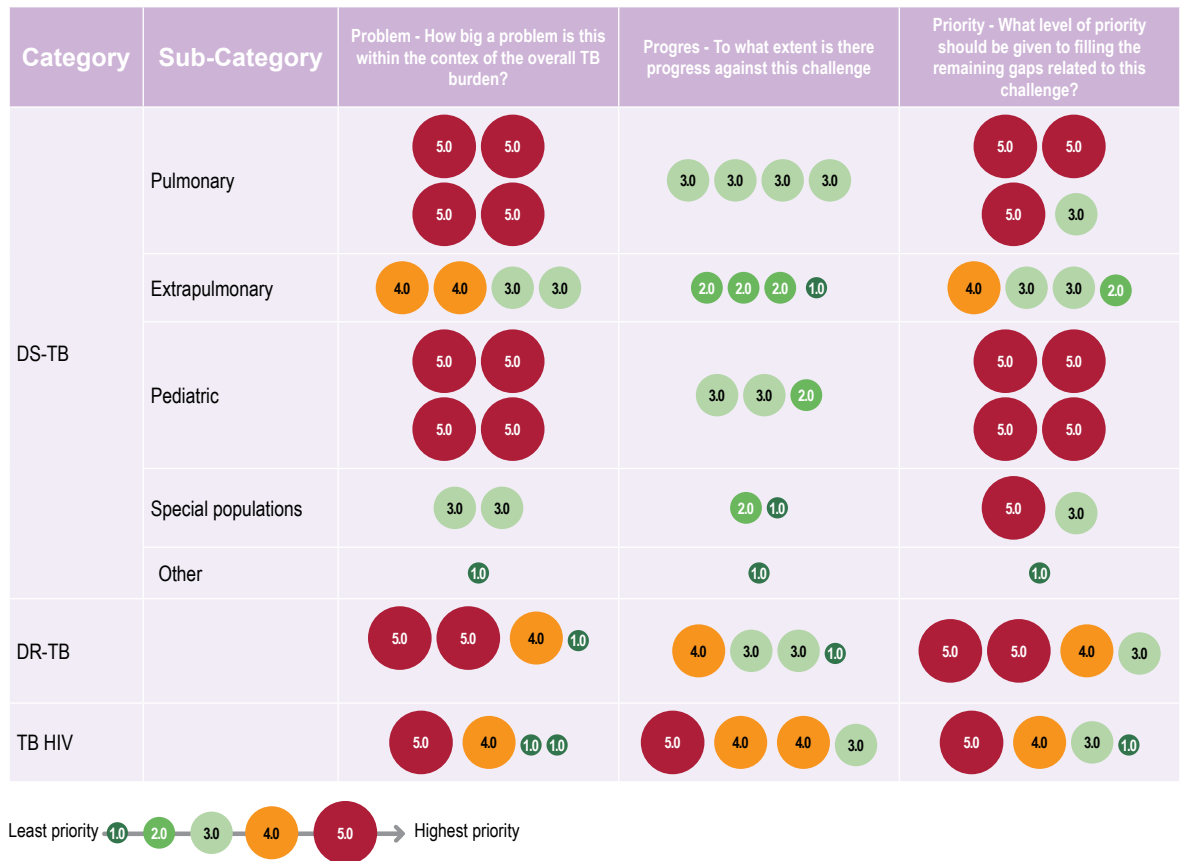
Fig. A3.2 and Fig. A3.3 shows a summary of group results during a workshop in Kenya.

Based on summaries of the outcomes of group work, the NTP and other participants should reach evidence-informed consensus on priorities for the national response along the continuum of care. The priorities may include the epidemiological burden and specific parts of the continuum of care.

