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Western Pacific Regional Framework to End TB (2021–2030)

World Health Organization
Western Pacific Region

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Abbreviations

ACF	active case finding
AMR	antimicrobial resistance
ART	antiretroviral treatment
BCG	bacille Calmette-Guérin (vaccine)
C4H	Communication for Health
COVID-19	coronavirus disease 2019
DR-TB	drug-resistant tuberculosis
DST	drug susceptibility testing
DOTS	directly observed treatment, short-course
LTBI	latent tuberculosis infection
MAF-TB	Multisectoral Accountability Framework for Tuberculosis
MDR-TB	multidrug-resistant tuberculosis
NCD	noncommunicable disease
NSP	national strategic plan
NTP	national tuberculosis programme
OOP	out-of-pocket
PLHIV	people living with HIV
PPM	public–private mix
RR-TB	rifampicin-resistant tuberculosis
SDG	Sustainable Development Goal
TB	tuberculosis
TB-HIV	tuberculosis and HIV
TB–SDG	Tuberculosis–Sustainable Development Goals (monitoring framework)
TPT	tuberculosis preventive therapy
UHC	universal health coverage
WHO	World Health Organization

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Executive summary

The World Health Organization (WHO) Western Pacific Region has succeeded in reducing tuberculosis (TB) deaths by 17% and TB incidence by 6% compared to 2015 levels; however, the progress thus far is not sufficient to achieve the *End TB Strategy* and Sustainable Development Goal targets for TB by 2030.

The *Western Pacific Regional Framework to End TB (2021–2030)* was developed at the request of and in consultation with the Member States in the Region. It is aligned with the global *End TB Strategy* and with *For the Future: Towards the Healthiest and Safest Region* – a vision for WHO work with Member States and partners in the Western Pacific in the coming years. This Framework is a continuation of the *Regional Framework for Action on Implementation of the End TB Strategy in the Western Pacific, 2016–2020*. This new Regional TB Framework focuses on system development. People and communities – not diseases – are at the centre of the health system in the Framework, with universal health coverage (UHC) and multisectoral partnerships as key elements in facilitating the reduction of the burden and suffering caused by TB in the Region. The Framework can be adapted by Member States in formulating their national TB plans, based on their local experiences.

The first part of this Framework begins with an exercise in "backcasting", or working backwards from a longer-term goal – the end of the TB epidemic – to determine steps needed to reach that goal. The second part addresses the background or premise of the TB approach in the Western Pacific Region, and the third part details the proposed responses under this new Regional Framework.

1. Through the lens of 2030

The Regional Framework employs the principle of backcasting to address the *End TB Strategy* targets from a different angle – through the lens of 2030. It begins with the desired state – a reduction in TB deaths by 90% and new cases by 80% between 2015 and 2030, and ensuring that no family is burdened with catastrophic expenses due to TB – regardless of the current feasibility of those targets, but with the intention of determining the priority actions needed to achieve them.

The TB situation, the service delivery system and surrounding environment are likely to be very different in 2030 than they are today. In a scenario where the 2030 *End TB Strategy* targets were achieved, TB incidence and mortality would be reduced dramatically. The disease likely would be concentrated predominately in high-risk groups, with a large proportion of TB cases due to the reactivation of old infections.

The environment also will be noticeably different. It is assumed that technological breakthroughs will be made and effective new tools introduced for TB. The social determinants of TB may be largely addressed as part of overall social and economic development. Universal coverage for TB services may, for the most part, be ensured by 2030. TB response by then would be predominately outbreak response.

It is understood that progress towards ending the TB epidemic will not occur at a similar pace in all 37 countries and areas of the Western Pacific Region, with countries at different stages of social and economic development and TB epidemiology. Considering the scale of TB burden and evolving national health priorities, there may be a risk of weakening essential TB functions at the central level, which could lead to a re-emergence of TB and a rise in drug-resistant strains. To prevent such a scenario,

specific TB functions need to be maintained at the central level – and strengthened towards and beyond 2030. These functions – policy, monitoring and evaluation, and quality of services – can be thought of as "control levers" for managing and ending the TB epidemic.

The backcasting exercise has helped identify key areas of action for the future and essential TB functions that need to be strengthened, including a major emphasis on research and innovation. The exercise also found that health system strengthening and working with sectors beyond health are essential if the future vision of a healthier and safer region is to be realized.

2. The premise for the Regional Framework

This section describes the current TB situation in relation to *End TB Strategy* targets and identifies impediments towards the future vision. Nearly 2 million people develop TB in the Western Pacific Region every year. Regional milestones set earlier for 2020 have not been reached, and at the current rate of progress, subsequent milestones might be missed as well. Almost 20% of those in the Region notified that they have TB are older people. Also, about 20% of the people with TB in the Region are either undiagnosed or have never been notified. Of the estimated number of people who developed TB, only two thirds have been successfully treated. The situation is worse for those with drug-resistant tuberculosis (DR-TB) or TB with HIV co-infection. More than one third of people in the Region with TB face catastrophic costs.

The coronavirus disease 2019 (COVID-19) pandemic has resulted in the disruption of TB services and decreased detection of both TB disease and infections in several countries, which may have a major negative impact if TB services are not restored and maintained quickly. And while COVID-19 has imposed great challenges on TB programmes, it also has created opportunities to build back a stronger system.

A slow decline of TB incidence is expected if the current effort continues. However, a scenario analysis confirms that by scaling up a set of interventions – including the use of rapid molecular diagnostics for detection, active case finding with a treatment provision for both TB disease and infection, and support for treatment adherence – it will be possible to achieve the *End TB Strategy* milestones of 50% reduction of TB incidence rate by 2025 in comparison to 2015. However, the 2030 targets would be missed without a breakthrough, such as a new and effective vaccine. Interventions in TB care already make economic sense, generating at least a fourfold return on investment.

The Regional Framework recognizes future socio-demographic and economic trends, such as ageing, urbanization and income inequality. The ever-growing burden of noncommunicable diseases (NCDs) in countries that are part of an epidemiological transition means additional efforts will be needed to keep TB under control, given the link between TB and risk factors, such as diabetes, the harmful use of alcohol, air pollution, malnutrition and tobacco. Therefore, all of these factors must now be considered in the design of TB programmes.

Challenges are categorized into four groups:

1) **TB specific**: missing cases (those undiagnosed and/or unreported), inadequate quality of care and prevention efforts. These issues are equally important for both drug-susceptible TB and DR-TB cases.

2) **Beyond TB, within health**: inadequate systems for UHC, insufficient coordination to address risk factors, limited research and innovation, inadequate engagement of civil society and community.

3) **Beyond health**: inadequate social protection mechanisms and limited multisectoral involvement with accountability to address the social determinants of health.

4) **Overarching management and governance**: issues such as inadequate financing, weak coordination mechanisms and accountability.

3. The response framework

The Regional Framework has the same goal as the *End TB Strategy*, adopted by the World Health Assembly in May 2014, with targets linked to the Sustainable Development Goals. With the vision of a TB-free Western Pacific, the Regional Framework adopts a human-rights-based approach and aims to achieve an 80% reduction in the proportion of people who newly develop TB (TB incidence rate), a 90% reduction in number of TB deaths by 2030, as compared to 2015, and no catastrophic costs. The Framework is aligned with *For the Future*, which promotes TB efforts as a part of all four thematic priorities of the regional vision: 1) health security, including antimicrobial resistance; 2) NCDs and ageing; 3) climate change, the environment and health; and 4) reaching the unreached. The Framework is linked with specific strategies to address those thematic priorities. It highlights reaching the unreached through special focus on high-risk groups and the most vulnerable and underserved populations.

The approach of the Regional Framework features country-specific and multisectoral partnership. The Framework draws on the following operational modalities: 1) a systems approach to strengthen service delivery; 2) fostering information for action; 3) strategic communication and change management; and 4) innovation and rapid uptake.

Action domains of the Regional Framework

Strengthen essential TB functions: To address challenges for the TB response, the Framework recommends strengthening essential TB functions by: a) ensuring early diagnosis and notification of TB disease for all populations, including vulnerable populations; b) ensuring equitable, people-centred TB services with a decentralized model of care, empowerment of people and families affected by disease, the integration of treatment adherence interventions, and integrated palliative and end-of-life care; and c) preventing TB infection and disease by strengthening infection prevention and control, the acceleration of expansion of TB prevention treatment, and bacille Calmette-Guérin (BCG) vaccination in high-prevalence settings.

Build health system foundations: To address challenges beyond TB, the Framework recommends within the health sector the strengthening of health system foundations through: a) systems approach towards UHC by contributing to the attributes of universal coverage; b) enhancing collaboration with other health programmes, and with clinicians and professional entities for managing risk factors and comorbidities; c) establishing or strengthening national-level research networks; and d) ensuring meaningful participation of community and civil society organizations.

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Promote health beyond health: To address challenges beyond the health sector, the Framework recommends promoting health beyond the health sector through: a) contributions to enhancing social protection mechanisms; and b) promoting a whole-of-government and whole-of-society approach.

Governance and accountability: To address the overarching management and governance challenges, the Framework recommends: a) sustainable adequate financing; b) TB-sensitive policies and managing the translation of policy to practice; c) strengthening management and coordination; and d) managing TB in emergency situations.

The Regional Framework aims to support national strategic planning for TB. This Framework should guide the development of national plans and serve as a tool for collaboration with other sectors within and beyond health to implement the *End TB Strategy* in a manner consistent with a country's context. WHO and all stakeholders are expected to assist countries in the journey towards 2030 with the goal of ending TB in the Western Pacific Region.

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Introduction

The sixty-sixth session of the World Health Organization (WHO) Regional Committee for the Western Pacific in 2015 endorsed the *Regional Framework for Action on Implementation of the End TB Strategy in the Western Pacific, 2016–2020*,[1] which was adapted from the global *End TB Strategy*[2] to reflect the context of the Region for the five-year period ending in 2020. In October 2019, during the seventieth session of the Regional Committee, a report on progress and challenges was presented.[3] In response, several Member States requested WHO to develop a framework to provide direction through 2030 in implementing the *End TB Strategy*.

This document, the *Western Pacific Regional Framework to End TB (2021–2030)*, like its predecessor, is based on the *End TB Strategy*. It draws from global and regional experiences, adapting global strategy and experiences to the evolving regional epidemiological, demographic and geographical context. It draws on an evaluation of the previous framework,[4] technical input and experiences from stakeholders. Finally, the Regional Framework is aligned with the vision presented in *For the Future: Towards the Healthiest and Safest Region*.[5] The Regional Framework describes how tuberculosis (TB) and good health have causes and effects that extend beyond the health sector. It is also a tool for advocacy for multisectoral partnerships at the national level.

The Western Pacific Region has succeeded in reducing TB deaths by 17% and TB incidence by 6%, compared to 2015 levels.[6] But progress thus far has not been sufficient to achieve the targets contained in the *End TB Strategy* and the Sustainable Development Goals (SDGs). There are considerable challenges, such as missing people with TB and drug-resistant TB (DR-TB) and a huge pool of TB infection with the potential to become disease, as well as challenges with the slow uptake of innovations and a lack of multisectoral actions to address catastrophic costs faced by those on TB treatment and their families. Socioeconomic trends will add to these challenges in the future. Rapid economic growth will facilitate the transition of health financing from international to domestic sources, which will bring new responsibilities and challenges. In addition, increasing urbanization will necessitate strengthening urban TB control; a flourishing private sector will demand a greater focus on a public–private mix strategy; ageing populations will generate the challenge of managing TB in older people; and the ever-growing burden of noncommunicable diseases (NCDs) will impose additional challenges in addressing TB and risk factors, such as diabetes, the harmful use of alcohol, air pollution, malnutrition and tobacco use.

For the Future, the shared vision for WHO work with Member States and partners in the Western Pacific Region, [5] has identified four priorities: 1) health security, including antimicrobial resistance; 2) NCDs and ageing; 3) climate change, the environment and health; and 4) reaching the unreached. These priorities align with those of the *End TB Strategy* and offer an unparalleled opportunity for the TB programme to leverage and collaborate in building resilient and sustainable health systems that provide universal health coverage (UHC) as a foundation, promote multisectoral and accountable partnerships for TB while engaging with civil society, and respond with a human rights approach that is centred on people affected by TB.

The coronavirus disease 2019 (COVID-19) pandemic has further shaken health systems, economies and societies. These extraordinary circumstances have forced a rethinking of priorities and operational mechanisms. This situation reinforces the importance of strengthening UHC with an increase in access

and availability of quality services for all, including vulnerable and unreached populations affected by TB and other diseases.

In recent times, several high-level commitments have been made to accelerate progress towards ending TB. The WHO Global Ministerial Conference on Ending TB in the Sustainable Development Era: A Multisectoral Response, held in Moscow in 2017, emphasized the need for a multisectoral response and accountability framework.[7] The first ever high-level meeting on TB of the United Nations General Assembly in September 2018 reiterated the commitment by leaders to end TB by closing the gaps in diagnosis, treatment and prevention.[8] Following the declaration that emerged from the United Nations high-level meeting, initiatives were launched in several countries in the Western Pacific Region: a Race to End TB was launched in Cambodia and the Philippines; Viet Nam set up a TB commission headed by the Deputy Prime Minister to ensure a multisectoral response; and China emphasized multisectoral involvement for TB in its national action plan. In 2020, progress was reported to the United Nations General Assembly, as agreed in the political declaration on TB. The report emphasized that high-level commitments and targets galvanized global and national progress towards ending TB, but urgent and more ambitious investments and actions are required to put the world on track to reach targets, especially in the context of the COVID-19 pandemic.[9] The report identified priority recommendations to put the world on track to reach the agreed targets by 2022 and beyond and to reduce the enormous human and societal toll caused by TB.

Over the past few years, new tools, technologies and policies have been available for TB services. Multiple rapid diagnostic platforms from different sources have been introduced in countries. Several new drugs and shorter regimens have been introduced. Digital technologies are widely used, and e-health platforms are becoming popular. The TB community is expecting more breakthroughs in the coming years. These tools and technologies have the potential to change the TB programme landscape. Strong health systems need to be ready to adopt and scale up these new tools and technologies.

The Western Pacific Region is diverse, consisting of 37 countries and areas that are home to more than one quarter of the world's population. The Region includes countries that are big and small, low and high income, some with fast-growing populations and others that are rapidly ageing. Health systems and services are strong in some countries and weak in others. Various natural disasters are common in the Region. Similarly, the Region is diverse in the level of its TB burden: it has countries with a very high burden of TB and also countries in the pre-elimination stage. Such diversity calls for a country-focused approach.

Aim and objectives of the Regional Framework 2021–2030

The aim of this document is to provide the basis (reasoning) and concepts for multisectoral actions that countries can adapt to their context and implement with all stakeholders to achieve the targets of the *End TB Strategy* by 2030. This Regional TB Framework is applicable to all countries and areas in the Region.

The objectives of the Regional Framework are:

1) to further accelerate progress on TB in the Western Pacific Region and to be an essential tool for national tuberculosis programmes (NTPs) and technical partners to develop their national strategic plans (NSPs) for TB or national health plans;

2) to strengthen health systems and UHC and to leverage them for: a) ending TB in the context of the changing demographic, epidemiological and financial landscape; and b) introducing future innovations in TB and health systems; and

3) to be a thought-provoking advocacy document and tool for collaboration and partnership, targeting policy-makers at various levels and of various sectors, to ensure that programme managers, policy-makers and decision-makers understand the complexities around the disease and support TB control through a wide, multisectoral set of interventions and policies.

Target audiences

This Regional Framework is intended for a wide audience of professionals and policy-makers in all sectors including those beyond the health sector. It is hoped that the ministries or departments of health (TB and non-TB); industry; the commerce, education and environmental sectors; social sciences; health-care workers in the public and private sectors; civil society; and TB-affected communities will find this document useful in further strengthening collaboration and partnership to end TB.

What the Regional Framework is not

The targets of the *End TB Strategy* continue from the previous regional framework for 2016–2020. The new Regional Framework does not provide new regional targets. It also does not give country-specific targets, as these are well-placed in the NSPs. The Regional Framework is not intended to be a TB technical document, the utility of which is limited to those with TB technical expertise. It also should not be considered a "shopping list" of activities that can be directly transferred to a national plan.

Organization of the document

The Regional Framework consists of three parts. The first part presents an exercise in "backcasting", or working backwards from a longer-term goal to determine steps that need to be taken, in this case looking at TB from a 2030 viewpoint. The second part describes the status of TB care and prevention, as well as challenges. The third part presents the response framework and the approach towards 2030 to end TB. The document is organized in sections, with summaries or key messages presented in a box at the end of each section.

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Box 1. Aim and objectives of the *Western Pacific Regional Framework to End TB (2021–2030)*

The **aim** of the 2030 Framework is to provide the basis (reasoning) and concepts for multisectoral actions that countries can adapt to their context and implement with all stakeholders to achieve the targets of the *End TB Strategy* by 2030.

The **objectives** of the Framework are:

- to further accelerate progress on TB in the Western Pacific Region and to be an essential tool for NTPs and technical partners to develop their NSPs or national health plans;
- to strengthen health systems and UHC and leverage them for: a) ending TB in the context of changing demographic, epidemiological and financial landscapes; and b) for introducing the future innovations in TB and health systems; and
- to be a thought-provoking advocacy document and tool for collaboration and partnership, targeting policy-makers of various levels and of various sectors, and to ensure that programme managers, policy-makers and decision-makers understand the complexities around the disease and support TB control through a wide, multisectoral set of interventions and policies.

The target audience for the Regional Framework is all those with an interest in the promotion of TB prevention, control and care, including: ministries or departments of health (TB and non-TB); industry; the commerce, education and environment sectors; social sciences; health-care workers in public and private sectors; civil society; and TB-affected communities.

This Framework is applicable for all countries of the Western Pacific Region; however, priorities may differ in different countries based on their specific TB situation.

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1. Through the lens of 2030

1.1 Tuberculosis in 2030

TB response in the Western Pacific Region has been guided by the global *End TB Strategy*, with the vision of a world free of TB and the goal of ending TB as public health problem by 2035. The Strategy sets a target of an 80% reduction of TB incidence rate by 2030 (compared to 2015). For the *End TB Strategy* targets to be achieved by 2030, it must be understood that the TB situation, service delivery system and surrounding environment in 2030 are expected to be different from what they are in 2021. This Regional Framework begins with backcasting by drawing an expected scenario of TB in 2030. As backcasting involves working backwards from a longer-term goal to determine the steps necessary to reach that goal, this exercise helped to identify strategic actions and identify milestones to make the 2030 target a reality.

Why backcasting

Backcasting is a planning methodology also known as "future-to-now" planning and is an operational modality that is one of the cornerstones of the regional vision in *For the Future*.[5] This is an approach commonly used in economics and business, but less so in public health. Such a planning method is particularly important for addressing complex, long-term problems involving many sectors and recognizes that external factors play a significant role when prevailing trends are not favourable to the achievement of the desired future state. TB is an excellent example of such a health issue, and one that benefits from this planning process. The backcasting planning process focuses on the "how" and seeks solutions to reach the desired target. It promotes thought processes beyond traditional business practices to spark creativity, identify innovative solutions and inspire to work towards a common goal. It tries to address what needs to be done today to reach that successful outcome in the future.

This section uses the *End TB Strategy* target from its endpoint view. It starts with the desired state, irrespective of the feasibility of achieving that state from the current perspective. The intention is not to test the feasibility of the current target, but rather to find the priorities to reach the target.

TB in 2030: regional view

The backcasting scenario assumes the *End TB Strategy* targets for 2030 have been achieved. In that case, TB incidence and mortality would be reduced dramatically (Fig. 1): regional TB incidence would be 20 per 100 000 population, and number of TB deaths would be low, around 11 000 per year. The majority of countries would be either in a lower-moderate or low-incidence situation for TB. TB may be concentrated predominately in high-risk groups such as older people, immunocompromised people, migrant populations from high-endemic areas, etc. A huge proportion of TB cases may be derived from the reactivation of old infections.

The environment will also be noticeably different. Social determinants of TB such as extreme poverty, poor living and working conditions, low education, food insecurity, stigma, discrimination and marginalization may be largely addressed due to overall development. Social protection mechanisms would be mature enough to protect the most vulnerable. These assumptions are tied to achievement of the SDGs by 2030.

