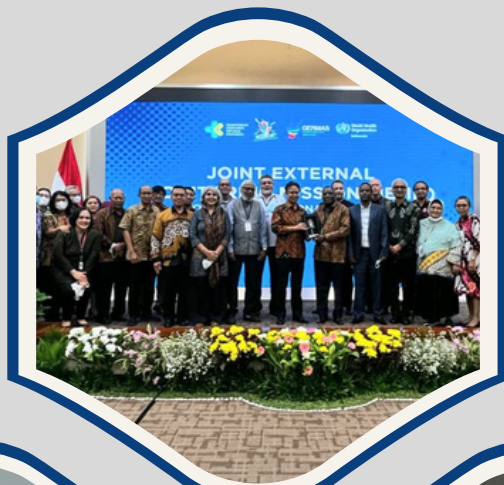


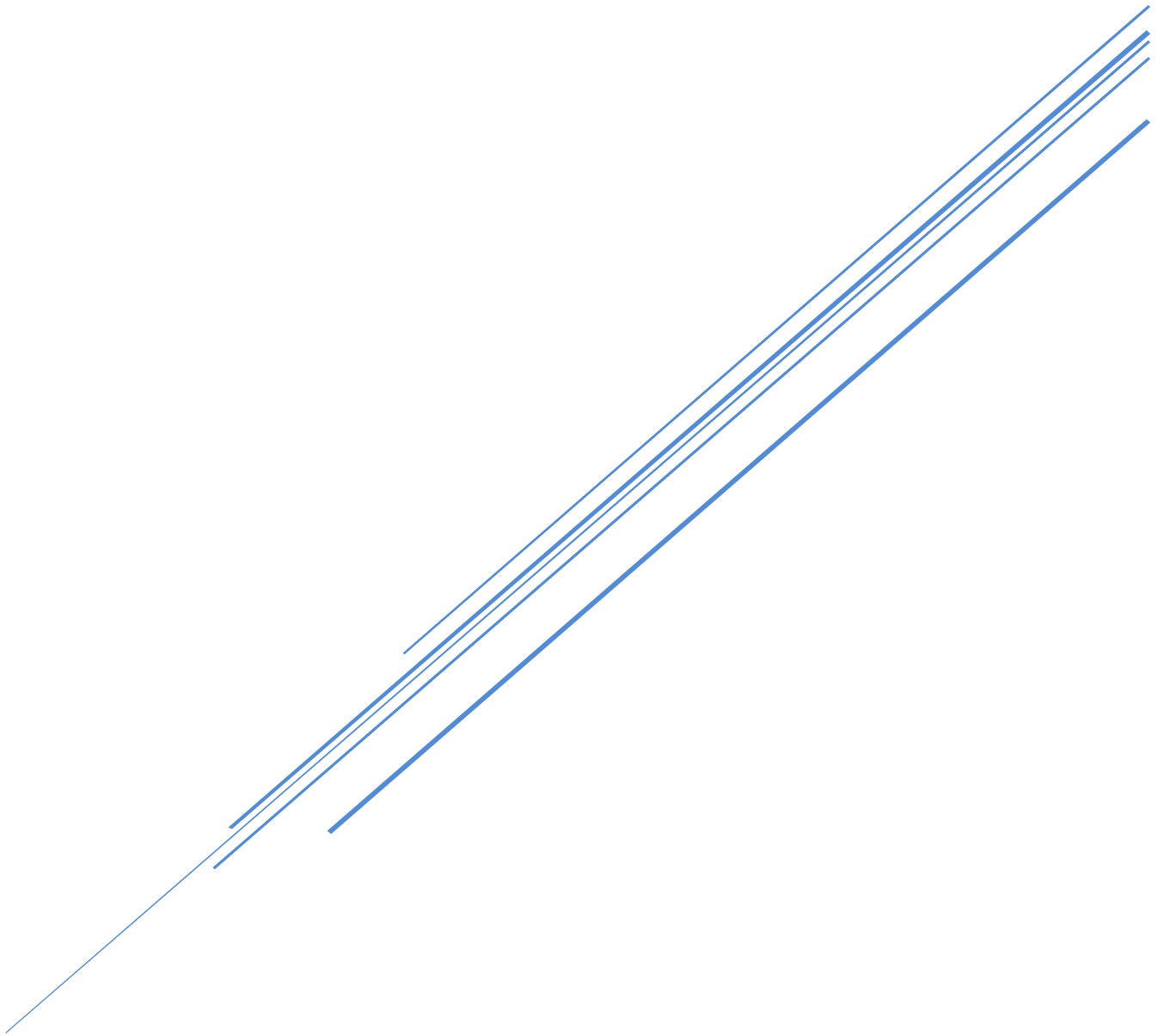
# INDONESIA

## TB JOINT EXTERNAL MONITORING MISSION (JEMM) REPORT

4-15 December 2022



2022  
INDONESIA TB JOINT EXTERNAL  
MONITORING MISSION (JEMM)  
REPORT



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had TB or have been affected by TB. The narration of the experiences these people were going through or had gone through helped to sharpen the perceptions of the JEMM on key program areas because ultimately the JEMM was about people and the TB response in Indonesia was also about people. Being able to put faces on to the data, the strategies, interventions, and activities that the JEMM was concerned about was the most satisfying element of the 2022 Indonesia TB JEMM.

## Abbreviations and Acronyms

AI	Artificial Intelligence	CI	Confidence Interval
ACF	Active (TB) Case Finding	CISDI	Centre for Indonesia's Strategic Development Initiatives
ADINKES	Asosiasi Dinas Kesehatan (Association of District Health Authority)	CRG	Community Rights and Gender
ART	Anti-Retroviral Therapy	CXR	Chest X-ray
BAPPENAS	Badan Perencanaan Pembangunan Nasional (Ministry of National Development Planning)	DPPM	District Based Public Private Mix
Bdq	Bedaquiline	DR-TB	Drug Resistant TB
BIA	Budget Impact Analysis	DS-TB	Drug Susceptible TB
BPJS-K	Badan Penyelenggara Jaminan Sosial Kesehatan	DST	Drug Susceptibility Testing
BKP	Badan Kebijakan Pembagunan Kesehatan	DSSM	Direct Sputum Smear Microscopy
BPOM	Badan Pengawas Obat dan Makanan (Indonesia Food and Drug Administration)	DTO	District Tuberculosis Officer
BRIN	Badan Riset dan Inovasi Nasional (National Research and Innovation Agency)	EQA	External Quality Assurance
CAD	Computer-aided detection of TB on chest radiography (software employing artificial intelligence)	FDC	Fixed Dose Combination
HC	Health Centre (Puskesmas)	FSW	Female Sex Workers
CCT	Conditional Cash Transfer	GDF	Global Drug Facility
		GDP	Gross Domestic Product
		GNI	Gross National Income
		Gol	Government of Indonesia
		H	Isoniazid
		HFIS	Health Facility Information System
		Hr	Isoniazid resistant TB
		HRG	Human Rights and Gender
		IDR	Indonesian Rupiah
		IMCI	Integrated Management of Childhood Illness
		INH	Isoniazid

JKN	Jaminan Kesehatan Nasional	PHC PITC	Primary Health Care Provider Initiated
KEMENKO, PMK	Coordinating Ministry of Human Development and Culture	PLHIV	Testing and Counselling People Living with HIV
KOPI-TB	Coalition of Professional Organization against Tuberculosis	PMTPT	Programmatic management of TB Preventive Treatment
KVPs	Key and Vulnerable Populations	POC PSM	Point of Care Procurement and Supply Chain Management
LPA	Line Probe Assay	PWID	People who Inject Drugs
LTFU	Loss to follow up	rGLC	regional Green Light Committee
MICA	Monthly Interim Cohort Analysis	RMNCAH	Reproductive, Maternal, Neonatal, Child and Adolescent Health
MoF	Ministry of Finance	Rp	Rupiah
MoHA	Ministry of Home Affairs	RPJMN	Rencana Pembangunan Jangka Menengah Nasional - National Mid Term Development Plan
MoSA	Ministry of Social Affairs	SDGs	Sustainable Development Goals
MSM	Men who have Sex with Men	SIHA	Sistem Informasi HIV Aids - The Indonesia HIV Information System
SPM	Standar Pelayanan Minimum (Minimum Service Standards)	SITB	Sistem Informasi Tuberkulosis - The Indonesia TB Information System
mWRD	molecular WHO recommended rapid diagnostic (for TB)	SLDST	Second Line Drug Susceptibility Testing
NACP	National AIDS Control Program	SRL	Supranational Reference Laboratory
NIHRD	National Institute for Health Research and Development	SSBs	Sugar Sweetened Beverages
NRL	National Reference Laboratory		
NTP	National TB Control Program		
P	Rifapentine		
PBI	Beneficiaries of Health Insurance Contribution Assistance (Penerima Bantuan Iuran)		
PCR	Polymerase Chain Reaction		

STI	Sexually Transmitted Infections	UHC	Universal Health Coverage
STR	Short Treatment Regimen	UNHLM	United Nations High Level Meeting (on TB)
TPT	Tuberculosis Preventive Treatment	UI	University of Indonesia
TSR	Treatment Success Rate	VOT	Video Supported Treatment for TB
		Z	Pyrazinamide



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## Executive Summary

The 2022 Indonesia TB Joint External Monitoring Mission (JEMM) was carried out from December 5 to 14, 2022. The primary objective of the JEMM was to review progress and the performance of the National TB Program (NTP) of Indonesia to understand what was achieved or not since the 2020 JEMM. The JEMM was particularly interested in understanding the drivers of progress or lack of change. In support of the 2022 JEMM, a national TB epidemiological review was conducted in October 2022 to consolidate TB surveillance and disease burden data and assess the situation with the digital surveillance system for TB (*Report of the national TB epidemiological review in Indonesia, October 2022*). Other program assessments that preceded the 2022 JEMM include an external review of district based public private mix (DPPM) approach for TB prevention and care that was carried out in mid 2022 (*Report of the external assessment of District Based Public-Private Mix for TB Care and prevention in Indonesia, September 2022*), and earlier missions by the regional Green Light Committee (rGLC) and Global Drug Facility (GDF). The 2022 TB JEMM was explicitly requested to take into consideration the findings and recommendations from these recent reviews and reports to avoid duplication of efforts. In this context, the methodology used for the JEMM included document reviews, including national strategic and regulatory documents, reports, publications, materials in the grey literature and field visits to four provinces (West Kalimantan, North Sulawesi, North Sumatera and Yogyakarta) to dialogue with the political and technical (health) leadership of the provinces and districts, health facility managers, frontline health care workers, patients and those who support them and to observe principles and practices of health care provision in addition to reviewing available data. The quantitative and qualitative data gathered during the field visits and review of documents was discussed at meetings of the JEMM to identify key achievements/progress made and the key gaps and constraints so as to formulate focused recommendations to sustain and improve progress being made and to address gaps and constraints. The key findings and recommendations of the JEMM were communicated to the Minister for Health and to national and provincial stakeholders in debriefing sessions held on December 13, 2022, and December 14, 2022, respectively. All the previous missions and reports comprise integral components of the JEMM 2022, and the implementation

of their recommendations should be monitored closely, along with specific recommendations from the JEMM 2022.

Indonesia has a strong and mature national TB program that is implementing all components of the End TB Strategy. The efforts of the NTP were boosted by the Presidential decree on TB number 67 of 2021 which set ambitious targets (reduction of TB incidence to 65/100,000 and TB mortality to 6/100,000 by 2030) and envisages an effective, comprehensive, and integrated approach to TB elimination in Indonesia. The Ministry of Health (MoH), which is the executive of the Presidential decree on TB, is keenly following the implementation of the decree and the resulting outcomes with a focus on finding people with TB (reduce the number of missing people with TB) and their successful treatment. The Coordinating Ministry of Human Development and Cultural Affairs is the director of the Presidential decree and has primarily a coordination role. Other ministries of the Republic of Indonesia have been included in the Presidential decree either as members of the “director” or “executive” of the implementation arrangements of this decree thereby providing opportunities for the evolution of a multi-sectoral engagement in the TB response.

There has been an increase in domestic financing for TB, which more than doubled between 2015 and 2019, and the combination of a focus on finding people with TB, increase in financing for TB, and use of lessons from the COVID-19 pandemic appears to be paying dividends. While COVID-19 had a negative impact on TB notifications, there has been a rebound and this year, 2022, more than 611,000 people with TB are expected to be notified, a figure that is among the highest that the NTP has ever achieved.

Progress is also being made in other areas of TB care and prevention. Thus, there has been a significant expansion of capacity to provide TB testing with a molecular WHO recommended rapid diagnostic (mWRD) test which is expanding genotypic drug susceptibility testing (DST). There has also been expansion of phenotypic DST for TB. The proportion of TB patients tested for HIV and provided with ART when confirmed to be living with HIV is steadily increasing. Efforts have been made to strengthen clinical diagnosis of TB in children and child-friendly anti-TB drug formulations are available for the appropriate treatment of disease and infection, including with shorter regimens. Treatment success rates for both drug-susceptible and drug-resistant TB in

adults and children are similar to global averages, implying that there is still much room for improvement.

There are however multiple challenges that face the TB response in Indonesia. The country is not on track to end TB as a national public health threat by 2030, based on the End TB Strategy and SDG targets. Tuberculosis case notification is much lower than expected and yet TB case finding remains mostly passive. There are limited efforts to actively find people with TB and wherever this is attempted, sensitive tools such as chest x-ray are not used. The detection of TB at the primary health care facility (or Puskesmas) level is constrained by lack of availability of mWRD and chest radiography in addition to limited linkages with communities and private providers. The systems for specimen transportation are still sub-optimal. There is also a striking under-notification of TB from private health providers and especially from general practitioners. All these challenges vary by location across the country such as between provinces and districts or between urban and rural settings. When active TB case finding is carried out, it is often limited to contact investigation, which is itself not fully implemented. There is also a lack of linkage between active case finding and provision of TB preventive treatment to stop progression of TB infection to disease, including in key vulnerable populations where this intervention is highly recommended such as people living with HIV and young children <5 years who are household contacts of people with TB.

Tuberculosis stigma remains a major problem in the population and is likely to be contributing to the low case notification, low HIV testing for TB patients in the public sector and the low coverage of TB preventive treatment. Despite strong evidence-based recommendations and availability of a range of options, there is a marked reluctance by the population and healthcare workers to implement TB preventive treatment (TPT) for key vulnerable populations based on unsubstantiated concerns about individual and public health risk.

The country is facing significant human resource (HR) constraints for health at all levels including the national, provincial and district level. The data systems for monitoring and evaluation of TB notifications, treatment outcomes, contact investigation and TB preventive treatment are time-consuming for healthcare workers and are not integrated. The Presidential decree on TB emphasizes regional planning,

target setting and budgeting, however, there is limited capacity to plan, budget, execute and monitor program interventions at provincial and district level which is affecting performance and progress. Even though financing of the TB response is improving, huge funding gaps persist and the complexity and non-transparency of funding flows from domestic and also external financing is constraining utilization of available funding.

The achievements, challenges and proposed interventions and actions that should be taken to address the current constraints in the TB response in Indonesia and to accelerate progress towards achieving the End TB Strategy and SDG targets for TB are further elaborated in the main body of the report. Highlighted here are the key recommendations:

**1. Enhance finding people with TB by actively screening high risk populations for TB using highly sensitive screening tests such as the chest x-ray with or without computer-aided detection of TB.**

As recommended by WHO, populations with a prevalence of TB of greater than 0.5% may benefit from population wide screening for TB and with repeated rounds of screening the burden of TB in these populations should decrease as has been documented in various research settings. Whole population screening may however be resource intensive and the feasibility of programmatic implementation in TB endemic settings with limited resources is uncertain. In such situations, as recommended by WHO, high risk groups within the population should be the target for TB screening. To achieve public health goals of impacting TB incidence, mortality and patient/family costs, a high proportion of the targeted population should be reached. The 2022 JEMM therefore recommends that key and vulnerable populations be mapped, preferably village by village, district by district and be systematically screened at the community level for TB using portable (ultra-portable) chest radiography equipped with CAD and mWRD testing for those with abnormal chest x-rays. To effectively carry out community TB screening will require that efforts are made to strengthen community engagement including community empowerment.

**2. Increase capacity of the primary health care system to detect and treat TB by ensuring availability of chest x-ray at the PHC level while also expanding mWRD coverage among them.**

The opportunity to rapidly diagnose TB among people who seek care through the patient-initiated pathway (passively) should not be missed. With a strengthened primary health care system as envisaged in pillar 1 of the health system transformation agenda, initial care seeking will increasingly be with primary care providers in either the public or the private sector. These primary care providers need to be capacitated to detect and diagnose TB. The JEMM understands that there are regulations including regulation number 75/2014, that limit the placement of chest x-ray in Puskesmas and strongly recommends that these regulations be reviewed with a view to removing this bottleneck to make the chest x-ray available at this lower level of the health care system. The community based active case finding intervention will work best if it is twinned with enhanced capacity at the Puskesmas and private GP level to diagnose and treat TB. Increasing capacity at the Puskesmas level and expanding coverage of engagement of private primary providers will also provide an opportunity for early screening and diagnosis of other lung diseases that contribute to the burden of disease, such as acute respiratory infections, chronic respiratory disease (such as asthma and chronic obstructive pulmonary disease), lung cancer and others.

**3. Strengthen TB diagnosis and treatment, for all forms of TB in secondary and tertiary care.**

While many hospitals both in the public and private sector, have been systematically engaged in the TB response and have TB care and treatment units (currently called DOTS corners), hospital coverage and quality of TB services remain suboptimal. The JEMM recommends that systematic engagement of hospitals be enhanced through training and supporting health care workers to provide high quality TB services, equipping these facilities with tools such as digital x-rays and mWRD to support screening and rapid diagnosis of all forms of TB, consideration for establishing diagnostic centres equipped with high-throughput mWRD to serve specific urban areas with attendant specimen transport systems, and supporting secondary and tertiary care facilities to establish or strengthen intra-facility coordination of TB services.

4. **Re-orient diagnostic network capacity for primary care and improve quality and performance** by establishing and funding a clear and costed plan for supervision, EQA, and quality management systems for peripheral laboratories while also diversifying mWRD platforms (both technologies and number of modules per facilities), emphasizing on-site placement at primary care and hard to reach areas.

5. **Mobilize adequate financial resources for TB and re-structure the national social health insurance payment system to incentivise finding people with TB and improving quality of TB care.**

There are currently substantial funding gaps in key areas of tuberculosis care and prevention in Indonesia, and domestic funds disbursement mechanisms are not fully supportive of efforts to rapidly find people with TB and provide them with effective treatment. To address these TB funding bottlenecks, the JEMM recommends that the Government of Indonesia should consider creating an episodic payment mechanism from the state mandatory social health insurance program, (Jaminan Kesehatan Nasional or JKN) for primary health care under TB Strategic Health Purchasing to incentivize all providers to i) identify and notify TB, ii) implement adherence monitoring, and iii) support treatment completion for TB patients. It is strongly recommended that the country should continue to pursue and implement the “no notification, no reimbursement” policy at all levels to ensure all diagnosed and/or treated patients with TB are notified. The JEMM also strongly recommends that the country should consider increasing resource mobilization for TB from pro-health tax revenues for example from tobacco, sugar sweetened beverage etc that will have twofold benefits: increase fiscal space for health in general and reduce risk behaviour related to TB such as smoking and diabetes.

6. **Enhance provision of TB preventive treatment including integrating this intervention with active case finding to optimise its public health benefit.**

Tuberculosis preventive treatment (TPT) in Indonesia is lagging even among populations where the intervention is highly recommended such contacts of people with active TB and people living with HIV. Contact screening should be routinely implemented and case finding at the household level integrated with provision of TPT to eligible contacts. In Indonesia, however, there is widespread TPT hesitancy



including among health care workers to provide TPT in Indonesia. To overcome the observed TPT implementation bottlenecks and ensure efforts to find people with TB includes TB preventive treatment among their contacts, the JEMM recommends that a TPT communication plan be developed and implemented to deliver TPT information and educate both the community and health care providers. The emphasis should be on addressing the myths and misunderstandings leading to TPT hesitancy. For a successful massive scale-up of programmatic management of TPT, existing/potential procurement bottlenecks for the testing and treatment of TB infection should also be addressed. Additionally, the opportunity provided by newly available TPT regimens that are shorter, safer and which have been associated with better completion rates than the six-month regimen should be included among the measures to overcome current TPT implementation barriers.

**7. Address the human resource constraints at all levels of the healthcare system** including at the national, provincial, district and primary health facility level. The burden of TB in Indonesia qualifies to be considered a public health emergency that requires an urgent and holistic response. An enhanced TB response will require “boots on the ground” and every effort should be made to increase health personnel numbers and capacity. The JEMM recommends that the NTP, supported by relevant departments in the MoH, including those driving the health transformation agenda and technical partners to map out HR, both the numbers and skills/capacity, needed at the various levels of the system. Both short term solutions to fill obvious critical HR gaps and medium to long term solutions, based on assessments such as workload indicator of staffing needs, should be used to address the HR constraints.

**8. Address HIV associated TB to find people with TB among PLHIV and to improve TB treatment outcomes in HIV associated TB.**

The slow progress in the implementation and scale-up of TB/HIV collaborative activities is likely driven by stigma. The JEMM recommends that the MoH through the directorate of communicable disease, and the NTP and National AIDS Control Program (NACP) should show strong leadership in this area, revive and sustain the TB/HIV technical working groups at the national, provincial and district level, train health care workers on components of TB/HIV care including knowledge about TB/HIV

stigma and how to address it and provide the medical commodities that are needed to provide quality care for TB and HIV. Additionally, it is strongly recommended that TB/HIV interventions be included in the DPPM package to better reach people accessing care for TB and HIV in the private sector.

9. **Address inadequacies in case-finding, clinical management, and prevention of TB in children** by enhancing capacity to diagnose and treat TB disease and infection among children at the Puskesmas as well as higher levels of the health service delivery system. This will require: greater use of diagnostics including mWRD, non- sputum samples including stool, gastric and nasopharyngeal aspirates and CXR; training of health care workers at all levels; increasing the coverage of household contact screening; integrating TPT with contact investigation; and strengthening the public-private mix. Policy guidelines should be updated, including considering the latest WHO guidelines on diagnostic approaches and novel treatment options for disease and infection (TPT) in children and adolescents. However, the major challenge is to close the policy-practice implementation gap which will require decentralisation and integration of services with stronger collaboration and communication between paediatric TB service providers and the NTP at all levels of care.
  
10. **Develop and execute a joint plan with relevant ministries such as the Ministry of Social Affairs (MoSA) to link people with TB, both DS TB and DR TB, to social support programs** (mandated in Presidential decree 67/2021) as critical components of care for these patients who are often socio-economically disadvantaged.
  
11. **Engage with those driving the health and digital transformation agenda to evolve a TB information system that meets the objectives of the TB response, including TB care at primary level and integrated information system on the entire TB episode and cascade.**

# 1. Introduction

## Geography of Indonesia

Indonesia is an archipelagic country in Southeast Asia. It covers more than 1.905 million KM<sup>2</sup> and comprises more than 17,000 islands making it the largest archipelago in the world. The country extends about 5,120 KM from East to West and 1,760 KM from North South. There are five main islands (Sumatra, Java, Borneo (Kalimantan), Sulawesi and New Guinea) and two main island groups (Nusa Tenggara and Maluku). The country shares land borders with Malaysia, East Timor and Papua New Guinea and maritime borders with Australia, India, Palau, the Philippines, Thailand, and Vietnam. The country is ranked in the top three among countries at risk of the consequences of climate change such as flooding and extreme heat<sup>1</sup>. It is located in the so-called “Pacific Ring of Fire” and has a high risk of natural disasters such as tsunamis, earthquakes, and floods<sup>2</sup> (figure 1).

## Why is this important for TB?

This is important for TB because geographical factors can pose significant barriers to access to health services including TB services while natural disasters can constrain the ability of the health care system to provide services while increasing the risk of some diseases.