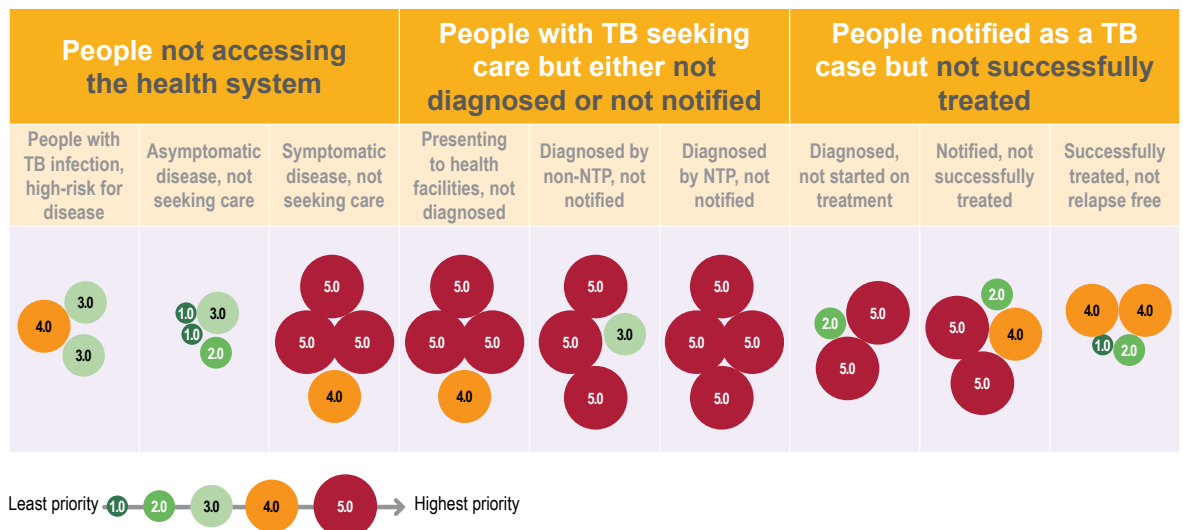
In Kenya, both DS-TB and DR-TB were considered high priorities, as was pediatric TB. Along the continuum of care, people with symptoms who were not seeking care and people with TB who sought health care but were either not diagnosed or not notified were identified to be the highest priorities.



**Fig. A3.2. Summary of group work on problem prioritization for epidemiological burden, Kenya**



**Fig. A3.3. Summary of group work on problem prioritization along the care continuum, Kenya**



## A3.3. Root cause analysis (Day 2)

### Overview

Once priority problems are identified, participants can explore their root causes and identify the factors that contribute to persistent gaps. Day 2 of the workshop consists of an introduction to root cause analysis followed by its application to identify and analyse the causes of the problems prioritized on Day 1.

Session	Expected duration (minutes)
Recap of day 1	30
Presentation: • Concept of root cause analysis	30
Group discussion	120
Plenary session	150
<b>Total time</b>	<b>330 (5.5 hours)</b>

### Objectives

- Introduce and apply root cause analysis.
- Explore root causes and identify priority domains for action.

### Key messages

- The methods for analysing root causes include fishbone,<sup>1</sup> 5-Whys<sup>2</sup> and a causal tree.<sup>3</sup> In all methods, root cause analysis consists of sequential probing of “why” a problem exists.
- Each response to a “why” prompt can be considered a determinant or cause of the problem and a domain for action. Eventually, sequential exploration of “whys” will reveal the root cause, which is frequently an economic or social constraint beyond the scope of a TB-specific response. The programme should then assess whether addressing the determinant or cause is within the scope of the NTP or requires collaboration with other entities.
- Each problem probably has many valid determinants or causes or one cause with many contributing factors that differ by geographical region or care sector. Therefore, root cause analysis at subnational level is critical. Expert opinion, including inputs from TB patients and health providers in focus groups, can be important at this stage.
- Omitting the root cause analysis and assuming that interventions can be designed in direct response to the more visible problem can address the symptoms but not the underlying causes, which may lead to sub-optimal or irrelevant interventions.