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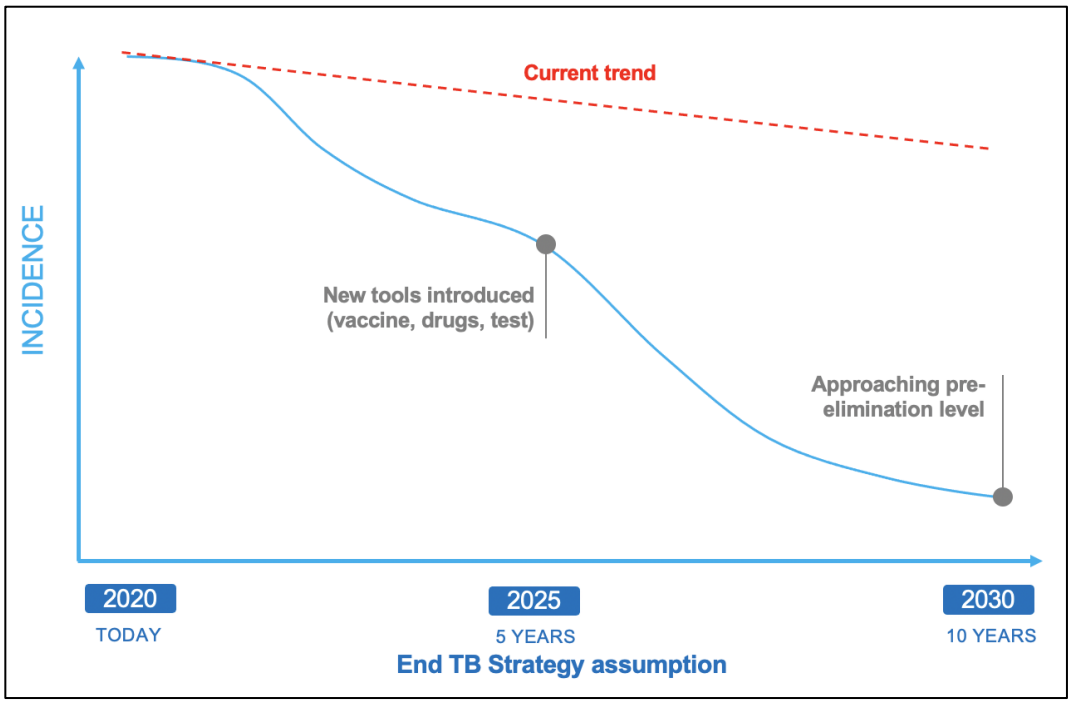
Fig. 1. Reduction in TB incidence in 2025 and 2030 in the Western Pacific Region – future scenario



Source: The End TB Strategy. Geneva: World Health Organization; 2016

Over time, health service delivery systems will change. Universal coverage for TB services may be mostly ensured, and people – without any discrimination – would have access to quality health services without facing financial hardship. People would be empowered to oversee their own health. They would have options to choose from various modalities, either public or private. Service delivery may be driven by various innovations including digital technologies and artificial intelligence. New tools for TB – be they vaccine or point-of-care molecular diagnostics or short, simple effective treatments – would be effectively introduced.

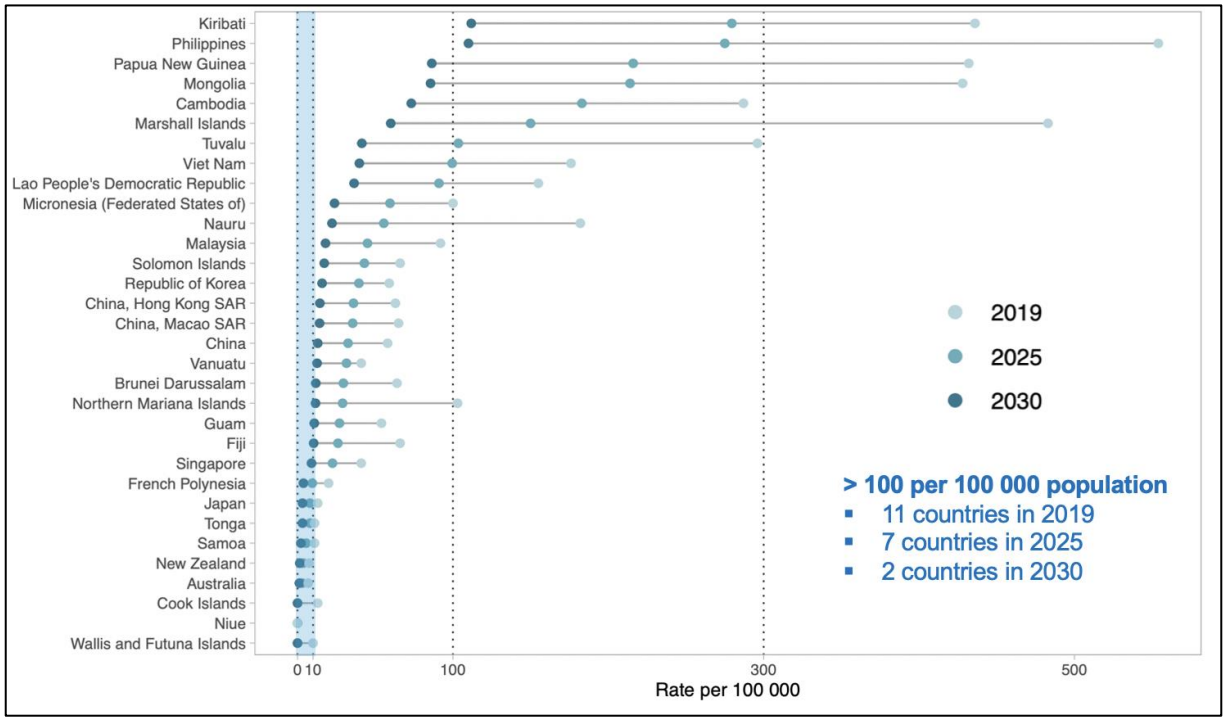
The TB response would be predominantly an outbreak response approach with systematic screening in high-risk groups. TB cases would be detected at the very early stage. This would trigger an alarm, which activates the system for various public health responses such as contact tracing, resistance profiling, genetic mapping, treatment for TB disease and prevention for TB infection. The surveillance system would be multi-source and detect signals where TB might arise, monitor the situation in real time and detect cases at an early stage to effectively cut the chain of the transmission. Once treatment is initiated, the system would follow the patient through the full course, until cure or palliative care or the end-of-life support, as needed.

TB in 2030: country specificity

It is well recognized that the progress will not be at a similar pace in all countries. Countries will be at different stages in terms of the developmental indicators and TB epidemiology. In 2019, a total of 11 countries in the Region had a rate of TB incidence more than 100 per 100 000 population (Fig. 2). Moving towards 2025 and 2030, with the assumption that all countries achieve the *End TB Strategy* targets, the number of those countries would be seven in 2025 and two in 2030. By 2030, most countries

would be in the lower-moderate TB incidence category (less than 50 per 100 000 population); however, a few countries would still have higher rates of new TB cases. Therefore, different countries may have a difference in their priorities and operational modalities.

Fig. 2. Reduction in TB incidence in 2025 and 2030 in countries and areas of the Western Pacific Region – future scenario



Outlook of the delivery mechanism/system in 2030 for TB

As mentioned in the earlier section, future service delivery modalities may be very different than they are now. The service delivery system should be ready to reach most of the currently unreached, either due to settings (geographical location, special settings such as prison or aged care, internally displaced, migrant populations), socio-demographic (gender, age, education, income, disability) and stigmatized conditions (mental health, substance abuse, reproductive health, infectious diseases such as TB, HIV/AIDS). Fair legal frameworks and governance will enable reaching the vulnerable populations.

True people-centred approaches may materialize, and people will be more empowered and will have the power to make decisions on their own health and service options through so-called “personalized care systems”. Countries will be closer to personalized medicine, which is an approach to patients that considers their genetic make-up but with attention to their preferences, beliefs, attitudes, knowledge and social context. TB prevention and treatment will be individualized based on drug susceptibility testing (DST) and other molecular markers and other social contexts that would determine acceptability by patients and communities. Digital technologies and artificial intelligence may have a major influence, the division of public and private service may be less demarcated, and various payment modalities may have major influences and chronic care facilities may be prioritized. TB services will be available based on the local epidemiology; however, people with TB symptoms can be identified at the very peripheral level of care and referred to a specific level with proper equipment and expertise. TB service in most

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countries are delivered through a common platform and are integrated into mainstream health services. There might be further integration of services in the journey towards 2030.

By 2030, if the *End TB Strategy* assumption of breakthrough innovations and tools materializes and vaccines become available, then TB may be considered a vaccine-preventable disease. At the central level, it may also be categorized as health security agenda.

Steps towards the future scenario

The above scenario summarized what conditions must be fulfilled to achieve the *End TB Strategy* targets. However, it does not cover the question of how to turn the future projection into reality.

Without the new tools – vaccines for prevention, point-of-care molecular diagnosis or shorter effective treatments – achieving the 2030 targets may not be possible, as per the *End TB Strategy* assumption. Therefore, the major emphasis needs to be on research and innovation with proper financing and a research-friendly environment. Countries also need to be prepared for the rapid roll-out of the new tools.

Essential TB functions such as screening, diagnosis, treatment and prevention using existing tools need to be strengthened and scaled up with ensured quality. In some cases, massive interventions and large-scale implementation will be needed, with appropriate financial support.

Health systems must be ready for the future, moving from a disease-specific programme approach towards a people-centred, integrated care system in line with the vision of UHC. Various applications of digital health have the potential to transform the delivery of different dimensions of services, bringing the notion of patient-centred care within reach.[10]

To sustain a world free of TB, sustainable development is key. Sectors beyond health will have a major role to play in enabling this future vision, and TB-sensitive social protections and strong collaboration with various sectors responsible for the social determinants of TB need to be established.

In the Western Pacific Region, various countries are at different stages of development and TB epidemiology. Some countries, especially those with very high burdens of TB and drug-resistant TB, need to continue to give special attention to TB with additional human and financial resources. Fine-tuning of the health system needs to continue to gain efficiency. TB programmes may prove to be a pathfinder for overall health system strengthening in such contexts. Some countries have passed some of the stages as described above. Exchanging ideas and experiences among countries will be useful, keeping in mind that no one-size-fits-all solution exists.

Control levers

In the future, in some countries, with the decreased scale of the TB burden along with an evolving national health agenda and system transformation, there may be a risk of losing essential TB functions at the central level. Hence, the chance of a re-emergence or rise of drug-resistant strains may be a real risk, as has been seen in the history of TB response.

Specific key functions need to be continued and strengthened towards and beyond 2030. Those should be considered as “control levers” or essential functions. They may either sit in a section or unit at the central level, currently known as the national tuberculosis programme. In some decentralized settings,

these functions may also need to be available at subnational levels. This Regional Framework has identified three key areas (detailed below). Maintaining and further strengthening those essential TB functions will ensure proper clinical management of TB and a robust public health response to future epidemics.

1) **Policy:** TB-sensitive policies need to be ensured, including a TB-sensitive social protection policy. Even in low-incidence settings, specific groups of people may be unreached without policy support.
2) **Monitoring and evaluation:** Surveillance capacity as a component of monitoring and evaluation needs to be advanced in real time. Surveillance systems should be sensitive enough to detect early cases or even risk groups. Multi-source surveillance will be needed, and digital advancements may make that possible.
3) **Quality of services:** Quality services need to be ensured, including diagnosis with precise, effective treatments for both disease and infection, ensuring adherence to care in a patient-friendly manner. Quality assurance may come through different modalities, including routine audits and accreditation.

Box 2. TB in 2030

- TB as an integral part of the health agenda, transitioned from a disease-specific programme approach.
- Essential TB functions – policy, monitoring and evaluation, and service quality – must be continued as "control levers" even in very low-incidence settings.
- Country responses will be tailored based on the burden and health system.
- Journey towards 2030 may be focused on three areas:
  - strengthening essential TB functions
  - building a health system foundation ready for future change
  - promoting health beyond the health sector to enable a future vision

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2. The premise for the Regional Framework

2.1 The regional TB situation

An estimated 10 million people developed TB globally in 2019. About 18% of those people were in the Western Pacific Region.[11] In 2019, the Region had an estimated:

- 1.8 million people total who developed TB (93 per 100 000 population);
- 36 000 people who developed TB and were co-infected with HIV (1.9 per 100 000 population);
- 101 000 people with multidrug-resistant tuberculosis (MDR-TB)/rifampicin-resistant tuberculosis (RR-TB) (5.2 per 100 000 population); and
- 90 000 people with TB who died (84 000 were HIV-negative, and 6300 were HIV-positive).

Estimated number and rate of TB incidence

The estimated TB incidence varies greatly among the Region's 37 countries and areas (Fig. 3). In 2019, of the estimated number of people who fell ill with TB in the Region, almost half (46% or 833 000 people) were in China and nearly one third (33% or 59 000 people) were in the Philippines. In other words, 80% of the people who developed TB in the Region in 2019 were in these two countries. Another 9% (170 000) were in Viet Nam. These three countries along with four more (Cambodia, the Lao People's Democratic Republic, Mongolia and Papua New Guinea) accounted for 95% of the people who developed TB in the Region. The other 30 countries and areas accounted for the remaining 5%.

In 2018, six countries had an estimated 300 people who developed TB for every 100 000 population. The highest rate was in the Philippines (554), the Marshall Islands (434), Papua New Guinea (432), Mongolia (428), Kiribati (349) and Cambodia (302). In contrast, six countries or areas had an estimated 10 people who developed TB for every 100 000 population: American Samoa, Australia, Cook Islands, New Zealand, Samoa, and Wallis and Futuna.

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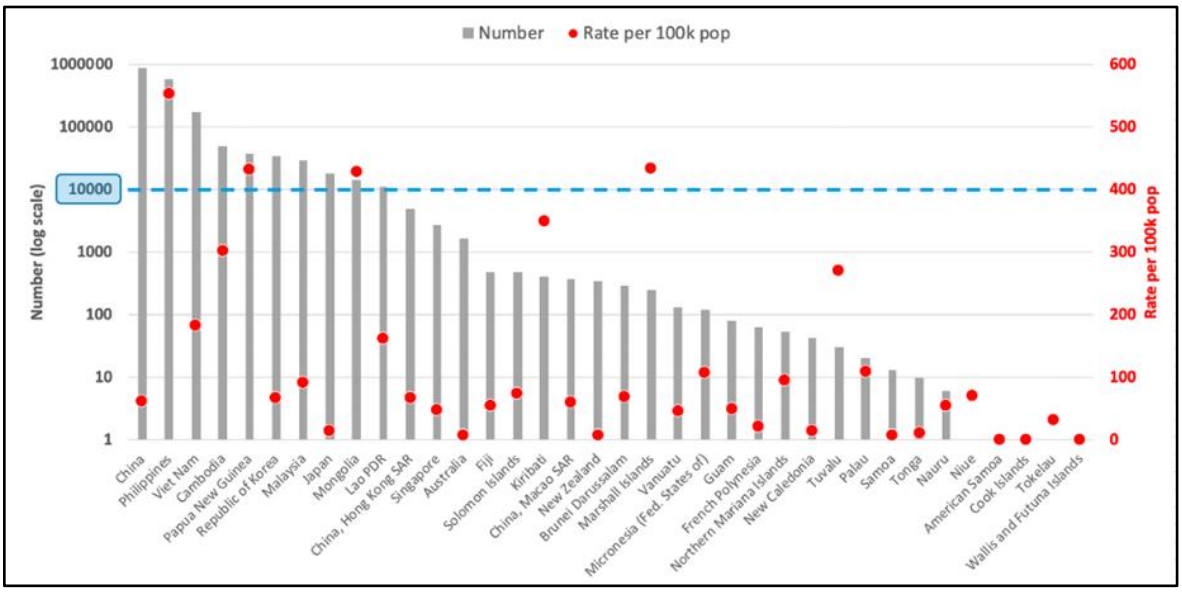
Fig. 3. Estimated number and rate of TB incidence for countries and areas in the Western Pacific Region, 2018



Data source: WHO

TB care cascade

Gaps in the TB care cascade, which evaluates outcomes across stages of patient engagement in a health system, are large in the Region (Fig. 4).

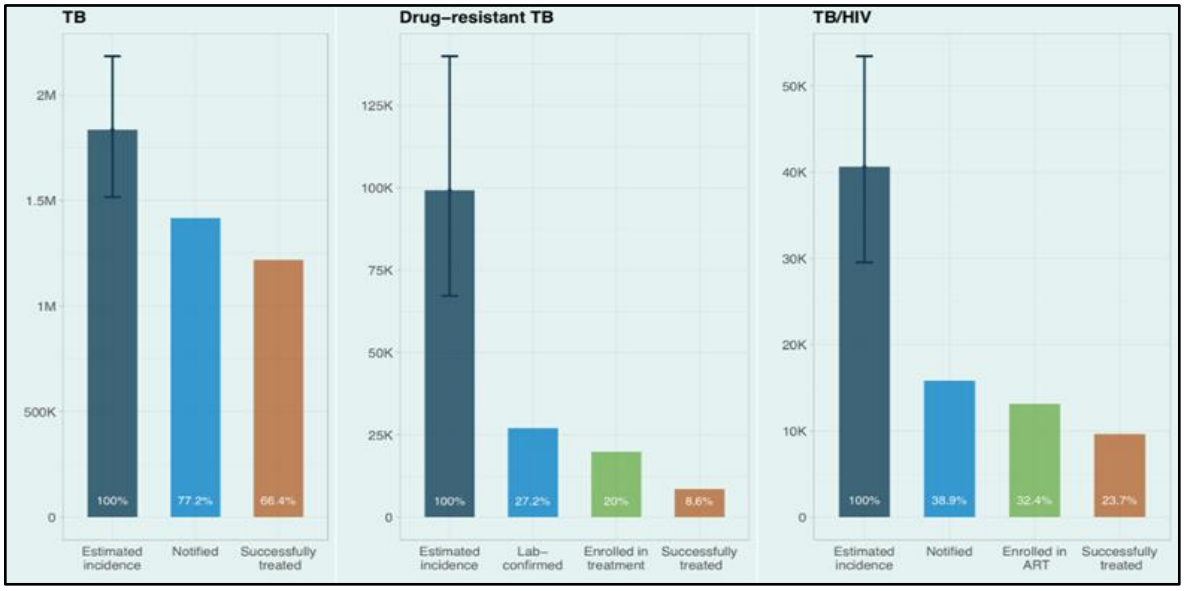
- Treatment coverage was low. It was 77.2% for those notified that they had TB, with 23% of those having TB (estimated incidence) missed for diagnosis or notification, 38.9% of those with TB–HIV co-infection notified, and 27.2% of those suspected of having MDR-TB and RR-TB having received laboratory confirmation.

- Of the estimated number of people who developed TB, the proportion diagnosed and successfully treated for TB, MDR-TB and RR-TB, and TB co-infected with HIV was 66.4%, 8.6% and 23.7%, respectively.

- The fatality ratio among people on TB treatment (estimated mortality/estimated incidence) was 5% in 2019.

Annex

Fig. 4. Cascade of care for TB, drug-resistant TB and TB–HIV co-infection in the Western Pacific Region, 2018



ART: antiretroviral therapy

Data source: WHO

Epidemiological trend

Case notification. The notification rate of people with TB Western Pacific Region has not increased since 2007, when it was 74 per 100 000. There has been a growing effort to increase detection of drug-resistant tuberculosis (DR-TB). Between 2015 and 2018, the proportion of people with bacteriologically confirmed TB who got drug susceptibility testing (DST) has increased from 28% to 51% – still far from the 100% target. In the Region, the notification rate for people with MDR-TB and RR-TB has increased from 1.0 to 1.4 people per 100 000 population between 2015 and 2018. Yet, 73% of the people estimated to have DR-TB and 61% of those estimated to have TB-HIV co-infection were not diagnosed or not notified. Scaling up the use of WHO-recommended rapid diagnostics remains a challenge in many countries. While many countries reported high DST coverage, it is extremely low (<5% of bacteriologically confirmed TB cases) in several countries (Cambodia, Papua New Guinea, the Philippines and Solomon Islands).

TB–HIV co-infection. The proportion of people with TB for whom their HIV status is known has increased from 12% in 2009 to 58% in 2019. This remains well below the target of 100% and the global average of 69%, despite a longstanding policy to conduct HIV testing for all people with TB. The prevalence of HIV among the people with TB who were tested for HIV has fallen from a high of 13% in 2006 to below 3%, which has been maintained since 2016, reflecting more comprehensive screening. The proportion of people with TB and HIV co-infection receiving antiretroviral therapy (ART) was 78% in 2019, based on reporting from 15 countries in the Region.