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<sup>1</sup> <https://www.adb.org/sites/default/files/publication/700411/climate-risk-country-profile-indonesia.pdf>

<sup>2</sup> <https://www.statista.com/statistics/920857/indonesia-risk-index-for-natural-disasters/>

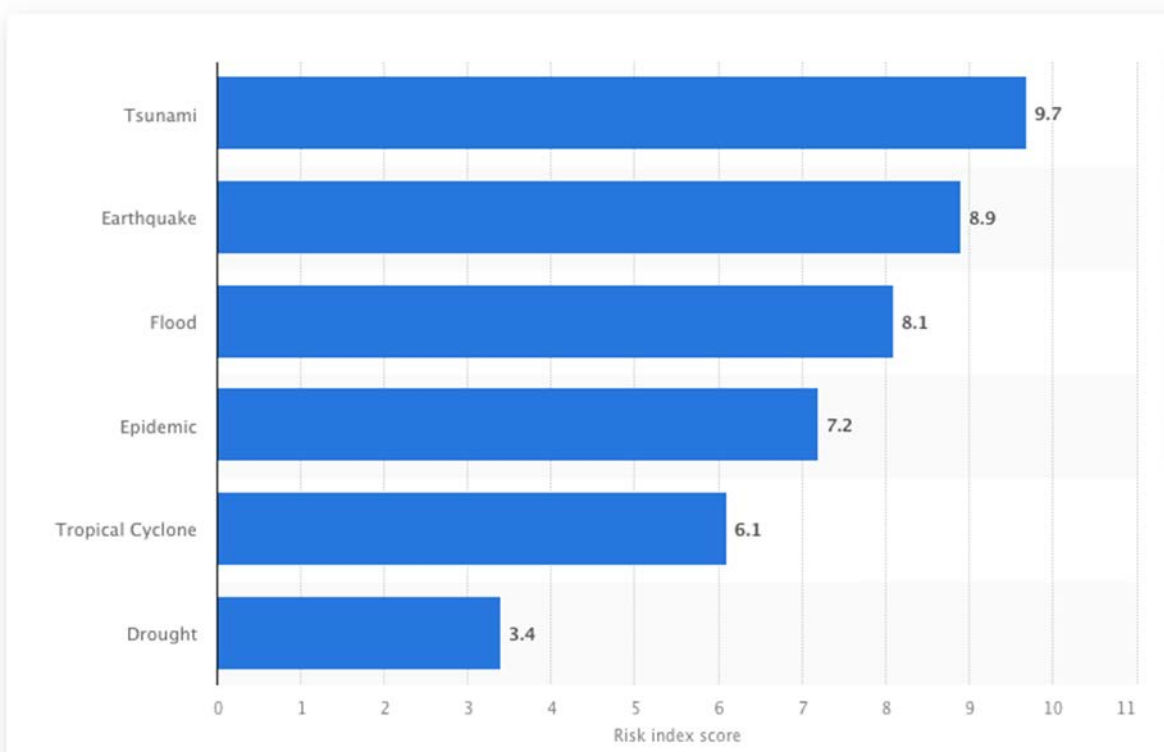


Figure 1. Indonesia's risk profile for natural disasters (sourced from [here](#))

### Indonesia's demographic profile

The population of Indonesia is currently estimated to be 279.1 million people with equal numbers of males and females. The annual rate of population change has averaged +1% since 2020 and is expected to remain so, by 2025. The Indonesian population is youthful with children of the age group 0-14 comprising 25% of the total population, 68% of the population is in the age group of 15-64 years and 7% of the population is over the age of 65 years. Life expectancy at birth is 70 years for males and 75 years for females<sup>3</sup>. Figure 2 below shows Indonesia's population pyramid. About 57% of the Indonesian population live on Java Island. In 2021, it was estimated that 57% of the Indonesian population lived in urban areas with an annual urbanization rate of 2.2%<sup>4</sup>.

### Why is this important for TB?

The burden of TB is highest in young productive age groups, however, very young people below the age of 5 and older individuals over the age of 65 have an increased

<sup>3</sup> World Population Dashboard, Indonesia. <https://www.unfpa.org/data/world-population/ID>

<sup>4</sup> <https://data.worldbank.org/indicator/SP.URB.TOTL.IN.ZS?locations=ID>

risk of progressing to active TB if infected with *Mycobacterium tuberculosis*. The burden is also higher in males compared with females.

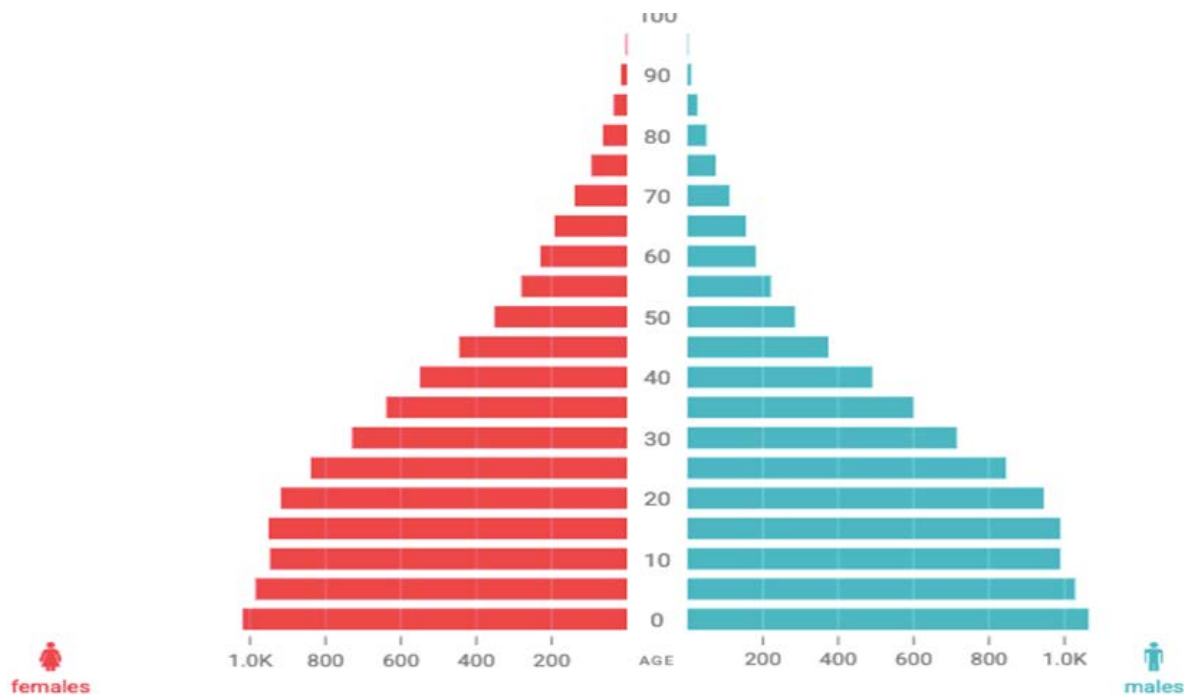


Figure 2. Indonesia's population pyramid

### Indonesia's economic profile

Indonesia is currently classified as a middle-income country by the World Bank. The country's Gross Domestic Product (GDP) was estimated to be USD 1.9 trillion and has been growing at an average of 4-5% annually since 2000. As happened in many countries in the world, the GDP declined in 2021 by 2.1%, as a result of the COVID-19 pandemic. In 2021 the GDP per capita (current) was estimated to be USD 4,291 and the Gross National Income (GNI) per capita (Atlas method, current) was USD 4,140<sup>5</sup>. The country has made major strides in reducing poverty. Poverty trends have shown a steady decline since 2000 where an estimated 20% of the population was poor and by 2021, it was estimated that 9.8% or about 26.4 million people in Indonesia were living below the national poverty line.

<sup>5</sup> <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=FigirFID>

Though the economy has been growing and poverty rates have come down, inequality remains a major challenge. Between 2000 and 2012, inequality, using the GINI index, rose as the economy expanded and from 2012, the GINI index has remained flat at close to 40% (it was 37.9% in 2021). Inequality is known to drive TB and reduces the pace of decline in the burden of TB<sup>6</sup>[6].

### POVERTY HEADCOUNT RATE, 2000-2021

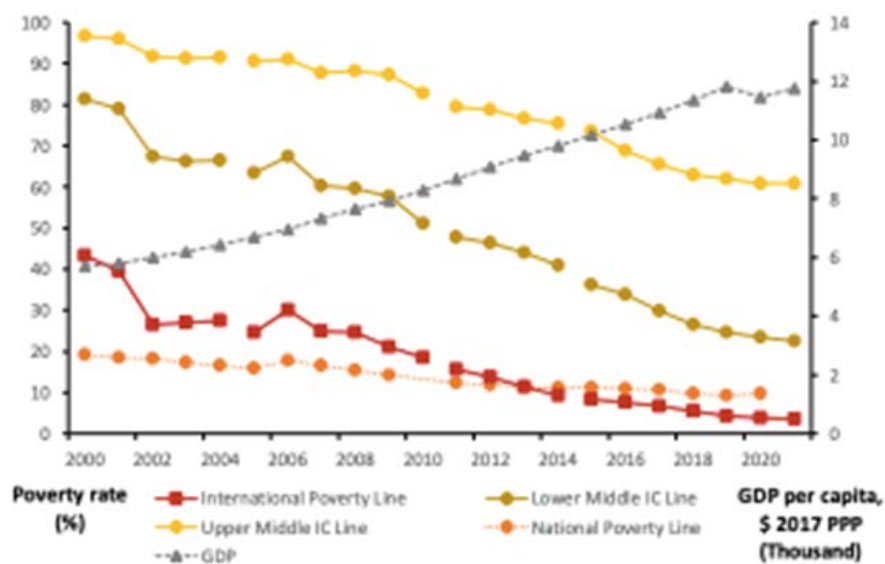


Figure 3. Indonesia's poverty headcount 2000-2020

<sup>6</sup> Global\_POVEG\_IDN.pdf . [https://databankfiles.worldbank.org/data/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/current/Global\\_POVEQ\\_IDN.pdf](https://databankfiles.worldbank.org/data/download/poverty/987B9C90-CB9F-4D93-AE8C-750588BF00QA/current/Global_POVEQ_IDN.pdf)

## INEQUALITY TRENDS, 2000-2021

Gini Index

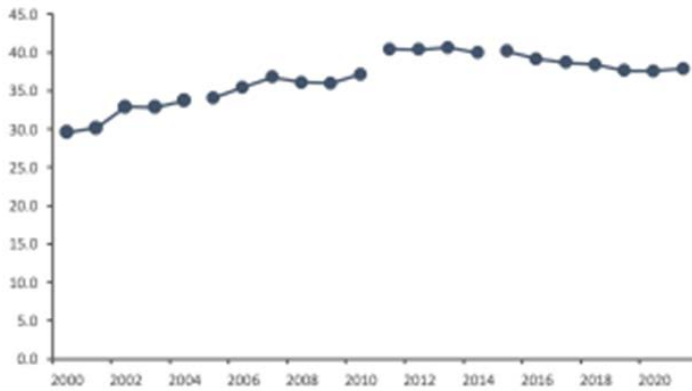


Figure 4. Inequality trends in Indonesia, 2000-2021

## Health profile in Indonesia

As in most low- and middle-income (LMIC) countries, Indonesia has a triple burden of disease in which there remains a backlog of infections, undernutrition, and maternal deaths with an increasing burden of non-communicable disease and the health effects of lifestyle change, globalization, and climate change. As seen in figure 5 below TB has remained in list of the top ten causes of deaths even though there was a significant decline in TB deaths between 2009 -2019 (Figure 6).

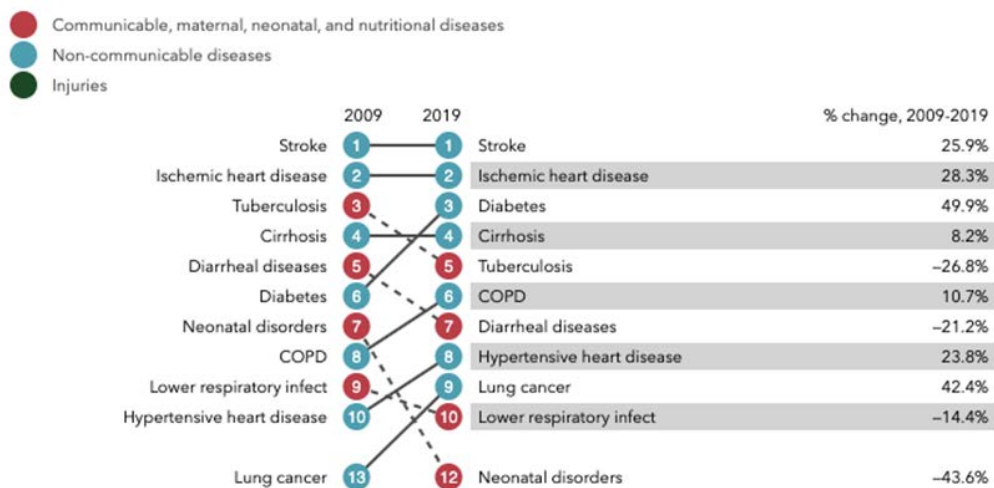


Figure 5. Top ten causes of deaths in Indonesia in 2019 and percent change, 2009-2019

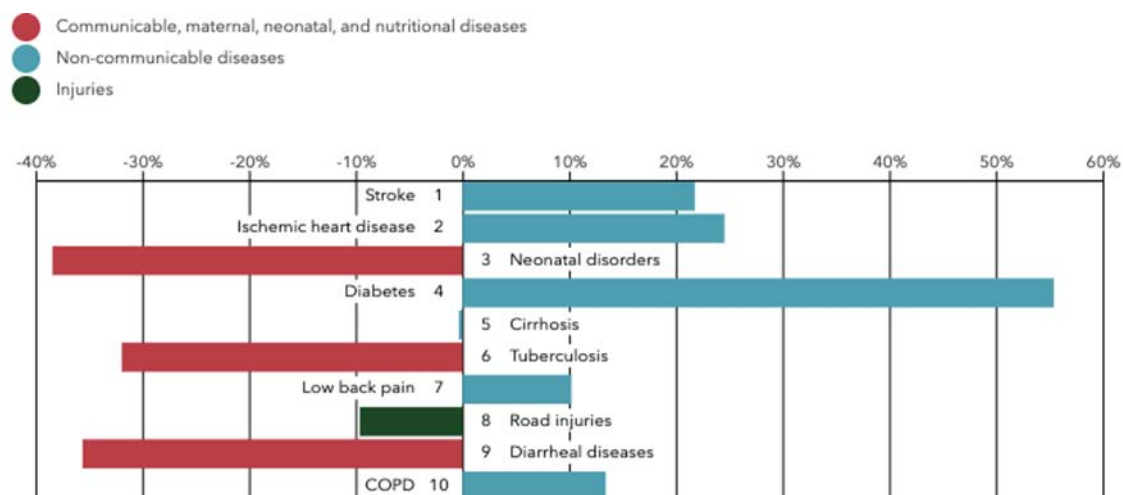


Figure 6. Top ten causes of deaths and disability in 2019, and percent change, 2009-2019.

Health indicators in Indonesia have steadily improved in recent years<sup>7</sup> [7]. Table 1 shows progress being made for some of the health indicators tracked under the Sustainable Development Goal (SDG) number 3 (Good Health and Wellbeing)

Table 1: Key Health Indicators in Indonesia 2015 and 2020

Indicator	Value at onset of SDG period (2015 unless otherwise stated)	Value after onset of SDG period (2020 unless otherwise stated)
Maternal Mortality Rate (per 1,000 live births)	192	177 (2017)
Neonatal Mortality Rate (per 1,000 live births)	14.2	11.7
Under 5 Mortality rate (per 1,000 live births)	27.7	23

<sup>7</sup> <https://dashboards.sdgindex.org/profiles/indonesia>



TB incidence (per 100,000 population)	325	354 (2021)
New HIV infections (per 1,000 uninfected population)	0.15	0.1
Death rate from major NCDs* in adults aged 30-70 years	25.55	24.8
Death due to Household/ Ambient Air Pollution per 100,000 population		112 (2016)
Life expectancy at birth (in years)	70.6	71.31(2019)
Birth attended by skilled health personnel (%)	92.6	94.7
Universal Health Coverage (service coverage)	51	59

\*NCDs: non-communicable diseases include diabetes mellitus, chronic respiratory disease, cardiovascular disease, and cancer

Indonesia's health care system may at a glance appear to be complex. A devolved system of health sector governance is in place in which the central Ministry of health, the Ministry of home affairs, the Ministry of Human Development and Coordination, provincial governments, districts government and villages have specific roles and responsibilities. It is worth noting that there are 38 provinces in Indonesia, nine of which have special status. In terms of health services delivery, the health care system

in Indonesia is straightforward with service delivery organized in a hierarchical manner with community or near community level health service delivered through community clinics, Posyandu, Posyandu Prima and Puskesmas, and hospital level care at the district, provincial and national levels (for specialized hospitals managed by the Ministry of Health). There are plans to transform the health care system to improve maternal, children's' health, family planning and reproductive health; accelerate improvement in community nutrition; improve disease control; create a healthy movement culture (GERMAS) and strengthen health system and drug and food control. This transformation is being carried out under six pillars: primary care, secondary care, health system resilience, health financing, health talent and health technology<sup>8</sup>.

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<sup>8</sup> Presentation by Bureau of planning and budgeting, MoH, JEMM stakeholders meeting, December 12, 2022.

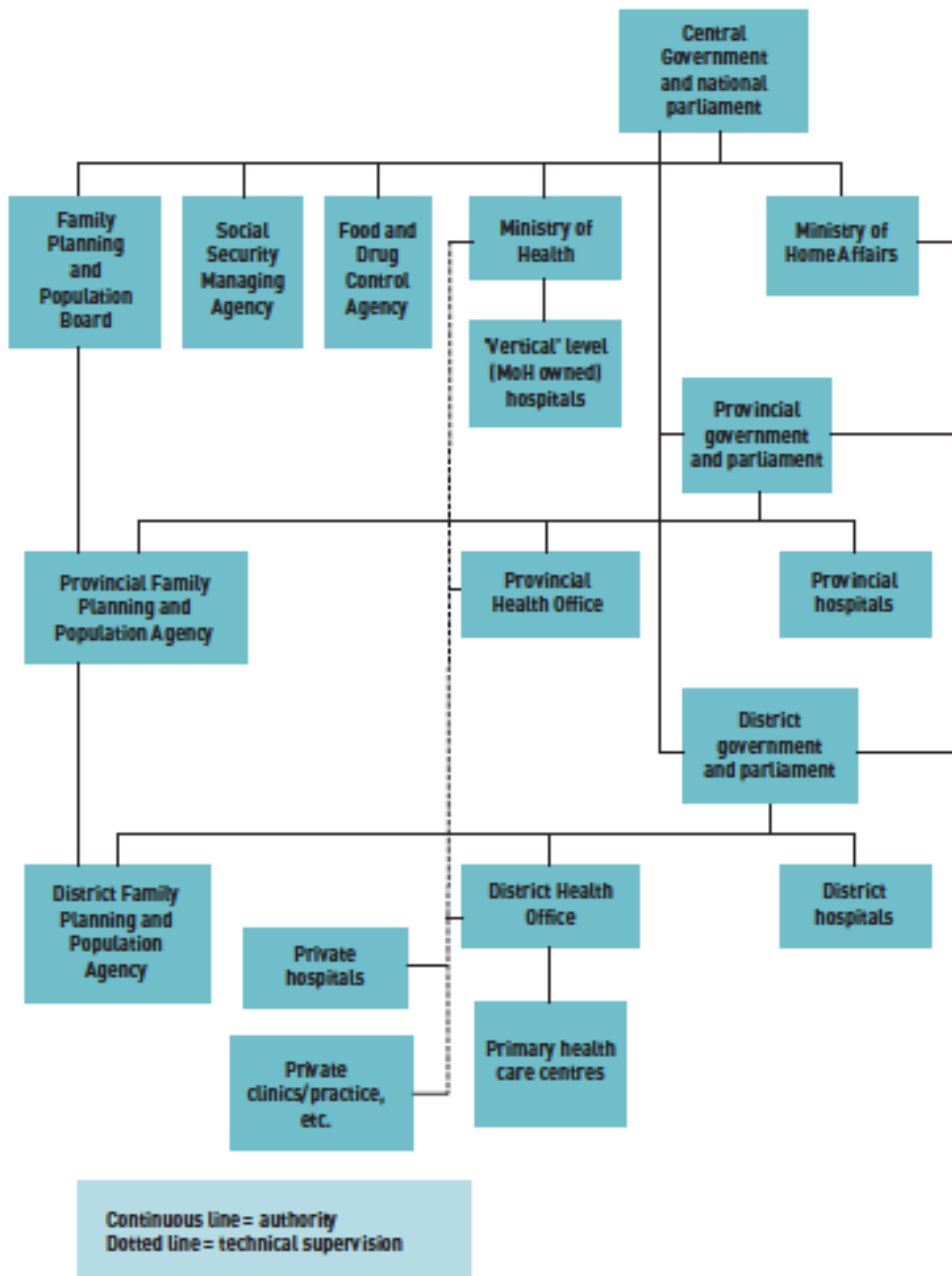


Figure 7. Organization of the Health Care System in Indonesia (sourced from<sup>9</sup>)

<sup>9</sup> The Republic of Indonesia, Health System Review. Health Systems in Transition, vol 7, No1, 2017. Asia Pacific Observatory on Health Systems and Policies.

## **2. Objectives and Methodology**

### **Objectives of the 2022 JEMM**

The objectives of the 2022 JEMM were to:

- Document the progress and the performance of the National TB Program (NTP) of Indonesia to understand what was achieved and what may not have been achieved since the previous review of 2020.
- Understand the drivers of change and or lack or sub-optimal progress to formulate recommendations on how achievements can be improved and sustained or how factors hindering progress can be mitigated.
- Draw lessons from the review findings to formulate recommendations that outline what strategic decisions need to be made and what evidence-based interventions should be implemented in line with the United Nations High Level Meeting (UNHLM) commitments and SDGs to accelerate progress towards ending TB by 2030.

### **Methodology of the 2022 JEMM**

The 2022 JEMM was preceded by an epidemiological review of the TB situation in the country whose observations and recommendations were taken into consideration in the formulation of the approach to the review. Additionally, the review considered the findings and recommendations of the previous JEMM of January 2020 which preceded the COVID-19 pandemic. There were 15 thematic areas (see annex number) around which the review was anchored and review tools to guide data acquisition developed.

**Approach to the 2022 JEMM** included:

#### **1. Documents Review**

The principal documents that were reviewed include but are not limited to:

- The TB- NSP 2020- 2024.
- The Funding Request to the GF for the period 2021-2023.
- The 2020 JEMM report.
- The 2022 Indonesia TB Epidemiology Review report

- Reports of other recent reviews on various aspects of the TB response including the external assessment of the district based public-private mix for TB care and prevention (DPPM), regional Green Light Committee (rGLC) technical assistance mission and the Global Drug Facility (GDF) technical assistance mission.
- Reports of the NTP
- The 2022 World Health Organization (WHO) Global TB Report.
- Published and grey literature relevant to Indonesia's health system and TB response.
- National TB Programme (NTP) guidelines.
- Facility TB registers and data in the national TB information system (SITB)

## **2. Key informant interviews**

Mission teams held intensive and cordial discussions with a wide range of personnel at the national, provisional, district levels and at health care facilities where TB services are provided. The purpose of these discussions was for mission teams to gain a deep understanding and receive perspectives from a wide array of stakeholders, on the TB situation and response in Indonesia.