1. Ishikawa K. Guide to quality control. Tokyo: Union of Japanese Scientists and Engineers; 1982.

2. Serrat O. The five whys technique. Manila: Asia Development Bank; 2009.

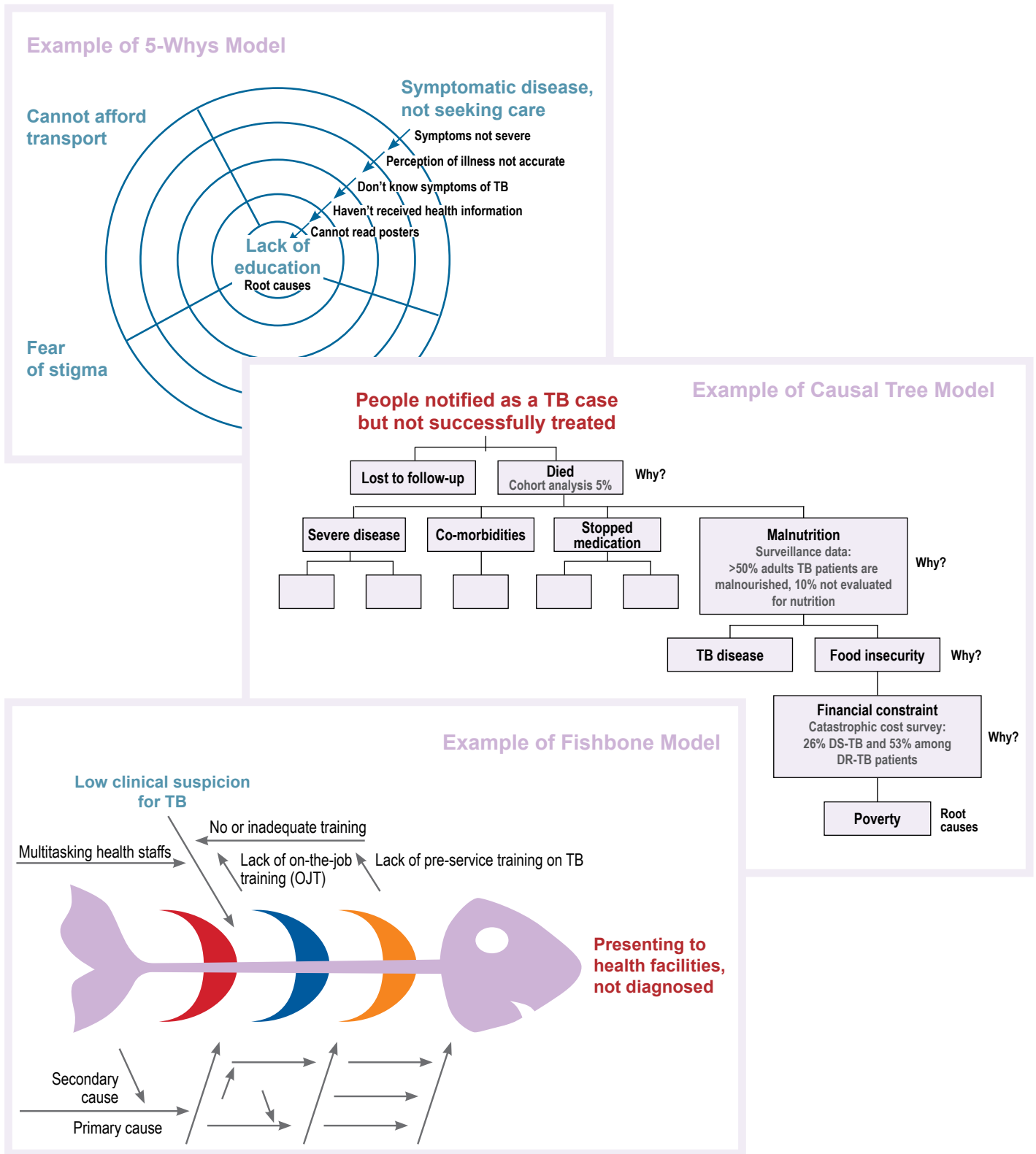
3. Boissieras J. Causal tree. Description of the method. Princeton (NJ): Rhone-Poulenc; 1983.

## Presentation

Before the group work starts, the meeting organizer should introduce the concept of root cause analysis and methods that could be used during the discussion (Fig. A3.4).



**Fig. A3.4. Examples of methods for conducting root cause analysis**



## Group discussion

In the second group discussion, participants are expected to identify and analyse the determinants, causes and root causes of the prioritized problems by reviewing data and using expert opinion, including inputs from focus group of TB patients and health providers.

The meeting organizer should present the instructions for group work, explaining the process and expected outcome, and allowing participants to ask questions. Each group is required to explore determinants, causes and root causes and identify priority action domains for designing interventions in the next planning step.

The group discussion would proceed as follows:

<b>Participants</b>	<ul style="list-style-type: none"><li>• Divide the participants into groups to discuss each component along the continuum of care (groups 1–5 in Fig. A3.4). Groups might be formed to address issues for specific population groups (group 6–9 in the Fig. A3.5); for example, issues associated with low diagnostic capacity may differ between adults and children. The grouping may depend on the settings and need.</li><li>• Members should be allocated to groups according to their expertise and experience. When possible, ensure that each group includes people from different institutions.</li><li>• In subnational workshops, the group composition should remain the same as in the session on problem prioritization.</li></ul>
<b>Group tasks</b>	<ul style="list-style-type: none"><li>• Ask the groups to conduct root cause analysis with the 5-whys, fish-bone, causal tree or other method for each of the identified priority problems.</li><li>• Ask group members to review and consider the data along the continuum of care (using pre-populated consolidated data for the root cause analysis).</li><li>• Encourage the group to comment on the quality of the data and to identify data gaps that limit adequate assessment of the determinants, causes and root causes of the problems.</li><li>• Compile critical information gaps to inform future data collection and operational research.</li></ul>
<b>Prioritization</b>	<p>Ask the group to identify priority domains for action to inform strategic interventions on the basis of the identified determinants, causes and root causes.</p> <p>The guiding questions for prioritization are:</p> <ul style="list-style-type: none"><li>* What is known about the factors that contribute to the problem?</li><li>* What additional evidence is needed to better understand the root cause of the problem?</li><li>* What factors can feasibly be addressed? If addressed, which factors would have the most impact on the problem and are therefore identified as domains for action?</li></ul>
<b>Group organization</b>	<ul style="list-style-type: none"><li>• The group leader should ensure that all members understand the instructions and the expected outcomes of the group work and should encourage the use of consolidated data and the expertise of all group members during the discussions.</li><li>• Assign a rapporteur to document the group's rationale during prioritization.</li></ul>