Treatment outcomes: The TB treatment success rate in the Region has been close to 90% for longer than a decade. However, the rate is largely due to big countries – China (93%) and Viet Nam (92%). It varied from 35% in New Caledonia to 98% in the Commonwealth of the Northern Mariana Islands in

2018. Twenty of 32 (63%) reporting countries and areas had treatment success rates of less than 85%, with success rates of less than 70% reported in countries and areas such as China, Hong Kong SAR (China) and Japan, where TB predominantly affects older people, but also in some Pacific island countries such as and Tuvalu and Papua New Guinea with younger populations. The treatment success rate for MDR-TB and RR-TB was low with 60% in 2019 (the 2017 cohort) in the Region. Treatment outcomes for people living with HIV (PLHIV) remain suboptimal – 75% in 2019 (the 2018 cohort) – in the Region.

TB prevention. In 2019 in the Region, only 41% of PLHIV and 11% of the contacts below 5 years of age received preventive treatment for TB. This is based on reports from eight and 14 countries, respectively. This percentage could be even lower in non-reporting countries.

Costs to individuals due to TB. Substantial proportions (35% to 70%) of TB-affected families were reported to have faced catastrophic costs due to TB in the eight countries that carried out national cost surveys for people with TB.[12]

Progress towards the milestones of the *End TB Strategy* in the Region

The interim 2020 milestones of the *End TB Strategy* are 20% and 35% reductions in TB incidence (rate) and deaths (numbers), respectively, compared to the 2015 baseline, in addition to a goal of eliminating catastrophic costs due to TB. The estimated incidence of TB in the Region has steadily declined from 135 per 100 000 population (2 304 902 people with TB) in 2000 to 96 per 100 000 population (1 835 528 people with TB) in 2018 (Fig. 5). Meanwhile, the estimated total TB deaths in the Region was reduced by more than half – from 12.2 deaths per 100 000 (209 022) in 2000 to 4.7 deaths per 100 000 (90 384) in 2018. This amounts to an annual reduction in the proportion of people who develop TB (incidence) and people who die with TB as 1% and 3.4%, respectively. The progress has been slow over the past 18 years.

- From 2015 (when the *End TB Strategy* and the 2016 Regional Framework were endorsed) until 2019, the estimated TB incidence rate and deaths declined by 6% and 17%, with annual reductions of 1.6% and 3.4%, respectively. These rates are not enough to achieve the 2020 milestones or other future targets of the *End TB Strategy*. Also, the declining trend in the Region is largely driven by the improvements in TB control in China.

- The declining trends of the TB burden in the Region are broadly in line with global trends.

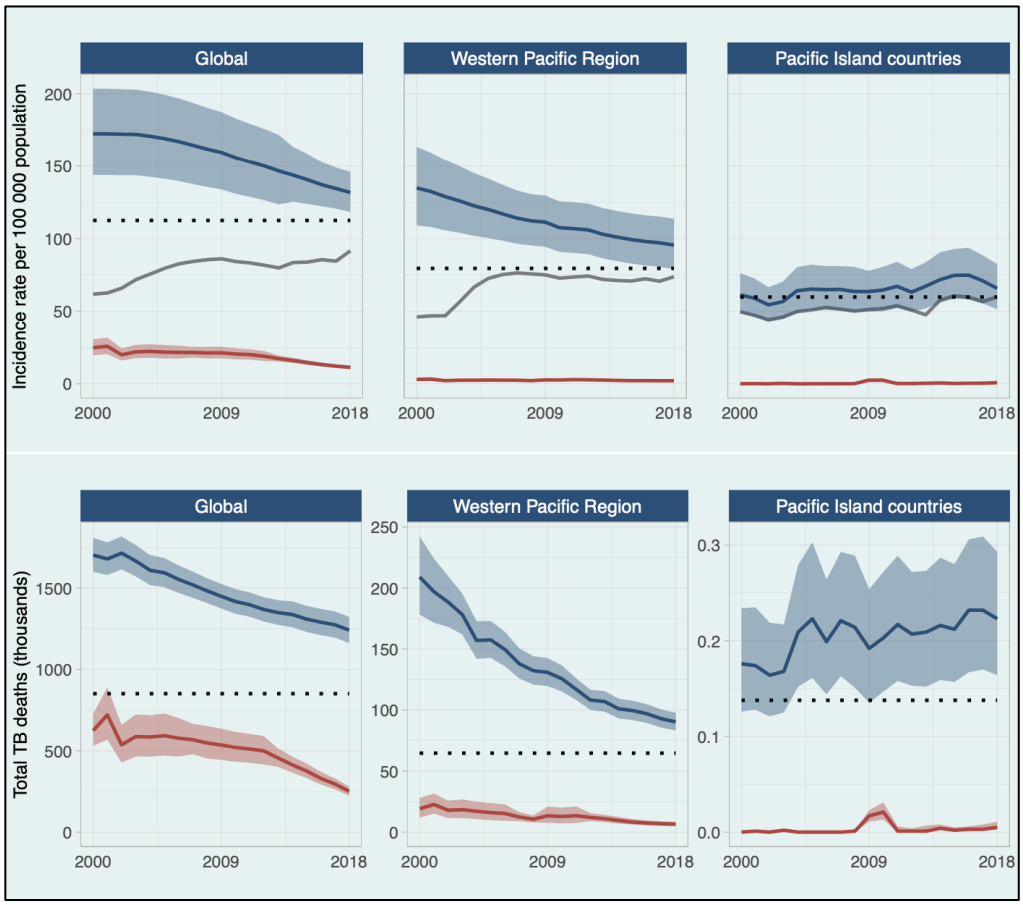
- For the subregion of Pacific island countries and areas (excluding Papua New Guinea), the estimated incidence rate was lower than in other parts of the Region. However, there has been no decline in the number of people who developed TB since 2000 in the Pacific (54 per 100 000 population in 2002 to 75 per 100 000 in 2016).

- The TB incidence and mortality rates in PLHIV have remained low in the Region (2.1 and 0.34 per 100 000, respectively in 2018).

- Only 19% (7/36) and 11% (4/36) of the countries in the Region have reached the 2020 *End TB Strategy* milestones of reduced TB incidence rate and deaths, respectively, as of 2018.

Annex

Fig. 5. Trends of estimated rate of TB incidence and number of TB deaths at global level, regional level and for Pacific island countries and areas, 2000–2018



Note: Estimated incidence and numbers of deaths are shown in blue and those among HIV-positive people in red. The horizontal dashed lines show the 2020 milestones of the *End TB Strategy*. Shaded areas represent uncertainty intervals. The grey solid lines show notifications of new and release TB cases for comparison with estimates of the incidence rate.

Data source: WHO.

2.2 COVID-19 and the impact on TB

COVID-19 has had an impact not only on health but also on society, people, politics, technology and economies. The pandemic has stressed health systems and disrupted essential health services, including TB services.

Challenges to TB programmes by the pandemic

The response to COVID-19 has resulted in disruption of TB services and decreased detection of both active and latent TB infection in several countries. Restrictions limited movement of both health-care providers and those who need care. The post-lockdown restoration of services has been slow and suboptimal in many countries. Multiple waves of infection have made restoration challenging. Assessments and modelling by WHO estimated a significant increase in TB mortality and incidence globally and the derailing of progress.[13] A regional survey showed that, in most priority countries, active

case finding (ACF) and contact tracing activities were severely affected. In some cases, treatment was hampered due to interrupted supplies. In most of the cases, resources were reallocated away from the TB programme. The overall impact is not yet known, but the pandemic continues to pose a serious threat to the *End TB Strategy* targets.

Impact on TB detection and mortality in 2020

The provisional monthly and quarterly TB case notification data for 2020 (reported online to WHO) from 14 countries, which account for more than 99% regional notification, reported 1.3 million cases (provisional), compared with 1.6 million for 2019. The relative shortfall in TB case notifications (2020 versus 2019) was 20% in the Region. The largest shortfall was in the Philippines (37%). As the impact of reductions in TB detection and care in 2020 are felt, an estimated 137 000 excess TB deaths could result in 2020 and 2021, setting the Region back more than a decade.

Financial implications of the pandemic

There are major uncertainties in the overall impact of the pandemic; however, the biggest uncertainty is its impact on all spending by individual, governmental or developmental assistance. The initial projections of the COVID-19 impact indicate a contraction of gross domestic product across all countries by 4.9%.[14] Several countries will be at risk of a decline in per capita public spending on health, even if the proportion of government expenditure on health remains unchanged. The impact could be further exacerbated if there is a reprioritization of health.

In order to sustain progress towards achieving UHC in the context of COVID-19 in the Western Pacific Region, the following are the key areas of consideration: protection of regular health budget while mobilizing resources for COVID-19 response; "ring-fencing" of priority expenditures; cutting down on non-priority expenditures, re-examination of priorities; and expanding engagement with private sector actors and nongovernmental organizations to deliver care.

Priority for rapid restoration of TB care and prevention

During the pandemic, continuity of TB and other essential health services is a top priority. Actions for immediate restoration may fall into three domains:[15]

1) **Case finding:** Scaling up simultaneous testing for TB and COVID-19, taking into consideration the similarity of symptoms and based on exposure or presence of risk factors.

2) **Treatment:** Home- and community-based prevention and care should be strongly preferred. Digital adherence technologies can help bridge the gap in communication. TB preventive treatment should be ensured for household contacts, especially given the increased risk of exposure.

3) **Resources:** Ensuring that TB prevention and care are safeguarded. Community health workers, youth volunteers and civil society can be engaged to supplement the health workforce.

Ensuring effective infection prevention and control measures to protect the health and safety of health workers, staff and patients is of utmost importance. Health-care facilities should include staff orientation on COVID-19, implementation of infection control practices as per WHO guidance and the use of personal protective equipment for staff. WHO continues to provide guidance on operational planning[16] and updated information notes on considerations for TB care.[17]

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Opportunities offered by the COVID-19 pandemic

While COVID-19 has imposed great challenges on TB programmes, it has also created opportunities to develop innovative strategies to ensure continuity of TB services and ultimately to strengthen TB care, prevention and control. Pandemic responses offer several opportunities for collaboration. COVID-19 provides an entry point for introduction of technology-based solutions, multisectoral engagement and sharing of resources for overall health system strengthening. A few examples are presented below:

- **Opportunities to strengthen TB prevention.** Infection control measures, considering administrative, environmental and personal protection can apply to both COVID-19 and TB, which may have some positive impact on TB. NTPs may use the opportunity to strengthen contact tracing, triaging, cough etiquette, and personal protective equipment supplies and use.

- **Integration and multisectoral response.** COVID-19 brings the opportunity of service integration and multisectoral response. Multisectoral response to COVID-19 is a unique example that may be referred and explored further for the TB response.

- **People-centred outpatient and community-based care.** People-centred and community-based care is promoted over hospital treatment, except for serious conditions.

- **Digital health and innovations.** COVID-19 has unleashed a flood of innovations that are penetrating society at record speed. Use of digital health technologies should be intensified to support people with TB and TB programmes.

- **Proactive planning, procurement, supply and risk management.** Proactive planning, procurement and regular monitoring of stocks of drugs and laboratory consumables should be in place to prevent interruptions in the supply of diagnostics and medicines, especially in peripheral facilities.

- **Human resources and capacity-building.** The staff involved in TB should also be familiarized with COVID-19 guidance and vice versa. TB programme systems – such as contact tracing, infection prevention and control, household and community care, and surveillance – can also benefit responses for COVID-19 and at the same time be further strengthened.

2.3 Strategic investments for TB

As noted in 2.2 COVID-19 and the impact on TB, the slow decline in TB incidence and deaths is not sufficient to achieve the *End TB Strategy* milestones. Additionally, there are societal, economic and demographic transitions such as urbanization and ageing in countries that will influence the epidemiology of TB and the achievement of *End TB Strategy* targets. Intensified efforts are needed, but economic implications will be of paramount importance to countries. Interventions to prevent and treat TB have been estimated to be extremely cost-effective, providing up to a 43-fold return on investment if a 95% reduction in TB deaths is achieved.[18] Japan offers a strong example: the country's investment in the control of TB and parasitic diseases in 1950s and 1960s contributed to the country’s post-war economic growth.[19]

Annex

With this background, a scenario analysis was conducted to predict the incidence and mortality of TB between 2020 and 2030 in the Western Pacific Region under various scenarios and interventions and to estimate the cost-effectiveness for different interventions. The analysis was based on four countries with nearly 89% of the incident TB cases of the Region.[20] The results for all four countries were pooled for the purpose of developing the Regional Framework. This analysis did not include the impact of the social determinants for TB and the impact of COVID-19. The results should be interpreted with caution.

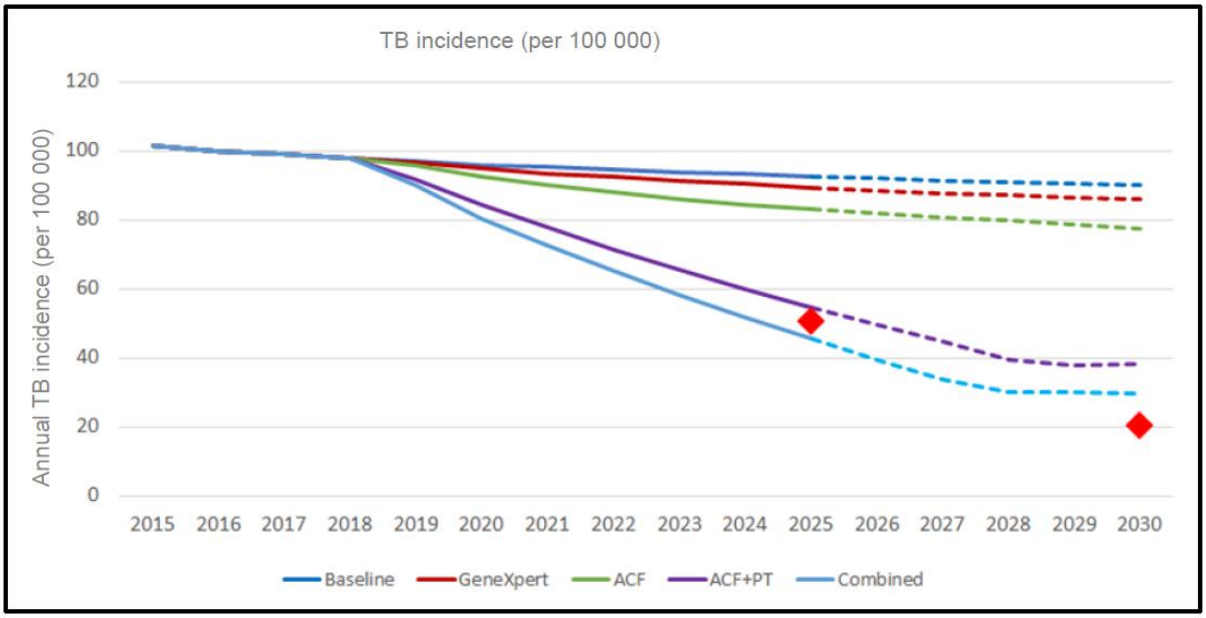
The analysis considered various interventions being scaled up one by one (separately) from 2020 to 2025 and then being sustained until 2030. Besides including single interventions, the model also considered combination scenarios consisting of all the mentioned interventions. The interventions considered in all four countries were (Fig. 6): a) use of rapid molecular diagnostics as the first diagnostic test (universal DST); b) active case finding (ACF) – randomly, systematically or based on risk factors (ACF was defined as screening of people for TB in people not seeking care for respiratory symptoms); and c) ACF followed by TB infection screening and TB preventive therapy (TPT). In individual countries, additional interventions such as TPT for children aged under 5 years living in households of people affected by TB, and improving treatment success by enhancing patient support, were also modelled. The analysis showed that it was possible to achieve the *End TB Strategy* milestone for incidence for 2025, which was a 50% reduction from the 2015 level by using the combination strategy. However, even the combination strategy was not sufficient to achieve the 2030 incidence target (80% reduction from 2015). This reconfirms the *End TB Strategy* assumption and highlights the importance of research and innovations towards ending TB. The analysis showed that:

- between 2015 and 2025, without additional interventions, TB incidence is projected to decrease by 9%, from 96.9 in 2019 to 89.9 per 100 000 per year in 2030; and
- with various interventions, the incidence in 2030 will be:
  - with universal use of rapid molecular diagnostics – 86.0 per 100 000 per year,
  - with ACF – 77.5 per 100 000 per year,
  - with ACF and TPT for people with TB infection – 38.0 per 100 000 per year, and
  - with a combination of all modelled interventions – 29.7 per 100 000 per year.

For the ACF or combined interventions to be effective, it was noted that coverage will have to be extremely high, almost reaching 100% of the population, or the intervention needs to be able to effectively identify and target communities or groups of individuals with high TB prevalence. Small-scale or pilot implementation will not have a major impact on the TB epidemiology in the Region. In the model, the interventions produced different impacts in the four countries studied, partly due to demography and the current extent (coverage) of the interventions. This emphasizes that knowing the local epidemic and context is the key for planning and prioritizing actions.

Annex

Fig. 6. TB incidence per 100 000 person-years in the Western Pacific Region 2015–2030



Notes: The different curves represent different intervention scenarios.
The red markers show the *End TB Strategy* incidence milestones and targets for 2025 and 2030.

Source: Estill J, Islam T, Houben RMGJ, Rudman J, Ragonnet R, McBryde ES, et al. Tuberculosis in the Western Pacific Region: estimating the burden of disease and return on investment 2020–2030 in four countries, The Lancet Regional Health – Western Pacific. 2021;11;100147.

The broader economic impact of TB disease and care was assessed. The exercise concluded that TB care is an extremely efficient policy option and will likely bring a multifold return on investments in the coming decade. Interventions to improve the effectiveness of TB care along the continuum of care are also likely to be cost-effective. Based on a high-burden country analysis, the current standard of TB care was estimated to return US$ 4 to US$ 49 per US dollar spent within a longer time window – until 2030. Additional interventions are likely to bring a net benefit by increasing productivity. A weighted mean value for the Western Pacific Region, based on the three highest-burden countries, would be US$ 13 per US dollar spent.

Box 3. Estimating the burden of disease and return on investment 2020–2030

Key messages

- A slow decline in incidence and mortality is expected in the coming years. The targets set for TB incidence and mortality reduction by 2030 will be difficult to reach.
- Large-scale, coordinated and sustained policy shifts and implementation efforts, along with transformational new tools such as point-of-care approaches, easily accessible diagnostics for infection and disease, shorter and more effective regimens against infection and the various forms of active disease, and a new potent vaccine are needed.
- TB care in the Western Pacific Region is an extremely cost-effective investment, providing a likely 4-1 return on investment, or even higher if interventions are sustained and longer-term impacts are achieved. A weighted mean value for Western Pacific Region would be about US$ 13 per US dollar invested.
- The situation in each country needs to be reviewed in detail to select efficient, context-appropriate and acceptable interventions that can together put the Western Pacific Region on a path towards eliminating TB as a public health problem.

2.4 Future socio-demographic transitions to influence the TB burden and care

This Regional Framework recognizes the three important fundamental transitions anticipated or already in motion in the Western Pacific Region: 1) demographic; 2) socioeconomic development; and 3) epidemiological.

Demographic transition

TB among older adults will soon pose major challenges to global TB control.[21] In 2018 in the Western Pacific Region, one fifth (20%) of the notification for people with TB disease was among those aged 65 years and older.[11] This is well above the global average of 11%. High rates of TB among older men are unique to the Western Pacific Region (Fig. 7). The populations in many settings identified with a low TB burden have gotten much older over the past decades, and the burden of TB has shifted towards the oldest age groups, at least in the non-foreign-born population.[22] However, this phenomenon is also seen in high-incidence settings in the Region. TB rates among older men are particularly high in countries such as Cambodia, China, the Lao People's Democratic Republic, Malaysia, the Philippines and Viet Nam. Further, about 10% of TB cases remain undetected among older people. The Region also identified ageing as one of its thematic priorities.[5] The percentage of the population aged 65 and older is rapidly increasing in the Region, and may reach 15% by 2030 and 25% by 2050. It is important to prepare TB programmes to address these future challenges.