## **3. Health facility visits**

Teams of JEMM visited health facilities in 4 provinces: West Kalimantan, North Sulawesi, North Sumatera, and DI Yogyakarta. The health care facilities visited included primary, secondary and tertiary care centres including those in the private health sector. The provinces were selected based on TB program performance criteria or special considerations. Thus, North Sulawesi was selected because it is high performing and has less support from donors and partners; Yogyakarta was selected because it is implementing interventions that are considered to represent best practice such as the Zero TB initiative and establishment of Governor's decree for TB; West Kalimantan was selected because it is considered to be low performing and has a high burden of TB/HIV and North Sumatera was selected because it is one of eight provinces implementing an accelerated TB response and has a medium level of performance. In each province two districts were selected for the field visits.

#### **4. Synthesis of review findings and formulation of recommendations**

After the field visits, mission teams shared their observations and through consensus consolidated their district and provincial level quantitative and qualitative data into national level achievements, gaps, and constraints to formulate national level recommendations in each of the 15 thematic areas.

#### **5. Feedback to health authorities and national TB stakeholders**

At the end of the field visits, debriefings were carried out with political and/or health technical leads of each visited province. On December 13, 2022, a debriefing session was held with the Minister for Health, Hon. Budi G. Sadikin at the MoH office in Jakarta. A debriefing session with national and provincial stakeholders was held on December 14, 2022 at the Gran Melia Hotel in Jakarta.

### **3. Review Findings and Recommendations**

#### **3.1 Advocacy, accountability, and high-level commitment to ending TB.**

##### **Context**

At the national level, there is a strong political commitment to end TB in Indonesia. The year of 2021 is historic in that it was the year in which there was the enactment of a Presidential Regulation of the Republic of Indonesia, also known as the Presidential Decree, no 67, concerning Tuberculosis Control, signalling the highest-level commitment for TB elimination. Apart from this, the Health Minister of Indonesia is extremely committed to the TB response and has been holding regular, weekly, TB response review meetings with the director of communicable disease control and the leadership of the NTP. The recent G20 presidency of Indonesia demonstrated leadership and commitment by the Republic of Indonesia to the TB response by among other things, conducting a TB side-event in a meeting of the G20. The TB side event at the G20 meeting was a true example of multi-sectoral engagement and resulted in a strong Call to Action focusing on prioritizing financing for the TB response to help high burden countries sustainably finance their response. Indonesia has strong engagement with civil society and affected communities through various organizations and the NTP has leveraged this engagement to foster stronger community participation. Despite the fact that organic political prioritisation around TB is gaining traction in Indonesia, the advocacy around the disease is currently limited almost exclusively on key stakeholders and functionaries of the national TB response.

The Presidential Decree number 67 of 2021, serves as a legal umbrella for cross-sectoral collaboration between the Ministries at national, provincial, district, village government levels and calls upon other stakeholders to strengthen their commitments and leadership for TB elimination. The regulation also mandates meaningful engagement of civil society and affected communities at all levels of the TB response. The enactment of the decree entails strengthening of the provincial, district and village level government's leadership and commitment towards TB by ensuring implementation of the national strategic plans, provision of sufficient budget for TB, availability of necessary trained healthcare workforce, setting of targets for TB elimination for their respective regions and implementation of region-based TB care and prevention interventions.

As a country with a decentralized governance system, it is imperative to review the program implementation not only from the national level, but also at the provincial and district levels. The visits to the provinces provided opportunities to interact with the provincial and district government authorities to understand their commitment and accountability to ending TB.

### **Achievements**

Implementation of the presidential decree on TB includes several government ministries and agencies each with specified roles and responsibilities. The governors of two of the four provinces visited by the JEMM (Yogyakarta and North Sumatera) have issued decrees on TB. Some districts have also issued decrees on TB. In North Sumatera, in addition to the issue of a governor's decree on TB, the wife of the governor is a TB Ambassador, for TB regulation establishment at the provincial level.

At the district level, the levels of commitment varied with the following findings:

- A multi-sectoral forum (FMS) for TB, aligned with the Presidential Decree has been established in 2 out of 25 districts/cities in Yogyakarta.
- The city of Medan had developed a TB district action plan for up until 2021.
- The district of Deli Serdang socialised and implemented the Presidential Decree to villages to utilise Dana Desa (village budget or village fund). One village uses the village budget to finance monthly nutritional support for TB patients.

Funding for TB through domestic sources is available in the provinces and districts and in some districts TB funding for certain activities such as patient support is also available.

### **Gaps and constraints**

- There have been no decrees on TB issued by the Governors of West Kalimantan and North Sulawesi (as is the case in many several other provinces across the country).
- District level decrees and associated plans for TB were lacking in districts, especially in North Sulawesi and West Kalimantan.



- There is limited engagement, coordination and collaboration with civil society organizations and the corporate sector for TB.
- Translating the national commitment to provincial and district level commitment is a major challenge especially due to decentralized governance and consequently significant autonomy of the provinces and districts, lack of dedicated budget and human resources capacity in various settings.
- Targets in the presidential decree were set based on an estimate of the burden of TB in the pre-COVID-19 era. There is great deal of uncertainty around the estimates of the TB burden in the post-COVID era (both level and trends).
- The coordination mechanism for the implementation of the presidential decree on TB at the national level is unclear and appears to be inadequate. The Secretariat that is overseeing the implementation of the presidential decree is at the MoH while the Ministry of Human Development and Coordination manages the coordination function, however, a platform in which the various actors, including those outside of government, come together to discuss progress, challenges and constraints in the implementation of the decree is not in place.
- The internal regulatory systematic review mechanism is lacking as there are no committees for regular monitoring of the activities.

## **Recommendations**

To accelerate action against TB and achieve faster progress towards TB elimination, advocacy efforts are needed at various levels. At the national level there is a need to keep the “fire burning” and thus advocacy efforts need to continue to ensure the attention that the Government of the Republic of Indonesia is paying to TB does not wane with time. At the provincial level there is a need to raise awareness of political and other leaders about the problem of TB so that political commitment is obtained and secured. Similar efforts need to be made at the district and village levels. The key actors in these advocacy efforts include the government, especially the MoH who should be advocating for greater engagement of other ministries and government agencies and the engagement of entities outside the government including the corporate sector and the media. Additionally, the MoH at central level should nudge provinces to undertake key actions needed to fully implement the Presidential decree while the provincial level actors should carry out TB advocacy efforts at the district and

sub-district levels. TB advocacy efforts will include many actions, however, the key ones that the 2022 JEMM is recommending include the following:

- Organise regular national high-level meetings (1-2 in a year) to review progress of the implementation of the presidential decree on TB and ensure every government ministry, other government agencies and other entities including the corporate sector and civil society provide a status report on the implementation of assigned tasks and responsibilities.
- Mobilize collaborative efforts between executive and legislative bodies, civil society and affected communities, and other key stakeholders to strengthen the regulatory and legal frameworks to enhance governance across sectors and ensure policy coherence for an effective, inclusive, and sustainable response to address TB, at the provincial and district level.
- Develop mechanisms to foster partnerships (e.g., FMS and PROTEKSI at all levels) and synergies between different ministries, professional organizations, civil society and affected and other stakeholders for a strengthened multisectoral engagement on the implementation of Multisectoral Accountability Framework for TB in Indonesia.
- Commit to ensuring that the TB care and prevention program from national, provincial and district levels is fully equipped and funded to enable the scaling-up of TB care and prevention services in order to successfully achieve the end TB targets and develop mechanisms/structures for all stakeholders (both public and private) to contribute resources for TB elimination.
- Strengthen advocacy for people-centered regulations from national, provincial and district level, that protect human rights and to avoid language and policies that can have long-term negative implications for the response to other infectious diseases; to protect, safeguard, respect and promote the human rights of all affected directly or indirectly by TB, especially those who are most vulnerable, without discrimination.
- Assign and allow entities such as the Stop TB Partnership, Indonesia to track the progress being made to achieve the targets of the presidential decree on TB. This effort could be enhanced by creation of a real-time dashboard exhibiting all the TB indicators by province and district.

- Advocate for the inclusion of TB as an agenda item in meetings of the Indonesian cabinet so that the problem of TB remains visible across the entire government.
- Consider establishing a presidential TB award scheme to recognise and reward the best performers in the response to TB. The reward system may have financial and non-financial incentives and should cover players at all levels including those at the village level. The end of TB will probably happen village by village and will depend on what every village does to combat the disease. Performance indicators may include parameters that track the TB care cascade such as number (and proportion of target) of people screened for TB and number of cases of detected, treated and cured. Where applicable impact indicators can be built into the performance framework for the award scheme.
- Consider establishing an Indonesia chapter of Global TB Caucus to support efforts to sustain the political will against TB.

## 3.2 Public Private Mix for TB Care and Prevention in the 2022 JEMM

### Context

An external assessment of PPM for TB care and prevention in Indonesia was carried out between July and September 2022 and therefore in the preparatory phase of the 2022 JEMM, a decision was made not to include PPM among the thematic areas of the JEMM. The reader is advised to consult the District Based PPM (DPPM) Assessment report which is available [here](#) (password, PPM 2022). The following paragraphs and the table below summarize the objectives, key observations, and key recommendations of the 2022 DPPM assessment.

### The objectives of the DPPM assessment were:

1. To assess the effectiveness of, role and contributions of local government, PPM workforce (PPM technical officers and field executives), professional organizations (including KOPI TB), health facility associations, community, and other stakeholders in implementing PPM activities.
2. To review the performance of the various PPM-TB models, analyse the cost, outputs, and outcomes of these models, determine cost-efficiency and if feasible, based on available data, cost effectiveness of these models and to assess the degree of synergism among the various models.
3. To identify the challenges, opportunities, good practices, and lessons learned in the implementation of current PPM interventions.

As in many other assessments the DPPM assessment methodology included desk review of available performance reports, previous assessment reports and other relevant documents, data review, validation and analysis and acquisition of qualitative data through key informant interviews.

The Indonesian NTP, with the support of the Global Fund, has prioritized 80 districts for the implementation of DPPM. Of these districts, six (Medan city, Pasuruan city, Depok city, Tangerang city, Denpasar city and Purbalingga districts) were visited by members of the DPPM assessment team.

**The key observations of the DPPM assessment include:**

1. Good progress has been made with the implementation of DPPM interventions with an increase in the number of private facilities engaged, number of people with presumptive TB identified by private providers, number of people with presumptive TB who have access to TB bacteriological tests including an mWRD and number of identified people with TB who have access to anti-TB medicines from the NTP.
2. The PHOs, DHOs, Puskesmas, professional associations and community organizations have played critical and pivotal roles in promoting private provider engagement and capacity building of and monitoring of PPM in engaged private health facilities. The internal and external TB networks in the visited districts have been robust.
3. While local funding and regulations for TB and for PPM is improving private provider engagement, additional efforts are needed to ensure effective implementation of DPPM.
4. In the engaged facilities, and especially in large hospitals, facility level monitoring is currently inadequate to ensure participation of all departments/units in the hospitals.
5. There has been a slower and less satisfactory engagement of private primary care providers.
6. While the role of CSOs is critical for patient support in the community, retrieval of patients interrupting treatment has not been fully effective and contact tracing has not provided desired results including provision of TB preventive treatment to household contacts. Within the DPPM effort, TB preventive treatment (TPT) is yet to be scaled up with the focus of contact investigation being active case finding, not TPT.
7. Private hospitals are currently not playing a significant role in management of DRTB.
8. The staff supported by the Global Fund have played an effective role in private sector engagement.

9. The USAID supported TB in the private sector project (TBPS) is contributing significantly to the strengthening DPPM and is using approaches and models that are complementary and fortifying to DPPM interventions funded by others such as the Global Fund and local governments. This is likely to lead to more effective and efficient DPPM.

The table below summarizes the key recommendations of the DPPM assessment. These recommendations have been re-organized to fit into the thematic areas of the 2022 JEMM.

Strategic area	Recommendation
<b>Finding missing people with TB</b>	Conduct anti-TB drug sales surveillance to estimate the number of unnotified people with TB managed by private providers.
	Expand access to mWRD by people accessing care in the private sector by re-estimating the need and enhancing mWRD coverage in the private sector, including by placing mWRD machines in the private sector.
	Consolidate, rapidly, hospital engagement and expand engagement of private primary care providers (General Practitioners) by: (a) expanding primary provider mapping using sources beyond the BPJS-K such as through local surveys, review of professional organizations' membership lists and pharmacy surveillance and (b) optimization of Field Executive workload so that each FE covers about 10 hospitals and 25 private primary providers. Increase the number of Field Executives (FEs) by 50% to achieve the desired private provider GP/Clinic coverage rate.
	Build and monitor capacity of public and private specialty hospitals (like maternity hospitals) to screen people for TB symptoms and report presumptive TB and confirmed TB in SITB.
<b>Programmatic Management of TPT</b>	Invest in TB preventive treatment through TPT oriented advocacy and communication in the private (and public) sector through professional organizations.
	Develop and disseminate a policy to include TB preventive treatment (TPT) among the components of DPPM and build capacity of clinicians to provide TB preventive treatment
	Align contact investigation with TB preventive treatment.
	Develop community and provider oriented (including private providers) communication strategies to rapidly scale-up implementation of TB Preventive Treatment
<b>DPPM management and coordination</b>	Develop a policy to optimize remuneration of externally supported DPPM HR and decentralize HR recruitment to reduce risk of non-uptake of DPPM positions and attrition.
	Develop the capacity of PHOs/DHOs and local stakeholders for advocacy with local governments for

	<p>enhanced leadership, funding, and monitoring of end-TB activities including DPPM.</p> <p>Monitor DPPM activities through local government leadership and funding to support meetings, supervision, and technical support of private providers.</p>
<b>Programmatic Management of DRTB</b>	<p>Develop a policy on engaging private hospitals for DRTB care with approvals for major private hospitals without in-house mWRD to participate in DRTB care.</p>
<b>Care and support of people on TB treatment</b>	<p>Engage community cadres for routine treatment adherence support of patients seeking care from the private sector. Share community cadre directory with private providers for direct linkage.</p> <p>Analyze the reasons for the high proportion of patients whose outcomes are not evaluated at the end of treatment in the hospitals.</p> <p>Conduct in depth analysis of the causes of higher loss to follow up among patients registered for treatment by the private facilities and public hospitals.</p> <p>Delegate a TB coordinator in large hospitals scout the hospital at least once a month and coordinate with units/departments for intensified case finding and real-time reporting.</p> <p>Reorient/train and re-train clinicians to reduce the clinical practice of symptomatic management of presumptive TB with delayed bacteriological testing for TB.</p> <p>Engage with the Pharmacists' association to support PHOs/DHOs in implementation of a pharmacy-based surveillance and pharmacy-based referral.</p> <p>Build capacity of CSO cadres in retrieval of LTFU, and to undertake causal analysis of LTFU to provide customized interventions.</p> <p>Include treatment adherence support to patients notified/treated by private providers, contact investigation and TPT initiation in the operations of CSOs engaged in community level activities for TB care and prevention.</p>
<b>DPPM Information System</b>	<p>At the BPJS level, have a dedicated person/team to carry out data analysis and validation of TB data to address data sharing barriers.</p> <p>Build capacity of hospital staff to directly transfer patient data to Puskesmas and to directly link patients with community cadres for treatment adherence support.</p> <p>Monitor, routinely, unit/department wise presumptive TB and TB reporting including monitoring the use of SITB for presumptive TB reporting to assure participation of all units/department in the internal network of public and private hospitals.</p>

### 3.3 Active Case Finding

In an effort to limit disruptions to TB services during the COVID-19 pandemic, the Indonesia Ministry of Health issued a circular letter number PM.01.02/1/840/2020 with several guidelines for infection prevention and control (IPC), and continuity of TB diagnostic and patient-centered treatment. In addition, the government of Indonesia issued the Presidential Decree No. 67 of 2021 reiterating commitment to the World Health Organization's (WHO) End TB Strategy by 2030.

#### Context & Findings

In 2020 Indonesia's National TB Program initiated active TB case finding (ACF) in several pilot projects that have included diverse target groups, such as detention centers, Islamic boarding schools, farmers, fishing communities, coffee factory workers, and other high-risk groups (HRGs) – such as contacts of TB patients, people living with HIV (PLHIV), and people with diabetes mellitus (DM). These ACF activities have relied mostly on symptom screening and when available, chest radiographs (CXR) and collection of sputum samples for testing by WHO-recommended molecular rapid TB diagnostics (mWRDs).

The report Tuberculosis Control in Indonesia 2022 (Directorate General of Prevention and Disease Control, Ministry of Health, Republic of Indonesia) provided the following results of ACF activities:

Table 2. Results of Active TB Case Finding Activities in Indonesia, 2020-2021

Year	TB cases detected (%) of number screened	Target Group	Comments
2020	158 (4.2%) of 3696	High risk groups (not defined)	3 districts (Karawang, Garut, and Brebes)



2021	125 (0.3%) of 41960	“General population”	7 districts (Tangerang Regency, Depok City, Bekasi Regency, Bandung City, Cirebon Regency, Karawang Regency, and Surabaya City)
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An ongoing pilot project, Zero TB Yogyakarta, initially focused on the screening of household contacts of TB patients with the use of portable CXR and computer-aided detection software (CAD), regardless of symptoms. Other populations have been targeted by this project for ACF screening. Valuable lessons have been gained from this pilot project, demonstrating the increased yield of ACF by targeting contacts and focusing on KVPs.

The table below shows ACF screening activities with number of participants, target populations, presumptive and bacteriologically confirmed TB cases, number started on treatment, number of people screened to detect a TB case, by urban population in Yogyakarta province (April 2021-October 2022), rural population in Kulon Progo district (April 2021-August 2022), and urban-rural populations in Sleman district (September-October 2022). Target groups included “poor”, household contacts (HHC), healthcare workers (HCW), and high-risk groups (HRG).

Table 3: Results of Active TB Case Finding Activities in Yogyakarta Province, April 2021-October 2022.

	Yogyakarta (urban) (April-2021-October 2022)	Kulon Progo (rural) (April 2021-August 2022)	Sleman (urban-rural) (September-October 2022)
Participants	27 491	22 507	3 619
Populations	Poor, HHC, HCW	HHC, HCW	Contacts+HRG
CXR done	26 616 (human)	21 466 (human)	3 491 (QXR AI)
Presumptive TB	4 069 (15%)	2 937 (13%)	672 (19%)
TB	367 (1.3%)	183 (0.8%)	70 (1.9%)
TB with bacteriological confirmation	122 (0.4%)	39 (0.2%)	12 (0.3%)
Start treatment	296	162	50
Number of people to screen to detect 1 TB case	69	114	49
Number of people to screen to detect 1 TB with bacteriological confirmation case	205	459	226

In addition, the Ministry of Health (MoH) has established memoranda of understanding with six big chain private hospitals (255 facilities) in 30 provinces to increase TB case finding.

The Report of the External Assessment of District Based Public-Private Mix for TB Control in Indonesia (September 2022) indicated that most people with TB (74.6%) first sought care from an informal or private provider – underscoring the crucial need to successfully engage the private sector in ACF.

### Challenges

Most ACF activities have relied on symptom-based screening followed by mWRD tests. Some projects/areas have also used CXR screening. Limiting ACF to symptom screening is fraught with missing persons with paucity of symptoms yet have CXR abnormalities consistent with TB and test positive with mWRDs.

There are significant travel cost and out of pocket expenditure associated with exclusion of active disease among people with a presumptive diagnosis of TB. Additionally, community cadres appear not to be effectively utilized and or provided with adequate enablers and incentive to undertake community level ACF activities.

Between 2019 and 2022, the overall TB case notification has remained relatively stagnant and low as shown in figure 8 below.

**Graph 2. Trend of Notified TB cases and Treatment Coverage TB 2019-2022**

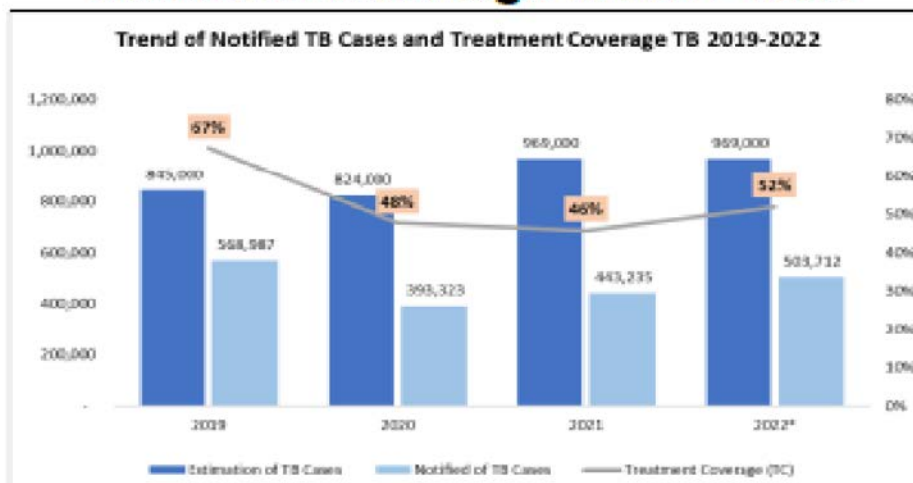


Figure 8. Trends of notified TB cases and treatment coverage, 2019-2022

The yield of ACF is dependent on populations screened – higher in target KVPs (with lower number needed to screen [NNS]), and low when conducting general population screening (with larger NNS).

CXRs with CAD/AI are not available either at Puskesmas or in prisons (reportedly limited by National Nuclear Agency radiation exposure safety policies), thus restricting ACF activities.

Resource shortages (mWRD cartridges) limited ACF in the visited district in North Sumatera.

TB infection diagnosis coupled with TB preventive treatment (TPT) has not been a routine component of ACF, thus limiting access to this important intervention as part of the comprehensive package of TB services.

Private sector engagement for ACF is progressing slowly, also constraining expanded potential for enhanced and early TB case finding and notification in Indonesia.

## **Recommendations**

To improve and expand TB ACF and notifications, the following recommendations are made to address the challenges identified by JEMM observers.

1. Increase access to portable CXR with CAD/AI as the basis for ACF screening (to include updating National Nuclear Agency radiation safety policy to enable use of ultraportable CXR devices which reportedly emit much lower doses of radiation than conventional chest radiographs).
2. Analyse available data (and implement operational research) to characterize and define epidemiologically and locally-relevant KVPs for targeted ACF screening activities (e.g., TB contacts, DM, PLHIV, others—to be determined).
3. Assure uninterrupted supply of health commodities (X-rays, mWRD cartridges) during ACF screening.
4. Include TB infection diagnosis with TPT as a component of the package of ACF screening activities.
5. Implement the recommendations provided in the September 2022 Report of the External Assessment of District Based Public-Private Mix for TB Control in

Indonesia to optimize private sector engagement in ACF screening and notification.

6. Explore private pharmacy surveillance of anti-TB drugs sales to identify under-reported TB cases and priority private providers for engagement.
7. Provide enablers to community cadres and identified presumptive TB cases to complete the cascade of ACF activities
8. Expand systematic screening and testing among KVPs at primary care level, and in a broader range of service delivery channels. Include risk factors in systematic screening, collect specimen irrespective of symptoms from KVPs.

For provincial/regional observations and recommendations on ACF see annex 1

### **3.4 TB and co morbidities, Key and Vulnerable population.**

#### **Context**

#### **Key and vulnerable populations (KVPs) – Major equity concern**

Key populations in the context of TB are those that experience a high epidemiological impact from the disease, combined with reduced access to services and/or being criminalized or otherwise marginalized. These 'TB key populations' are people who are vulnerable, underserved or at risk for TB infection and illness. It is very likely that a large portion of the missing people with TB can be found among TB key populations, since these groups are usually the last to be reached by passive case-finding approaches that rely on individuals presenting at health facilities. Due to a range of social, economic, cultural, and other barriers including geographic barriers in the island nation of Indonesia, TB key populations are unable to access health and other supportive services and thus benefit most from targeted TB interventions. The key and vulnerable population (KVP) may be further subdivided to two broad categories, first, those with clinical risk factors that make them more prone to TB such as people with People Living with HIV/AIDS (PLHIV), people with Diabetes Mellitus (DM), people who smoke tobacco, people with other immunological conditions such as chronic renal diseases etc and, second, those with social factors that make them more susceptible to disease infection such as people living in slums, migrants, miners, those living in prisons and other confined settings, those working in crowded environments or in settings where exposure to infectious TB is likely etc. Those social risk factors are often compounded by legal, human rights and gender barriers for accessing health services. In addition, undernutrition is an overarching additional risk factor for most of these people. People living in the same household as a person with TB and health care workers are two important groups that need to be considered as groups that are vulnerable to TB and active measures need to be put in place to find TB early in them and to manage the disease including providing TB infection treatment to those who are currently not having active TB. Reaching KVPs in the TB response, that is equitable and conforms to human rights, is essential to end the TB epidemic.