**Fig. A3.5. Example of group division for root cause analysis, Kenya**

	People not accessing the health system	People with TB seeking care but not diagnosed	People with TB diagnosed not notified		People notified as a TB case but not successfully treated
General population	<b>Group 1</b> Pre-care seeking, including community engagement	<b>Group 2</b> Diagnostic gap and intergrated care	<b>Group 3</b> Engaging al care providers	<b>Group 4</b> Address notification loss	<b>Group 5</b> Ensuring cure, including treatment support and social protection
People with drug-resistant TB	<b>“Systems” track</b>				
Children with TB	<b>Group 6</b>				
People living with HIV	<b>Group 7</b>				
Key populations	<b>“People” track</b>				
	<b>Group 8</b>				
	<b>Group 9</b>				

### Plenary session

The plenary session for the root cause analysis exercise will be longer than that for problem prioritization. Outlining the determinants and causes of prioritized problems and agreeing on domains for action are critical for designing interventions to overcome the problems.

- Each group presents the results from their root cause analysis and the domains for action that will be the focus of interventions in the next step of planning.
- Groups should also present the data gaps identified during the discussion.
- In view of the amount of information presented by each group, each presentation could be followed directly by questions or comments from the other groups. An average of 15 minutes should be allocated for each group presentation and associated questions and comments.
- The NTP representative and the meeting organizer should collect and summarize the group work and present it during the recap session on day 3 of the workshop.

### Model examples of group results

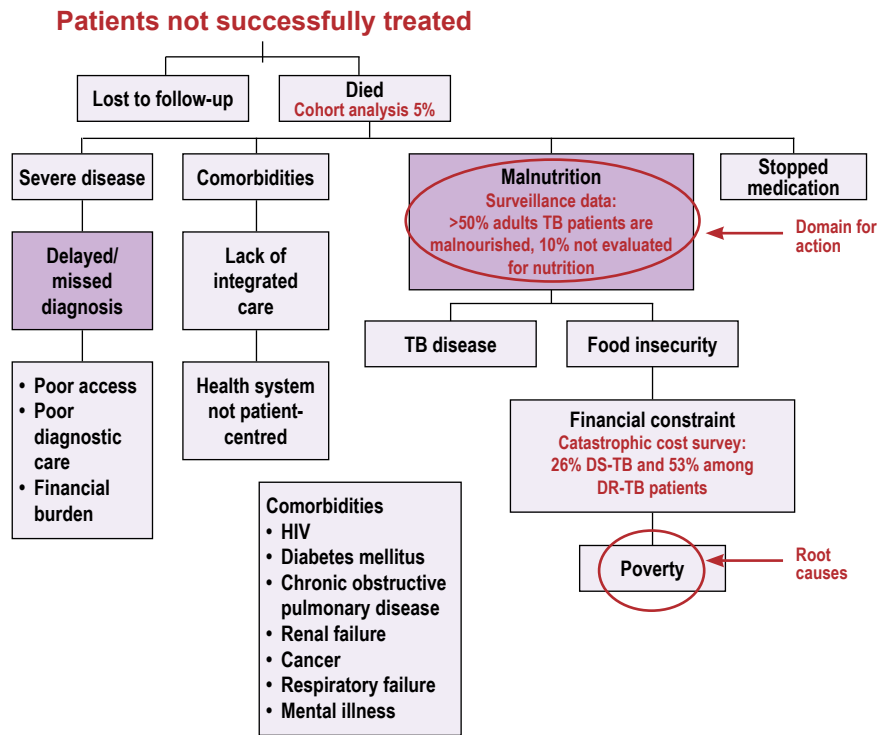
#### Individual groups:

Fig. A3.6 shows the results of root cause analysis with the causal tree method during a workshop discussion in Kenya on why some cases of TB are notified but not successfully treated. It reveals multiple determinants of the deaths of patients during TB treatment, including poverty as a root cause. The various determinants and causes identified indicated malnutrition as a domain for action, in which interventions would probably have a greater impact in reducing mortality among TB patients currently being treated. Addressing malnutrition would require a broader approach to the problem and collaboration with other sectors.