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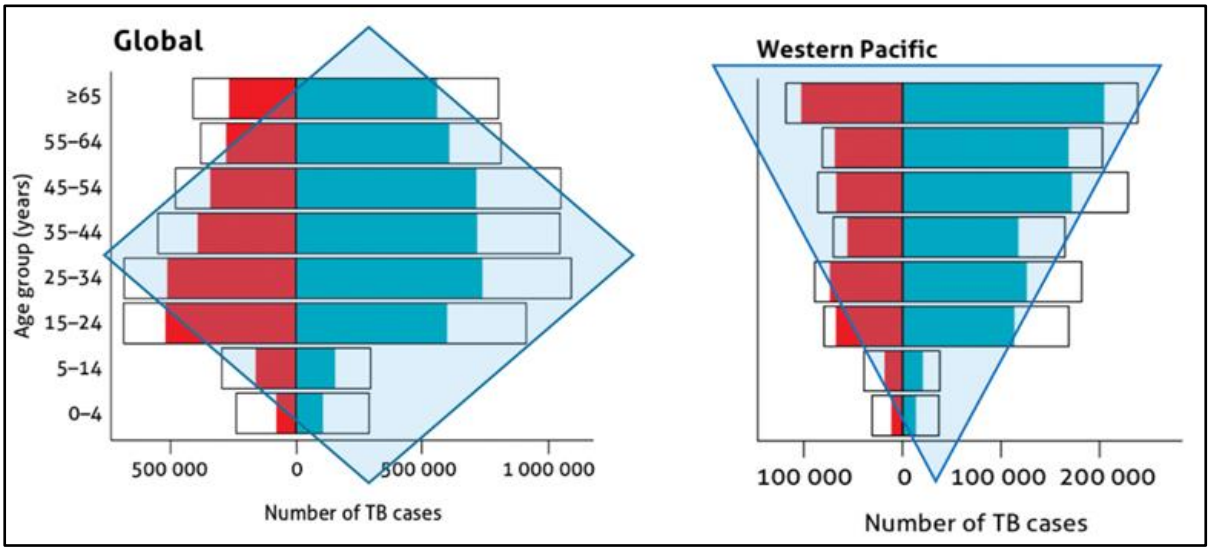
Fig. 7. Estimates of TB incidence (black outline) and notifications disaggregated by age and sex (female in red; male in turquoise), global and Western Pacific Region, 2018



Source: Global TB report, WHO, 2019

Challenges with TB care in older people

Clinical symptoms and signs in older people can be subtle – or atypical such as delirium – and may present with complications.[23] Older people are likely to have difficulties in accessing diagnostic and treatment services and may have technical difficulties in providing quality respiratory samples for testing, which inevitably delays diagnosis and contact tracing efforts. The prognosis of TB tends to be worse with higher mortality in older people. Untreated TB in older people can lead to outbreaks in nursing homes or spread among children in some settings, especially if older people play a major role in household childcare. TB management in older people can be highly complex, as most carry multiple comorbidities that require intensive medical care. Adverse events can be exacerbated because of existing age-related medical conditions or because of abnormal drug absorption and/or drug toxicities due to polypharmacy from comorbidities. The need for psychological and social support are also important to maintain adherence to treatment in older people.

Programmatically, there are two major challenges: 1) reaching older people for TB diagnosis; and 2) comorbidity management in older people with TB disease and adherence to treatment. Preparing for population ageing requires a long-term change involving the whole of society.[24] Many countries in the Region with a high TB burden are at a stage in which they are preparing for healthy ageing. The TB programme may need to play a forerunner role.

Socioeconomic development

Socioeconomic development has a strong relationship with TB epidemiology. As income levels and development indicators improve, the health system improves (as measured by UHC indicators) and TB incidence decreases. There are no low-income countries in the Region, with most undergoing rapid socioeconomic development. This may have a positive impact on TB in the long run; however, countries may face more immediate challenges as mentioned below.

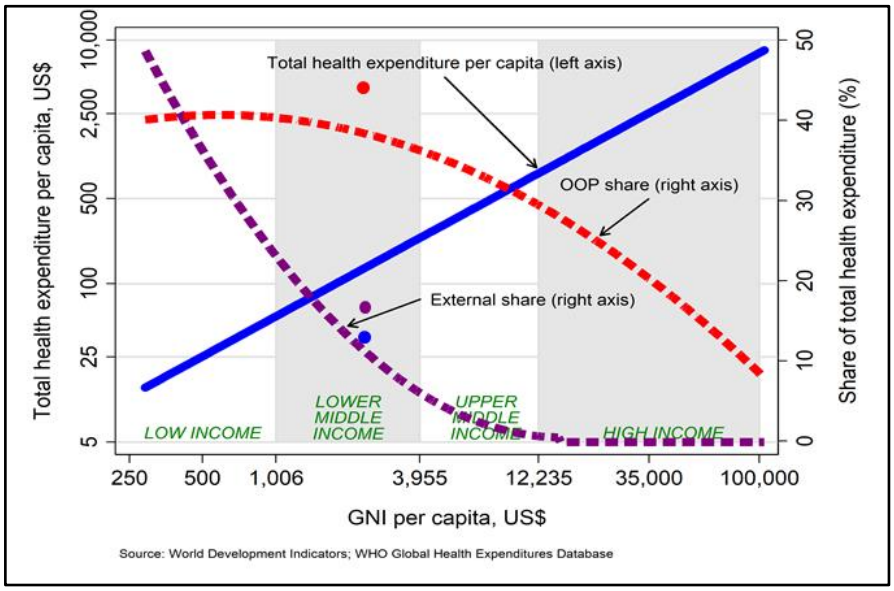
Annex

Implications for health financing

In the Region, health is largely financed from three sources: 1) public financing; 2) out-of-pocket (OOP) expenditures by households; and 3) external sources. Health spending per capita in 2017 varied significantly – from US$ 61 in Papua New Guinea to US$ 5332 in Australia. Health expenditures in high-income countries are mostly financed by public sources – on average, a mix of general government revenues and social health insurance contributions – while others have large shares of external financing combined with domestic government revenues and relatively low levels of OOP financing.

Most countries with a considerable TB burden in the Region are in the middle-income group. As countries move to the higher-income group, they are likely to transition out of external funding (Global Fund to Fight AIDS, Tuberculosis and Malaria and other donors), resulting in increased dependence on domestic funding. Fig. 8 shows that the external share usually declines faster than health expenditure growth, with most of the difference covered by OOP spending. If not managed properly, OOP expenditures may increase too much, creating a barrier to access.

Fig. 8. Relationship of economic growth with total health spending, external share and out of pocket share



Implications on urbanization

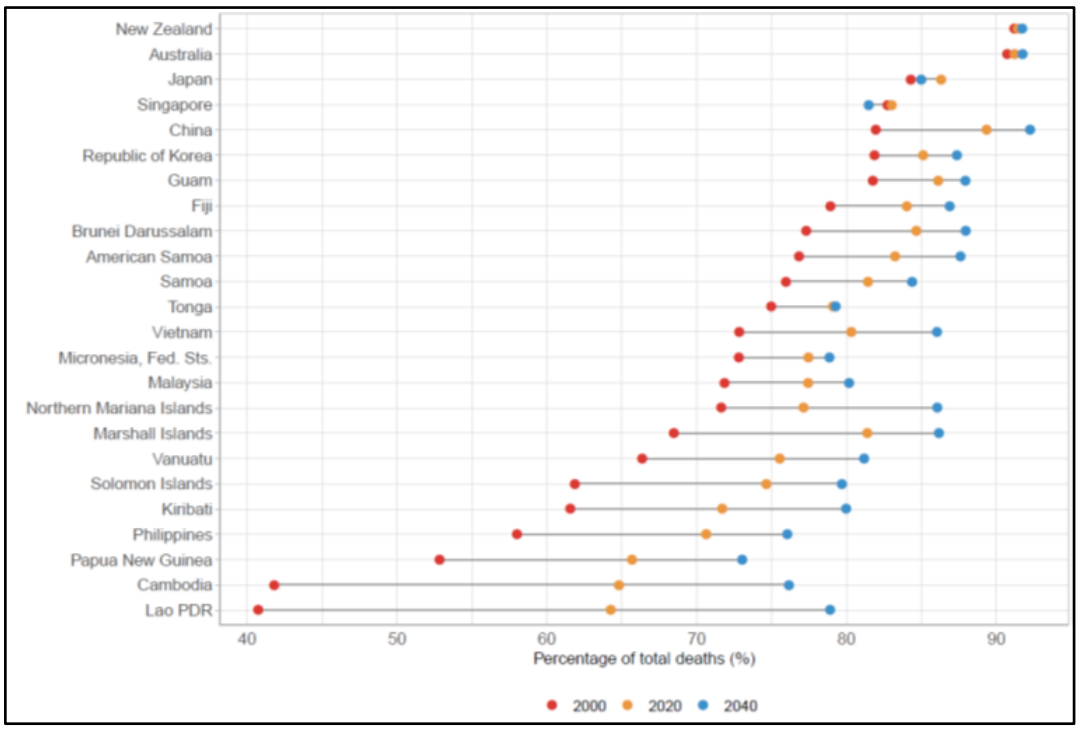
Rapid economic growth will facilitate rapid urbanization, which may create disparities in income to a certain extent. Currently, 60% of the megacities globally are in the Western Pacific Region. It is expected that 60% of the total population (close to 1.5 billion people) in the Region will live in urban areas by 2030.[25] The common TB programme set-up is designed for semi-urban or rural communities: one "basic management unit" serves a defined population with a known pattern. Urbanization brings multiplicity – multiple authorities, multiple types of populations (including internally displaced, urban slums and mobile populations) and multiple providers (public and private) – which poses challenges. The design of urban TB programmes must be adapted considerably.

Annex

Epidemiological transition

NCDs will be the major cause of death in nearly all countries and areas of the Region by 2030 (Fig. 9).[26] Increased prevalence of NCDs, such as diabetes mellitus, and their risk factors, such as tobacco use, the harmful use of alcohol, poor diets and physical inactivity, will increase the risk of TB infection or progression from latent TB infection (LTBI) to active TB. The increasing trend of NCDs could result in lower resource allocation and lower prioritization of communicable diseases, including TB.

Fig. 9. Percentage of NCD burden in 2000, 2020 and 2040 in countries in the Western Pacific Region



Source: Institute of Health Metrics and Evaluation, Global Burden of Disease Study

2.5 Impediments to the future desired scenario

Considering the current situation and future socio-demographic transitions, this Regional Framework categorizes the challenges of TB control and elimination into four groups of impediments to the future desired scenario (Fig. 10). Though context specific, major challenges are common across most settings:

1) **TB specific:** Challenges in TB care (TB diagnosis, treatment and prevention)

2) **Beyond TB, within health:** Challenges in health systems that influence TB care

3) **Beyond health:** Challenges related to social determinants of TB

4) **Overarching:** managerial and governance issues that influence TB care.

Fig. 10. Challenges to TB control and elimination

Challenges in TB care (TB specific)

The challenges are grouped in three major areas of TB care: 1) missing cases (diagnosis and/or notification); 2) quality of care; and 3) prevention. These issues are equally important for both drug-susceptible and drug-resistant TB (DR-TB) cases.

Missing diagnosis and notification of people who develop TB disease

An estimated 25% of the people who developed TB and nearly an estimated 75% of the people who developed DR-TB had not been diagnosed and/or reported to NTPs and were considered to have been "missing" in 2019. A lack of equitable access to TB care services is one of the major contributors to challenges in diagnosis. A weak health system fails to attract people with respiratory and other illnesses. Uncertainty in estimates of the number of people who develop TB for a particular country due to lack of sufficient epidemiological evidence makes it hard to provide accurate estimates of the case detection gap. The proportion of MDR-TB and RR-TB among those with new and previously treated TB has remained stable for some time; however, it is posing a serious threat to TB control in some high-burden countries. Low detection and poor outcomes among these cases mean continuous transmission.

Challenges with quality of care

Inadequate quality of care is a major challenge. People on TB treatment face quality of care challenges such as delays in diagnosis and treatment, long waiting times for results, use of less sensitive diagnostics, inflexible models of care, and neglected and unmanaged adverse events. These are in addition to their struggles with comorbidities and disease sequelae, stigma and discrimination. For example, inadequate use of WHO-recommended molecular diagnostics results in under-diagnosis of TB and DR-TB in all populations; whereas, overreliance on chest X-rays results in over-diagnosis of TB. Only about half of the people on treatment for DR-TB have a successful treatment outcome. Inadequate quality of services is an important contributor. Countries are lagging in expanding implementation of WHO-recommended exclusively oral treatment regimens for DR-TB that improve treatment outcomes and save lives.

Challenges with prevention

For a long time, not enough importance was placed on prevention in TB management. There is no fully effective vaccine available for TB, but bacille Calmette–Guérin (BCG) vaccination remains important, especially for preventing severe forms of TB in children. Also, there are major gaps in practising infection control in a health-care facility and also in practising respiratory etiquette in the community.

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TB preventive therapy is a major tool for TB prevention, in addition to the early detection and treatment of active TB cases. At the first United Nations high-level meeting on TB in 2018, Member States committed to provide TB preventive treatment to at least 30 million people in 2018–2022. However, progress has been slow in the Western Pacific Region.

Table 1 gives possible reasons for the three challenges cited above.

Table 1. Contributors to the challenges for TB care and prevention

Missing people with TB	Quality of care	Prevention
Not detected • Lack of sensitive point-of-care diagnostic tools • Limited access to recommended diagnostic tests due to geographical, financial, cultural, knowledge, stigma and perception barriers • Lack of trained health-care workers • Inadequate engagement of other health providers in the public and private sector Not notified • Inadequate notification system • Inadequate enforcement for notification including of those treated in other sectors	Quality of diagnosis • Insufficient quality of bacteriological and clinical diagnosis • Late diagnosis and not contributing to cutting the chain of transmission Quality of treatment • Lack of people-centred approach leading to treatment interruption and loss to follow-up • Lengthy, toxic regimens • Undocumented and unmanaged adverse events • Weak collaboration with general pharmacovigilance • Lack of attention to comorbidities and psychosocial support • Inappropriate regimen and low quality of drugs Treatment follow-up • Weak system for treatment support • Lack of attention to post-treatment follow-up TB in emergencies • No contingencies leading to interruption of services due to calamities, other epidemics, etc.	TB infection control • Weak infection control in health-care and congregate settings • Weak communication for personal protection • TB infection control not well integrated with general infection control • Lack of resources, especially for enhanced control required for DR-TB TB preventive treatment • Issues in accuracy and availability of tools for diagnosing infection • Weak system to exclude active TB disease • Insufficient access to shorter regimens • Provider and client hesitation due to either incorrect perception or lack of proper communication • Gaps in notification and surveillance of TB preventive therapy Lack of effective vaccine • Poor efficacy of BCG in preventing TB disease • No new vaccine available which can effectively prevent infection and/or disease

Note: This table considers both TB and DR-TB.

Challenges in health systems (beyond TB, within health)

There are challenges in health systems that impede the progress of the TB response. These are categorized as: a) an inadequate system towards UHC; b) insufficient collaboration to address risk factors for TB and comorbidities; c) limited research and innovations; and d) inadequate community and civil society engagement.

Annex

Inadequate system towards UHC

UHC road maps in the Western Pacific Region emphasize the five attributes of high-performing health systems: quality; efficiency; equity; accountability; and sustainability and resilience.[27] Current actions for TB within the attributes of UHC are not adequate to achieve UHC in many settings.

Access to high-quality primary health-care service is a challenge in many settings. Infrastructure, financing and human resources are often insufficient to provide service closer to the community. This is a barrier for people with symptoms, including children, older people and other vulnerable populations, to seek care and have an opportunity to access TB diagnostic and treatment facilities.

Although TB care is free in governmental health systems in the Region, many TB patients and their families suffer financial hardships due to TB illness. National cost surveys for people with TB estimate that 35% to 70% of TB-affected households face catastrophic costs due to TB. The key TB services are included within national health insurance schemes in some countries, but the percentage of population, the TB services covered and the proportion of costs covered by health insurance are insufficient.

Insufficient collaboration to address risk factors for TB and comorbidities

There are several health risks and comorbidities associated with TB. These not only increase the risk of developing TB but also worsen treatment outcomes. These comorbidities (and their prevalence) in the Region are undernourishment (6.0%), diabetes (8.4%), smoking (26.3%), alcohol use disorder (4.2%) and HIV infection (0.1%).[28,29] Of the estimated 1.8 million incident TB cases in 2019 in the Region, 320 000 cases are attributable to undernourishment, 64 000 to diabetes, 176 000 to smoking, 171 000 to alcohol use disorder and 35 000 to HIV infection.[11] Malnutrition plays a major role in contributing to the TB burden in most low- and middle-income countries. The resulting burden imposed by these factors is considerable in the Region and acts as a barrier for reduction of TB incidence.

To address those risk factors and comorbidities, close collaboration and coordination among various programmes and sectors are required. However, these are still underdeveloped, impeding the further reduction of the TB epidemic.

Limited research and innovations

Intensified research and innovation is the third pillar of the *End TB Strategy*. Increases in TB research were observed in most countries and areas of the Region over the past two decades, particularly in those with a high TB burden.[30] However, there is still a major gap in research and innovations. Operational research and locally driven innovations are needed in increasing the access, utilization and performance of the current tools and interventions in health systems.

In many countries in the Region, a national TB research network, national TB research agenda, a TB research capacity-building plan and advocacy for TB research are not well established. A health and medical education system that promotes and supports research, innovations and entrepreneurship will go a long way to combat TB, as well as other diseases.

Inadequate community and civil society engagement

Empowering individuals, families and communities to take charge of their own health through participating in planning and implementation is the key component of the health-care delivery system through primary health care. Civil society can help the health system by creating demand and by

monitoring and making systems accountable. Collaboration between the government and civil society is a key component of the second pillar (bold policies and supportive systems) of the *End TB Strategy*. This collaboration facilitates achieving the *End TB Strategy* targets and addressing social determinants and risk factors for TB.

However, there are several challenges in facilitating community and civil society engagement. There is a lack of regular platforms to involve affected communities in TB programmes from the national to community level. Hence, the voice of affected communities is not sufficiently reflected in the programme, and the potential of affected communities to contribute to TB care and prevention is not fully realized. Human resources and funding are scarce to support community-led and community-based responses to TB. There is a lack of indicators to evaluate the contribution of community-based activities in the NTP. Hence, community-based service delivery and similar initiatives are not sufficiently facilitated and documented.

Challenges related to social determinants of TB (beyond health)

Several social issues influence the predisposition to develop TB infection or TB disease or influence the course of illness for those affected by the disease. TB is not merely a disease, as it has social risk factors and social consequences including poverty and socioeconomic disparities. These challenges cannot be addressed by the health sector alone.

Insufficient social protection mechanism

TB is predominantly a disease of the poor. TB patients continue to bear a heavy financial burden, despite the provision of free TB services in most countries in the Region. Results from national cost surveys for people with TB showed that catastrophic costs are mainly caused by non-medical costs and income loss due to TB,[12] poor households get poorer and people with TB lose their jobs; and the financial burden of TB is more significant among people with DR-TB and TB co-infected with HIV.[31] The results further highlighted insufficient social protection mechanisms and inadequate coverage among the poor.

Limited multisectoral involvement to address social determinants

Fig. 11 shows the interconnectedness of the causes and effects of TB and their relationship to SDG targets.

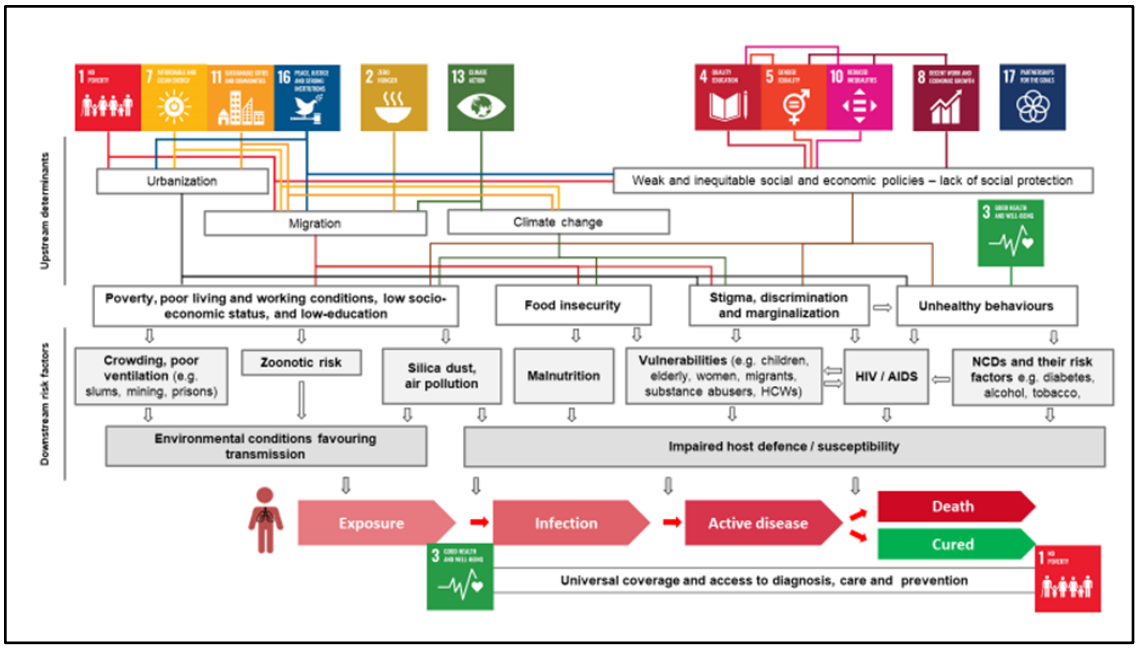
The TB burden has shown a clear socioeconomic gradient between countries, within countries and within communities, and the poorest have the highest risk.[32,33,34] People with low socioeconomic status have more frequent contact with people with active TB disease, a higher likelihood of crowded and poorly ventilated living and working conditions, limited access to safe cooking facilities, more food insecurity, lower levels of awareness and/or less power to act on existing knowledge concerning healthy behaviour, and limited access to high-quality health care.[35] Such low socioeconomic conditions can further lead to higher exposure to direct TB risk factors, such as HIV, malnutrition, smoking, harmful use of alcohol, silicosis, diabetes and mental illness.[36]

In the face of continued globalization, climate change and ongoing political instability, it is anticipated that the size and scale of migration will continue to increase in the Region.[37] The TB burden is generally higher in urban as opposed to rural areas due to high population density, crowded living and working conditions, and lifestyle changes associated with urban living. Cross-border migration poses significant

challenges in monitoring the health of migrants and in ensuring universal and equitable health access for them.