## **Addressing comorbidities and risk-factors**

As people with clinical risk factors like PLHIV, DM, malnutrition, Chronic Respiratory Disease (CRD), Smokers, alcohol use disorder etc have more risk of developing TB disease and also these comorbidities make them vulnerable to adverse treatment outcomes, addressing TB and comorbidities is crucial for TB detection and successful treatment as well as reducing TB deaths.

We are addressing KVP and Comorbidities together in this section as most of the interventions have similarities.

The COVID-19 Pandemic has impacted TB care globally and also in Indonesia. COVID-19 and TB have many common symptoms and both clinical and social factors have made TB detection and care challenging during the pandemic. There are reports of increased adverse outcomes including more deaths among people co-infected with TB and COVID-19. The impact of COVID-19 on TB could continue longer, hence we need to consider COVID-19 and TB as another important comorbidity in addition to the impact of COVID -19 on the TB response. At the height of the COVID-19 pandemic health care resources including human resources and equipment, were often diverted, or redeployed to concentrate on the COVID -19 response, leading to a significant negative impact on the TB response. In the future, outbreaks of COVID-19 or other infectious epidemic could lead to a repeat of this situation unless measures are taken to prepare for such outbreaks in a way that ensures existing health programs are sustained during the new health crisis.

## **TB and co-morbidities in the TB -NSP 2020-24**

The TB-NSP 2020-2024 clearly lists out priority actions required for the KVPs and addressing TB comorbidities. The NSP notes; *“Key intervention of TB care and prevention will be enhanced to reach the most vulnerable population groups”*:

1. Household contacts of bacteriology confirmed TB cases.
2. Clinical high risks: smoker, malnourished, diabetic, elderly, PLHIV and immunocompromised.
3. Congregate settings and workplaces: inmates of penitentiary/ detention center, urban slums, workplaces (informal and formal), closed mining, refugee camps, barracks, and boarding schools.

#### 4. Health care workers, people previously treated for TB.

The integration of TB screening activities with provision of TB preventive treatment will be exercised as the main intervention.

### Cases attributable to five risk factors, 2021

(Number)

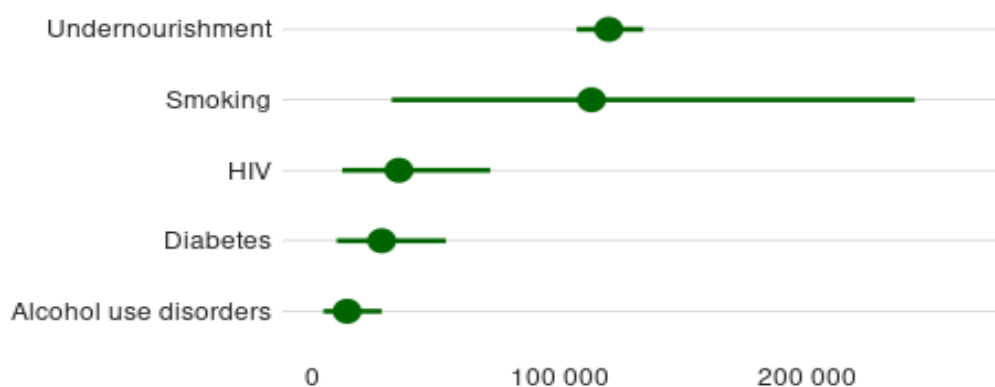


Figure 9. TB attributable risk factors in Indonesia, 2021.

#### Key Observations

- **Issuance of COVID-TB National guideline.** In order to address the impact of COVID 19 pandemic on TB, the NTP published guidelines that included innovative TB screening strategies, innovations in care delivery such as monthly dispensing of drugs, digital monitoring, tele consultations, hotline etc.
- **National level policy for screening for DM in TB exists.** There is a national policy on bi-directional screening for diabetes and TB. In some districts, blood sugar testing of TB patients at baseline is a policy. For example, in Deli Serdang, 2703 out of 3573 people with TB were screened for DM, identified 771 people with DM and 734 were initiated on DM management, however this practice is not uniformly seen in other districts visited.
- There has been no effort to actively screen for TB in people with DM on care.
- **Prisons:** ACF efforts were carried out in different prisons, but with divergent quality, i.e., in some places the effort was only annual symptoms screening with low yield while in some prisons there was regular active screening with Xpert testing with high yield. Guidelines on TPT recommend giving TPT for prisoners,

but TPT is not being provided generally except in Sumatera and Sulawesi. There is no active TB screening of prison staff.

- **Household contact investigation** is observed, but this needs further strengthening with better monitoring of the cascade loss, better utilization of screening and testing tools. Underreporting from community system to SITB is a challenge in monitoring. Community health care workers conducting contact investigation are insufficient in number, have numerous other responsibilities and are under-compensated which contributes to the slow pace of implementation of contact investigation.
- **Community level sensitization programmes** were observed in boarding schools, commercial sex worker groups etc, however it was not clear whether these groups are more vulnerable to TB than the general population.
- **No systematic and active measures were observed to find people with TB from slums, migrants, elderly** etc as envisaged in the NSP.
- **There was no nutritional assessment or support for people with TB**, nor any linkages with social protection schemes observed.
- There was no collaboration noted with the Non-Communicable Diseases (NCD) or Reproductive Maternal, Neonatal, Child and Adolescent Health (RMNCAH) programme.
- No mental health assessment or any mental health support was observed as part of the programme for people with TB nor was there any professional counselling services offered.
- There is a high level of TB-related stigma observed among the population and health care workers at all levels.

## **Recommendations**

- **COVID-19/TB collaboration.** We recommend that the NTP utilize the COVID pandemic experience as an opportunity for efforts to end TB: The infrastructure and systems developed for COVID-19 should be used for expanding care for TB, especially the digital technology, molecular diagnostics, contact tracing as part of TB ACF and community health care systems. The NTP should advocate for inclusion of TB in discussions of pandemic preparedness and explore COVID-TB funding opportunities in GF reprogramming for bi-directional screening and testing. The COVID-19 pandemic presents a huge potential for



acquiring more digital X-Rays, rapid molecular diagnostics and also for community systems for health that benefit TB care.

- Expand the coordination mechanism for TB/NCD collaboration established at national level to provincial and district level.
- Establish national, provincial and district level collaboration between TB and RMNCAH, Integrated Management of Childhood Illness (IMCI) programme for TB care in mothers and children. Include TB screening trainings in RMNCAH, IMCI trainings. Integrate TB screening in Child growth monitoring activities
- Integrate intensified TB case finding among the elderly by actively screening for TB at geriatric clinics. Guidance documents, monitoring etc need to be developed.
- Implement proper recording and reporting system for TB comorbidities, starting with TB/DM, drawing on the example set by TB-HIV collaborative activities, starting with use of any available BPJS codes and creating appropriate codes
- Enhance bidirectional screening and referral for TB/DM by training and supporting health care workers, providing job aids, and ensuring required testing commodities are available in both TB and DM care centres to:
  - Institute regular TB screening with CXR and mWRD in DM clinics.
  - DM screening and referral for treatment of TB patients.
- Expand systematic screening for TB among other clinical high-risk groups.
- Systematically assess the nutritional status of people with TB at primary care level. Develop and use tools for nutritional status assessment at Puskesmas and community level and provide the nutritional rehabilitation needed.
- Engage with the Ministry of Social Affairs (MoSA) to develop and implement interventions for the provision of nutritional support to people with TB and their families as part of the stunting reduction programme and to link these persons to other existing social protection schemes.
- Systematically assess mental health status of people with TB patients and coordinate management with existing mental health services.
- Include assessment of smoking status in all adult patients with TB and train health care workers to provide anti-smoking communication to those TB patients who smoke and to link people with TB who are smokers to smoking cessation programmes. Learn lessons from pilot projects in the country and

expand. Train HCW to develop necessary counselling skills. More intensive interventions for smoking cessation can be provided to smokers wishing to quit. Nicotine replacement therapy, or medication such as bupropion and varenicline, are widely documented as effective. Smoking being an important contributor for the incidence of TB in Indonesia, collaboration between the NTP and the National Tobacco Control Initiative and integration of TB with the existing tobacco control initiative is needed to strengthen TB -Tobacco collaborative efforts

**Prisoners:**

- For ACF-Use more sensitive screening (e.g., CXR on site) and diagnostics (esp. mWRD) tools.
- Implement a national policy on TPT in prisoners- Test and Treat for TB infection in prisons, provide ACF services to prison staff too.
- Strengthen links with Puskesmas and community services for patients released before completing TB treatment or TPT.

**For key and vulnerable populations (KVPs):**

- Data of KVPs need to be developed with key population estimation, mapping and prioritization at district, provincial and national level for focused interventions. The tools developed by the Stop TB Partnership, 'Data for Action for Tuberculosis Key, Vulnerable and Underserved People' (1) can be used for standardised KVP estimation and prioritization. This involves literature review, focus group discussions with stakeholders and if required focused population level surveys. Interventions for stigma reductions, addressing community rights and gender (CRG) based on CRG action plan and addressing legal barriers need to be prioritized for KVPs. The JEMM strongly recommends that the NTP invests sufficient resources including from GF for prioritized interventions for KVPs.
- Expand and prioritize ACF activities (2) for all KVPs and prioritize social support to KVPs.
- Promote and support active community engagement using local community and local self-government leadership for village level plans for addressing TB with a focus on KVPs for example by utilizing 'Village fund' for social, nutritional, and financial support to KVPs.

## References

1. Data for Action for Tuberculosis Key Vulnerable and Underserved People <https://stoptb.org/assets/documents/communities/Data%20for%20Action%20for%20Tuberculosis%20Key,%20Vulnerable%20and%20Underserved%20Populations%20Sept%202017.pdf>
2. TB case finding with Key populations. [https://stoptb-strategicinitiative.org/elearning/wp-content/uploads/2019/04/STBFG\\_01.pdf](https://stoptb-strategicinitiative.org/elearning/wp-content/uploads/2019/04/STBFG_01.pdf)

### 3.5 HIV associated TB

#### Findings

Indonesia is a high burden TB/HIV country with an estimated 540,000 people living with HIV (PLHIV),<sup>10</sup> 22,000 of whom develop active TB disease every year.<sup>11</sup> Except in Papua which is experiencing a generalized HIV epidemic, HIV is concentrated in key populations with prevalence rates of 17.9% in men who have sex with men (MSM), 13.7% in people who inject drugs (PWID) and 2.1% in female sex workers (FSW) in Indonesia.<sup>12</sup> The HIV prevalence rate among TB patients is 3.8%, which is higher than some key populations (i.e., FSW). PLHIV have a 30-fold greater risk of acquiring TB disease compared to those without HIV and the treatment success rate (TSR) for those with both TB and HIV in Indonesia is only 68% compared with an overall TB TSR of 86%.<sup>13</sup> An estimated 6,500 people with both TB and HIV died in Indonesia in 2021, despite treatment availability for both infections.

To mitigate the impact of HIV on TB, the JEMM 2020 recommended that all patients with TB receive provider-initiated testing and counselling (PITC) for HIV, and all PLHIV with TB should start antiretroviral treatment (ART). In addition, all PLHIV without TB should receive TB preventive treatment (TPT) for TB infection, with training of staff and clarification of exact operational responsibilities between different health facilities and cadres as the key to success.<sup>14</sup> Although progress has been made towards these goals, scale-up has been slow resulting in a lack of or delayed access to HIV treatment and care services. In addition to the negative impact on individual's lives, untreated TB or HIV may result in ongoing transmission, impeding both HIV epidemic control and TB elimination.

Indonesia introduced TB/HIV collaborative activities in 2004, however the proportion of TB patients tested for HIV in 2013 was only 3.2%, which gradually increased to 43% in 2019 prior to the COVID-19 epidemic and remained low throughout 2020 and 2021.

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<sup>10</sup> National Action Plan on TB/HIV Collaboration 2020-2024

<sup>11</sup> WHO Global TB Report 2022

<sup>12</sup> Indonesian Ministry of Health 2016

<sup>13</sup> WHO Global TB Report 2022

<sup>14</sup> Indonesia JEMM Report 2022

Although there are signs of recovery in 2022, still only 53% of TB patients know their HIV status.<sup>15</sup>

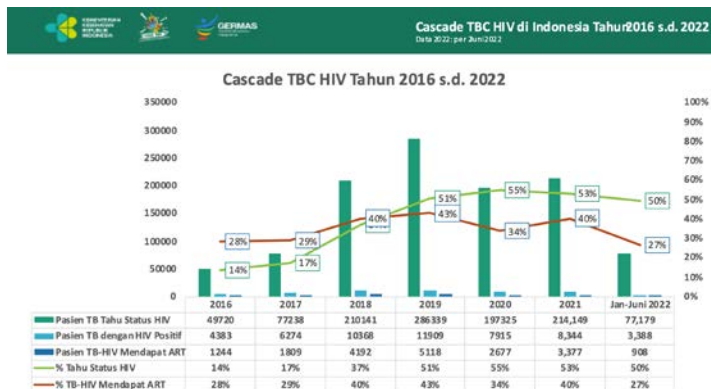


Figure 10. TB/HIV Cascade in Indonesia, 2016-2022

Although, among those in HIV care, 61% of newly diagnosed PLHIV were screened for TB, TPT for PLHIV remains underutilized, with just 7% of newly diagnosed PLHIV on ART starting TPT in 2022.<sup>16</sup> However, there are examples of specific project-supported sites with higher rates of TPT for PLHIV, such as the Zero TB Initiative in Yogyakarta and USAID’s Meeting Targets and Maintaining Epidemic Control (EpiC) project where prioritized facilities in Jakarta were able to screen 90% of PLHIV for TB and test all TB presumptives with mWRD, support over 90% of people with TB/HIV coinfection to initiate both TB and HIV treatment and reach 17% TPT coverage.

### HIV/TB coordination and collaboration

Since TB/HIV collaborative activities began in 2004, strengthening has been recommended on subsequent national reviews. The sub working group on TB/HIV includes participants from the National AIDS Program (NAP), NTP, development partners and CSOs and meets quarterly to review progress, develop guidelines, and give recommendations to improve program performance. The HIV/STI program review in 2020 concluded that, despite existing regulations promoting TB/HIV collaborative activities in 142 priority districts, the implementation of the policy has been variable<sup>17</sup>. One major area of concern has been the disparate recording and reporting systems

<sup>15</sup> NTP TB/HIV Cascade Through June 2022

<sup>16</sup> NTP data Jan -June 2022

<sup>17</sup> HIV and STI Programme Review Report 2020.

between TB and HIV programs. Electronic data systems for TB (SITB) and HIV (SIHA) do not communicate directly which often results in missing data or discrepancies.

A National Action Plan for TB-HIV Collaboration 2020-2024 serves to guide the program and define indicators tailored to the needs of Indonesia. Indonesia's National TB Strategic Plan 2020-2024 outlines targets and activities related to TB/HIV collaboration as seen in Box 1.

**Box 1.**

**Indonesia's National TB Strategic Plan 2020-2024: TB/HIV components**

- Provide access to HIV test in TB services
- Ensure continuous laboratory logistic for HIV test among TB patients
- TB screening in high-risk populations, including PLHIV
- Develop communication strategies for TB counselling and stigma reduction of DS-TB, DR-TB and TB- HIV
- Encourage multi-sectoral collaboration to increase ARV coverage in people with TB-HIV
- Strengthen financial support of National Health Insurance to increase ARV coverage in people with TB-HIV
- Conduct intensive case finding in HIV services

Good practices observed during JEMM 2022 site visits to North Sulawesi, North Sumatra, West Kalimantan, and Yogyakarta included:

- Universal screening for both TB and HIV was implemented for prison inmates on entry (N Sulawesi, N Sumatra, W Kalimantan).
- Some Puskesmas and other sites in the districts in N Sumatra and N Sulawesi tested 100% of TB patients for HIV
- At some TB service delivery sites, 100% of TB/HIV patients-initiated ART soon after TB treatment initiation.
- One-stop shop TB/HIV services were observed in a few Puskesmas.
- HIV care sites report regular routine TB screening for PLHIV using symptom screening.

- Molecular WHO recommended rapid diagnostics (mWRD) were used for TB diagnosis in PLHIV with presumptive TB.
- Zero TB Initiative in Yogyakarta reached 88% TPT coverage for PLHIV.
- A TB/HIV district level taskforce in Deli Serdang was found to be functional.

## **Challenges**

However, despite recommendations in the preceding JEMM (2020) for strengthening key TB/HIV activities, much room for improvement remains to ensure that all TB patients are tested for HIV; all those with both TB and HIV benefit from rapid treatment initiation for both diseases; all PLHIV are screened for TB at every health care encounter and all PLHIV without active TB disease complete a course of TPT. The 2022 JEMM team assessed these aspects of TB/HIV collaborative activities and made the following observations.

### **HIV testing for all TB patients: Challenges observed from site visits**

**Variable testing of TB patients for HIV:** While overall provincial testing coverage was reported to be quite low, the teams observed variable levels of HIV testing across the sites. Some public TB sites were testing as few as 30% of TB patients, while others were testing 100%. Data in TB registers (TB 03) often revealed a better situation than what was reflected in SITB, (N Sulawesi and N Sumatra) and the low coverage was felt to be primarily a reporting issue related to lack of SITB- SIHA (the HIV program's electronic reporting system) interoperability. In general, high levels of HIV testing of TB patients were observed in the public hospitals and Puskesmas visited. However, provincial TB program staff mentioned that many Puskesmas were not yet offering HIV testing for TB patients. In N. Sulawesi training is planned for sites that have not yet scaled-up, although they reported that HIV rapid test kits were available at all sites. In W. Kalimantan, the provincial hospital tested only 35% of TB patients in 2021, while Yogyakarta reported at least 50% testing at all sites, with some reaching 90%. A reporting disconnect between TB and HIV services contributes to inaccurate numbers, especially in sites where patients are referred from the TB clinic to the HIV clinic for testing.

**Barriers to HIV testing of TB patients:** These included lack of HIV testing services, HIV test kit stock-outs, especially at Puskesmas, stigmatizing approach by providers

and implementing opt-in rather than routine offer/opt-out testing. Another important impediment to finding TB/HIV coinfection is the absence of TB/HIV services within the district public private mix (DPPM) engagement package. The teams found that private hospitals were not testing TB patients for HIV (N. Sulawesi and Yogyakarta), which could be an important contributor to the identified testing gap and may become more relevant as DPPM efforts reach more private providers. There was limited awareness and emphasis on TB/HIV at private facilities, a lack of training or mentoring for private providers, and programmatic HIV test kits were not available in private facilities. However, on a positive note, routine screening for both TB and HIV was completed for all new inmates in prisons visited in N Sulawesi and N Sumatra. All prisoners with HIV could then benefit from ART initiation, in addition to TB treatment for those found to have TB disease.

**ART for TB/HIV Patients:** Similar to HIV testing, SITB reported low ART treatment initiation for the provinces visited [N Sumatra (41%), N Sulawesi (53%), W Kalimantan (50%)], however major discrepancies were observed between SITB and SIHA. Referral is usually required for TB patients to initiate ART at the HIV site and communication between the HIV and ART clinic to confirm ART start is frequently lacking. However, onsite review revealed that the ART rate was better than that reported in SITB. Some teams found that 80-100% of TB/HIV patients started ART after looking into HIV clinic data. In the provincial hospital in N Sumatra only 20-40% of coinfecting patients started ART, although much of this is likely a reporting issue due to lack of SITB-SIHA interoperability. However, there are barriers leading to TB/HIV patients starting ART too late or missing out on ART altogether. Although ART is reported to be decentralized, it is still not available in all places where TB patients receive care. In one district visited, ART initiation was limited to the hospital, which means that patients had to travel often long distances to reach the ART site far from home. Further decentralization of ART is required. However, when the ART clinic is in a separate facility from the TB site, communication is often poor. Even in facilities which have an ART clinic on site, regular discussions between TB and HIV services may be lacking. Another issue was delaying ART too late into TB treatment. Guidelines call for ART initiation within 2 weeks of TB treatment start, as strong evidence shows that this reduces mortality. However, providers frequently choose to wait more than two weeks and often until completion of the intensive phase. In some



instances, ART is not started until the full course of TB treatment is completed. Clearly, further training on clinical management and the most up-to-date guidelines is needed. In addition, sites were primarily using efavirenz-based ART, instead of the preferred dolutegravir-based options due to slow scale-up of the internationally recommended regimen.

### **TB screening among PLHIV:**

HIV treatment sites routinely screened PLHIV for TB at least annually, but often with poor documentation. The national symptom screening tool was no longer used at some ART sites and staff did not all know the screening questions. However, all HIV sites were using mWRD to test people with presumptive TB.

At all sites visited, there was no lateral flow urine lipoarabinomannan assay (LF LAM) for TB diagnosis in advanced HIV disease or C-reactive protein (CRP) for TB screening in PLHIV. This is not currently part of national HIV guidelines but is recommended by WHO to increase TB diagnosis in this group.

### **TPT for PLHIV:**

There was very limited TPT availability for PLHIV in most sites visited. In N Sulawesi only 2% of eligible PLHIV were benefiting and it was limited to just two districts with only the 6H regimen available. N Sumatra and W Kalimantan also reported very low TPT rates. However, the Yogyakarta team reported 88% TPT coverage of PLHIV on ART at the public hospital, aided by the Zero TB Initiative. Barriers to TPT included absence of drugs at most sites, clinicians' concerns about side effects, worries of burden on health care workers and fear of drug interactions. The TPT stocks found at some Puskesmas were earmarked for contacts only. Across the country, TPT for PLHIV is generally limited to the older 6H regimen, except in 6 provinces with the IMPAACT4TB project where 3HP is available. In general, the NTP procures 3HP for contacts only. There were also stock outs of TPT medicines reported in many sites. A lack of community health literacy on TPT for PLHIV along with a lack of community engagement and empowerment weaken the program.

## **TB/HIV collaboration/coordination:**

The team found that collaboration and coordination between TB and HIV programs was suboptimal. The national TB/HIV coordination forum (FORKOR) has not been functional since the Challenge TB project ended. Subnational/district level TB/HIV FORKOR are also not meeting in most districts, although Deli Serdang district had a functioning task force. Poor integration at facility level along with weak ART referral systems leads to some of the problems articulated above, although there were examples of Puskesmas functioning as one-stop services offering at a minimum HIV testing in TB clinics, generally with referral to start ART. As SITB and SIHA are currently not interoperable, facilities rely on quarterly M&E meetings between TB and HIV programs to “catch-up” data.

## **Recommendations**

### **For National and District TB Programs**

- Accelerate scale-up of HIV testing for all TB patients as a matter of urgency.
- Train/retrain health care workers on PITC and deliver clear guidance on ART standards, through classic or eLearning approaches.
- Integrate TB/HIV into DPPM to engage private health facilities, including access to programmatic HIV test kits. PHO and DHO should provide technical assistance on TB/HIV along with other aspects of PPM.
- Deliver programming to reduce TB provider stigma towards PLHIV and other vulnerable populations.
- Incorporate HIV education into community cadres’ activities.
- Transition to one-stop shop approach for TB/HIV service delivery.
- Appoint or designate TB/HIV focal points at national, provincial and district level.

### **For National and District HIV Programs**

- Train HIV providers on guidelines and importance of early ART start in PLHIV who have TB.
- Further decentralize ART care to increase access to treatment for TB/HIV patients. In addition, strengthen communication and referral linkages between sites.