Fig. A3.6. Example of root cause analysis with the causal tree method, Kenya



**Summary of group work:**

Table A3.2 summarizes group work on day 2 of the workshop. The group will use the priority issues identified in the problem prioritization session and the priority domains for action derived by root cause analysis in designing interventions in the next discussion.



Table A3.2. Example of group discussion summary on day 2

Care continuum	Priority issues	Priority domain for action
TB infection or at high risk for disease	Despite limited data, country considered key population groups an important priority.	Awareness and information Access to health facilities and TB prevention Cost of care
Asymptomatic disease, not seeking care	Result of national TB prevalence survey: 26% of TB patients are asymptomatic.	Not applicable Not considered a priority in the country
Symptomatic disease, not seeking care	Result of national TB prevalence survey: 65% of symptomatic prevalent cases had not sought health care before the survey.	Access to health facility Cost of care
Presenting to health facilities, not diagnosed	Patient pathway analysis: only 43% of patients initially visited a health facility with diagnostic capacity.	TB screening algorithm and implementation Access to TB diagnostic service Quality of TB diagnostic service
Diagnosed outside NTP, not notified	Weak enforcement of mandatory notification by private facilities TB inventory study result: unreported cases significantly more likely to have been diagnosed in the private sector.	Engage private sector providers Quality of case management Financial barriers Complete notification
Diagnosed within NTP, not notified	Result of TB inventory study: 81% of unreported cases were in public health facilities.	Dissemination and recording of TB test results (to be completed)
Diagnosed with TB but not started on treatment	(to be completed)	(to be completed)
On treatment, but not successfully treated	(to be completed)	(to be completed)
Successfully treated, but not relapse-free	(to be completed)	(to be completed)

**Hint:**

Similar domains for action may emerge for other parts of the continuum of care, indicating the possibility of cross-cutting interventions for addressing patient needs holistically, which may require collaboration with other sectors. However, various domains for action might have to be addressed to make progress in one part of the continuum of care or priority issues. This consideration is important during optimization of interventions.

## A3.4. Optimization of interventions (Day 3)

### Overview

The next and final step is defining and optimizing interventions. This section summarizes the three planning steps of the people-centred framework and explains implementation of the last step, optimization of interventions.

Session	Expected duration (minutes)
Recap of day 2	30
Presentation:	
• General recommendations or best practices in designing interventions	15
• Concept of intervention optimization	15
Group discussion	150
Plenary session	150
Synthesis and way forward	60
<b>Total time</b>	<b>420 (7 hours)</b>

**Objectives:**

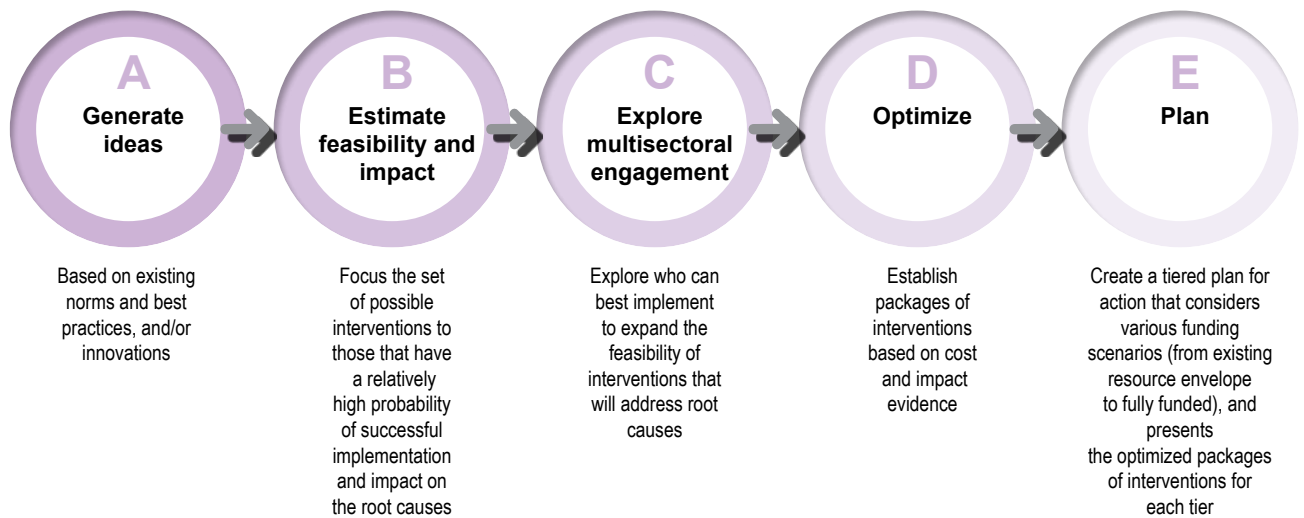
- Summarize the three planning steps in the people-centred framework.
- Introduce and apply optimization of interventions.
- Identify high-level interventions to optimize the impact of resource allocation for priority domains for action identified in the root cause analysis.
- Define the post-workshop follow-up plan (including timelines).