Addressing these risk factors and the social determinants of TB requires a holistic approach with strong multisectoral involvement. At least 12 SDGs are linked with TB.

Fig. 11. Interconnectedness of the causes and effects of TB



Source: Lönnroth K, Jaramillo E, Williams B, Dye C, Raviglione M. Tuberculosis: the role of risk factors and social determinants. World Health Organization 2010: 219-241. Geneva, Switzerland. Further modified by Villa S, Raviglione M.

Overarching management and governance challenges

There are some challenges linked to all three layers and groups mentioned above. They are defined as "overarching" challenges.

Inadequate financing

Sound implementation of the *End TB Strategy* depends on the availability of resources, both human and financial. The *End TB Strategy* has ambitious targets to reduce the immense suffering from this infectious disease, a top killer that is potentially curable with one of the most cost-effective disease programmes.[38] Historically, core TB interventions are less costly than other programmes, hence the historical budget or allocation for TB is low, which is grossly inadequate considering the current context. TB programmes need adequate financial resources at the implementation level and for research and development.

At the implementation level, the *End TB Strategy* is a comprehensive strategy that includes more action domains and components than earlier strategies, with technological advancements, more robust diagnostics, drugs and tools available, but more expensive than before. To reach ambitious TB targets and end TB as a public health problem, more extensive activities are needed than ever before. In some

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countries, reaching the "last mile" in TB treatment carries a much higher cost per person treated or death averted.

At the research and development level, appropriate financing is needed more than ever to have a vaccine, point-of-care tests and shorter treatment regimens. This will become a choice between front-loading costs and enjoying savings later, or continuing the status quo with a long-term economic burden.

Considering the economic landscape of countries in the Region, domestic funding must increase significantly, along with continuing coordinated efforts for external resource mobilization.[9] Improving efficiency and identifying a sustainable mechanism will be the key.

Weak coordination mechanism

The TB programme alone or even the health sector alone is unable to address the issues around the social determinants of TB that increase the vulnerability of populations. For TB interventions to be effective, concurrent efforts need to be put in place by other sectors (the media, sports, entertainment, the environment, information technology, telecommunications, and the public and private sectors) and by other ministries (social services, finance, energy, defence, labour, mining, education, justice and housing) and their public programmes. Various sectors are associated with issues differently as some have a direct impact (in diagnosis and treatment) and others have an indirect impact (social determinants and upstream factors).

Coordination across various public health programmes, ministries and sectors is a critical challenge that is often hampered by competing priorities and a lack of leadership or multisectoral accountability mechanisms. Currently, the coordination function is assumed by NTPs. However, considering the complexity, this coordination is suboptimal in most instances. Frequently, NTPs lack sufficient authority, making a higher-level coordination body essential.

Weak accountability

Accountability means being responsible and answerable for commitments made or actions taken. It begins with well-informed and empowered individuals, families and communities. It is essential for the success of the people-centred care of TB. Accountability applies to various levels of health care (primary, secondary and tertiary health-care centres), different levels of health administration (district, provincial and national) and different sectors (health and beyond health). Accountability also applies to the community, civil society, private sectors and technical agencies.

There is an evident gap in accountability in the TB arena as global commitments are translated into national commitments. But in many cases, these commitments are not informed as policy or legislation or converted into actions at the implementation level. Moreover, there is no clear governance accountability mechanism for the sectors beyond health. Global-level accountability is defined by the WHO *Multisectoral Accountability Framework to Accelerate Progress to End Tuberculosis by 2030* (MAF-TB); however, national and subnational mechanisms need substantial strengthening. Mechanisms of accountability are specific to the context and culture. The accountability framework for different groups and levels are thus to be developed and used at the country level, involving all stakeholders

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Weak planning for TB in emergencies

Natural disasters such as typhoons, volcanic eruptions, tsunamis and floods are common in many parts of the Western Pacific Region, and rising sea levels are threatening to erode many islands and atolls in the Pacific. However, most of the TB programmes and their NSPs lack contingency plans.

Box 4. Key messages: Challenges

Four groups of challenges for achieving the *End TB Strategy* targets are considered in the 2030 Regional Framework.

1) Challenges in TB care

- missing diagnosis, treatment and notification of people who develop TB disease
- inadequate quality of care
- weakness in prevention

These issues are equally important for both drug-susceptible TB and DR-TB cases.

2) Challenges in health sector

- weak health system with poor progress towards UHC resulting in poor access to primary health care and social and financial protection
- poor control of comorbidities and risk factors for TB
- lack of research and innovation resulting in weakening of the third pillar of the *End TB Strategy*
- lack of community and civil society engagement

3) Challenges with social issues that fall under non-health sectors

- insufficient social protection mechanisms
- limited multisectoral involvement to address social determinants

4) Overarching challenges

- inadequate financing
- weak coordination mechanism
- lack of accountability of stakeholders
- weak planning for TB in emergencies

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3. The response framework

3.1 Priorities and approaches

The *Western Pacific Regional Framework to End TB (2021–2030)* has been informed by and is aligned with the vision, goal and indicators of the *End TB* Strategy, as well with *For the Future: Towards the Healthiest and Safest Region – A vision for WHO work with Member States and partners in the Western Pacific*.

Vision: A TB-free region, and the healthiest and safest region

Goal: The Regional Framework follows the same goal as the *End TB Strategy*, adopted by the World Health Assembly in May 2014, with targets linked to the SDGs. The goals of the Regional Framework are: a) to reduce the number of TB deaths by 90% by 2030 compared to 2015; b) to decrease the proportion of people who newly develop TB by 80% by 2030 compared to 2015; and c) to ensure that no TB-affected families face catastrophic costs due to the disease.

Relationship with the *End TB Strategy*

The *End TB Strategy* builds on three essential pillars:

1) Integrated, people-centred TB care and prevention
2) Bold policies and supportive systems
3) Intensified research and innovation.

These three pillars are underpinned by four key principles:

1) Government stewardship and accountability, with monitoring and evaluation
2) Strong coalition with civil society organizations and communities
3) Protection and promotion of human rights, ethics and equity
4) Adaptation of the strategy and targets at country level, with global collaboration.

This Regional Framework is fully aligned with the *End TB Strategy*, following the same vision and goal. It defines a conceptual framework for implementation of the three pillars of the *End TB Strategy* in the context of the Western Pacific Region.

Linkage with the regional *For the Future* vision

For the Future articulates a shared vision: acting today to address the challenges of tomorrow, with the goal of making the Western Pacific the healthiest and safest Region. *For the Future* urges the application of a gender and equity lens to ensure that everyone benefits equally from regional progress towards better health. There are four thematic priorities that comprise the *For the Future* vision, all of which overlap with the challenges and suggested ways forward in the Regional Framework:

1) **Health security, including antimicrobial resistance (AMR):** DR-TB is a regional health security concern and one of the major components of AMR. Drug-resistant forms of TB are examples of conditions for which information is relatively precise, and policies and strategies to combat the

epidemic are clear and endorsed by all, governments and agencies working in the field. TB care and prevention is therefore an excellent model for the AMR response.

2) **NCDs and ageing:** NCDs and their risk factors are major attributes of TB. Additionally, TB in older people is becoming a common trend in the Western Pacific Region.

3) **Climate change, the environment and health:** Climate change and an inadequate living environment have consequences for TB care and prevention. Climate change and its consequences on the agriculture and food chain may generate strong reactions, forcing people to migrate. Living conditions are also affected by climate changes. Outdoor air pollution may possibly favour the onset of TB among people with latent infection, as can indoor air pollution that is produced by toxic fuels used domestically.

4) **Reaching the unreached:** TB-affected people remain unreached either due to settings (geographical location, special settings such as prisons or aged care, and internally displaced and migrant populations), socio-demographic factors (gender, age, education, income and disability), and stigma associated with the disease. In the Western Pacific Region where most of the population lives now in middle-income economies with increasing economic gaps, the relevance of addressing the challenge of reaching the unreached cannot be overemphasized.

Based on the regional circumstances, challenges and capacities, *For the Future* proposes seven operational shifts as tools to deliver better health outcomes, including for the TB programme:

1) finding new approaches to meet future challenges (innovation)
2) working backwards from the longer-term goal (backcasting)
3) taking a systems approach, with UHC as the foundation
4) building solutions from the ground up (“grounds-up”)
5) driving and measuring country impact
6) promoting health, beyond the health sector
7) strategic communications.

The Regional Framework is aligned with the priorities and operational shifts of *For the Future* (Fig. 12). This Framework should not be considered as a stand-alone framework but rather as one of many strategies that drive progress on the thematic priorities of *For the Future*.

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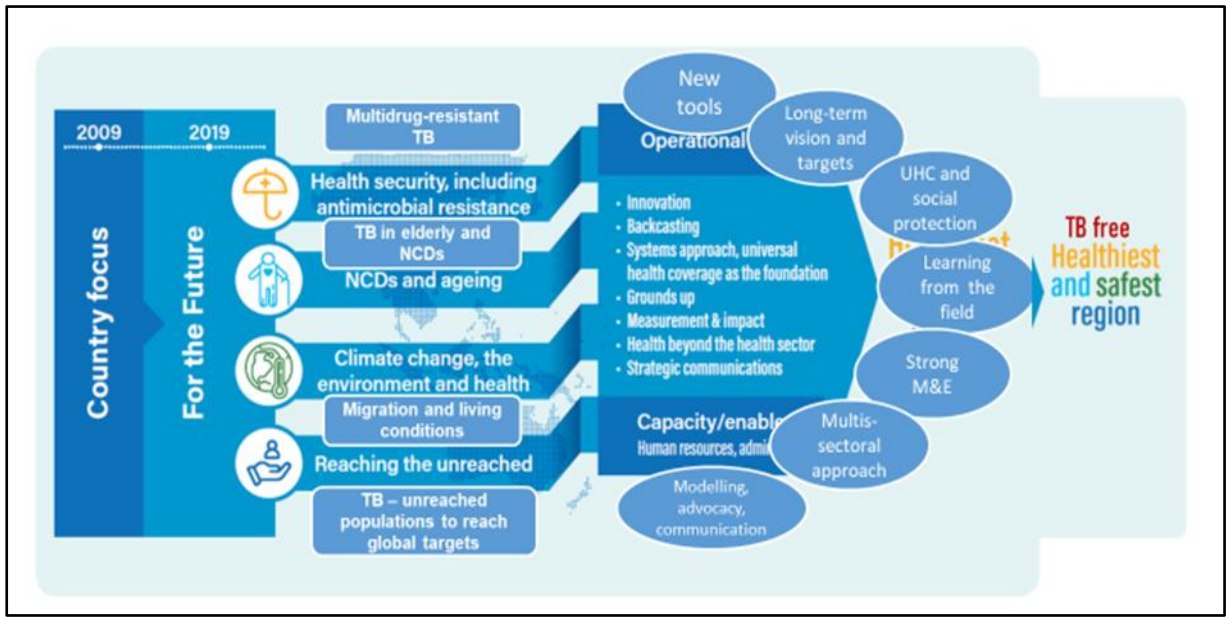
Fig. 12. Alignment with the *For the Future* vision



3.2 The response framework

The response framework (Fig. 13) is based on three key principles, two approaches, four operational modalities and four action domains.

Fig. 13. The response framework

Key principles: social justice, ethics and human rights

In this context, social justice means the fair distribution of advantages and burdens among people. Ethics are concerns with what should or should not be done. Human rights are legal guarantees that protect individuals and groups against actions that interfere with fundamental freedom and human dignity, while establishing entitlements requiring positive actions. The right to health, articulated as the highest attainable standard of physical and mental health, is a fundamental right of every human being, enshrined in the WHO Constitution.[39] Social justice, ethical principles and values underpin the *End TB Strategy*. Included in the right to health is the right of individuals to receive diagnosis and treatment for TB and

the obligation of Member States to take steps to provide a full range of high-quality TB care and prevention services. TB prevention, diagnostics, treatment and care available in a form convenient and easily understandable to the communities are essential for self-care, as well as to enable communities to protect themselves and participate in wider efforts to end TB. Policies, regulations and laws need to ensure access to TB services without any prejudice and discrimination. Important steps towards a human-rights-based approach to TB at the national and subnational levels include:

- Addressing stigma and discrimination in communities, workplaces, health-care settings, etc.: Based on the results of stigma assessment, a communication strategy needs to be developed and implemented.
- Addressing gender-related barriers: Assessments of gender-related barriers to services in the community should be conducted, and necessary actions based on the assessment results should be incorporated in the NSP and in practice. This will ensure a gender-responsive TB programme.
- Advocating policies and regulations that take consideration of the interest and human-rights-based approach for all people including refugees, migrants, prisoners, substance abusers, etc.: Legal assistance should be available to everybody, including marginalized populations, for access to care and to protect them from stigma and discrimination. Examples include the right to employment, social protection through cash reimbursement or supplementation, support for nutrition and social health insurance.

Approaches

This Regional Framework addresses the *End TB Strategy* goals through two approaches: tailoring the response for countries based on their burdens of disease and local experiences; and creating multisectoral partnerships.

Country-specific approach based on burden of disease and local experiences

The Western Pacific Region is diverse and consists of both large and small countries and areas, as well as countries with a very high burden of TB and others in the pre-elimination stage. A similar approach will not be suitable for such diverse contexts, particularly in a rapidly changing landscape. Each country will need to have forward-looking, long-term planning suitable for its context and based on local successful approaches.

Countries and areas can be categorized according to their TB burden (Table 2). This classification may also be possible at the subnational level if data are available. Low incidence is defined as lower than 10 people with TB per 100 000 population. A pre-elimination setting is defined as 1 per 100 000, and TB elimination is defined as one in 1 million TB incidence. Above 100 TB infections per 100 000 is considered endemic, more than 300 per 100 000 is highly endemic and more than 500 100 000 is classified as severely endemic. Intermediate incidence is 10–100 per 100 000 people, with the upper range as 50–99 per 100 000 and the lower range as 10–49 per 100 000. This epidemiological classification is a spectrum, not cut-off points.

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Table 2. Groups of countries and areas of the Western Pacific Region based on burden of TB disease

Estimated TB incidence (per 100 000)	> 500	300–-499	100–299	50–99	10–49	< 10
Grouping	Severely endemic	Highly endemic	Endemic	Upper moderate	Lower moderate	Low incidence
Countries and areas	Philippines	1. Marshall Islands 2. Papua New Guinea 3. Mongolia 4. Kiribati 5. Cambodia	1. Tuvalu 2. Viet Nam 3. Lao People's Democratic Republic 4. Palau 5. Federated States of Micronesia	1. Commonwealth of the Northern Mariana Islands 2. Malaysia 3. Solomon Islands 4. Niue 5. Brunei Darussalam 6. China 7. Hong Kong SAR (China) 8. Macao SAR (China) 9. Republic of Korea 10. Fiji 11. Nauru	1. French Polynesia 2. Japan 3. New Caledonia 4. Guam 5. Singapore 6. Vanuatu 7. Tokelau 8. Tonga	1. New Zealand 2. Australia 3. Samoa 4. American Samoa 5. Cook Islands 6. Wallis and Futuna

Data source: WHO

Regional priority countries in the Western Pacific Region are defined for monitoring purposes, with five countries listed by the estimated absolute number (Cambodia, China, Papua New Guinea, the Philippines and Viet Nam) and five by the estimated incidence rate of TB (Kiribati, the Lao People's Democratic Republic, the Marshall Islands, the Federated States of Micronesia and Mongolia), with a minimum of 100 cases. Together, these account for over 95% of the regional burden. The current list of global high-burden countries includes five countries from the Region (China, Mongolia, Papua New Guinea, the Philippines and Viet Nam).

This Framework is applicable for all countries and areas of the Region, irrespective of TB burden. Priorities will be different in different settings. It will be also important to learn from the other settings of the spectrum. Country-specific approaches imply that countries will use an approach specific for their subnational units. Detailed implementation plans at the subnational level will be important. Several TB interventions require local innovations for effective implementation, especially where the coverage of services is low. The actions are very much dependent on local culture and context, and are likely led by communities and civil society. This local "grounds-up" approach requires coordination, supervision, stewardship, normative guidance, and monitoring and evaluation from the national level. The global and regional approach is expected to be adapted by countries based on successful grassroots examples. Long-term NSPs, either independent or as a part of the national health strategy, should be developed as guiding documents for the country.

Multisectoral partnership

TB is a disease that derives its nature from social and economic imbalances and inequities. Therefore, ending TB requires an integration of the TB response with broader systems reforms and necessary interventions, within and beyond the health sector. This presents an opportunity for NTPs to align mutual interests with the overall health sector for strengthening and leveraging UHC, and with the other sectors

for addressing risks and providing social protection to people and families affected by TB. Working beyond health requires understanding the concerns and imperatives of other sectors to find common ground. Both sides must be good partners. A multisectoral approach will require partnership, moving away from "what others can do for us" to "what we can do for each other". Understanding the concerns of other sectors is imperative to find common ground and synergy. The TB issue needs to be reframed as a driver of growth and development, rather than just a consumer of resources. Partnerships with diverse and non-traditional stakeholders, as well as sustained engagement of a broader range of partners within communities, including engagement with young people, are important.

The high-level political meeting in Moscow in 2017 and the United Nations General Assembly in 2018 ended with declarations calling for a multisectoral accountability framework (MAF) to be promoted in each Member State.[40] A MAF includes a clear set of commitments, actions, a monitoring and reporting system, and a review mechanism at global, national and local levels. The TB MAF is therefore a powerful tool to ensure that health authorities embark on the necessary normative and political discussions with colleagues from other sectors promoting health- and TB-sensitive policies.

A multisectoral approach with accountability needs high-level political commitment and a coordination mechanism, as was observed in the COVID-19 response. The role of the NTP is to initiate dialogue with other sectors and provide tools for the policy-makers that may need both formal and informal dialogue.

Operational modalities

The Regional Framework suggests the following operational modalities: 1) systems approach to strengthen service delivery; 2) fostering information for action; 3) research, innovation and rapid introduction; and 4) use of strategic communication and change management.

Systems approach

The "system" means the mechanism of delivering health services, in this case TB services. The Regional Framework takes a systems approach, which indicates "system strengthening" as the main aim and the reduction of the disease burden as the output of the system. This may require a major shift in planning and prioritization.

In the first part of this Regional Framework, with the backcasting exercise, we noted that the system in the future may be different from the current system. Such a future system will need UHC as the foundation for strong health service delivery for a range of different programmes, including TB. A systems approach will ensure integration of health services as opposed to fragmented health delivery, according to funding priorities. Integrated, people-centred health services mean putting people and communities – not diseases – at the centre of the health system, and empowering people to take charge of their own health rather than being passive recipients of services. Integrated services at different levels of the health system will assist in integrated care for comorbidities and adverse events for people affected by TB. This will be useful to put individuals and families at the centre, supported by their communities, and to address gender and other disparities. The different health and non-health services (for example, preventive, curative, social and welfare services) are expected to be available in a coordinated manner in the community based on its needs.