- Introduce LF LAM testing and CRP screening for PLHIV. Integrate these tools into national policy; procure reagents and train HIV care providers
- Prioritize, commit, and accelerate TPT services for PLHIV.
- Train, procure (3HP, 3HR, 6H) and scale up PMTPT.
- Support (by DHO and PHO) HIV clinics to ensure TB screening according to national guidelines with those screening negative receiving TPT.
- Ensure all TPT regimens (3HP, 3HR and 6H) are available for PLHIV and eligible contacts with procurement from NTP to avoid program silos.
- Initiate and scale-up community engagement and treatment literacy on TPT.
- Strengthen TB/HIV reporting and recording through regular monitoring, evaluation, and supervision

#### **For Directorate of Communicable Disease**

- Strengthen communication, networking and coordination between TB and HIV programs at provincial, district, and facility levels, especially referral linkages for ART.
- Revitalize FORKOR (TB/HIV coordination forum) at subnational level.
- Expedite timeline for TB and HIV integration into ASIK/SATUSEHAT to solve data discrepancies. Communicate the urgency of TB/HIV integration to the DTO to ensure it is prioritized.
- Socialize TB/HIV national guidelines with professional organizations; build provider and community capacity; and revitalize the TB/HIV mentoring checklist, including TPT.
- Conduct analysis of TB and HIV in pregnancy to better understand the situation in Indonesia.

### 3.6 Diagnostics, universal DST

#### Background

Diagnostics have an important role in the overall patient care pathway ensuring that individuals receive an accurate, rapid, and quality assured diagnosis thereby informing appropriate treatment. To ensure patient needs are met, the diagnostic services require a robust laboratory network that is fully capacitated, quality assured and generates timely and impactful results. Testing is primarily conducted in a laboratory with the necessary infrastructure and equipment, which has appropriately skilled staff to perform the testing, quality management systems are applied and the required biosafety precautions available. At the same time, each laboratory needs to be linked into a tiered network to ensure good coverage, consistency of services and quality oversight.

#### Findings

The TB laboratory network operates at three main levels (national, regional and district levels) according to the complexity of the services provided.

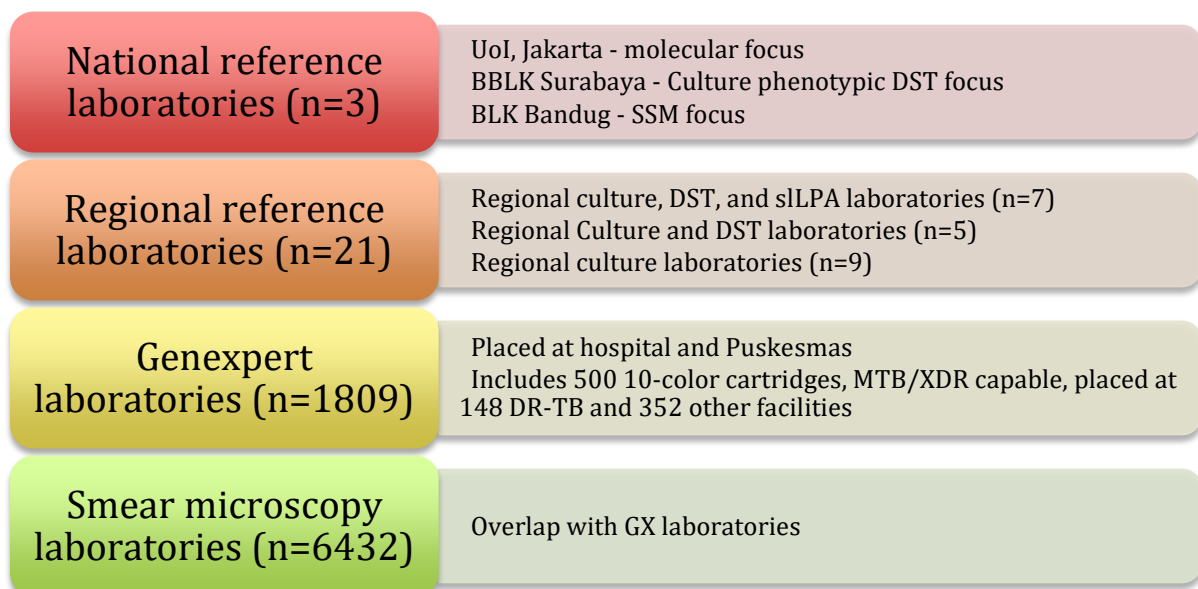


Figure 11. TB laboratory network design in Indonesia

TB laboratory services in Indonesia have three designated reference laboratories, and their primary focus and capacity are as follows.

- Department of Microbiology, University of Indonesia, Jakarta for molecular tests. Human Resources (HR): 2 bacteriologists; 8 Laboratory technicians. In addition, the lab has separately standing Monitoring, Evaluation and Coordination unit, whose staff includes 5 public health specialists, including the head.
- BBLK Surabaya for TB culture and phenotypic Drug Sensitivity Testing (pDST). HR: 1 bacteriologist, 1 pathologist, 10 laboratory technicians, 2 engineers; 3 technical officers (monitoring, evaluation, and coordination), and
- BLK Bandung (Jawa Barat) for sputum smear microscopy networking. HR: 2 bacteriologists; 7 laboratory technicians, 2 technical officers (monitoring, evaluation, and coordination) oversee the laboratory network in coordination with the NTP laboratory team.

There are 21 TB culture labs of which 12 perform TB drug susceptibility testing (DST). Seven laboratories perform rapid molecular line probe assay (LPA) to detect resistance to the second line anti-TB agents.

- At the peripheral (Puskesmas) level, as of 3Q 2022 there are 1809 laboratories which provide molecular diagnosis for TB and RR- TB (Xpert MTB/RIF test) along with sputum smear microscopy. In addition, 4,846 microscopy laboratories provide only smear microscopy services for TB diagnosis and treatment follow up. Specimen transport and referral systems formally operate in 292 (about 56%) of 514 districts.
- In terms of GeneXpert module transition, the 1809 laboratories providing Xpert MTB/RIF test include approximately 500 10-color platforms that are capable of being used with MTB/XDR cartridge, with 148 of them placed at DR-TB facilities and 352 at other facilities.

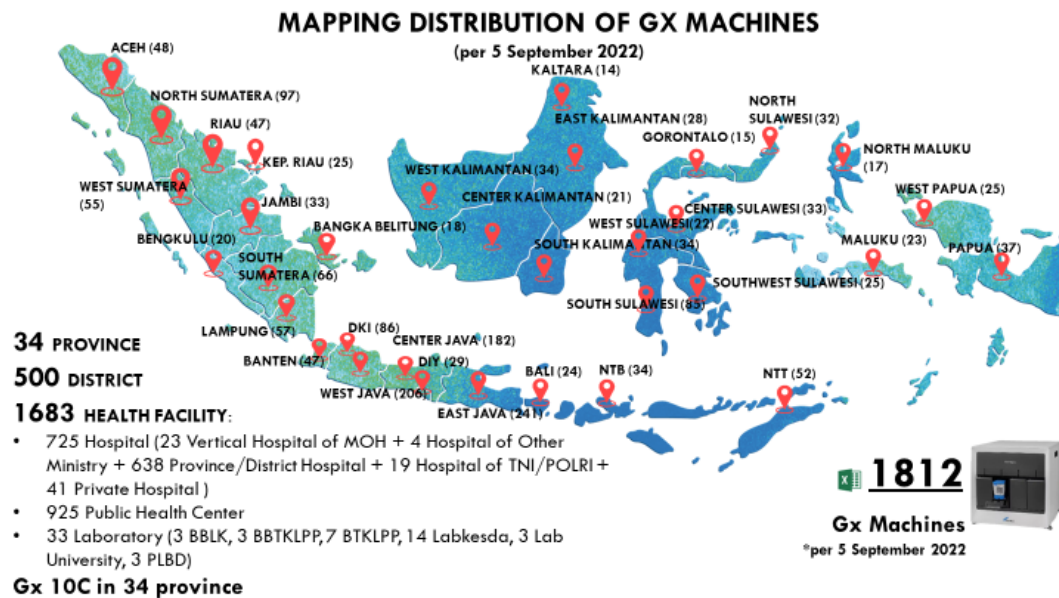


Figure 12. Distribution of GeneXpert machines in Indonesia in 2022.

A central laboratory team, at NTP, coordinates laboratory equipment installation, supplies and logistics, across the country. The team monitors workloads at the laboratories and key quality performance indicators on a quarterly and an annual basis. Several referral laboratories in the network, at various levels, are certified for quality management systems such as: ISO 15189:2012, and ISO 17025:2017 by KAN (Komite Akreditasi Nasional), and KALK (Komite Akreditasi Laboratorium Kesehatan) at the Ministry of Health.

### Phenotypic DST and second-line LPA services

Culture/LPA laboratories provide services at the regional basis, covering more than one province. Culture laboratories perform microscopy, liquid automated culture (Mycobacteria Growth Indicator Tube (MGIT)) and phenotypic DST. From early 2019, all TB DST laboratories are providing phenotypic DST (MGIT)) for six TB drugs in eight critical concentrations as a standard package (isoniazid (two critical concentrations), pyrazinamide, moxifloxacin (two critical concentrations), bedaquiline, clofazimine, linezolid as per WHO recommendations.

Line Probe Assay (LPA) laboratories provide molecular DST to first- and second line drugs. However, detection of isoniazid mono-resistance (Hr) is not done routinely in all TB newly detected rifampicin sensitive patients. External Quality Assurance (EQA)

panels for phenotypic DST are provided by Supranational Reference Laboratory (SRL) at Adelaide, Australia. Three National Reference Laboratories (NRLs) aim to provide EQA in respective areas: culture/pDST, molecular diagnosis, light microscopy, but in practice due to constrained capacity and lack of dedicated funds it is limited to preparing and distributing EQA panels for each method and sporadic training activities.

The laboratory network uses information system Sistema Informasi TB (SITB), which is connected to provincial and district laboratory/hospital levels, including microscopy/Xpert laboratories. GX-Connect, which is an internally adapted version of software GX Alert, is used to automatically connect Xpert results to SITB. At the same time laboratories at district level use parallel paper-based recording and reporting forms. Access to SITB is generally available at all levels in all facilities visited during the JEMM.

### **Health system context**

In Indonesia's national health insurance system, general diagnostic testing at the primary care level, whether public or private, is expected to be provided by the facility under capitation. At the hospital level, the costs of necessary tests are meant to be included in reimbursement under the diagnostic group.

Tuberculosis testing is somewhat unique, in that the presidential decree (paragraph 4, Article 21) includes TB testing as the responsibility of the public health system, for financing, procurement, and distribution of tests and transportation. That functionally means full public sector provision, transport, testing, service quality, with operation by health system staff. The policy has facilitated rapid scale up of molecular diagnostics. But consequentially, testing is disconnected from the health system, with clinical service support owned by public health program rather than integrated into routine clinical services. Private sector services have to, for this one disease, connect to public services whenever testing is needed. Furthermore, there is some structural misalignment with diagnostic access goals; testing is not incentivized at primary care level, while repeat visits are incentivized at the hospital level.

### **Diagnostic algorithm**

Under the national algorithm (figure 13), all presumptive TB patients, identified either by active case finding or passively, are expected to receive a mWRD (GeneXpert

MTB/RIF) test as an initial diagnostic test. If drug-susceptible TB (DSTB) is detected, first line treatment is initiated. In case rifampicin resistance is identified by Xpert MTB/RIF, sputum is expected to be referred in parallel to provincial molecular laboratory for the rapid detection of fluoroquinolone (FQ) and amikacin (AMK) resistance as well as to provincial culture and DST laboratory for the phenotypic detection of resistance to several above-mentioned first- and second-line drugs. However, in reality rapid molecular and phenotypic DST is either delayed or often not done. In facilities where mWRD services are available sputum microscopy is used exclusively for treatment follow-up. However, in case either mWRD is not available on site nor specimen transportation is readily available, only sputum microscopy may be used for TB diagnosis (in about 30% of people with presumptive TB) and treatment follow-up.

### **Specimen transportation**

Vertical specimen transport systems prevail in the absence of a national clinical laboratory network. While Indonesia has a notable public health system, the corresponding national public clinical laboratory system is not present, accordingly laboratory services remain reliant on hospitals or private networks, and no pre-existing transportation system for specimens is available for TB use. Accordingly, specimen transportation is conducted as arranged locally via:

- Private courier service - contracted transport system.
- Ad hoc courier – incentive paid to local staff to transport specimens.
- Postal services – official package transport service.
- No services – send the patient to the center where laboratory services are available.



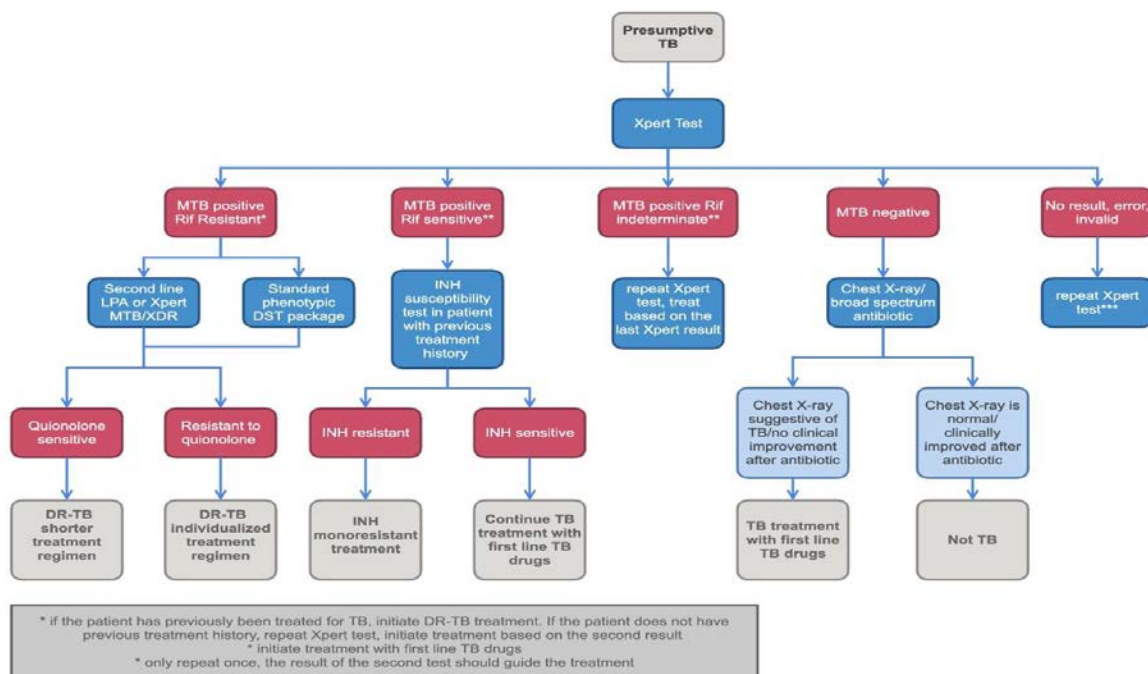


Figure 13. Diagnostic algorithm for presumed TB and DR-TB cases

### Progress towards diagnostic access principles

Indonesia has made remarkable strides to transition to upgrade the TB diagnostic services nationwide, with a focus on expansion of molecular WHO-approved rapid diagnostics (mWRD).

Progress towards achievement of diagnostic access principles are summarized in the table below.

Table 4. Achievement of diagnostic access principles in Indonesia by 2022

Diagnostic Access Principle	Status in Indonesia, 2022
1. Strong political and financial commitment should be available to support affordable diagnostic access.	Nationwide scale-up of diagnostic network based on mWRD using national funding.

<p>2. Diagnostic testing should be equitable.</p>	<p>Available mWRD to all presumptive TB patients by policy, though access gaps remain, particularly among patients seeking care from private providers.</p>
<p>3. The most accurate and rapid tests should be used to diagnose TB.</p>	<p>Policy established, and operational transition largely achieved.</p>
<p>4. The diagnostic approach should be patient centered.</p>	<p>Barriers impacting on the patient experience and related costs remain; though testing is free, on-site same-day diagnosis is uncommonly achieved, even where mWRD are on-site.</p>
<p>5. Diagnostic coverage should reach all levels of the health system and should also cover patients in the private and non-NTP sectors.</p>	<p>High levels of coverage can be found in secondary care facilities (i.e. lower level hospitals) in the public sector. Gaps remain in alignment with universal health coverage plans, which contain perverse incentives for referral and clinical diagnosis, and fail to incentivize testing at primary care levels. Coverage and access in the public sector greatly exceeds that of the private/non-NTP sectors</p>
<p>6. Diagnostic results should be timely to impact patient management.</p>	<p>Available network not optimized for timely results.</p> <p>Data to inform timeliness not available for review, but secondary markers (turn-around time, specimen transportation lags) suggest that substantial gaps persist in achieving same-day diagnosis where mWRD on-site, or timely diagnosis where sample referral is used. Backlog of specimens frequently reported at mWRD sites.</p> <p>Connectivity system available (GX-Connect) but not fully implemented and efficient due to limited internet, lack of training and software bugs. Result reporting depends on ordering facility checking results, or eventual return of paper results. No special handling or action noted for rapid feedback of positive results.</p>

7. Diagnostic capacity should be optimally used based on the local context.

Uneven application of network to local service needs, and no suggestion of excess testing capacity (where available) used for multi-disease testing (e.g. Covid-19, HIV EID and VL). No formal optimization exercise, though substantial local thought and planning recognized and acknowledged in deployment of current network. Post-placement, no formal review or re-deployment exercise undertaken.

### Utilization and coverage of laboratory services

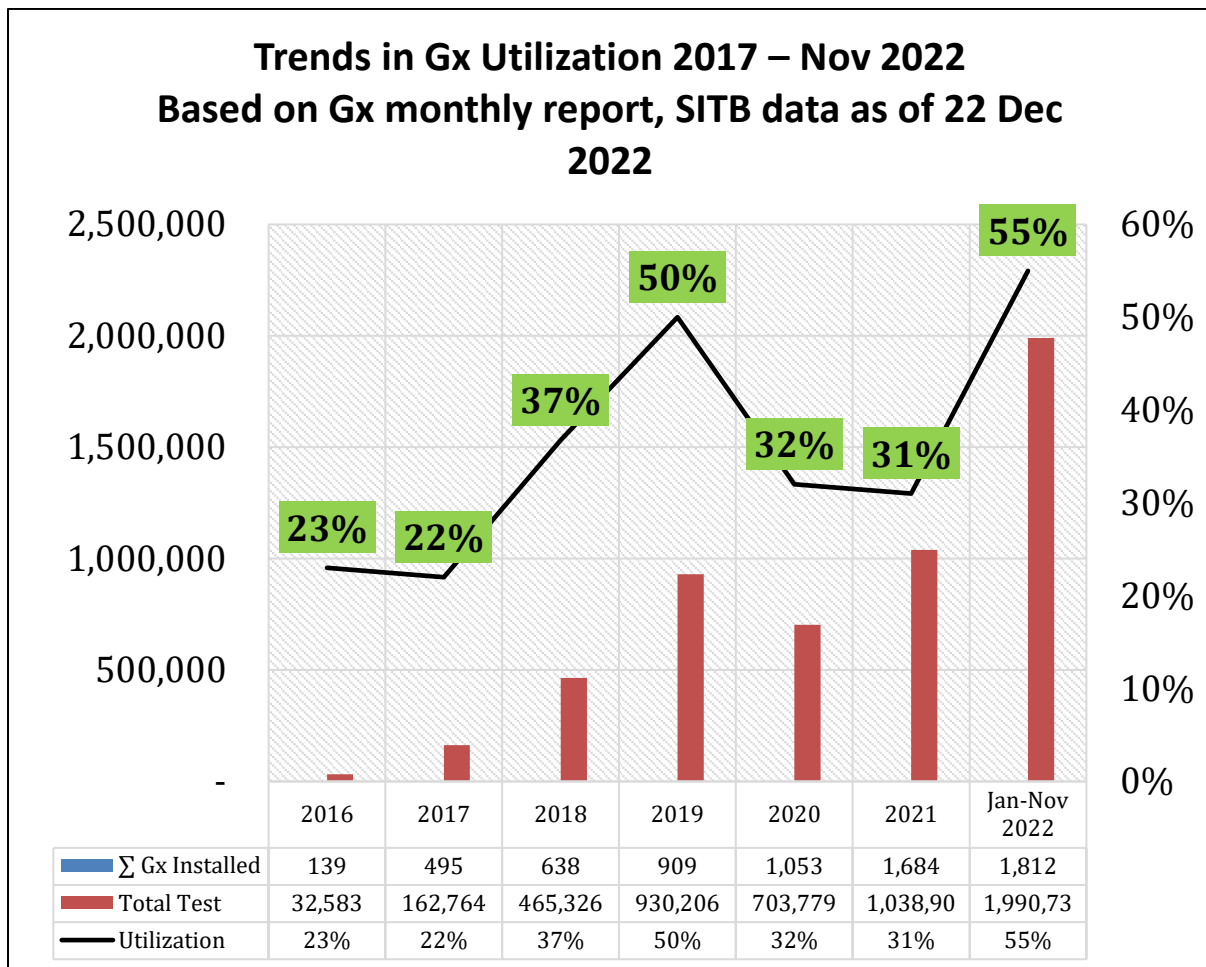


Figure 14. Trends in GeneXpert (GX) installation and utilization. Source, NTP

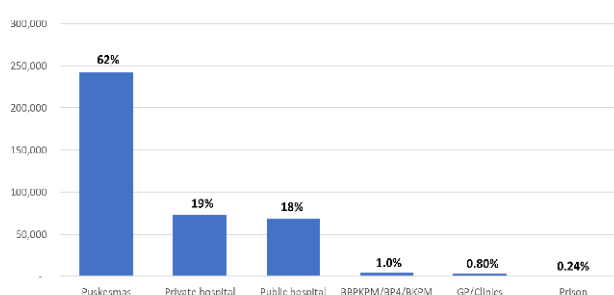
Table 5. Testing volumes in Indonesia per technology in use, 2020-2022

	SL LPA	Xpert	cDST	Culture / Follow up
2020	2,885	703,779	2,002	8,613
2021	1,663	1,038,902	3,366	24,427
2022	7,145	1,990,738	4,677	38,000

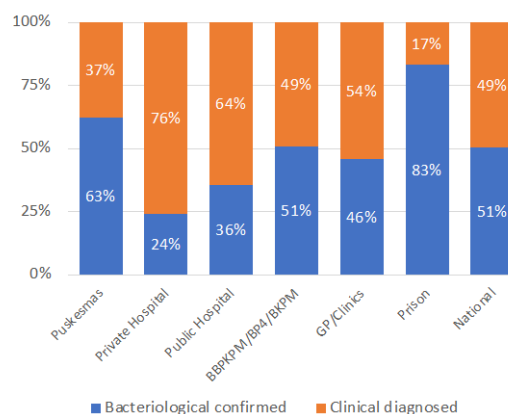
Table 6. Progress in implementing selected TB diagnostic technologies in Indonesia, 2020-quarter 3, 2022

Metric	2020	2022 3Q
WRD installation	1053	1809
Presumptive TB	1,484,841	2,282,047
Presumptive TB WRD tested (%)	565,315 (38%)	1,595,738 (70%)
Notified TB patients WRD	150,134/393,323 (38%)	307,552/465,886 (66%)
WRD connectivity installation	200/1053 (20%) GX Alert	200/1809 (11%) GX Connect
SL LPA coverage	1914/7086 (27%)	5166/9179 (62%)
SL DST (pheno)	1595/7086 (22%)	2922/9179 (32%)

### National TB case notification (new and relapse) by type of facility, 2021



### Bacteriological confirmation (new and relapse) by type of facility, 2021



Data source: SITB

Figure 15. National TB notification and bacteriologic confirmation, by facility type.