**Key message:**

- The aim of strategic intervention and optimization is to identify a package of interventions that, when combined, have a maximum impact, in view of resource limitations. [Fig. A3.7](#) outlines the identification and optimization of strategic interventions.



Fig. A3.7. Flow of optimization of interventions



- A. Generate ideas.** The results of the root cause analysis should prompt ideas for addressing the factors that contribute to the identified challenges. Some interventions might be based on national or international standards or best practices, while others may reflect innovative approaches.
- B. Estimate feasibility and impact.** The list of possible interventions should be narrowed down to those that are most relevant, feasible and effective. When resource limitations require tradeoffs, it is important to assess which root causes have the greatest impact and, subsequently, which interventions will most efficiently address the causes. Evidence on costs and the impact of various proposed activities and interventions should be collated.
- C. Explore multi-sectoral engagement.** Those best suited for or requiring multisectoral action should be identified. For example, the NTP should collaborate with the groups and sectors that can most efficiently implement the identified interventions.
- D. Optimize.** Once packages of activities (interventions) have been identified, they can be optimized to achieve the highest impact on programme outcomes. Modelling could be used to provide a comparison of the cost–effectiveness of different scenarios and help to identify the package of interventions that will yield the largest overall health benefits for a given budget.
- E. Planning.** A programme may wish to consider various resource scenarios, such as available funding, increased funding or a fully financed budget. The package of interventions that most effectively and efficiently targets the root causes and priority problems in each scenario should be determined. The existing budget could be used for immediate action, while other budget levels can be used as the basis for future resource mobilization and allocation.

The workshop is limited to assessments of the feasibility and the likely impact of the proposed interventions and exploration of multi-sectoral engagement (A–C). The NTP should review the work of all the groups and continue to optimization and planning.

### *Presentation*

Before group discussions on interventions begin, it is suggested that general recommended interventions and best practices in line with the continuum of care are explained to ensure that participants are aware of and consider those recommendations that are considered to be cost-effective and have a high impact.

### *Group discussion*

The aim of the session is to identify interventions to address priorities and domains for action. The meeting organizer should present instructions for the group work, including the process and expected outcomes, and allow participants to ask questions. The expected outcome of each group is identification of programme objectives, outcomes and interventions for each domain for action.

The group discussion would proceed as follows:

<b>Group division</b>	As a continuation from the root cause analysis, it is suggested that group allocation remain the same as in the previous discussion (for both national and subnational workshops).
<b>Group task</b>	<ul style="list-style-type: none"> <li>• Review general recommended interventions to address each priority domain for action. In view of the limited time, each group is asked to focus on three or four main domains for action.</li> <li>• Ask the group to set high-level objectives and target indicators for each domain for action. The proposed indicators will be used to assess programme performances and should therefore be measurable, such as the number of TB patients identified, treatment success rate or percentage reductions in mortality and incidence.</li> <li>• For each issue or domain for action, ask the group to identify three or four high-level interventions rather than activities.</li> <li>• Encourage the group to be innovative and critical, particularly when proposing continuation of existing interventions.</li> <li>• If time allows, encourage the group to identify potential stakeholders or partners to implement or support the interventions.</li> <li>• Encourage the group to identify data gaps that limit the design of interventions.</li> <li>• Compile critical information gaps to inform future data collection and operational research.</li> </ul>
<b>Prioritization and optimization</b>	Once the groups have identified three or four interventions per domain for action, ask them to assess the feasibility and potential impact of each. This will help the NTP to prioritize and optimize the proposed interventions.
<b>Group organization</b>	<ul style="list-style-type: none"> <li>• The group leader should ensure that members understand the instructions for group work and the expected outcomes; when appropriate, encourage the use of existing national- or international-recommended policies and interventions or national or subnational best practice in designing interventions.</li> <li>• Assign a rapporteur to document the group's rationale during identification and prioritization of interventions.</li> </ul>

## Plenary session

- Each group presents the objectives and proposed interventions for each domain for action.
- During the presentation, the group should indicate the feasibility and probable impact of the proposed interventions.
- If possible, the NTP representative and the meeting organizer should summarize the potential strategic objectives and target indicators resulting from each group presentation.
- The NTP representative and the meeting organizer should compile, summarize and review the proposed interventions to identify cross-cutting and multi-sectoral interventions.