At the community level, a shared vision of the system to be built should involve all stakeholders according to the needs of the population. A community-based integrated health-care system tailored to

individual needs to be designed. Health-care services need to move away from treating each ailment in isolation and instead aim for one-stop service for diagnosis, treatment, management, rehabilitation and palliative care services, with appropriate referrals and cross-referral mechanisms. Transformation of the system involves community leadership, a trained health workforce, performance management, regulatory frameworks and funding. Individuals and families must be empowered for shared decision-making with care providers. This is possible through health education, peer support groups and training of caregivers. Effective linkages with the communities must be developed to supplement the efforts of the health system in reaching vulnerable populations. This is possible by training community health workers and through community dialogue. To address the social determinants of health in the community and optimize the use of scarce resources, a multisectoral committee for health should be set up at the local level. The availability of TB services will depend on the local epidemiological burden. In high-burden settings, TB services should be available at peripheral health facilities, whereas in low-burden settings it may be placed at a higher level with a proper referral mechanism.

Such a holistic approach to TB service delivery will be able to deal with the socio-demographic transitions foreseen in the Region. Examples of TB care for older people and urban TB programmes are considered below.

Box 5. TB care for older people

An example of a systems approach can be seen with the TB care for older people. A people-centred, community-based health-care system will address the needs of older people for all health concerns, including TB.

- Access to health care and to TB services for older people will be facilitated by the primary health care system in the community, with outreach services targeting older people or by active case finding among older people in a convenient and friendly location.
- Treatment adherence will be supported by community volunteers, peer groups and family.
- Health centre staff will be appropriately trained in geriatrics, including TB symptoms in older people. Policy to screen for TB among older people who seek medical attention for any reason will address the diagnostic hurdle.
- Health centres will be able to take care of other common comorbidities in older age, including mental health problems.
- Staff of a long-term care facility will be knowledgeable about TB detection and treatment. They will initiate active surveillance in an outbreak situation.
- Other sectors, such as transport and social support, will also be engaged.

Fostering information for action

TB programmes have a long history of monitoring and evaluation that is universally accepted and has benefitted from progressive digitalization in recent years. TB prevalence surveys promoted by WHO, based on a standard protocol, have enabled better comprehension of the burden and – where repeated regularly (as in Cambodia, China and Viet Nam) – of the progress of TB control efforts over time. However, the use of routine data for programme improvement at peripheral levels needs vast improvement.

TB programmes need robust data analytics. Each country must have capacity to analyse data at the subnational level, and interventions should be tailored to the local situation. There are two key areas for

improving the monitoring of programme data. The first is to include all indicators relevant for TB control at that level and not to be limited to impact and outcome indicators. The second is the collection of information for the essential TB indicators through an integrated and comprehensive national system. Real-time, case-based digital surveillance systems will help not only the monitoring of programme performance and ensuring proper clinical management, but also the early detection of outbreaks and timely public health responses.

Box 6. TB care and prevention in an urban setting

TB care and prevention in an urban setting, with challenges due to multiple care providers under different administrations, will be part of the systems approach. It will also consider strong coordinated partnerships with multiple stakeholders and include:

- Participation of tertiary hospitals and of other public and private health-care providers
- Involvement of workplaces and pharmacy outlets
- Health education, and self-reporting and care
- Targeted approach for urban poor and slum dwellers
- Use of digital technology to monitor and support treatment adherence
- Multisectoral collaboration by local authorities.

With changes in demography, epidemiology and financial situations, the need for better understanding of the social and economic determinants of TB has prompted the expansion of TB monitoring and evaluation to include other indicators of health and SDG 3 – to ensure healthy lives and promote well-being for all at all ages – as well other SDGs. This new approach warrants new collaborations towards the integration of data collection systems and analyses.

Research, innovation and rapid introduction

Research and innovation are embodied in the third pillar of the *End TB Strategy*. Innovations are expected for new diagnostics, drugs and vaccines to hasten progress in combating TB. There is also a major need for operational, implementation, health system and social science research. The *Global Strategy for Tuberculosis Research and Innovation* promotes: a) creating enabling environments; b) increasing financial investments; c) improving approaches for data sharing; and d) promoting equitable access to benefits.[41]

Innovations from the community and grassroot levels are very important in solving local issues and must be nurtured (*For the Future* refers to such approaches as “grounds up”). The COVID-19 pandemic has brought the need for innovation to the forefront. Use of information technologies has accelerated scale-up in some settings for capacity-building, notification, monitoring, treatment adherence, etc. TB programmes should take advantage of these opportunities.

All successful research outcomes and innovations need quick adoption and large-scale implementation. Many innovations do not have the desired impact due to slow uptake and are often small-scale efforts or pilot projects. Early preparedness may greatly accelerate the uptake of innovations, including diagnostic platforms such as the latest versions of automated rapid diagnostics or genome sequencing techniques to rapidly detect drug resistance-inducing mutations, as well as digital technology that helps with the provision of optimal care and surveillance, new drugs and regimens that have become available during the past decade, and hopefully a new vaccine within the next decade.

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Countries can prepare themselves for the introduction of innovations by considering the following: 1) the formation of national TB technical groups for policy review; 2) strengthening of the legislative environment (for registration, policy adoption, etc.); 3) identification of early implementers (sites ready to be used as demonstration centres or centres of excellence); and 4) flexible funding mechanisms (reprogramming the budget).

Use of strategic communication and change management

The Regional Framework promotes a multisectoral response and calls for "systems thinking" as the main aim. These require a change or shift in thought processes and actions, and communications will be the key to manage the change. This Framework promotes the Communication for Health (C4H) approach, which is used to drive outcomes or change behaviours and to encourage community mobilization and engagement.

Advocacy, communication and social mobilization are key parts of a TB strategy. From a global and regional perspective, the work has focused on higher-level awareness-raising; however, at the country level, it requires communication to drive action that will impact health outcomes. For example, if interventions or changes are needed to address TB issues among prisoners, C4H approaches should determine what messages and communication campaigns are needed for prison staff and the justice sector to encourage change. The programmes must listen and respond to people's voices, share evidence-based information to build support for health policies, and empower people to protect and improve their own health. This requires moving away from a focus on outputs (products and activities) and towards a focus on the outcomes and impacts of communications. Communications should enable connecting with people on a human level to understand their concerns and make a difference in their lives.

This is particularly relevant when thinking through "health beyond health" or Health in All Policies and how to encourage other sectors to take up the cause or see this part of their work. This also will require understanding the audiences to be reached beyond health, through dialogue. The focus should be on identifying key audiences outside the health sector that require buy-in and offer greatest potential to address the bottlenecks of the TB response, using the C4H approach to understand what is needed for them to drive actions that make a difference for TB.

Advocacy will remain an important component to influence TB-sensitive policy either through formal dialogue or informal communication.

Action domains

Using the principles and components of the *End TB Strategy* and the operational modalities of *For the Future* for future-proofing countries, this Regional Framework is organized into four action domains:

1) Strengthen essential TB functions (within TB)

2) Build health system foundations (within health)

3) Promote health beyond health (beyond health)

4) Governance and accountability (overarching).

The following sections address each of these areas.

Box 7. Key messages: Priorities and approaches of the response framework

- The Regional Framework is aligned with the *End TB Strategy* and has the same goals, milestones and targets.
- It also is aligned with *For the Future: Towards and Healthiest and Safest Region* and overlaps with the four priority areas of that vision document.
- The approach of the Regional Framework considers: a) the country context of varied population sizes and burdens of disease; and b) multisectoral partnerships.
- It recognizes that each country will need to have forward-looking, long-term planning suitable for its context and based on local successful approaches.
- The approach of this Framework is an *integration* of the focused control of TB with broader systems reforms and necessary interventions within and beyond the health sector, using four operational modalities: 1) a systems approach to strengthen service delivery; 2) fostering information for action; 3) research, innovation and rapid introduction; and 4) strategic communication and change management.
- Using the principles and components of the *End TB Strategy* and operational modalities of *For the Future* for future-proofing countries, this Framework is organized into four action domains: 1) strengthen essential TB functions (within TB); 2) build health system foundations (within health); 3) promote health beyond health (beyond health); and 4) coordination and accountability (overarching).

3.3 Strengthen essential TB functions (within TB)

Diagnosis, treatment and prevention services for TB and DR-TB need to be intensified, as well as quality assured, to achieve the *End TB Strategy* targets in the Region. Essential TB functions include the following.

Ensure early diagnosis and notification of TB disease for all populations, including the vulnerable populations

Active case finding

Active case finding (ACF) remains the cornerstone, and it needs to be well planned with the right tools. Generally, populations with higher risk such as contacts of bacteriologically positive patients, PLHIV, those in specific geographic locations and special targeted groups should be considered for systematic screening for ACF.[42] This should be based on data that help with the identification of populations to be targeted and should consider the screening and diagnostic algorithms that are feasible and have good sensitivity. Various tools such as chest X-rays followed by an accurate test have been recommended for screening depending upon the targeted groups. Systematic screening should be conducted: a) among household and close contacts of TB patients, PLHIV, miners and prisoners; b) in settings with $\geq 0.1\%$ TB prevalence, among people with risk factors for TB (malnourishment, diabetes, history of previous TB, chronic lung disease and others) seeking health care; c) among populations with structural risk factors for TB and limited access to health care (urban poor, homeless, refugees, migrants and other vulnerable or marginalized groups); and d) in settings with $\geq 0.5\%$ TB prevalence among the general population. Stakeholders, including civil society, are recommended to be involved in these efforts. There should be a clear pathway to treatment for all those with confirmed TB.

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Universal coverage of rapid molecular diagnostics and drug susceptibility testing (DSTs)

WHO-approved rapid molecular diagnostic tools should be used as an initial diagnostic tool for improving the quality of diagnosis.[43] TB programmes require a tiered network of integrated laboratories in which different levels use complementary tools. To increase the access to rapid molecular diagnostic tests, these tools must be decentralized either by placing them at peripheral health centres or connecting them via efficient sample transport mechanisms. DSTs, either conventional or molecular techniques, for newer drugs must also be established and made accessible in all settings. In low-burden settings, access to vulnerable groups (high-risk groups and hard-to-each areas) must be ensured.

Engagement of other public and private health providers

The public–private mix (PPM) for TB prevention and care represents a comprehensive approach for the systematic involvement of all relevant health-care providers in TB control to not only achieve national and global targets to end TB but also to promote the *International Standards for Tuberculosis Care*.[44] Alignment of the private sector for UHC is also needed to promote equity, access, quality and financial protection for the population. Some vulnerable populations can realize substantial benefits with the PPM approach. The engagement of other providers, especially private providers, has remained low in several high- and moderate-burden countries. An innovative and intensified PPM approach, according to the local context, must be identified and supported by regulation. The road map[45] towards scaling up the engagement of all care providers in TB prevention and care identified 10 priorities: 1) building understanding about patient preferences; 2) setting ambitious targets; 3) advocating for commitment; 4) allocating adequate funding; 5) partnering with intermediaries and key stakeholders; 6) establishing policy and regulatory frameworks; 7) adapting to the local context; 8) harnessing digital technologies; 9) delivering incentives and enablers; and 10) monitoring.

Ensure the provision of people-centred TB services

Promote equitable services

TB diagnostic, treatment and prevention services should be available for all with no discrimination, including children and adults, males and females, the urban and rural poor, migrants, people deprived of liberty, etc. One-stop services for timely prevention, detection, initiation of treatment and follow-up services, and well-coordinated referrals will avoid interruptions in their treatment.

Establish a decentralized model of care

TB care for all forms, including DR-TB, should mainly be ambulatory rather than hospitalized care and community- or home-based care as opposed to facility-based treatment. It should ensure access to needed specialized care for those with complications or who are seriously ill or have severe adverse events, or with mental health issues and uncontrolled comorbidities.

Empower the person and families affected by the disease

Health education, counselling, and clear, accurate and understandable information about all aspects of care should be provided. Stigma reduction approaches should be integrated, and people affected by TB and their social networks should be involved in decision-making regarding treatment and the delivery of care.

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Prioritize safety

The safest, least-toxic regimens based on scientific knowledge and the best available evidence need to be introduced, such as all-oral regimens for DR-TB. Active monitoring and management of adverse events need to be implemented and strengthened in collaboration with the designated national pharmacovigilance centre. Early detection and management of adverse events maintain quality of life and prevent complications and loss to follow-up.

Integrate a package of treatment adherence interventions

Such a package may include: social support, such as material support, for example food or financial support (meals, food baskets, food supplements, food vouchers, transport subsidies, living allowances, housing incentives or financial bonuses); psychological support (counselling or peer group support); tracers such as home visits or digital health communication, for example mobile phone text messages, telephone calls; medication monitoring; and staff education (adherence education, charts or visual reminders, educational tools and desktop aids for decision-making and reminders). This support should be based on the assessment of individual needs. There may be various options of treatment administration that a person on treatment can choose from, such as daily treatment with trained lay providers or health-care workers, videoconferences for directly observed treatment, short course (DOTS), non-daily DOTS (for example, not every dose is supervised, with only weekly or a few times per week supervision), etc. Technology should be used to the extent possible to assist people in adherence and decrease their number of visits to health facilities.

Integrate palliative and end-of-life care

Palliative care is defined as an approach to improve the quality of life of people facing a life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual. For people with TB for whom the likelihood of cure is low with the existing treatment tools, palliative care is important to improve their quality of life and to minimize and relieve suffering.

Integrate post-TB care

TB can result in either temporary or permanent disability, arising from the disease process or the side-effects related to TB treatment. People with a history of pulmonary TB may suffer from a range of long-lasting respiratory-related sequelae such as impaired lung function, chronic obstructive pulmonary disease and pulmonary fibrosis.[46] Mental health disorders may also be more prevalent among TB survivors than the general population.[47] To track and reduce TB-related sequelae and disabilities, post-TB care is important and there needs to be a collaboration mechanism with other national health programmes.

Prevent TB infection and disease

Strengthen infection prevention and control

COVID-19 has highlighted the importance of interrupting the chain of transmission for infection prevention and control of respiratory diseases. For infection control of TB, there is a need to strengthen triage, cough etiquette, disposal of infectious materials, timely contact tracing, timely isolation of people who are highly infectious, and implementation of adequate administrative, mechanical and personal protective measures in all congregate and household settings, depending upon the context and resources available.

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Accelerate expansion of TB preventive treatment (TPT)

Currently available TPT can reduce the risk of TB disease by 60–90%, which means that achievement of TPT targets would translate into major reductions in mortality and morbidity for people at highest risk of TB. In addition, by preventing TB disease, TPT protects individuals and their families against catastrophic costs. Thus, for the most vulnerable and at-risk populations, providing access to TPT is an urgent need and a human right, similar to access for treatment for TB disease. Tools such as shorter TPT regimens of one to three months, digital radiography equipped with computer-aided detection software for TB, and tests for TB infection (tuberculin skin test and interferon-gamma release assays) to better target TPT may help to scale up TPT. The system should be strengthened in all countries to trace, screen and treat household and other close contacts of all age groups of people of bacteriologically confirmed TB cases and other selected high-risk groups. A surveillance system should also be designed to support and monitor completion of TB preventive treatment. The impact of community-wide screening for, and treatment of, LTBI as an intervention to accelerate progress towards elimination in high-burden settings remains uncertain and is the subject of several ongoing studies.

Continue BCG vaccination in high-prevalence settings

The bacille Calmette-Guérin (BCG) vaccine remains the only licensed vaccine against TB. It provides moderate protection against severe forms of TB in infants and young children.[11] In countries or settings with a high incidence of TB, a single dose of BCG vaccine should be given to all healthy neonates at birth for the prevention of TB. Countries with a low incidence of TB may choose to vaccinate neonates selectively in groups at high risk for TB and/or leprosy. Countries with declining rates of TB are encouraged to evaluate the epidemiology of TB periodically and consider whether a switch from universal vaccination to selective risk-group vaccination would be appropriate.[48]

As of early 2020, about 14 vaccine candidates are in various phases of clinical trials. Countries need to proactively participate in clinical trials and prepare for adoption and roll-out when a vaccine is available.

Key documents

1. WHO consolidated guidelines on tuberculosis, module 2: screening – systematic screening for tuberculosis disease, Geneva: World Health Organization; 2021.
2. WHO consolidated guidelines on tuberculosis, module 3: diagnosis – rapid diagnostics for tuberculosis detection, Geneva: World Health Organization; 2020.
3. Guide to develop a national action plan on public-private mix for tuberculosis prevention and care. Geneva: World Health Organization; 2020.
4. The End TB Strategy. Geneva: World Health Organization; 2014.
5. WHO policy on collaborative TB/HIV activities. Geneva: World Health Organization; 2012.
6. Collaborative framework for care and control of tuberculosis and diabetes. Geneva: World Health Organization; 2011.
7. Policy brief: promoting women's and children's health, integrating HIV, TB, malaria and reproductive, maternal, newborn and child health programmes. Geneva: World Health Organization; 2013.
8. WHO consolidated guidelines on tuberculosis, module 1: prevention, Geneva: World Health Organization; 2020.
9. Consensus meeting report: development of a target product profile (TPP) and a framework for evaluation for a test for predicting progression from tuberculosis infection to active disease. Geneva: World Health Organization; 2017.

Box 8. Key messages: Strengthen essential TB functions (within TB)

- Ensure early diagnosis and notification of TB disease for all populations including the vulnerable populations by: a) planned and institutionalized ACF; b) establishment of universal DST; c) engagement of the public and private sectors; d) collaboration with other health programmes; and e) legislation and implementation of mandatory notification of TB.
- Ensure people-centred services by: a) promoting equitable services for all populations with focus on one-stop shops for TB and comorbidities; b) decentralizing the model of care; c) empowering people and families affected by TB by giving them information and options; d) prioritizing safety in treatment and adverse events; e) ensuring treatment adherence using technology to the extent possible; f) integrating palliative and end-of-life care; and g) providing post-TB care.
- Prevent TB infection and diseases by: a) strengthening infection control in health facilities, homes, communities and congregational settings; b) accelerating the expansion of TB preventive treatment; and c) continuing BCG vaccination in high-prevalence settings.

3.4 Build health system foundations (within health)

A strong health system with a vision of UHC, integrated care for addressing risk factors and comorbidities, accelerated research and innovation, and community and civil society engagement will greatly facilitate the achievement of the *End TB Strategy* targets.

Contribution to universal health coverage

UHC is the overarching vision for health sector development – defined as all people having access to quality health services without suffering the financial hardship associated with paying for care. UHC should be considered as a platform to ensure quality, efficiency, equity, accountability and sustainability for overall health care, including TB care.

Universal Health Coverage: Moving Towards Better Health – Action Framework for the Western Pacific Region[27] provides a platform for strategic advancement of UHC. It includes 15 action domains across the five essential health system attributes. TB prevention and care as part of the overall health agenda needs to contribute to the UHC vision. Table 3 maps various TB actions associated with UHC attributes and action domains. TB also can be considered as an indicator of the readiness and maturity of the UHC platform.

Policy options should be identified for sustainable financing for TB care and prevention by: a) clarifying essential functions for effective TB care; b) mapping key service providers; and c) exploring a range of funding sources for TB care and prevention. Collaboration between national health insurance systems and NTPs should be strengthened to ensure a smooth transition and operation. The quality of TB service provided by health facilities may be ensured under health insurance schemes, with an essential package of TB services. The pathway to TB diagnosis and treatment for people with TB should be improved through interventions to address direct medical costs such as expanding health insurance coverage of TB services, expansion of ACF, ambulatory care and standardization of treatment protocols. Innovative interventions may be considered to reduce barriers to access health care, such as conditional cash transfers, vouchers, and refunds to cover medical and transport.