### Additional notes from laboratory visits

The biosafety and infection control systems were in place in the visited reference laboratories. Personal protective equipment available for staff (N95 masks and these

are fit tested). Negative pressure ventilation is functioning in culture and DST laboratories. The procedure for managing accidents is readily available and visible. The workflow routines to reduce cross contamination were in place.

There were reports on limitations of GeneXpert maintenance received at national level, with a high rate of module failure at selected sites, which, however, was not possible to verify during the site visits.

Previously, there was a post-warranty service gap, and many modules went offline. In addition, warranty service itself had service delays. Currently a service contract is available to cover the majority of post-warranty installations, and as of the date of the mission reportedly 7160/7530 (95%) of modules assessed were operational.

### **Notable future activities and procurements related to diagnostic access**

Per report, early efforts to diversify the diagnostic network are underway, with GF-supported procurement ongoing for additional mWRDs, including 30 Truenat, 16 BDMAX, and an additional 100 10-color GX4 devices.

In addition, a World Bank project under development for TB (2023-2026) includes key performance-based results that can be expected to directly improve diagnostic access opportunities, via strengthening specimen transportation linkages and incentivizing notifications from primary care providers, public and private alike. These metrics are linked to performance-based disbursement of funds under the credit agreement.

Table 7. Excerpt from World Bank credit results framework – Select areas of focus directly related to diagnostic access; preliminary finding till agreement executed.

<p>(3) Disbursement linked indicator #3: Strengthened access to diagnostic and regular sample transport mechanisms</p>	<p>Disbursement linked result (DLR) 3.1: MOH has enacted a regulation to strengthen laboratory specimen transport practice, including that of private primary health care providers</p> <p>DLR 3.2: MOH has developed a template for agreements for specimen transport services that can be used between districts and third-party service providers.</p> <p>DLR 3.3: More districts have signed service agreements with third-party service providers for specimen transport services that serve all engaged public and private health care facilities in their respective areas that do not have in-house capacity for WHO Recommended Diagnostics.</p> <p>DLR 3.4: More private primary health care providers have become new regular users of the services provided by third-party service providers for specimen transport services.</p>
<p>(5) Disbursement linked indicator #5: Strengthened payment mechanism links to TB notification and treatment</p>	<p>DLR 5.1: MOH has implemented new payment arrangements for TB that incentivize primary health care providers to increase the rates of TB notifications and treatments by: (a) revising the PKBK to link capitation payments to, among others, the rates of TB notifications and successful treatments and (b) piloting a non-capitation payment mechanism based on actual TB notifications and fully treated TB cases.</p>

## Challenges

Acknowledging enormous progress since the 2020 JEMM, a large diagnostic gap remains. Nearly 40%, or 400,000 cases, of the estimated annual incident TB remains undetected or not notified. Despite progress, only 66% of all notified cases were tested with a mWRD. Only 51% of notified TB is bacteriologically confirmed despite the availability of highly accurate tests.

Access to mWRDs remains limited, with only half of TB diagnostic sites capacitated. In particular, access remains constrained at primary care sites, both Puskesmas and especially private facilities, where more than 3/4<sup>th</sup> of patients first present for care.

Specific challenges noted included:

### **Key challenges in diagnostic network organization and management**

- **GeneXpert module malfunctions persist.** While the up time of GeneXpert modules has reportedly increased, the rate of module failure is a cause of concern. In addition to hardware issues, error code analysis conducted by at least one province suggested the possibility of lack of training as an additional weakness.
- **Network over-reliance on one technology.** The existing network is largely dependent on one particular mWRD (Xpert MTB/RIF), which was for many years the only real option, which puts risks on diagnostic access via supply chain, as shown by cartridge stockouts globally in recent months. Additional options for mWRD at various levels of complexity are available but not implemented in Indonesia.
- **Specimen transportation network gaps.** Though much improved since the 2020 JEMM, the specimen transportation network designed to implement hub-and-spoke mWRD access remained relatively ad-hoc, with locally variable mechanisms and performance. Registering patients and specimens for transportation was notably complicated, with registration on an often-slow SITB interface required for presumptive TB cases before a specimen would be accepted. Though sputum collection and transport starts with the health workforce, training for health workers is uncommon, with standard operating procedures unknown by providers.
- **GeneXpert connectivity is not achieved in practice.** GX-Connect often is unlinked to SITB, due to internet connectivity and lack of training on procedures. In addition, there are concerning reports of software failures on GX4 after GX Connect installation
- **Highly constrained laboratory supervision.** Effectively, laboratory supervision was not observed below the regional level. The 3 NRLs, each responsible to supervise culture, microscopy, and LPA, have limited capacity to

implement their supervision responsibility, particularly for microscopy. No operational agreement with any SRL was noted.

- More concerningly, **provincial-level laboratories are not involved in supervision** of peripheral laboratories, including the nearly 2000 molecular laboratories using GeneXpert. No dedicated laboratory supervision funding was noted. The EQA panels used for microscopy were examined without notable feedback or corrective guidance.

### **Key challenges in diagnostic service utilization**

- **Extremely low utilization of diagnostic testing by ‘engaged’ private providers** at all levels, with observed system weaknesses in ordering, collection, transportation, and result reporting. More concerningly, reimbursement levers (JKN) are adapted to incentivize notification, but not designed or used to incentivize testing.
- Within the hub and spoke model, **much lower uptake of mWRD usage in spokes relative to hubs**. The WRD testing was roughly 50% greater in some provinces for facilities that had GeneXpert on-site vs those that referred specimens.
- **Under-utilization of alternative specimen types for mWRD**, manifest by generally low detection of extrapulmonary TB. Use of stool specimens has no guidelines, and other non-sputum specimens for pulmonary TB such as nasopharyngeal swabs or gastric aspirates are infrequently used. Similarly, extrapulmonary specimens are infrequently used.
- **Treatment follow-up sputum microscopy testing is low and falling**, as demonstrated by a striking shift in treatment success basis of assignment from ‘cured’ to ‘treatment completed’.
- **Prolonged second-line LPA turnaround times**, with weeks to months noted for a rapid test.
- **Isoniazid ( H) resistance testing is low**, including among previously treated patients, as per current national policy.



## **Recommendations:**

Indonesia has transformed 'how' patients get tested. To find the missing TB cases, the country must now expand 'who' gets tested.

### **Strengthen TB diagnostic access to primary-care patients.**

- At Puskesmas, expand on-site mWRD testing availability, with optimized hubs/spokes. Conduct a nationwide diagnostic network optimization exercise, anticipating future needs, to optimize placement of infrastructure for the fastest results.
- For private providers - by operational service enhancements (easy ordering & transport)
- For all sectors, leverage health financing to incentivize greater testing in public & private sectors.
- Provide fee for service payment that will incentivize bacteriologic testing for TB at primary care level, public and private.
- Implement performance-based capitation (PKBK) mechanism.
- Adopt TB financing mechanisms that not only encourage TB notification but also TB testing at all levels of the health care system (to delete transfer TB testing ownership to the health system)

### **Address gaps in service quality of existing mWRD network**

- Conduct sputum collection and transport training for HCWs based on need.
- Expand maintenance to currently available mWRD platforms beyond 2023.
- Strengthen training of laboratory workers operating mWRD and monitor error codes systematically to detect possible quality lapses in product or processes.
- Investigate the reasons for non-functional (broken) modules and build the capacity of laboratory personnel to prevent it.
- Undertake IT troubleshooting of synchronization of SITB and GX-connect.
- Expand linkage of GX-connect with SITB software to 100% of service points.
- Intensify rapid H and SL DST via Xpert MTB/XDR cartridge utilisation for rapid result to guide DR treatment regimens.

### **Strengthen diagnostic network with current and emerging tools, and optimised network development.**

- Expand portfolio of mWRDs for use in the country., via health technology assessment of a broader portfolio of mWRDs.
- Integrate moderate complexity automated NAATs that have high-throughput capability into diagnostic network, where transport systems are efficient, e.g., BDMAX and other technologies from this class.
- Conduct a current and forward-looking diagnostic network optimization exercise, to generate optimized hub/spoke system, with maximum on-site coverage at the primary care level.

### **Strengthen supervision of laboratory services.**

- Establish a clear and costed plan for supervision, EQA, and quality management systems for peripheral level laboratories.
- Implement the supervisory role of provincial laboratories, overseeing peripheral microscopy and mWRDs laboratories. Include capacity development to enable effective supervision, including guidelines, training, and budget.
- As part of the EQA process for microscopy and mWRD laboratories ensure feedback and corrective guidance.
- NRL's to establish EQA process (panels) for GeneXpert platforms for provincial and peripheral labs.
- Re-activate the contract with SRL (Adelaide, Australia) for ongoing technical support.

### **Increase use of non-sputum specimens**

- Update national TB diagnostic guidance for the use of stool and nasopharyngeal aspirate in children and for extrapulmonary specimens.
- Provide for testing of stool and EPTB specimens (e.g., lymph nodes) at all levels, starting with hospitals.
- Conduct early in-country validation of emerging lower-cost molecular rapid diagnostics such as tongue swabs, for primary-care diagnostic and screening applications.

**Increase scope and improve timeliness of H and second-line DST by introducing MTB/XDR cartridge.**

- Confirm that provincial culture and DST labs, and MDR treatment sites, have 10- color GX platforms for Xpert MTB/XDR use, and needed commodities.
- In the meantime, radically decrease LPA turnaround times.
- Increase volumes of H resistance testing among at least previously treated patients and contacts of DR-TB patients.

## 3.7 Child and adolescent TB

### Current challenges in Indonesia

Indonesia has a high incidence of TB, a low treatment coverage and almost one quarter of the population are children. Furthermore, the highest numbers of incident cases are in older adolescents and young adults – 15-34 years. Therefore, the incidence of TB in children (0-14 years or <15 years) is expected to be high. In 2021, the Indonesian NTP reported that 9% of 432,577 notified TB cases were children.<sup>1</sup> The numbers of notifications in young children (0-4 years) and in older children (5-14 years) were lower than estimated. There is a wide variation in child TB case notifications across the country – Figure 16 with child TB caseload being less than 5% in some provinces and as high as 22% in Mimika District of Papua, where health systems strengthening has decentralised TB services to the primary care level from 2014 to 2021.<sup>2</sup> There is similar variation in extrapulmonary TB – Figure 17. The numbers of children treated for MDR/RR TB is very low, as is the case globally.<sup>1</sup> In the past, a wide notification gap has been reported in children with TB from Indonesia.<sup>3,4</sup> In settings such as North Sumatera, TB in young children represents only 2% of notifications to the provincial TB program with treatment coverage for children (<15 years) of only 17% in 2021. It is not known how much the gap is under-notification of children being treated or how much is due to under-detection and treatment, and how many children are being managed in the private sector.

The COVID-19 pandemic had a massive impact on health services and access to care in Indonesia. In the earlier stage of the pandemic, over 75 percent of routine health services at the community level were closed.<sup>5</sup> In the later stage, most health facility resources were diverted to the COVID response, there was fear of exposure to SARS-CoV-2 at health facilities and a policy decision by clinic facilities to reduce service time and delay elective care. The COVID-19 pandemic reversed recent efforts by the Indonesian NTP to improve detection and treatment of child TB; the 70,341 reported child TB cases in 2019 was a 15% increase compared to 2018.<sup>6</sup> However, only 32,930 child TB cases were reported in 2020, a 53% reduction from the previous year and a return to numbers reported in 2016.

The current national child TB guideline was published in 2016. National training of trainers followed but the guideline was not well socialised to the primary care level.

The Indonesian Paediatric Society has a large membership of specialist leaders in child health and engagement with child TB challenges over many years – including development of a scoring system and providing technical guidance to the NTP – but the national child TB working group is not active and there are no child TB working groups at the provincial level. At primary care level, where most people with TB are managed, there is a lack of confidence or knowledge about child TB management along with a lack of tools for diagnosis of disease or infection.<sup>6</sup> There is no specific attention given to adolescents apart from screenings in boarding schools.

Diagnosis remains a key challenge.<sup>6</sup> While smear microscopy and/or Xpert MTB/RIF assay were performed in 54% of presumptive child TB cases, only 7% children treated for TB in 2020 were bacteriologically confirmed, and just 3.3% among young children. In Mimika District in Papua only 115 (2.7%) of 4230 children with TB were bacteriologically confirmed TB.<sup>2</sup> Sputum induction, which is an aerosol-generating procedure, is associated with risk of infection transmission in the context of the COVID-19 pandemic. The use of Xpert on stool specimens has been recommended but uptake of this new recommendation is so far very limited. Major challenges remain with clinical diagnosis. The Indonesian Paediatric Society’s scoring system is the preferred approach, but there are some limitations in the implementation.<sup>7</sup> Tuberculin skin test (TST) is often not available and there are challenges for access and interpretation of CXR. The scoring system prioritises sensitivity over specificity and so tends to lead to over-diagnosis. To address the limitations, the 2016 guideline provides some options to diagnose TB based on the access to CXR and TST. Unavailability of TST should not be a barrier to make a diagnosis of TB in children. Nevertheless, the guideline has not been well socialised to the district level and doctors in Puskesmas still lack confidence to diagnose and manage TB in children.

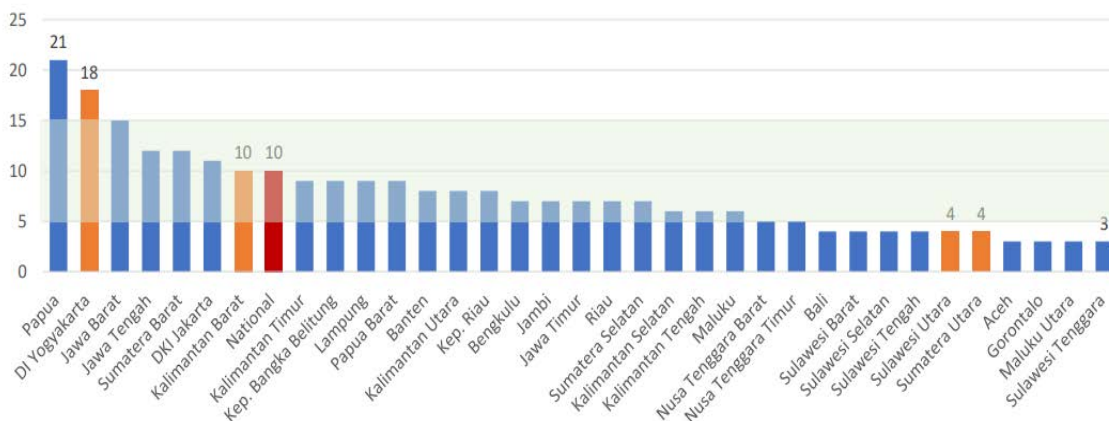


Figure 16. TB in children (<15 years) as proportion of total TB caseload by province

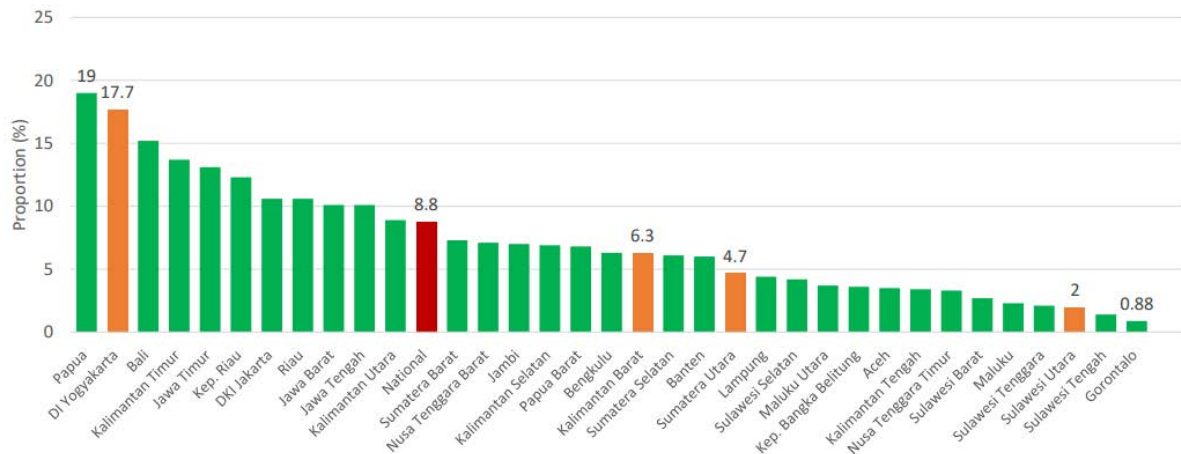


Figure 17. Extrapulmonary TB as proportion of all new TB cases by province

Child-friendly anti-TB medicine formulation is available as a dispersible fixed-dose combination for young children. Treatment success is generally better in children than in adults. In Timika, Mimika Regency, treatment success in children was 78% compared to 69% in adults.<sup>2</sup> However, the number of children who died during TB treatment doubled during the pandemic, which contributed to a fall in treatment success rate from 77.5% in 2019 to 72.0% in 2020. Furthermore, the long-term impact and disability caused by TB in children, especially those with severe forms of TB, is not known.

TB preventive treatment (TPT) is a key recommended strategy to prevent disease in key vulnerable populations, such as child contacts. There is an updated national guideline for TPT provision, which is now extended to household contacts of all ages. TPT options are available in Indonesia including short regimens such as 3RH and 3HP. Yet, the coverage of TPT for young child contacts is extremely low – 9% in 2019 and dropped to 3.7% in 2020-2021 (figure 18)

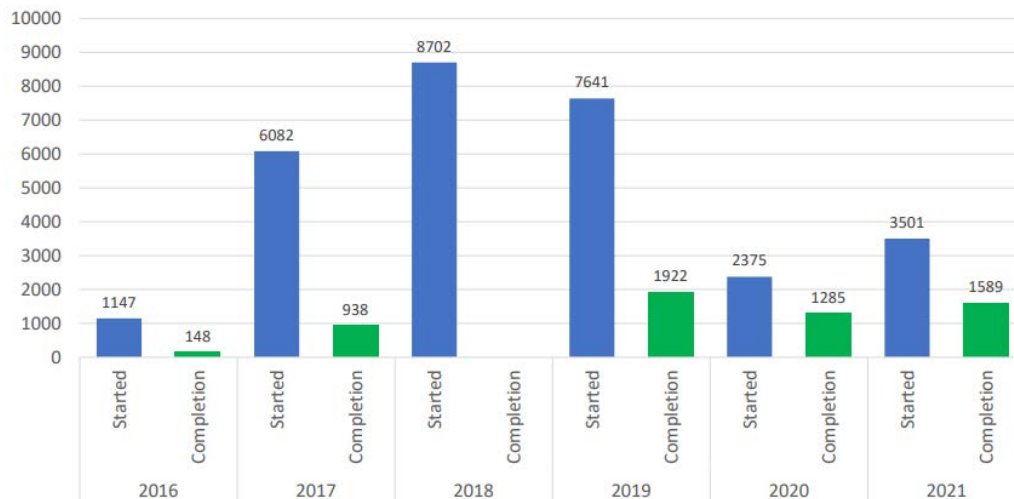


Figure 18. TB preventive treatment in household contacts 2016-2021 – NTP data

There is limited monitoring of key indicators such as contact investigation coverage as well as TPT initiation and completion in eligible contacts. There is published evidence from Yogyakarta of the potential yield and challenges of case detection and TPT implementation at the Puskesmas level from contact investigation and management.<sup>8,9</sup> There is still very little integrated contact management with TPT for children in Indonesia. TPT for MDR/RR TB contacts has been available, but the uptake is very low.

Community awareness and advocacy for child TB are limited and there is no specific attention to adolescent or maternal TB despite both being at-risk and vulnerable populations. Reluctance of caregivers and healthcare workers to provide TPT for child contacts is a major challenge and a missed opportunity to prevent TB and reduce child morbidity and mortality. Stigma and discrimination against TB including children and adolescents in educational settings is a further challenge. Limited awareness, knowledge, and skills of service providers on child health have also hindered access of children and families to child TB services.

### Recent global updates and relevance to Indonesia

The widest detection gap in TB including MDR/RR TB globally is in children, especially young children.<sup>1</sup> The COVID pandemic had a negative impact on case notifications in children. There are diagnostic challenges that are well recognised – low yield of bacteriological confirmation and uncertainties for clinical diagnosis which can lead to

under-detection or overdiagnosis.<sup>7</sup> There are also many missed opportunities for prevention with low TPT coverage in contacts despite universal recommendations, feasibility for an integrated approach at the household level and availability of short, safe regimens.<sup>10</sup> Adolescents are also a vulnerable risk group for TB with specific age-related needs for care and treatment support that are usually lacking.<sup>11</sup>

The WHO provided new recommendations for child and adolescent TB in 2022 – these have been added to previous updated recommendations for consolidated guidelines that are complimented by an operational handbook to facilitate implementation.<sup>12,13</sup> These updates support: diagnosis – a wider range of samples for molecular rapid diagnostic testing plus a systematic approach to clinical diagnosis and treatment; treatment – shorter regimens for non-severe TB or TB meningitis as well as all-oral regimens for MDR/RR TB for all ages; prevention with TPT for all eligible child and adolescent contacts; and decentralisation of services to the primary care and community level which is supported by evidence for increased detection, better treatment outcomes and TPT coverage and completion. Training e-courses on child and adolescent TB for programs and health care workers are being developed by WHO with supportive tools also by The Union.<sup>14,15</sup>

There are currently plans to update the national child TB guidelines and it is recognised that the problem is not a lack of evidence-based policy but rather the policy-practice gap. However, in discussions with stakeholders in Indonesia, the following are considered particularly relevant: introduction of stool as a sample to improve bacteriological confirmation; guidance on clinical diagnosis of MDR/RR TB in children without bacteriological confirmation; introduction of shorter regimen for non-severe TB; and TPT for older child and adolescent contacts as well as contacts of MDR/RR TB. Implementation will require improved access, knowledge and application of diagnostics including stool for rapid diagnostic testing, CXR and TST with procurement without stock-outs of child-friendly formulations to treat infection as well as disease, drug-susceptible and drug-resistant.



## Summary of context and recent achievements

- National child TB guidelines published in 2016 with plans to update guideline in 2023 with specifics for new diagnosis and treatment recommendations – funded.
- Engagement of paediatricians at provincial level with quality inpatient services at central referral level.
- Diagnostic algorithm developed with practical and appropriate use of the scoring system.
- Child-friendly formulations available for treatment and improved treatment outcomes
- TPT options include 6H, 3RH and 3HP.
- High BCG coverage (though impacted by COVID).

## Challenges

- Low notification of child TB and EPTB in many provinces.
- Variations in diagnostic and notification practices/gaps.
- Management in the private sector is common, but not recorded and reported to the health system.
- No effective translation of policy to decentralised levels of care.
- Lack of socialisation and training for implementation of guidelines, of diagnostic capacity, SOPs and tools.
- Very low detection of MDR/RR TB.
- Contact investigation has not been routinely done.
- Very low implementation of TPT among child TB contacts including MDR/RR contacts
- Lack of knowledge or acceptance of potential benefits and safety of TPT from both community and health workers.
- No particular attention to TB in adolescents or pregnancy-related TB despite being high-risk groups, with no regular screening for pregnant women.

## Recommendations

- Establish child and adolescent TB Working Group at central and provincial levels with a range of stakeholders to support implementation - with defined (SMART) objectives and outputs.
- Following guideline update in 2023, provide a series of trainings with tools to support bacteriological (e.g. stool) and clinical (with CXR) diagnosis, new treatment regimens and TPT implementation, particularly to primary health services including GPs and socialize to paediatricians.
- Decentralize services for detection and prevention - with treatment and notification – by improving capacity of Puskesmas facilities.
- Socialise and integrate TPT into case-finding and contact investigation<sup>16</sup>, and also by engaging community participation in the process.
- Operational research to evaluate diagnostic tools and approaches in high-risk (such as malnourished) children or the integration of contact investigation with TPT – request funding support for OR from Global Fund.
- Engage the private sector to strengthen recording-reporting and networking with the public sector through Indonesian Paediatric Society at national and subnational levels.
- Undertake a situational analysis of TB services for adolescents and pregnant women and develop networking with professional organizations providing antenatal care and Directorate of Maternal Child Health of Ministry of Health.