### Hint:

If there are more than eight groups, limit the presentation and question and answer time to 15 minutes per group. Appointment of a timekeeper will ensure that the time allocation is respected.

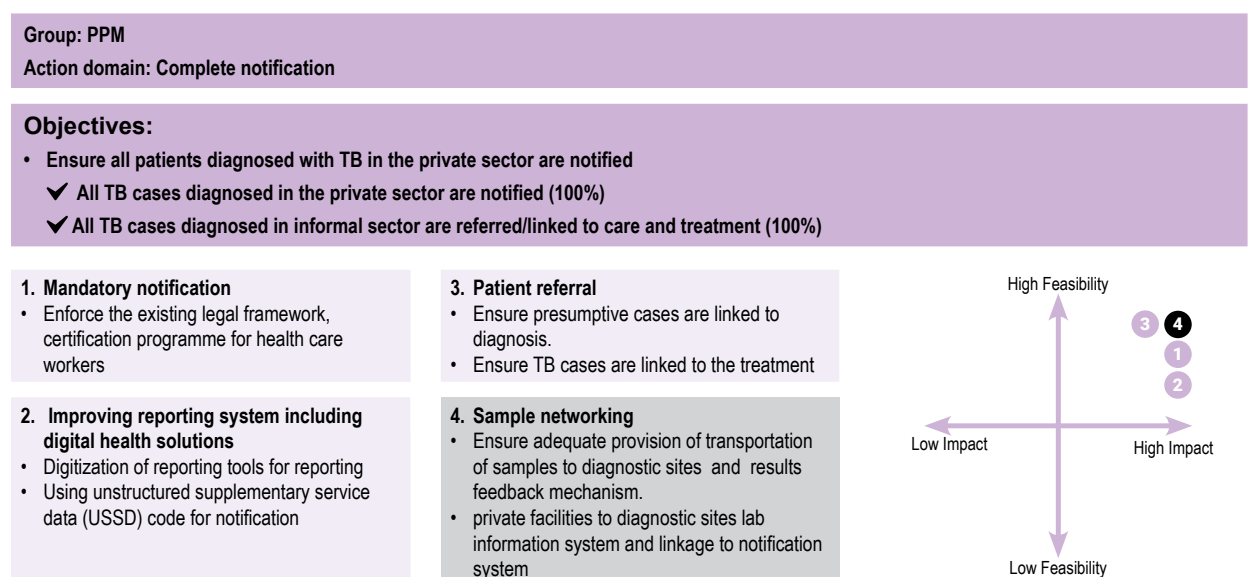
## Model example of group results

### Individual groups:

Fig. A3.8 shows an example of individual group results from Kenya. As indicated above, this shows that potential cross-cutting and multi-sectoral interventions emerged. Four groups proposed interventions related to a sample referral system (box highlighted in orange). However, groups made different assessments of the feasibility and impact of available interventions, suggesting that further exploration of implementation approaches, including cost-effectiveness analyses, would be warranted.



**Fig. A3.8. Example of work on optimization of interventions in four groups, Kenya**



**Group: Diagnostics**

**Action domain: Improve access to TB diagnostic services**

**Objectives:**

- Increase TB case detection rate from the current 46% in 2017 to xx% by 2023 and detection of DR-TB from X to X%
  - ✓ Outcome 1 Increase percentage of newly notified patients diagnosed with WHO-recommended rapid diagnostic (WRD) from 38% in 2017 to 70% in 2023
  - ✓ Outcome 2 Increase coverage of DST to all previously TB patients (from 75% to 100%) and to 80% for newly diagnosed cases
  - ✓ Outcome 3 Increase % of sites using a WRD to which a connectivity system has been established for electronic reporting to clinicians and electronic reporting system

**1. Integrated sample referral system**

- Establish policy and implementation framework across diseases and partners
- Electronic tracking