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Table 3. Suggested actions for TB within the attributes and domains of UHC

UHC attribute	UHC action domains	TB action (examples)
1. Quality	1.1 Regulations and regulatory environment	Improved health workforce competencies through continuing TB training, regulatory standards for TB medicine and relevant health technologies, TB service standards, rights of people with TB
	1.2 Effective, responsive individual and population-based services	Updated guidelines and standard operating procedures, integrated TB services at the community level, enhanced TB surveillance system to enable timely and effective intervention and evaluation
	1.3 Individual, family and community engagement	Platform for individuals, community and civil society engagement, treatment supporters, patient groups, treatment support group
2. Efficiency	2.1 Health system architecture to meet population needs	Role delineation for health-care workers, nongovernmental organizations/community health workers, defining a service package and referral mechanism for TB; ensure sufficient funding for core TB care functions, PPM strategy; partnership with other health programmes
	2.2 Incentives for appropriate provision and use of services	Innovative provider payment method to improve quality and efficiency, incentives for people to seek contact tracing services and strengthen the referral system, incentives for treatment supporters
	2.3 Managerial efficiency and effectiveness	Review, information for action, evidence-based decision-making, accountability, management information systems
3. Equity	3.1 Financial protection	Ensuring TB drugs and services to be free of charge for people with TB, covered by external and domestic sources, complemented with adequate social protection measures
	3.2 Service coverage and access	TB services at the community level, all TB services including chest X-ray, DST and second-line anti-TB drugs covered by national health financing schemes; m-health/e-health applications and services; and a focus on hard-to-reach populations
	3.3 Non-discrimination	Engagement of community and civil society in the design of anti-discrimination interventions that are based on baseline assessments and can enhance TB care and prevention; legal and policy assessments, satisfaction surveys among people who come to health facilities, facility-based assessments; and legislative and policy change, awareness raising and sensitization training of health workers to make TB service equitable, human-rights based and people centred.
4. Accountability	4.1 Government leadership and rule of law for health	Mobilization of sufficient resources for health and increased government investment in TB care and prevention, enabling policy environment
	4.2 Partnerships for public policy	Engagement of communities and civil society to shape TB policy, priority setting for the use of resources, and oversight for policy implementation and service delivery
	4.3 Transparent monitoring and evaluation	Improved data quality, analysis, transfer and use through assessment, quality assurance tools, improved statistics and analytical techniques, use of information for action

5. Sustainability and resilience	5.1 Public health preparedness	Multisectoral partnership to address TB
	5.2 Community capacity	Engagement of community and civil society organizations, employers and employees in all forms of TB care and prevention
	5.3 Health system adaptability and sustainability	Strong surveillance system to detect outbreaks, reduce reliance on donor funding and increase domestic funding, find efficiencies in the programmes, cross-programme linkage, coordination and integration to ensure financial sustainability and ability to withstand economic volatility

Key document

Universal health coverage: moving towards better health – action framework for the Western Pacific Region. Manila: WHO Regional Office for the Western Pacific; 2016.

Management of risk factors and comorbidities of TB

Risk factors and comorbidities among people with TB should be periodically assessed in collaboration with relevant professional entities. Mechanisms for collaboration should be strengthened between NTPs and health programmes based on the local epidemiology. Common risk factors and comorbidities include nutrition, HIV, NCDs, mental health, tobacco use, and maternal and child health. Regular meetings to share information, joint planning and monitoring progress should be considered. Bidirectional screening should be promoted, such as conducting systematic screening for TB among people with diabetes or HIV infection in countries with a high burden of TB. Such collaboration will ensure early diagnosis and management of TB. On the other hand, conducting diabetes or HIV screening among people with TB, unless the prevalence of diabetes or HIV infection is low, will ensure proper management of comorbidities. Comorbidities among people with TB should be addressed through the incorporation of comorbidity management into the national TB guidelines and cross-referrals.

Key documents

1. WHO policy on collaborative TB/HIV activities: guidelines for national programmes and other stakeholders. Geneva: World Health Organization; 2012.
2. Collaborative framework for care and control of tuberculosis and diabetes. Geneva: World Health Organization; 2011.
3. A WHO/The Union monograph on TB and tobacco control: joining efforts to control two related global epidemics. Geneva: World Health Organization; 2007.
4. Guideline: Nutritional care and support for patients with tuberculosis. Geneva: World Health Organization; 2013.
5. A handbook on how to implement mTB-Tobacco. Geneva: World Health Organization; 2019.

Strengthening research and innovation

Research and innovation for various health issues is the key for continuous improvement. The Regional Framework considers research, innovation and rapid uptake as one of the operational modalities, as described earlier. The following section focuses on strengthening national research network.

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A national research network may include health and other government agencies, research institutions, universities, the private sector, civil society, and international partners. Such a network can help establish the national TB research agenda and TB priorities, as well as review and disseminate findings. The agenda and priorities should be based on country needs and capacity from basic to operational research. Research training and capacity-building should be strengthened at the national level and centres of excellence should be identified. The training and capacity-building should be aligned with the national TB research agenda and priorities. Trained researchers and increased capacity should be retained with funding support and collaboration.

Adequate and sustainable funding should be ensured for TB research in line with the national TB research agenda and priorities. International funding opportunities should be closely explored. Involvement of government, donors, affected communities and civil society, as well as the scientific community, should be encouraged. This should facilitate public and private investment, governmental commitment and community engagement in research. A monitoring and evaluation framework should be established on TB research, including process and output indicators. Process indicators could include the existence of a national research network, a national research plan, and capacity-building and training plans, while output indicators could include the number of TB researchers, the amount of TB research funding, the number of TB research publications, and policy changes in TB prevention, diagnosis and treatment.

Key documents

1. A global action framework for TB research in support of the third pillar of WHO's end TB strategy. Geneva: World Health Organization; 2015.
2. A toolkit for developing a national TB research plan, in support of the third pillar of the End TB Strategy. Geneva: World Health Organization; 2016.
3. Global investments in tuberculosis research and development: past, present, and future. Geneva: World Health Organization; 2017.
4. A global strategy for tuberculosis research and innovation. Geneva: World Health Organization; 2020.

Meaningful participation of the communities and civil society

National-level platforms for the engagement of communities and civil society should be in place. This mechanism should provide a regular opportunity for affected communities and civil society organizations, as important stakeholders, to provide feedback and input into NTPs and overall health sector programmes. National, regional and international initiatives for community engagement in TB response should be linked.

Funding and programmatic support need to be institutionalized for a wide range of civil society and community-led responses that includes service delivery, research, advocacy and social mobilization. There should be funding schemes to support, sustain and document best practices of civil society organizations and community-based organizations. Sharing of experiences across various health programmes should be encouraged. This enables innovation through experiences of other programmes. TB programmes should share information in a timely and meaningful way for full participation of civil society. Technical guidelines in simple language and training of civil society participants and the TB community should be facilitated to encourage their active and informed engagement in the programme.

Community-level monitoring of TB programmes should be established with the help of civil society. The TB MAF should include civil society and TB-affected communities as important stakeholders and should measure their contribution towards ensuring access and quality of services for all without discrimination on the basis of gender, disease and other parameters.

Key documents

1. ENGAGE-TB: Operational guidance. Geneva: World Health Organization; 2012.
2. ENGAGE-TB: Implementation manual. Geneva: World Health Organization; 2013.
3. ENGAGE-TB: Training manual. Geneva: World Health Organization; 2014.
4. ENGAGE-TB: Training for community health workers and community volunteers. Geneva: World Health Organization; 2015.
5. WHO civil society task force on TB: engagement with civil society as the driver for change. Geneva: World Health Organization; 2020.

Box 9. Key messages: Build health system foundations (within health)

Within the health sector, TB care can be enhanced by:

- Ensuring UHC with its attributes of quality, efficiency, equity, accountability, and sustainability and resilience. UHC envisages financial protection for those affected by TB and promotes implementation of innovative interventions.
- Managing risk factors and comorbidities with improved collaboration among health programmes and bidirectional screening.
- Establishing and strengthening national-level research networks to spearhead basic and operational research.
- Establishing networks of communities and civil society and facilitating a platform for them to provide feedback to the programme, community-level monitoring, and input for research and other programmatic activities.

3.5 Promote health beyond health

The SDGs envisaged a multisectoral response to major global health problems.[49] Wider economic, political and cultural contexts shape society and population health. Responsibilities for health in the global arena go beyond a country's ministry of health.[50] Social inequalities drive TB, thus ending TB and addressing the social determinants of health are interdependent.[51] Reducing inequalities will not be possible without broader social, economic and cultural factors that leave some population groups behind. Major gains in TB will stem from action outside the health sector.

Contribute to enhancing social protection mechanisms

Even when TB diagnosis and treatment are offered free of charge, social protection measures are needed to alleviate the burden of income loss and the non-medical costs of seeking and staying in care. Social protection may include formal or informal initiatives such as social assistance to extremely poor individuals and households, social services to groups who need special care and access to basic services, social insurance to protect people against the risk and consequences of livelihood shocks, and social equity to protect people against social risks, such as discrimination and abuse.[52]

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Results from national TB-patient cost surveys are powerful arguments for initiating policy dialogue with other sectors to enhance social protection for TB patients. A multi-stakeholder consultation can be an effective way to initiate discussions about survey results and identify multisectoral actions required to improve social support for TB patients and their families.[53] In some settings, people with TB do not have access to existing social protection schemes, and they also lose their jobs due to a lack of labour protection or insufficient job security. Establishing a streamlined claim mechanism for people with TB to access sickness and unemployment benefits and for reimbursement of medical costs is important to increase the use of existing social protection schemes. Exploring collaboration with the labour and corporate sectors to improve workplace policies and services for people with TB is necessary to prevent dismissals from work on the basis of the disease.

Promote whole-of-government and whole-of-society approaches

Whole-of-government and whole-of-society approaches are needed to end complex global health issues including TB. The COVID-19 pandemic has demonstrated how a health crisis impacts multiple sectors and requires support of multiple sectors to ensure a coordinated and effective public health response.

The TB programme may be in a good position to proactively bring other health programmes and sectors beyond health to the national health policy dialogue to discuss and identify common challenges beyond health, develop a shared public health improvement goal, and create and sustain momentum for driving changes beyond health. A supportive governance structure that enables intersectoral coordination and defines clear and aligned policies is key for win–win situations across sectors and agencies to achieve success.[54]

There are three major components of establishing multisectoral response: 1) a coordination mechanism; 2) the definition of roles and responsibilities; and 3) regular monitoring of agreed indicators.[40,55] To initiate such mechanism both formal “strategic dialogue” and an informal or “whispering” technique will be needed.

In some settings, particularly in high-burden settings, a strong national coordination mechanism for TB is needed. As was the case for the 2017 ministerial conference in Moscow and the United Nations General Assembly, both unprecedented high-level events that elevated TB in the global political agenda, a country-level mechanism needs to be established with a multisectoral set of policies, recommendations and norms that engage ministries of health (nationally or locally, in case of large federal countries), as well as the top political powers and other ministries and authorities in a country in a way that builds a multisectoral accountability system. The example of Viet Nam setting up a Commission to End TB at the highest level is a good model that facilitates sectors other than health to respond to the epidemic by contributing through their own initiatives. The evolution in the Philippines from a comprehensive and unified policy in 2003 to a comprehensive TB law in 2016, and the establishment of national and regional committees in 2019 illustrate a journey towards a multisectoral response for TB. In moderate- to low-burden settings, existing overarching mechanisms such as an SDG monitoring body or country coordination mechanism can be used as coordination mechanism.

For effective intersectoral coordination, it is important to define the roles and responsibilities of various sectors and formulate a set of pertinent and relevant monitoring indicators. A multisectoral response also includes both the profit and non-profit private sector. With a flourishing private sector in some countries, PPM mechanisms need to be strengthened. A multisectoral response also needs to include civil society

to understand the community perspective and to increase accountability of the system. A monitoring framework with key indicators, as well as sharing updates, providing feedback and evaluating partnerships, is a key to success. Table 4 gives suggestions for various sectors that can be engaged in national-level multisectoral coordination, the contributions of the sectors and monitoring indicators for their domain.

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Table 4. Options for multisectoral collaboration to end TB

Sector	Potential areas of collaboration	Domain of contribution	Indicators (bold: TB–SDG monitoring indicators)
High-level government	• Secure political commitment and ensure funding for a whole-government, multisectoral response to end TB • Establish multisectoral coordination/oversight committee on TB • Establish a national multisectoral accountability framework according to the World Health Assembly resolutions and the United Nations political declaration on TB (United Nations Political Declaration A/RES/73/3)	Coordination Monitoring	National coordination function TB situation reported yearly to the highest coordination body TB report is available to all
Finance	• Ensure funding for a whole-government, multisectoral response to end TB • Support national TB response as part of the commitment towards UHC	Funding	**Gross domestic product per capita** **Gini index for income inequality** Share of the government expenditure on health and social sectors
Planning	• Ensure health and more specifically TB in all relevant policies and planning • National health plan as part of the overall development plan • TB strategic plan in line with the national health plan	Coordination Cohesive planning	National health plan referring to TB indicators

Social welfare/social protection/social security/ social development	• Poverty reduction/alleviation programme
	• Link TB-affected households with social services, targeting poor people
	  • Social security programme
	  • Cash transfer programme
	  • Disability grants
	  • Other social protection measures
	• Improve coordination between health and social workers at service delivery points
		Risk reduction: Poverty alleviation
		Social protection (reducing catastrophic cost)
		Improving case detection and treatment adherence
			▪ **% of population living below international poverty line**
			▪ **% of population covered by social protection/floors**
			▪ Number of people with TB receiving social protection

	• Consider including TB services within social protection schemes (e.g. TB screening for beneficiaries, conditional cash transfer, etc.)
	• Provide TB services and necessary control measures (e.g. screening, infection control, etc.) for institutions under the jurisdiction
	  • Homeless shelters
	  • Homes for older people
	  • Institutions for orphans, vulnerable children and families
	• Data sharing/exchange with TB programme for cross-referral and programmatic convergence		

Labour	• Expand access to social protection schemes by people with TB and affected households (crossover areas with social welfare depending on country setting)
	  • Sickness insurance and other income compensation schemes
	  • Disability grants
	  • Labour market interventions for people with TB and affected families
	• Protection of right to work – protect employment while workers are sick and facilitate restoration of work
	• Workplace policies including occupational health services
	  • Improve TB awareness in workplaces
	  • Provide TB services through occupational health services, where applicable, including TB diagnosis, referral and treatment support
	  • Ensure non-discrimination and reduce stigma
	  • Link workers' health screening programme with NTP services (pre-employment, regular screening linked with diagnosis in NTP facilities)
		Social protection (reducing catastrophic cost)
		Improving case detection and treatment adherence
			Number of workers screened for TB
			Number of people with TB diagnosed and referred
			Protection of right to work

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	• Occupational safety
	  • Ensuring infection control in workplaces (ensuring proper ventilation, avoiding congestion in workplaces)
	  • Include TB indicators in occupational safety inspection and reports (screening, referral, diagnosis, occupational exposure, outbreaks, etc) and link with NTP		

Immigration	• Promote the availability of adequate resources for migrant TB policy development, formulation of strategies and programme implementation subject to national laws and regulations • Encourage policy coherence with NTPs • Dialogue for TB-friendly policy not affecting the legal or contractual status of migrant population to the extent allowed by national laws and regulations • Migration health dialogues and establish cooperation • Cross-border coordination mechanisms	Improving case detection and treatment adherence	Number of migrants screened for TB Number of people with TB referred Cross-border collaboration for TB
Climate change and environment	• Address indoor air pollution	Risk reduction	**% of population with primary reliance on clean fuels and energy**
Justice/corrections, penitentiary (prisons)	• Effective TB control measures and services in correctional and detention facilities • Improve TB awareness and management capacity of all staff in the penitentiary system and provide TB services according to their need (TB screening, treatment support, etc.) • Improve collaborations with NTP and ministry of health both at the central and peripheral levels	Improving case detection and treatment adherence	Number of screened for TB Number of people with TB referred
Defence	• Improve TB awareness • Ensure access to TB services • Link with national TB programme and dedicated health services for defence personnel	Improving case detection and treatment adherence	Number of screened for TB Number of people with TB referred

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Education	• Improve TB awareness with consistent health communication on TB across all schools in collaboration with ministry of health
	• Ensure access to needed TB services for all students, teachers and staff in collaboration with ministries of health, including:
	  • Entry and periodic health screening (as needed, according to the need)
	  • Routine health monitoring and access to early diagnosis through school health services
	  • Outbreak detection and management
	• Address stigma and ensure non-discrimination of any forms in schools
		Health (TB) education
		Improving case detection and treatment adherence
			Number of health education materials covering TB
			Number of school outbreaks

Agriculture, food and nutrition	• Addressing food insecurity and malnutrition	Risk reduction	**Prevalence of undernourishment**

Various departments within the health sector	• Positioning the TB response as a core component of country's move towards UHC
	  • Ensure access to up-to-date technologies (e.g. new diagnostics) for TB care and prevention
	  • Improve financial protection among people with TB and families through expanded free TB-care polices
	• Effectively link with other health-related programmes to reduce risk factors for TB, including malnutrition, smoking, harmful use of alcohol, and illicit drug use
	• Improve quality of integrated, people-centred TB care for including management of comorbidities (diabetes, HIV, etc.)
	• Ensure mandatory notification of TB and quality of care by all care providers
	• Drug regulatory policies that are supportive of TB programme
		Risk reduction
		Cross referral: Improving case detection and treatment adherence
			• **Coverage of essential health services**
			• **% of health expenditures out-of-pocket**
			• **Health expenditure per capita**
			• **Prevalence of i) HIV, ii) smoking, iii) diabetes, and iv) alcohol use disorder**

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Foreign affairs/external affairs	• Secure commitment and ensure international cooperation/aid to end TB	Coordination funding	TB-friendly international cooperation
Human rights commission	• Ensuring a human-rights-based approach to TB prevention, treatment and care to assist programme managers, civil society and other TB partners	Risk reduction	% of satisfaction with TB care
Information/ communications	• Health (TB) information dissemination	Risk reduction	% of TB awareness
Internal affairs/home affairs/interior (police and other units)	• Improve TB awareness • Ensure access to TB services • Link with national TB programme and dedicated health services for defence personnel • Linking with refugee programme	Improving case detection and treatment adherence	Number of people screened for TB Number of people with TB referred
Mining/commercial fishing/natural resources	• Improve TB awareness • Recognition of high TB risk and requirements for regular screening among imported contract worker from high-incidence countries • Ensure access to TB services • Link with national TB programme and dedicated health services for defence personnel	Improving case detection and treatment adherence	Number of people screened for TB Number of people with TB referred
Science and technology	• Promote TB research and innovation • Policy for early adaptation of new tools and innovations for TB	Promote innovation	Number of TB research projects
Transportation	• Improve TB awareness • Ensure access to TB services • Link with national TB programme and dedicated health services for defence personnel	Improving case detection and treatment adherence	Number of people screened for TB Number of people with TB referred
Local government	• Position the TB response as a core component of local area • Ensure multisectoral response at the local level	Coordination Monitoring	Local coordination body

	• Effectively link with other health-related programmes to reduce risk factors for TB • Improve quality of integrated, people-centred TB care • Special attention for homeless, institutions for older people and other risk groups		
Urban planning	• Design urban health (TB) programme • Improve housing and living conditions • Map risk factors, local social determinants and risk group	Coordination Risk reduction	% of urban population living in slums

Annex

Key documents

1. Tuberculosis patient cost survey: a handbook. Geneva: World Health Organization; 2017.
2. Transforming our world: the 2030 Agenda for Sustainable Development [website]. New York: United Nations; 2015 (https://sdgs.un.org/2030agenda, accessed 10 March 2021).
3. Multisectoral accountability framework to accelerate progress to end tuberculosis by 2030. Geneva: World Health Organization; 2019.
4. Public-private mix for TB prevention and care, a roadmap. Geneva: World Health Organization; 2018.
5. Engage-TB. Integrating community-based tuberculosis activities into the work of nongovernmental and other civil society organizations, operational guide. Geneva: World Health Organization; 2012.
6. Implementing the End TB Strategy: the essentials. Geneva: World Health Organization; 2015.
7. TB–SDG monitoring tool

Box 10. Key messages: Promote health beyond health (beyond health)

- Whole-of-government and whole-of-society approaches are needed to end complex global health issues including TB.
- To address the risk factors for TB and other complex diseases and to protect those affected by TB from its serious consequences, multiple sectors other than health need to coordinate.
- It is important to define the role of different sectors and formulate a set of pertinent and relevant monitoring indicators.
- The multisectoral response needs to include the private sector, profit and non-profit.
- The multisectoral response also needs to include the civil society to get the community perspective and to increase the accountability of the system.

3.6 Governance and accountability (overarching)

This section describes actions which are overarching and related to all previous three groups.

Adequate financing

To reach the *End TB Strategy* targets, massive interventions and the rapid introduction of innovation will be necessary. This means adequate funding would need to be secured for implementation at the national level and also for research and development at the global level. Adequate financing is one of the key indicators for strong political commitment and accountability.

The justification for increased funding needs to be clearly communicated, and the demand for the interventions needs to be demonstrated and articulated. This needs strong voices from the community and civil society.

Countries need to be ready to transition from external to domestic financing, and they need to use this transition as an entry point to improve health system efficiency, advance UHC and achieve the SDGs. Towards this end, the following four actions are recommended:[56] 1) confirm core programme elements and service delivery arrangements; 2) strengthen institutions to manage finances more effectively; 3) increase domestic financing where needed; and 4) govern the transition process. The need to secure essential public health functions is relevant not only for countries facing reductions in funding from

global health initiatives, but also for countries undergoing service delivery and budgeting reforms. TB programmes need to be part of such discussions to be in the "core programme element". As public financing and OOP spending are the primary sources of financing for health in many countries in the Western Pacific Region, public financing will need to increase even more if it is to help offset declining OOP spending trends.