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### **3.8 Programmatic management of drug resistant TB (PMDT)**

The 2022 JEMM did not undertake a deep review of PMDT for the same reasons provided in section 3.3 on PPM. A regional Green Light Committee (rGLC) technical support mission to Indonesia was carried out on July 25-29, 2022. The report of this mission is available [here](#).

The terms of reference of this mission included:

- a review of the progress that had been made since the previous rGLC mission conducted in 2021
- Update information on WHO guidelines on MDR-TB diagnosis and treatment including documenting lessons learnt and plans for the use of the Xpert XDR and Ultra cartridges and the country's preparedness for the uptake and implementation of BPaL and BPaLM regimens.
- evaluation and planning of TB preventive treatment for contacts (adult and children) of persons with DR TB.
- review patient assistance mechanisms by the community-based organizations.
- review and evaluate quality of DR TB treatment.

The methodology of the rGLC technical assistance mission was similar to other reviews and included desk reviews of key documents such as guidelines, policy documents and progress reports, visits to health facilities (hospitals Puskesmas), key informant interviews including patients and discussions with national key stakeholders

The rGLC noted a decline in the proportion of estimated RR-/MDR-TB identified and enrolled into care and treatment from 46% in 2019 to only 32% in 2020 which was attributed to the COVID-19 pandemic. There was a slight improvement in RR/MDRTB identification and enrolment into care and treatment to 34% of all estimated RR/MDRTB in 2021. Among people confirmed to have RR/MDRTB enrolment into care and treatment improved from 48% in 2019 to 58% in 2020 and 61% in 2021.

Utilization of Xpert was noted to have improved and was close to 70% in 2022, when compared to the NTP benchmark for utilisation rates. The country has begun to utilize

BPaL although this is being done under operational research conditions. Clinical audits for RR/MDRTB care and treatment have been conducted since 2017 and serious adverse events assessment was initiated in 2020. In 2020, the all oral RR/MDRTB treatment regimen was introduced and by 2021 and 2022, 14% and 17% of RR/MDRTB patients were placed on these regimens respectively. Treatment interruption and lost to follow up at the regional hospital level declined from 26.7% in 2018 to 9.84% in 2020 and 6.9% in 2021. A civil society organization called Mentari Sehat Indonesia is engaged in the implementation of outreach activities.

Several weaknesses in the RR/MDRTB response were noted. These included: continued use of categories 1-9 for screening for drug resistance which may hinder progress towards universal DST; lack of universal implementation of contact investigations; inadequate identification of paediatric DR-TB; low enrolment of patients diagnosed with RR/MDRTB into care and treatment especially at higher level hospitals; delays of up to 6 weeks in initiating diagnosed RR/MDRTB patients on treatment after diagnosis; lack of adherence to treatment guidelines in some situations such as when adverse events occur; high death and lost to follow up rates; inadequate patient support with only transport cost compensation provided; low patient awareness about the disease and low treatment literacy; limited engagement of CSOs with limited portfolio of activities for the engaged CSO; incomplete laboratory forms; missing link between diagnostics and treatment enrolment and multiple reporting needs of hospitals (SITB and SMRS).

The key recommendations of the 2022 rGLC are highlighted below:

- Work towards achieving universal DST at the earliest by strengthening second-line DST with quick introduction of Xpert XDR-TB in the diagnostic algorithm and by increasing availability of cartridges for testing resistance to second-line drugs.
- Undertake contact screening for all TB, including RR/MDR-TB patients. Household contacts to be started on TPT after ruling out TB. For DR-TB contacts, Lfx +/- Ethambutol or Ethionamide may be used.

- Routinely monitor instrument/ lab performance through supervision and by retrieval of data from the instrument for analysis.
- Monitor drug resistance patterns and proportions (geography wise) using the available laboratory data.
- Train at least 2 laboratory technicians to be posted to perform LPA routinely.
- Reduce loss of patients, before and after start of treatment, by expanding MICA to all provinces with regular review and monitoring of loss to follow-up in each district and province. Strengthen patient support mechanisms through government mechanisms and CSOs.
- Analyse the causes of high death rates and address the reasons.
- Further build the capacity of clinical/care teams on AE management including when to change regimens and which new regimens to use.
- Systematically document and disseminate CSO engagement and best practices.
- Initiate planning for transition to BPaLM and BPaL regimen, making sure that the necessary capacity related to the TB laboratory network, HR for supervision and provision of technical support and clinical and care support staff is available.
- Consider developing a single interface for SITB and hospital MRS.
- Establish cross-learning opportunities between districts with better performing districts as mentors for low-performance districts.

### 3.9 Treatment and patient support

The NTP of Indonesia follows WHO guidelines for recommended treatment of drug-sensitive (DS-) and drug-resistant (DR-) TB. For DS-TB the programme is transitioning to daily regimen while for DR-TB the programme uses oral regimen with a priority for shorter all-oral regimen. Some of the national data as shared to the JEMM is discussed below.

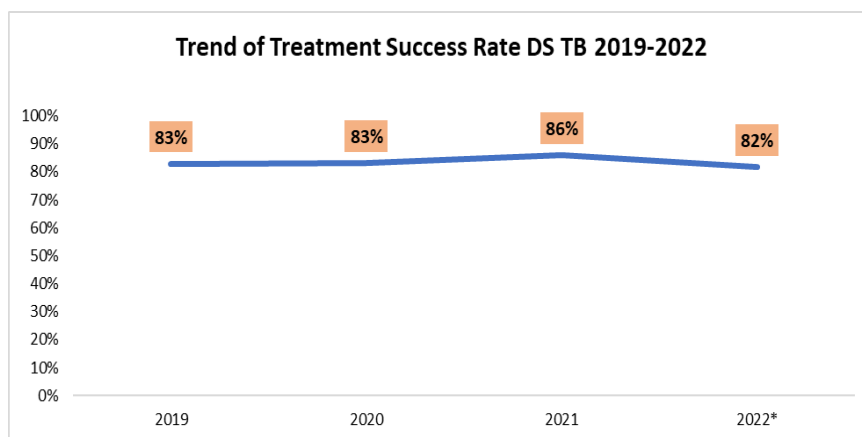


Figure 19. Trend of TSR, DS-TB, 2019-2022

As seen in Figure 19, there has been an increase in the Treatment Success Rate (TSR) till 2021, but for the year 2022, the TSR so far is 82%, below the target of 90%. Part of this could be attributed to the COVID-19 pandemic however, historically, the TSR has been below 85% even before the outbreak of the COVID -19 pandemic and therefore the observed TSR in 2022 is more likely a reflection of and in conformity with previous trends.

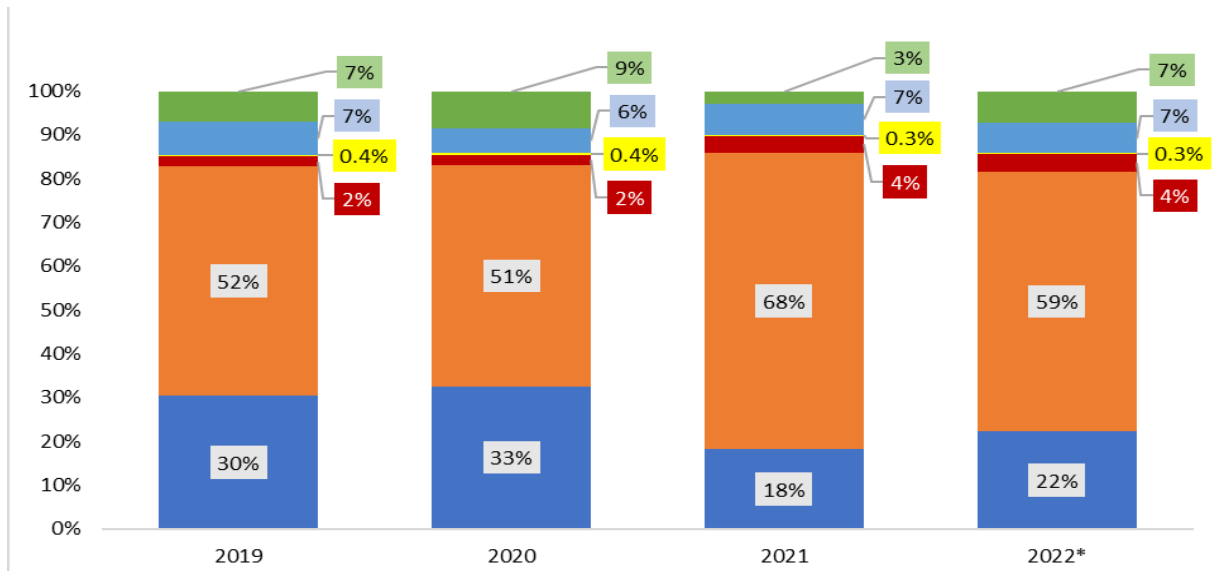


Figure 20. Treatment outcome, DS -TB, 2019-Oct 2022

The figure above shows trends of treatment outcomes of TB patients from 2019 till October 2022. The blue block is cure rate which remains low, but in 2021 there has been a further decline of 15% as compared to 2020. The biggest component of treatment success rate is the completion rate, which means that sputum results were not available for this group of patients– either because sputum was not available, or a follow-up test was not requested or done. In 2021, death rate increased from 2% to 4%. Lost to follow-up rates of 7% are high.

A comparison of diagnosed and enrolled rifampicin-resistant (RR-) and multi-drug-resistant (MDR-) patients is shown in figure 21. As can be seen the gap between two graphs, which means initial loss to follow-up increased massively till 2019. The gap decreased substantially in 2020 but with increased diagnosis in 2022, it has begun to increase again.



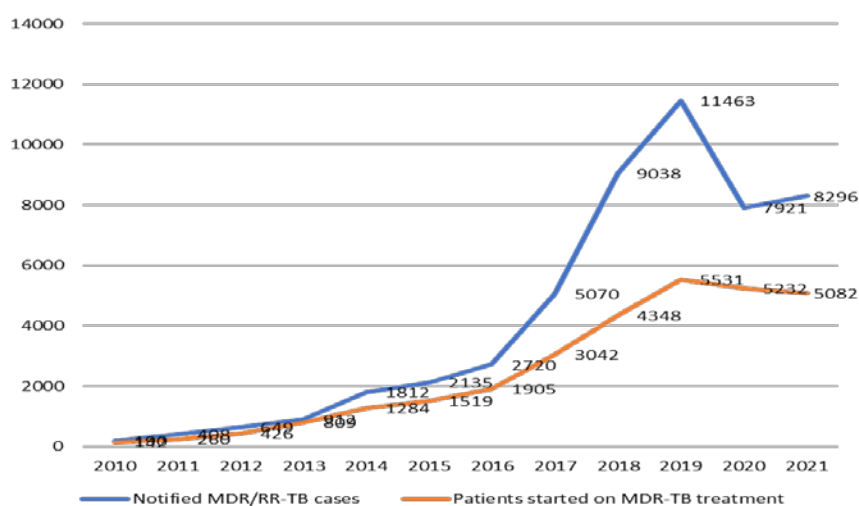


Figure 21. Gap between diagnosed/notified MDR/RR-TB and enrolment to treatment, 2010-2021

Patients diagnosed as RR-/MDR-TB are referred to hospital-based DR-TB treatment centres for evaluation and treatment initiation. Patients coming from other districts are either admitted at the DR-TB centre or need to make their own arrangements for stay. After treatment initiation the patient is referred to the nearest primary health care facility (Puskesmas) for ambulatory treatment. The patients are referred to the DR-TB treatment centre for follow-up and for management of adverse reactions or other complications.

Treatment adherence is monitored by the Puskesmas staff. In some districts the adherence is supported by Patient Support groups (PSG) and Community Cadres (CC) who trace those lost to follow-up and counsel them on treatment adherence.

The programme has now adopted all-oral regimen with preference for shorter treatment regimen (STR) as per the updated WHO guidelines from August 2020 onwards.

Table 8. Standard treatment regimen being used in Indonesia to treat RR/MDRTB

Treatment option (2020)	Drugs composition (Current)	Total treatment duration	Previous composition
All-oral shorter regimen	Bdq (6M) – Lfx – Cfz – H <sup>HD</sup> – Z – E – Eto / Lfx – Cfz – Z – E	9–11 months	Km – Mfx – Cfz – H <sup>HD</sup> – Z – E – Eto / Mfx – Cfz – Z – E
All-oral longer regimen	Starting with 5 drugs from Group A/B/C, continue with 3-4 drugs after Bdq is stopped.	18–24 months	5 effective drugs from Group A/B/C/D (WHO 2016), including injectable agents.

Table 9. Number of patients initiated on various regimen in use, since 2019 in Indonesia

Regimen	Criteria for using the regimen	Number of patients			
		2019	2020	2021	2022
Oral STR	TB RR/MDR (introduced in Aug 2020)	0	623	2089	1521
Oral ITR	TB RR/MDR previously treated >1 month, TB pre-/XDR, STR intolerant (introduced in Oct 2019)	1323	2358	2973	2467
Inj STR	TB RR/MDR (introduced in Aug 2017)	2996	1643	76	4
Inj ITR	TB RR/MDR previously treated >1 month, TB pre-/XDR, STR intolerant	1313	611	70	17
BPaL regimen	Introduced under OR in 6 sites since Jul 2022	0	0	0	5
<b>Total</b>		<b>5632</b>	<b>5235</b>	<b>5208</b>	<b>4014</b>

As can be seen in table 9 above, there is an increasing use of all-oral regimen, specifically the oral STR. Injections are being used only for individualised regimen, when the standard treatment regimen cannot be used.

Treatment success rate among DR-TB patients has slowly improved to 49% in 2022. However, this remains well below the targets and needs attention of the programme.

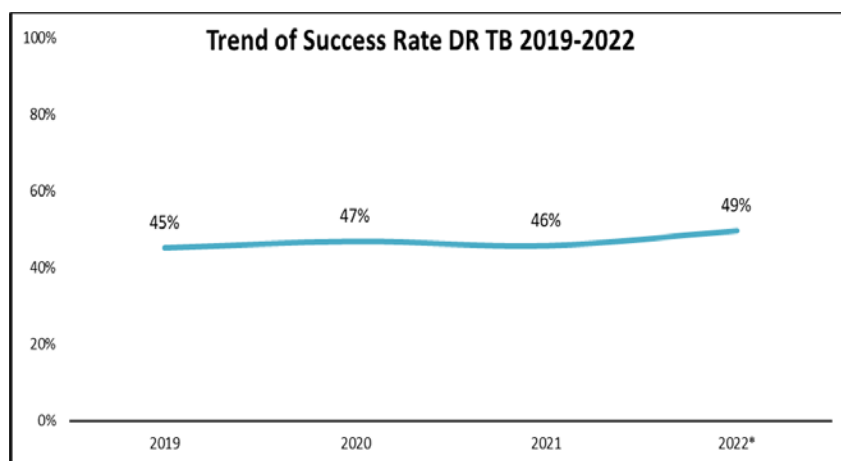


Figure 22. TSR, DR TB, 2019-2022

As can be seen from the figure below, lost to follow up and deaths among DR-TB patients on treatment constitute 40% of the treatment outcomes.

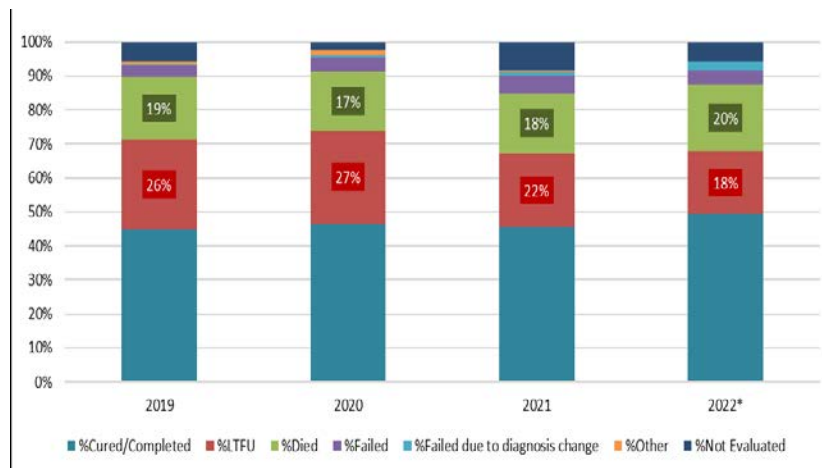


Figure 23. Treatment outcomes of DR- TB, 2019-2022

A few key principles of treatment adopted by NTP based on COVID-19 lessons include:

- TB treatment continues without the patient having to visit the TB health facility too often to take medicines. Availability of drug stocks to deal with side effects of treatment must also be guaranteed.
- Treatment monitoring can be carried out electronically, for example through video call facilities from mobile applications to help patients complete their TB treatment.
- TB services should not be stopped, including if TB service facilities (especially DR TB referral services) are also places for COVID-19 referral services.
- District TB program managers need to establish TB service hotlines in their respective areas to anticipate patients/families who need further information about the continuation of their treatment.

### Observations from the field

Some of the key observations from 4 provinces visited by JEMM teams are summarized in table 10.

Table 10. Comparison of observations from provinces visited by the JEMM.

	DI Yogyakarta	N. Sulawesi	N. Sumatera	W. Kalimantan
Intermittent treatment regimen for DS-TB	At puskesmas	Military hospital and other sites	No	Sporadic availability
DS-TB TSR	82%	91%	89%	86%
DR-TB enrolled	96.7%	84%	62%	83%
DR-TB TSR	61%	43%	45%	40% (cumulative)
Patient support	GF, district and village support	GF and village support	GF	GF

	Of concern
	Acceptable
	Positive

It was observed that for treatment of DS-TB, both intermittent and daily regimen continue to be available, though the availability and use appear variable among provinces. In addition, Category II treatment supplies were also observed in provinces, but in general are rarely used. It was also observed that, RR had been ruled out before initiation of Cat II treatment.

Treatment initiation for DS-TB is mostly at Puskesmas while for DR-TB, it is at the hospitals. Hospitals are likely to admit DR-TB patients for 2-5 days due to BPJS-K payment mechanism, after which the treatment is decentralized. For DR-TB patients, baseline investigations are being done for regular follow-up as well as for monitoring adverse events.

There has been a major shift of notifications from Puskesmas to hospitals. This seems to be an effect of changing behaviours since COVID-19 with more people going directly to hospitals, and importantly the fact that hospitals started to use the SITB and then register TB cases based on GX results (the vast majority of GX machines are located in the hospitals).

The available data from four provinces also shows:

- Hospitals have higher proportion of patients not receiving follow-up smears.

- High proportions of “not evaluated” patients at hospitals.

### **Possible reasons**

- Challenges with public health activities like adherence support at hospitals.
- Treatment decentralization without follow-up results.
- Large catchment areas of hospitals.

Enrolment on treatment of diagnosed DR-TB patients is variable among provinces.

Treatment completion is higher in the private sector than in the public sector.

The coordination/collaboration between hospitals and Puskesmas concerning household visits is suboptimal, with hospitals not consistently providing data to the Puskesmas.

### **Major Achievements**

- The programme is transitioning to daily regimen for DS-TB patients. Cat II is “mostly” phased out.
- Video supported TB treatment (VOT) was observed in North Sumatera.
- For DR-TB patients, all-oral regimens are being used with all-oral shorter treatment regimens for DR-TB being prioritized.
- Guidelines for treatment of Isoniazid resistance (Hr-TB) and paediatric DR-TB available, in alignment with WHO recommendations.
- There is a move towards further decentralization of DR-TB services with ambulatory treatment.
- There are multiple initiatives, including from organizations of people-affected by TB emerging to support and promote patients’ adherence to treatment.
- It was also observed that in all provinces, patients with DR-TB receive IDR 600,000 /month, transferred to their accounts through GF support.
- In some provinces local government support for TB patients is also available – IDR 300,000 for DS-TB and IDR 600,000 for DR-TB patients completing treatment

## **Main Challenges**

- Continued use of intermittent regimen for DS-TB in some facilities. Phase out of intermittent regimen seems dependent on local production capacities for daily regimen.
- Follow-up smears for TB patients are not done in several sites visited.
- DR-TB treatment initiation is still not fully decentralized.
- Patients with DR-TB need to stay in hospitals for initiation of treatment that varies from 2-5 days.
- Delay in treatment initiation specifically when the GeneXpert site is not within the same facility.
- There is a persistent high initial loss-to-follow-up.
- Hospitals do not systematically record and report adverse events.
- Low treatment success rates for DR-TB due to both:
  - High LTFU on treatment
  - High death rates

## **Recommendations**

- End procurement and use of intermittent treatment regimen for DS-TB.
- Roll-out shorter treatment regimen for child DS-TB. Shorter treatment regimen for adult patients also need to be considered after a close analysis of the prevalence of fluoroquinolone resistance among new and relapse cases.
- Plan and decide on transition to BPaLM/BPaL regimen for DR-TB. A transition plan with timelines needs to be developed as a priority.
- Build capacity of sub-national programme managers for intensive monitoring (like monthly interim cohort analysis or MICA) to triangulate data, monitor adherence and early action during initial and on-treatment LTFU, and ensure follow-up sputum testing.
- Use messaging services (like WhatsApp) to reduce delay in treatment initiation after diagnosis, and initial loss to follow-up.

- Improve systematic monitoring and recording of adverse events at hospitals, specifically for DR-TB treatment regimens while universally practicing clinical audit, monitoring SITB. Feedback from BPOM on adverse events reported will incentivize reporting.
- Mainstream policy and continue the current package for treatment adherence support for patients.
- Systematically build capacity for Case Manager and Patients Supporter including developing a to-do checklist (DR-TB).
- Further decentralize MDR-TB treatment and care to Puskesmas level and build the capacity of this level to manage MDR-TB.
- Support hospitals to undertake public health activities, specifically private hospitals.
- Promote use of digital technologies like telemedicine, VOT and others for decentralization and people-centric services

### **3.10 Social protection for people affected by TB in Indonesia**

Social protection and poverty alleviation are a component of the End TB strategy, key in contributing to the achievement of two global and national targets: at least 90% TB treatment Success Rate and elimination of TB associated family catastrophic costs.

#### **Context**

The government of Indonesia has taken important steps towards the inclusion of this component in their TB national strategic plan and other policy documents as indicated by the following milestones:

- 2009-2010: There was a 2-year pilot supported by USAID through KNCV to provide a psychosocial security package for DR-TB patients (including transportation, nutrition, miscellaneous, communication, income generation, shelter). The package reached up to 300 patients and showed a positive impact on treatment success rate.
- 2012: Scale-up of the psychosocial security package for national implementation for DR-TB, which contributed to increase the number of targeted TB patients. The Global Fund contributed to this effort by providing a transportation allowance.
- December 2020 (and for around four months): TB was added among the eligibility criteria for Conditional Cash Transfer (CCT) for Poor Households. On average, the coverage for TB affected household was ~3 million Rupiah. The COVID-19 pandemic and other factors contributed to its removal from the CCT (PKH) criteria since 2021. Sporadic interventions from local government (i.e., District Social Assistance, Village Fund) and philanthropies to provide supplemental food for DR-TB patients, which are not systematic and are unsustainable, are currently offered.

Despite the significant economic growth of the country and the prevailing national health insurance scheme, the patient cost survey conducted in 2021 showed that 78% of MDR-TB patients and 30% DS-TB patients' household do experience catastrophic costs. Furthermore, there is need to improve TB treatment outcomes, all making it even more critical to harness the potential of social protection to contribute to achieving End TB strategy targets.



## **Progress**

The presidential decree on tuberculosis calls for action on social determinants through social protection and coordination between MoH and MoSA, among other actors within and beyond the health sector. This call in the presidential decree confirms the awareness about social determinants as drivers of the TB epidemic. Access to health services and to social protection are two key human rights that the presidential decree calls to protect in order to end the TB epidemic in Indonesia

## **Findings and Constraints**

Currently, patients with DR-TB benefit from financial support through an enabler covering transportation costs (Rp 600.000/month). This allowance is equivalent to approximately 20% of the monthly minimum salary and, therefore, useful for the sake of enabling adherence to treatment but unlikely to make any impact on TB associated family costs.