**3. Adopt chest X-ray and other new WHO-recommended tools/approaches within the patient diagnostic pathway**

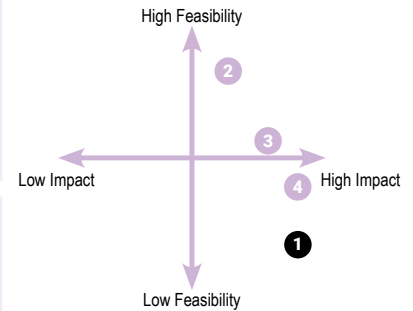
- Link GeneXpert laboratory information management system/laboratory information system (GX-LIMS/LIS) to TIBU and DHIS
- Stool kit for paediatric TB, Sequencing, Omni, lipoarabinomannan (LAM)

**2. Optimize diagnostic device placement and network structure**

- Diagnostic network optimisation analysis
- Include engagement of private sector labs and providers

**4. Remove cost barriers to TB diagnosis**

- Ensure all TB diagnostics are included in the national health insurance benefit package
- Negotiated diagnostic pricing for private sector
- Partners: ministry of health/partners



**Group: Symptomatic disease, not seeking care**

**Action domain: Access to health facility**

**Objectives:**

- Increase access to TB services
  - ✓ Improved access to diagnostic services
  - ✓ Integrated outreach services

**1. Strengthen specimen referral and feedback in targeted communities**

- Consider use of community health volunteers to fix specimens and transport to health facility

**3. Involve all actors in the community**

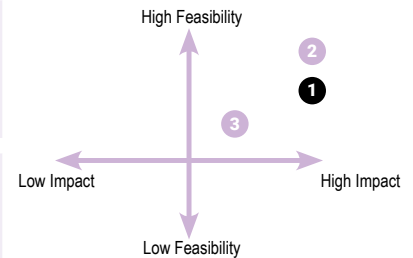
- Including herbalists, traditional healers as community health volunteers

**2. Integrate TB in outreaches in the community in targeted communities**

- Use community health volunteers to do TB screening in the community

**4. Intervention D**

- (supportive evidence)
- Description...



**Group: DR-TB**

**Action domain: Finding missing cases of DR-TB**

**Objectives:**

- To reduce the gap between the estimated and notified number of DR-TB cases
  - ✓ All (100%) previously treated cases accessing DST
  - ✓ At least 80% of new cases accessing DST

**1. Universal 1st line DST**

- All new and previously treated cases tested for 1st line DST
- Quality assurance programmes

**3. Universal 2nd line DST for DR-TB cases**

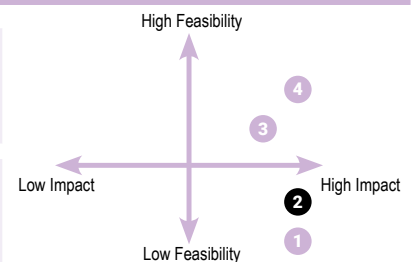
- 100% of patients with DR-TB tested for 2nd line DST
- Quality assurance programmes

**2. Sputum sample networking**

- Riders for health system in all counties

**4. Contact tracing**

- 100% of DR-TB cases contacts tested



### Summary of group work:

Fig. A3.9 gives an example of a summary of the results of day 3 group discussions that could be presented at the end of the workshop. As in Fig. A3.8, Fig. A3.9 shows cross-cutting themes among different groups. As optimization of interventions continues after a workshop, further analysis of individual group results, other processes such as modelling and cost-effectiveness analyses can help countries to design interventions and implementation approaches.



**Fig. A3.9. Example of day-3 group work summary, Kenya**

Theme	Pre-care seeking	Diagnostic	PPM	Monitoring & evaluation (M&E)	Social protection	Drug-resistant TB (DR-TB)	Childhood TB	Key populations	TB/HIV	Leprosy
Policy & Advocacy										
Service intergration										
Multi-sector coloboration										
Social protection and benefit package										
Community involvement										
Capacity building										
Use of apps & technology										
Sample referral										
Use of CXR										

## A3.5. Synthesis and way forward (Day 3)

At the end of the workshop on day 3, the NTP representative should present:

- workshop objectives, evaluating with participants whether all the objectives have been met;
- a summary of prioritized programmatic challenges and problems, their determinants, their causes and root causes and the proposed interventions;
- targets and strategic objectives (if possible);
- next steps to optimize the proposed interventions, for example by using modelling and cost-effective analysis, and preparation of an operational plan for monitoring and evaluation, technical assistance and budget;
- organization of a further workshop or meeting (if required); and
- timelines for next steps.

Depending on the purpose, the NTP representative may plan another half- or one-day workshop to discuss the operationalization, monitoring and evaluation, technical assistance and budget plan.

Before the workshop is closed, a formal written evaluation should be conducted to allow participants to give feedback and comments to improve similar workshops in the future.



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