As donor transition progresses, governments will need to consider how they can sustain the gains and continue making progress towards UHC. Given the flourishing private health-care sector and the integration of TB into health insurance schemes in many countries, various provider payment methods are important to gains in efficiency. When provider payment methods are aligned with TB programme objectives, they can be a powerful tool to improve programme performance by incentivizing community-based care, increasing early testing and treatment at the primary health care level, and reducing hospitalizations with increasing quality of care. Currently, most TB diagnostic and treatment services are included in primary health-care packages free of charge, leading to limited provision of services with no incentives to increase coverage of services. Recent moves to fee-for-service or case-based payments (in hospitals) can lead to overprovision of services and contribute to catastrophic costs incurred by people with TB and their families, while capitation-based payment methods tend towards under-provision of critical TB services. In order to promote better access to affordable, quality and people-centred TB services, performance-based payment methods should be considered and carefully designed, especially at the primary health care level.

Tool

Regional framework for action on transitioning to integrated financing of priority public health services in the Western Pacific. Manila: WHO Regional Office for the Western Pacific; 2018.

TB-sensitive policies and managing the translation of policies to practice

TB policies should be updated regularly, guided by the recent evidence and in line with the global standards. Other health policies and policies of sectors beyond health should be TB sensitive. Such social protection policies may include TB as an inclusion criterion. In some settings, legislation may be necessary to ensure implementation of certain policies.

Translation of policy into practice depends on various factors and takes different amounts of time in different countries. Global or regional policies are translated and adapted as per the country context, and then national-level policies are translated into field-level actions. Change thus has to be at multiple levels and can be challenging. Effective governance may facilitate the translation of policies to practice.

A systematic change process is needed as a means of improving performance and the quality of services and, ultimately, of improving TB programmes. Change management includes: a) defining the need for change; b) planning for a demonstration; c) supporting the demonstration; and d) scaling up with successful change efforts.

In the TB programme, there are many examples of slow translation of policies to practice, such as low uptake of preventive therapy and newer drugs. Slow introduction of rapid diagnostics is an example of a lack of harmony of multiple components where plans and resources were not matched. Inadequate collaboration between TB and HIV programmes is an example in which national-level collaboration is

not often translated into practice at the peripheral level. Monitoring indicators and regular supervision and reviews are important to track the policy–practice pathway and to support change at multiple levels.

Strengthening management and coordination

TB programmes need to strengthen internal accountability and the risk management framework at various levels (central, subnational and implementation). Such managerial capacity-building activity should target various levels of programme managers. Below are the essential components for managerial accountability of NTPs. The components are interconnected and operate in an integrated fashion to support the programme in achieving its mandate and expected results.

- **Human resources management**. Human resources are the key for any programme, including TB, and should be well planned and managed based on workload analysis.[57] Proper human resources management, including attracting, retaining and developing human resources, and providing a quality work environment, are essential. It includes acknowledging outstanding performance by recognition or rewards and managing underperformance to improve.

- **Financial and asset management**. This refers to the responsibilities to demonstrate stewardship of funds, safeguarding of assets and the effective, efficient and economical use of financial resources.

- **Information management**. This refers to the management of information as a strategic asset.

- **Partnership management**. This refers to the proactive engagement of partners to fulfil the objectives and to leverage partnerships to achieve results.

With the emphasis on a multisectoral environment, collaboration with various stakeholders within and beyond the health sector will be important. NTPs are expected to play the main coordination role. Such collaboration needs defining actions for different stakeholders, inviting commitment, reviewing progress through agreed indicators, and providing feedback and continuous dialogue.

Programmes needs to be ready to cope with health system transformation, shifting from reactive to proactive and predictive care. It is evident that countries in the Western Pacific Region are largely going through major economic demographic and epidemiological changes, and many countries are going through health system transformation, which is a dynamic process. To cope with the transition from the current system to the system envisioned to deal with future challenges, TB programme-based delivery systems would initially require integration of services with other programmes where there is synergy at the technical, financial and managerial levels. This will then be transformed to a people-centred care approach with the UHC vision.

Managing TB in emergencies

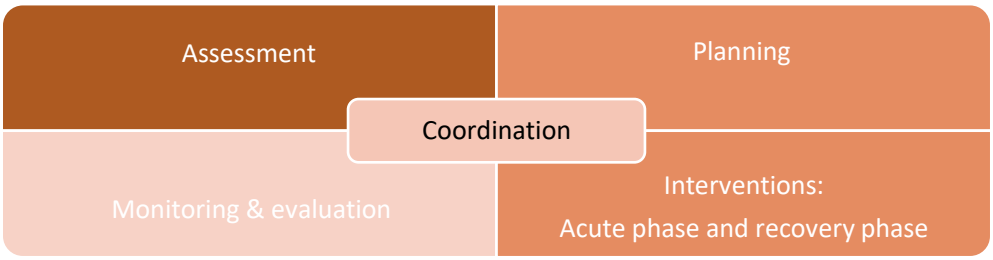
Various emergencies are common in the Western Pacific Region. Natural disasters such as cyclones, earthquakes, volcanic eruptions, floods and tsunamis force people to leave their homes for temporary shelter. Climate change threatens to raise the sea level, which may displace people in the Pacific within and across national borders. The COVID-19 pandemic re-emphasized the need for contingency plans for managing TB in emergencies.

Emergencies increase the risk of transmission of TB and also put pressure on the delivery of services. The health system must find ways to sustain case detection, avoid interruption of treatment among people on TB treatment and minimize the risk of drug resistance. The delivery of disease prevention and care services during emergencies is a multisectoral responsibility, and the prevention and control of TB is thus a challenging task in such context.

Response to emergencies

Preparation and planning for emergencies minimize unfavourable consequences. Preparation and planning require strong coordination mechanisms with four major functions:[58] 1) assessment; 2) planning; 3) interventions in the acute and recovery phases; and 4) monitoring and evaluation (Fig. 14). A plan for TB in emergencies is highly recommended to be included in NSPs in all countries.

Fig. 14. Major functions for emergency response



Coordination. TB programmes should proactively engage with the emergency response team (national or local) and ensure adequate linkages with the health cluster. This engagement should aim to set appropriate mechanisms among various stakeholders to coordinate the relief efforts with TB care activities and should ensure funding for TB control during emergencies.

Assessment and planning. The first step should be assessments of the TB control situation, followed by development of an action plan. The number of people on treatment and the availability of trained human resources should be assessed, and mapping should be conducted to determine health facilities where TB diagnosis and treatment are functional. Relevant guidelines and standard operating procedures need to be adapted to the context of emergencies.

Before making a decision to implement a TB programme in an emergency setting, it is important to assess data from the affected population that indicate that: a) TB is an important health problem; b) mortality for other reasons is not so high; c) there is the availability of basic needs such as water, adequate food, shelter and sanitation, as well as essential clinical services and basic drugs for common illnesses; and d) basic health services are accessible to a large portion of the population, so that people with signs and symptoms of TB can be identified and appropriate investigation or referral arranged. It is of the utmost importance to secure political commitment and ensure the safety of health-care workers.

Interventions (acute phase). Establishing a mechanism to ensure continuity of treatment in health facilities providing TB treatment services, securing an uninterrupted supply of TB drugs and pre-positioning drugs are the key activities in the acute stage.

Interventions (recovery phase). During the recovery phase, building back stronger should be the vision. All opportunities should be taken to restore the services of the NTP. Frequent data collection for appropriate decision-making is key. The TB situation is to be included in the post-disaster needs

assessment. The involvement of the affected community (leaders and health workers) in TB control efforts should be effectively pursued. Funds needed for TB control during the post-acute phase are to be included in donor proposals.

Emergencies may be protracted in some cases. TB care and prevention services need to be integrated in primary health care and in community initiatives to reach affected populations. Improved case finding through different means, such as moving beyond households to camps for internally displaced people or use of mobile clinics in areas without fixed health facilities, can be explored.

Monitoring and evaluation. Monitoring should be an integral part of an emergency, and regular evaluation of the situation can assist updating the plan accordingly.

Tool

Tuberculosis control in complex emergencies. Cairo: WHO Regional Office for the Eastern Mediterranean; 2015.

Box 11. Key messages: Governance and accountability (overarching)

Overarching management and governance actions required for achieving the *End TB Strategy* targets in the Region are as follows:

- Proper financing for a smooth transition from external to domestic financing, adequate domestic funding, integration of TB into health insurance schemes, and careful selection of payment methods to private sector to ensure quality of care and coverage
- TB-sensitive policy development and managing the translation of policy to practice at various levels of the health system, administration and among various stakeholders
- Programme management capacity to be strengthened at various levels; more important in a multisectoral environment and where health system transformation is expected
- Managing TB care in emergency situations to be part of the national strategic plan as the Region is experiencing the COVID-19 pandemic and various other emergencies are common in the Region.

3.7 Plans for a roll-out of the Regional Framework

Adoption at the country level

This Framework is applicable to all countries and areas in the Western Pacific Region. Countries are expected to incorporate approaches and actions relevant for their context in their national strategic plans (NSPs) and/or national health plans. Countries are expected to identify the challenges and strengths for reaching the *End TB Strategy* targets. With the help of this Regional Framework, they can identify approaches, the required operational modalities and the interventions specific to their situations.

The Regional Framework aims to support national strategic planning for TB. The NSP for TB is a major guiding document at the country level. Strategic planning is a fundamental component of the management of a TB programme and constitutes a key instrument to efficiently implement the policies for TB prevention, care and control in a country, over a defined period of time.[59] The NSP is usually for a long term (3, 5 or 10 years) and aligned with the national health plan. It defines the goal and objectives to be achieved, as well as the strategic interventions and activities to reach them. In many countries, the

NSP is supported by a short-term (annual or biannual) operational plan. A sound NSP should specify the budget needed to implement these interventions and activities. It should also clearly describe how these interventions and activities will be operationalized, as well as how their implementation will be monitored and their effect evaluated. In the era of "integrated and indivisible" SDGs and multisectoral approaches, an NSP cannot be developed without the involvement of other sectors within and beyond health. Strategic planning for the development process should be inclusive of all stakeholders.

It is expected that all stakeholders will assist national TB programme to roll out the Regional Framework to implement the *End TB Strategy*.

WHO support for the roll-out

The three levels of WHO will work as one, in a coordinated effort. The Regional Office for the Western Pacific will provide support to WHO country offices to assist countries to implement the Regional Framework. As needed, the Regional Office will also link up with WHO headquarters for specialized support. Country offices will be in the forefront of coordinating with their counterparts throughout the entire cascade of the TB programme, from planning to evaluation. WHO will continue to provide specific technical assistance through its wide network of experts, technical partners and collaborating centres.

The End TB and Leprosy unit at the Regional Office for the Western Pacific will work closely with other units and divisions to design the appropriate service delivery system for TB service delivery. The Regional Office will provide a regular platform to share experiences and monitor regional progress through TB programme managers meeting. It will also facilitate South-South collaboration among less-developed countries. Regional efforts will be coordinated with national processes of programme evaluations and will collaborate with national technical working groups to support the countries.

Regional initiatives will support country efforts. The Technical Advisory Group on Tuberculosis in the Western Pacific Region will assist the Regional Office to monitor the progress of the Regional Framework. The Regional Green Light Committee will monitor and provide assistance for scaling up programmatic management of DR-TB.

Monitoring and evaluation

Indicators align with the *End TB Strategy*. The Regional Framework is aligned with the *End TB Strategy*, and the Region will continue to monitor the three high-level, overarching, impact indicators, which are listed in the first three rows of Table 5.

Annex

Table 5. Targets and milestones in the Western Pacific Region

	2015 baseline	**2019 progress**	**2020 milestones**	**2025 milestones**	**2030 targets**
Reduction in **number of TB deaths**	109 853	90 290 (18% reduction)	70 003 (35% reduction)	27 500 (75% reduction)	
Reduction in TB **incidence rates**	99/100 000 population	93/100 000 population (6% reduction)	79/100 000 population (20% reduction)	50/100 000 pop (50% reduction)	20/100 000 pop (80% reduction)
% of TB-affected families facing **catastrophic costs**	Was not available	35–70%	0%	0%	0%
Operational indicators		**TB–SDG monitoring indicators**		**Process indicators**	
1. TB treatment coverage 2. TB treatment success rate 3. % of TB affected households experiencing catastrophic costs 4. % of new and relapse TB patients tested using WHO-recommended diagnostics at the time of diagnosis 5. LTBI treatment coverage 6. Contact investigation coverage 7. DST coverage 8. New TB drugs treatment coverage 9. % of known HIV status among TB patients 10. Case fatality ratio		1. HIV prevalence 2. Prevalence of diabetes mellitus 3. Prevalence of alcohol use disorder 4. Coverage of essential health services 5. Proportion of population with large household expenditures on health 6. Prevalence of smoking 7. Health expenditure per capita 8. Proportion of population living below the international poverty line 9. Proportion of population covered by social protection floor 10. Prevalence of undernourishment 11. Proportion of population using clean fuels and technology 12. Gross domestic product per capita 13. Income per capita 14. Proportion of urban population living in slums		1. NSP alignment with the Regional TB Framework 2. Coordination/collaboration mechanisms with other health programmes 3. Coordination/collaboration mechanisms with other sectors (using the MAF checklist) 4. Platform for engagement of civil society and affected communities 5. Annual report availability, a with beyond TB component	

Operational indicators. The top 10 priority operational indicators[55] for the implementation of the *End TB Strategy* will be monitored at the regional level on a regular basis.[6] These indicators sufficiently cover TB-specific responses. In addition to the top 10 indicators, the Regional Framework also encourages countries to monitor at the national and subnational levels, with indicators proposed to monitor the three pillars of the *End TB Strategy* as described in *Implementing the End TB Strategy: The Essentials*.

Annex

TB–SDG monitoring framework. WHO developed a TB–SDG monitoring framework in 2017 that identified clear linkages between TB incidence and various indicators that are part of the SDG framework. TB monitoring needs to include an analysis of selected SDG indicators that influence the course of the TB epidemic (indicators to monitor within SDG 3 and beyond SDG 3). The monitoring framework includes 14 indicators under seven SDGs (SDGs 1, 2, 3, 7, 8, 10 and 11). TB–SDG monitoring indicators can serve as a strong monitoring tool. The Regional Framework recommends that countries continue to monitor these indicators. These indicators will capture the "within health" and "beyond health" components of the Framework.

Process indicators. Some process indicators will be helpful to monitor the roll-out of the Regional Framework. NSP alignment with the Framework will ensure that the concepts contained in the Framework are adapted to the county context. It will also ensure that there are coordination and collaboration mechanisms for work with other health programmes and with other sectors (using the MAF checklist[60]), as well as annual report availability beyond the TB component and a platform for engagement with civil society and affected communities.

Modalities. The monitoring and evaluation of the implementation of the Regional Framework should be systematic and regular. Regular supervision, monitoring and review at the national and subnational level are important. The review should be comprehensive and include all components, including those beyond TB. The annual report should be published in a timely manner and available to all stakeholders. Periodic external and high-level reviews covering all components of the Framework should be organized (3–5 years for highly endemic settings).

Table 6 gives a summary of some examples of proposed high-level activities; however, it is to be noted that activities are very country and context specific. Priorities will vary in different settings, and settings may be different within the same country.

Annex

Table 6. Summary table of action domains, responses and proposed activities in different settings

Action domain	Responses	Proposed activities with considerations	
		All settings	**Focus for lower-incidence settings**
Essential TB functions	1. Ensure early diagnosis and notification	• Systematic screening a. Should always be conducted among household and close contacts of TB patients, PLHIV, miners and prisoners b. People with risk factors for TB seeking health care, in settings with ≥ 0.1% TB prevalence (malnourishment, diabetes, history of previous TB, chronic lung disease and others) c. Populations with structural risk factors for TB and limited access to health care (urban poor, homeless, refugees, migrants, other vulnerable or marginalized groups) d. General population in settings with ≥ 0.5% TB prevalence • Universal coverage of rapid molecular diagnostics and DST • Engaging other public and private health providers • Collaboration with other programmes • Strengthened notification and ensuring full implementation (establishing an electronic case-based TB registry and enforcing compulsory notification) • Optimizing the prevention and care of DR-TB • Strengthening drug regulation and management	• Screening mainly focused on TB contacts and selected high-risk groups (as per the context) • Continued surveillance, programme monitoring and evaluation, and case-based data management
	2. Ensure people-centred care services	• Promotion of rights-based equitable services • System strengthening for reaching the unreached • Decentralized model of care, ensuring quality and safety • Empowering the person and families affected by the disease • Integrating packages of treatment adherence interventions • Integration of palliative, post-TB care and end-of-life care • Emergency preparedness plan	• Address needs of special populations, such as ethnic minorities, migrants and cross-border issues (ensuring access to culturally sensitive health services and the establishment of cross-border collaboration)
	3. Prevent TB infection and diseases	• Strengthened infection prevention and control • Expansion of TB preventive treatment • Ensuring high coverage of BCG vaccination in high-prevalence settings	• Diagnosis and management of TB infection in high-risk groups more important than in low-incidence countries

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Health system foundations	1. Contribution to universal health coverage (UHC)	• Sustainable financing for TB care • Collaboration between national health insurance and NTPs • Improving pathway to TB diagnosis and treatment • Innovative interventions to reduce barriers to access health care • Strengthening TB actions within the attributes and domains of UHC (quality, efficiency, equity, accountability, and sustainability and resilience)	• Ensure reaching the unreached
	2. Management of risk factors and comorbidities of TB	• Assessing important comorbidities by clinical sector and relevant professional entities • Strengthening collaborative mechanisms • Finding and treating TB among people with risk factors • Addressing comorbidities among people with TB and the incorporation of guidance on risk factor mitigation and comorbidity management into the national TB guidelines • Preventing TB among people with comorbidities	
	3. Strengthening research and innovation	• Establishment of a research network (national and regional) with involvement of government, donors, affected communities and civil society, and the scientific community. • National TB research agenda, priorities, and monitoring and evaluation framework. • Research training and capacity-building. • Adequate and sustainable funding for research. • Framework for the rapid introduction of new tools	• Investment in research and new tools • Influencing the research agenda of main institutions • Support for national and international capacity-building for research
	4. Meaningful participation of community and civil society	• Link existing national, regional or international initiatives for community engagement in the TB response • Institutionalize funding and programmatic support for a wide range of civil society and community-led responses • Community-level monitoring of TB programmes • Inclusion of civil society and the TB community in strengthening the multisectoral accountability framework • Capacity-building of civil society and the TB community	• Advocacy from civil society, communities and other stakeholders to ensure political commitment locally, regionally and globally

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Health beyond health	1. Contribute to enhancing social protection mechanisms	• Ensuring social support and protection schemes for TB patients (and ensuring links with the existing scheme) • Advocating workplace policies and services for people with TB by exploring collaboration with the labour and corporate sectors	• Address the most vulnerable and hard-to-reach groups • Social support and protection • Addressing underlying social determinants
	2. Promote a whole-of-government and whole-of-society approach	• Identifying key sectors for collaboration • Establishment of a coordination mechanism • Defining roles and responsibilities with indicators • Ensuring regular and transparent reporting	
Governance and accountability	1. Adequate financing	• Confirm core programme elements and service delivery arrangements • Strengthen institutions to manage finances more effectively • Increase domestic financing, where needed • Govern the transition process	• Ensure political commitment, funding and stewardship for planning and essential services of high quality • Support global TB prevention, care and control
	2. TB-sensitive policies and managing translation of policy to practice	• Updated TB polices and guidance • Effective governance including processes and oversight to facilitate the transition of policy to practice • Improving performance and quality of services by a systematic change process	
	3. Strengthening management and coordination	• Proper human resource management including attracting, retaining and developing human resources, and providing a quality work environment • Demonstrate stewardship of funds, safeguarding of assets and the effective, efficient and economical use of financial resources • Management of information as a strategic asset • Proactive engagement of partners to fulfil the objectives and to leverage partnership to achieve results	• Central coordination, management and staffing for TB elimination • Support for bilateral and multilateral collaboration and technical assistance
	4. Managing TB in emergencies	• Coordination mechanism with four major functions such as: 1) assessment; 2) planning; 3) interventions in acute and recovery phase; and 4) monitoring and evaluation	

Note: The rightmost column gives some examples of priorities in lower-incidence settings.

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