Overall, the data obtained by the JEMM shows that there is not yet in place any intervention to achieve the WHO's End TB strategy target of zero catastrophic family costs. There are several reasons contributing to this finding. The two most visible factors behind the absence of social protection are:

- The limited, or absence of any funding allocated to the bodies with responsibilities to meet the social needs of TB patients.
- The registration system for health and social services are not linked in a way that facilitates enrolment of people in need into social protection programs.

## **Recommendations**

To increase access to social protection schemes (those existing and those that may be developed) and thus improve TB treatment success rate and end TB associated family costs, the MoH is urged to:

- Conduct a baseline assessment of the social protection services suitable to cover the needs of TB affected people with consideration to socioeconomic, demographic, and cultural context such as age, gender, income level etc
- Develop a coordination platform between the Directorate General of Disease Prevention and Control in the MoH and the Directorate General of Social

Protection and Security in the MoSA to align mechanisms to implement the interventions needed for social protection in the context of the Presidential Decree on TB.

- Collaborate with KEMENKO PMK, MoSA, MoF, BAPPENAS to develop specific targets on social protection for TB affected people, with clear lines of responsibilities and accountability for all actors including and beyond Health, in the context of the forthcoming United Nations General Assembly TB High Level Meeting (UNHLLM 2023).
- Coordinate with relevant bodies, including donors, to undertake research that informs the development of policies and guidelines for social protection of TB-affected people. An example of a critical operational research question is, for example, what would be the impact on TB incidence and mortality (and poverty) in Indonesia if there is an increased access to social protection for TB-affected people to at least 30% (i.e., minimum threshold that matches the current level of coverage of social protection among poor households in Indonesia)?

### **3.11 Civil society organization/community engagement including community, rights and gender**

#### **Context**

##### **Global Plan to End TB**

One of the key points to improve the quality of care for people with TB is to strengthen the people-centred care approach for adults, children, adolescents, and other groups in evaluation and treatment of all forms of TB. The people-centred care approach begins with providing comprehensive literacy to patients and their families so that they can make decisions according to their needs. The people-centred care approach includes connecting people with TB with necessary other health services, such as mental health services that may be needed during treatment or after treatment, HIV and Diabetes Mellitus as well non health services to improve the state of living such as nutrition programs. Solving nutrition problems can be supported by social assistance, such as providing incentives and enablers to obtain nutritious food. The context of interventions in TB care and prevention must also pay attention to gender aspects that might affect service delivery. Communities need to be actively engaged, and gender aspects teased out in mapping the issues and needs of each specific population. This active participation of communities is thus one of the strategies in the national TB strategic plan.

#### **Why CRG**

- To find the missing people with TB and ensure the dignity of people affected by TB we must ensure an equitable, rights-based TB response.
- This requires us to be able to identify, monitor, mitigate and overcome human rights and gender related barriers to quality TB services for all people (including key and vulnerable populations) and ensure that people affected by TB are empowered to actively participate in all aspects of the TB response (planning, design, implementation, monitoring, review and governance)
- Community Rights and Gender (CRG) is a set of interventions but also a perspective to inform the entire TB response.

## **UNHLM on TB Commitments**

Commitments made at the UNHLM of 2018 affirm that all people affected by TB need to be provided with care and support using the people-centred care concept across the TB prevention, care, and treatment cascade: prevention, screening, diagnosis, treatment, management of medicine adverse events, psychosocial support, nutrition, socio-economic support, and stigma and discrimination reduction. The strategy is realized by creating programs, systems, laws, and policies from the community and for the community through multi-stakeholders' partnerships aligned with the mapped needs and intended to overcome social, legal, or cultural barriers faced by KVPs or affected TB populations. Some key areas where attention need to be focused and targeted in the people centred TB response include education settings, workplaces, transportation systems, incarceration system, and other congregate systems.

## **National TB Strategic Plan**

The Presidential Regulation Number 67 of 2021 concerning TB Control in Indonesia mandates that community participation be an integral part of the planning process for TB by the Indonesian government. Communities should take roles starting from planning to implementation and to evaluation of the TB response in all areas of TB care and prevention such as case finding, contact investigation and treatment support. As a component of community participation in TB care and prevention, it is expected that communities will be engaged in a concept called Community-based monitoring and feedback. Currently organizations of TB patients/survivors are known to exist across 22 provinces in Indonesia.

## **Community-based monitoring feedback**

Community based monitoring and feedback has been included in the TB- NSP and is being implemented as a part of the activities of the NTP. Several platforms are used for its implementation, such as [www.laportbc.id](http://www.laportbc.id), a self-reported mechanism used by patients to report their self-medication process in TB treatment. However, its performance has challenges, such as the unavailability of focal points to link patients and the service providers. In addition, there is an inadequate workforce to implement the program including the lack of a solid network and organization of TB patients and survivors at national level. There is no systematic feedback mechanism for

communities to improve the quality of TB services and to advocate for what they need. There is also lack of funding support, and the reporting process does not provide for gender or stigma segments which need to be included as factors that impact treatment completion.

### **TB Stigma Assessment**

A stigma assessment among people with TB was completed in 2022. This assessment revealed high levels of TB stigma among community members/neighbours (84%), within health services (59%), at the workplace (46%), and in the family (29%) (source: TB Stigma assessment, Penabulu-STPI consortium 2022). The stigma assessment revealed high levels of stigma in TB- KVPs such as former prison inmates, health workers, indigenous persons, mine workers, persons living with HIV, persons who use drugs, persons with disabilities, refugees, and people living in slums or poverty. The results of this assessment should become a reference for the elaboration of detailed activities for TB – CRG interventions in Indonesia to provide solutions to the identified problems.

### **CRG-TB costed action plan**

Following a TB -CRG assessment, a TB CRG action plan has been drafted and costed. In the current Global Fund grant covering the period 2021-2023, CRG and Community System Strengthening (CSS) interventions have been included and allocated 2.7% of the total TB budget for the year 2022 and 1.8% for the year 2023. A large funding gap of about USD 11.1 million exists for CRG and CSS. The funding from the Global Fund is intended to support community-led monitoring (CLM) in various aspects of the TB response including service delivery and to address human rights gaps and encourage gender-transformative responses in TB care and prevention (source: Increased Domestic Resources and Strengthened Community Systems for National HIV, TB and Malaria Responses in Indonesia, Spiritia Foundation 2021). The implementation of CLM is vested on the consortium principal recipient (PR), thematic sub-recipient (SR) and community SR as the core implementing agencies. Implementation of CRG and CSS interventions will be anchored on a partnership with the government and national/international NGOs to strengthen the implementation process.

## **Key Achievements**

- Availability of TB patient/TB survivor organizations in at least 22 provinces that can become implementing elements of community activities for CRG-TB.
- The concept of community-led monitoring or community-based mechanism and feedback has been recognized by service providers and the government so that its implementation in the future can be further strengthened by establishing collaboration across institutions.
- Referrals for people with TB who need mental health care at health services is available. This will encourage integration between TB services and mental health services.
- Social assistance, such as providing nutrition and social protection, has been carried out independently by local organizations. Therefore, the implementation of this program only needs to be systematized by inviting other stakeholders who can strengthen the implementation of these programs.

## **Challenges**

- Limited awareness, sensitization and funding on TB literacy and TB CRG literacy (stigma, discrimination, confidentiality, privacy, remedies) – including among TB survivors, patients, TB KVPs and health care professionals (including in private health care settings).
- Stigma and discrimination (self-stigma, in communities, in employment settings, in health care settings) measurement, monitoring, and redress require further nuance and scale up.
- CLM is not active in most locations, and knowledge and capacity are low – a missed opportunity for engagement, feedback, and community-led responses.
- Gender-sensitive interventions, including health care workers – interventions dedicated to finding men where they work and socialize, also interventions that look at the experiences of women, including pregnancy/Sexual Reproductive Health, paediatrics, access to funding and support services (including mental health), leadership among young women in Boarding School context
- Nuanced engagement and interventions for TB key and vulnerable populations (including nutrition and income support for informal sector workers) – informal

labourers, prisoners, sex workers, and indigenous – TB KVP-led interventions, including ACF, is needed.

- Limited communication materials that can be accessible among TB KVPs, people who may be illiterate or speak languages other than Bahasa.

## **Recommendations**

1. Increase the prominence of TB CRG in the TB National Strategic Plan, including costings, investment, M&E and strategic interventions relating to overcoming human rights, stigma, and gender related-barriers to TB services, community-led monitoring, and social protection.
2. Consider creating a TB CRG Focal Point at the NTP to support the finalization and implementation of the TB CRG Costed Action Plan as well as broader CRG efforts.
3. Finalize and launch Indonesia's costed TB CRG Action Plan, integrate it fully into the TB-NSP and ensure this informs the funding requesting to the Global Fund (NFM IV proposal).
4. Enhance meaningful engagement and participation of TB patients, TB survivors and TB-KVPs through the detailed scale-up plan for active case finding (including among KVPs), contact tracing and community-led monitoring (CLM) for social accountability aiming for an increase in 1000+ new people engaged every semester in CLM - including through CBMF and expansion of the utilization of [www.laportbc.id](http://www.laportbc.id) supported by OneImpact for improved usage of data for advocacy.
5. Undertake comprehensive TB CRG literacy (including human rights, stigma, confidentiality and gender, KVPs) sensitization for the affected community and health care workers (both public and private) and community-led advocacy to enhance the development of remedies and redress mechanisms through partnerships with legal aid including health protection for KVPs who have increased exposure to TB due to where they live or work such as prisoners, sex workers, TB cadres, community health volunteers etc. Ensure CRG literacy materials are available across different communication mediums and languages.
6. Carry out a dedicated advocacy campaign for demand generation of new(er) tools and comprehensive social protections (income support, nutrition, mental

health) including TB preventive treatment (TPT) and short-term regimens for all and enhance community-led advocacy to law reform including utilization of X-ray as one of the diagnostic tools for TB.

7. Provide strong and sufficient financial support for the network of TB-affected communities, TB survivors, and civil society at the national and district levels to realize the CRG recommendations and contribute meaningfully to the TB response including community-led monitoring on presidential decree on TB implementation. Potential funding should be accessed from the current savings of the Global Fund support, domestic funds (social contracting) and other opportunities.
8. Carry out operational research that is developed and led by communities on community priority issues, including community-led services, active case finding, and KVPs.
9. Collaborate strongly with multi-stakeholders, including government at both the national and regional levels, development partners, UN agencies and other sectors to develop specific targets related to community empowerment, including women, children and key vulnerable populations in the context of the CRG, to ensure that at the upcoming UNGA TB HLM 2023 appropriate commitments are made to ensure social protection, legal protection and human rights to fulfill the needs of people with TB and TB-affected communities.



### **3.12 TB preventive treatment and TB infection prevention and control**

#### **Findings**

##### **Policies and strategies**

Amongst the topline recommendations made by the previous TB JEMM of Indonesia in 2020, one (3.5) was focused entirely on TB preventive treatment (TPT) namely: “Expand the uptake of TB preventive treatment for all contacts of bacteriologically positive cases and PLHIV. This will require informing all stakeholders of its importance as a lifesaving intervention, creating demand from those who need it, providing the new, shorter regimens without delay, and organising practical approaches to do this in the field.” In addition, other JEMM recommendations also encompassed TPT and IPC, including (1) to improve the quality of preventive care, and organize annual review of the TB response, using performance dashboards, with dissemination of lessons learnt; (3.4) stressing the need to give TPT at the end of the preventive cascade of care in people with HIV without TB and the importance of staff training and clarification of operational responsibilities between different health facilities and cadres; and (6) on improving the reliability and consistency of the data that the NTP generates.

In an effort to address the JEMM recommendations, the national TB programme has elaborated a TB-NSP, 2020-2024, around six critical areas of action. One of these is the “Optimization of promotion and prevention efforts, provision of tuberculosis prevention treatment and infection control”. The TB-NSP is premised upon the ambitious goal of reducing TB incidence in Indonesia to 65/100k population by 2030 (it was 354/100k in 2021). It is acknowledged that only a combination of TPT and treatment of people with TB found by active and passive means would bring about this dramatic drop.

In the Funding Request Form to the Global Fund for the allocation period 2020-2022, (grant period 2021-2023) the NTP estimated that the combined needs for TPT and IPC in the NSP amounted to about US\$160 million, of which one half would be a gap before GF allocations (see Table 11). The funding request envisages substantive achievements by 2024, including 60% coverage of IPC in health facilities treating TB, TPT coverage of 54% out of an estimated 1.2 million eligible contacts (90% coverage

in contacts under 5 years) and 55% coverage of people with HIV. Other parts of the funding request also incorporate activities on prevention, such as information dissemination, guidance development, advocacy, district health planning, supervision, and integrated activities with intensified case findings in households, such as support to community cadres to perform outreach work, training, and testing with tuberculin (TST). The overall budget would thus be well over the amount shown in the main action. More than 50% of the allocation is requested for TB specific interventions in 334 high priority districts with more than 87% of estimated TB incident cases.

The TB-NSP has been strengthened by a Presidential Decree No. 67 of August 2021. Amongst others, this influential instrument highlights the prominent role of preventive action in the process of TB care and prevention. Part Three, paragraph 3, Article 11, section 1 reiterates that TB risk factors can be moderated by improving individual health, healthy behaviours, improving the standard of living and TB infection prevention and control in healthcare facilities and public spaces. To be able to realize the control of TB risk factors, all sectors and related stakeholders must be involved through intersectoral collaboration. In addition to the above, efforts to control infection can be carried out through the detection and treatment of TB (Article 12, section 1) by optimization of passive case finding in healthcare facilities and active TB case finding in institutions and communities, and appropriate treatment. One of the primary activities that has been implemented by the NTP in response to the disruptions caused to TB services by the COVID-19 pandemic has been an online training on the management of TB infection and TB preventive treatment.

Table 11. TB prevention - NTP strategic areas, interventions, targets and funding

NSP strategic areas	Key interventions	Baseline (B) and targets (T)	NSP funding need (US\$)	Anticipated funding gaps % of need
Infection control and achieve the highest coverage of TB preventive treatment	Implement TB infection control	Coverage of health facilities implementing TB Infection Control  B 2018: NA%  T2024: 60%	59,742,353	52%

	Achieve maximum coverage of TB preventive treatment	<p>Coverage of TB preventive treatment in TB household contacts.</p> <p>B 2018: NA</p> <p>T 2024: 54% (out of 1,2 million eligible contacts)</p> <p>TPT Coverage of children under 5</p> <p>B 2018: 10%</p> <p>T 2024: 90%</p> <p>TPT Coverage for PLHIV</p> <p>B 2018: 10%</p> <p>T 2024: 55%</p>		
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The NTP introduced TPT in 2016. Regulation of the Minister of Health No. 67 of 2016 mentions contacts under 5 years and people with HIV, as well as other at-risk individuals, namely immunocompromised patients (on cancer treatment, on dialysis, on long-term corticosteroids, or preparing for organ transplants); prisoners; health workers; boarding school residents; military personnel; and injecting drug users. Projections for the coverage of different risk groups is shown in Table 12.

Table 12. Baseline and targets of TPT coverage among various population groups in Indonesia

No	Indicator	Baseline 2018	2020	2021	2022	2023	2024
1	Coverage of TPT in household contacts	N/A	11%	29%	48%	58%	68%
			149.034	397.878	652.103	793.871	929.170
1a	Coverage of TPT in adolescents and adults (over 15 years of age)	N/A	10%	30%	50%	60%	70%
			99.811	299.434	498.466	597.450	696.197
1b	Coverage of TPT in children <5 y	N/A	40%	50%	65%	80%	90%
			49.222	61.528	79.891	98.211	110.356
1c	Coverage of TPT in children aged 5-14 years	N/A	0%	15%	30%	40%	50%
			0	36.917	73.746	98.211	122.618
2		N/A	35%	40%	45%	50%	55%

	Coverage of TPT in PLHIV		26.799	35.418	45.640	63.245	87.858
3	Coverage of TPT in other risk groups	N/A	5%	10%	20%	30%	40%
			13.553	27.225	54.972	83.230	111.986

The Zero TB Initiative (<https://www.zerotbinitiative.org/>) is an international project utilizing a community-based approach to test out models of bringing TB to elimination levels through local partners. For example, the project in Yogyakarta has demonstrated the feasibility and increased yield of active case finding targeting contacts and other risk groups, linked to TPT in eligible individuals (<https://centertropmed-ugm.org/project/zero-tb/>). Their screening method comprises symptom screening, portable CXR using CAD software), and mWRD.

The current national guidance on TB preventive treatment dates from 2020. The guidelines are structured along the same format of the latest WHO guidance from that year<sup>18</sup>, and follow a cascade of care approach with 4 key steps namely identification of risk groups, ruling out TB disease, confirming TB infection and administering TPT, including for MDR-TB. The guidelines also have operational guidance on adherence support and management of adverse drug reactions. The risk groups recommended for TPT are largely aligned to the 2020 WHO guidelines but include some others (e.g., residents of military barracks and boarding schools). Three regimens are recommended (Table 13) for different groups. Rifapentine is registered for TB in Indonesia and is available.

<sup>18</sup> WHO Consolidated guidelines on tuberculosis. Module 1: prevention – Tuberculosis preventive treatment . Geneva: World Health Organization; 2020. License: CC BY-NC-SA 3.0IGO

Table 13. Recommended TPT by population as per national TPT guidelines, 2020

Population	TPT of choice		
	3HP	3HR	6H
Household contact < 2 years)		X	X
Household contact 2 – 4 years	X		
Household contact ≥ 5 years	X		
Person with HIV < 2 years		X	X
Person with HIV ≥ 2 years **)	X		X
Other risk groups	X		

In the 2020 national guidelines on TPT, 1HP is proposed as an option “for the future”, the reason given being that more evidence is needed for the NTP to be convinced of its safety. For TPT in MDR-TB the user is referred to the drug-resistant treatment guidelines, but it is mentioned that there is evidence from several studies of TPT effectiveness and safety in contacts of MDR-TB. Some indication is given about suitable regimens (eg levofloxacin with or without other agents). The guidelines mentions that the Indonesian Paediatricians Association (IDAI) recommends levofloxacin and ethambutol in child contacts. Otherwise, the guidelines include much practical detail on administration of TPT and TST, monitoring treatment for adherence and toxicity, and quantification of needs, procurement and deliveries which complies with WHO guidance. The indicators shown do not include one for the evaluation of risk groups for TPT but the ones for start and completion of TPT are defined, and both are aligned with WHO’s and disaggregated by risk group (denominators are estimates rather than enumerated values of eligible individuals). Targets for start and completion by year up to 2024 are also reproduced.

The national guidance on TB infection prevention and control was updated in 2021 by the Directorate General of Technical Services as part of health services quality order.

To varying degrees, the guidance touches upon the four main steps in the 2019 WHO guidelines (administrative controls, environmental controls, respiratory protection, and core components common to all IPC). It also covers some aspects of laboratory biosafety. The guidelines go into much practical detail on environmental controls relating to healthcare facilities layout and maintenance of ventilation systems; administrative controls on triage and transfer of infectious patients between establishments, personal protection with use of masks and respirators including fit test. As to core components there is reference to disinfection but less or nothing about how to articulate different activities, training, and screen staff for TB, and provide TPT. Additional guidance on IPC in prisons and primary healthcare settings are available; new guidelines for community and other congregate settings like religious boarding school are expected shortly. The country has a national infection control committee. Most of the committee members are reportedly familiar with TB. There was no information about the implementation of IPC requirements at the district level. The ratio of TB disease in healthcare workers to overall TB notification, a crude indirect measurement proposed to assess effectiveness of IPC measures, was not reported nationally or peripherally.

In early September 2022 the Stop TB Partnership's Global Drug Facility undertook a technical assistance mission jointly with the Global Fund which focused, amongst others, on the quantification, procurement, and supply planning for TB commodities in response to the latest WHO recommendations on TB preventive treatment. Partners interviewed by this mission acknowledged the use of 3HP, and large stocks of the regimen for people with HIV in particular. One of the mission recommendations was for NTP and partners to utilize the QuanTB tool to quantify TPT needs and obtain early warnings of stock shortages.

The 4th and latest TB epidemiological review of Indonesia was conducted on 15-31 October 2022. The main finding relevant to prevention was the coverage of TPT recorded in contacts and people with HIV. Compared with the national target of TPT for 2021, coverage was very low i.e., less than 1% among household contacts and 2.6% among people living with HIV. TPT enrolments have fluctuated in recent years and were acutely disrupted during the COVID-19 pandemic, with a recovery in 2022 to levels seen in 2018 among household contacts (see Figure 24). Data on TPT



completion have started to be collected but remain low. Standard 4.1 (“Data for Programme Management of TB Preventive Therapy (PMTPT) are accurate, complete and consistent”) was assessed to be partially met during the review. It was recommended to revise the data collection system to allow capture of data relevant to assess the benchmark for this standard. In conclusion the 2022 epidemiological review recommended that the JEMM look at six key areas to better understand barriers and opportunities for improvement, one of which was PMTPT due to the very low coverage.

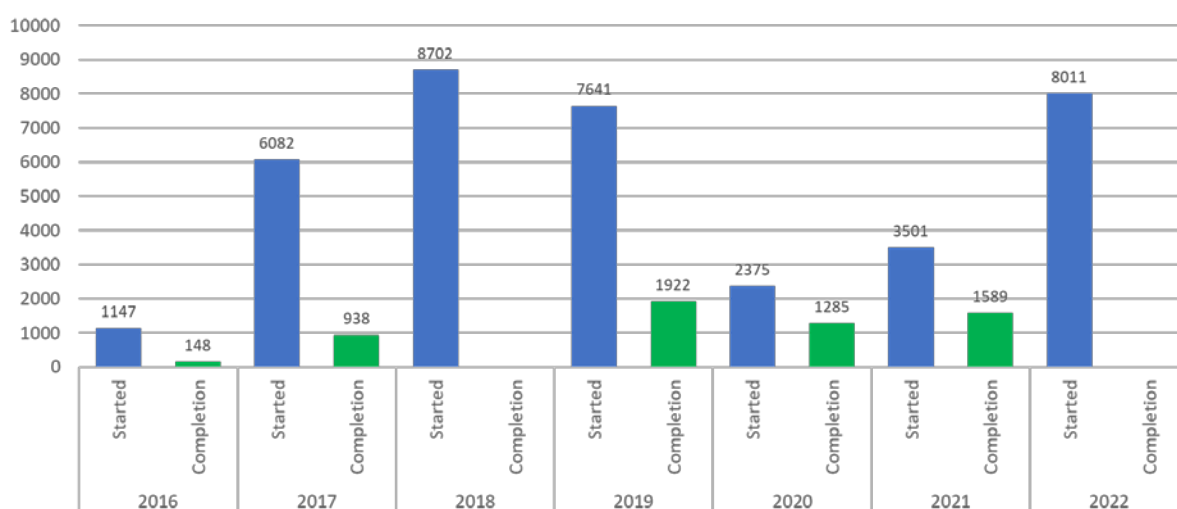


Figure 24. Initiation and completion of TB preventive treatment in household contacts, Indonesia, 2016-2022

According to data from SITB, about 36% of the contacts started on TPT in 2022 were under 5 years (as on 20 October 2022). The number of other risk groups given TPT was 1,594, or about 2.9% of the target for this year.

### Observations from site visits - TPT

- Most of the healthcare structures visited at provincial and district level are aware that TPT is a priority strategic activity that they should be doing more to scale up.
- Household contacts of all ages and people with HIV are clearly identified as priority risk-groups and attempts are made to varying degrees to start them on TPT, providing an opportunity to scale up coverage among all potential individuals at risk. In some sites TPT was also being used in prisoners.
- A “cascade of care” approach was used to present efforts at case finding and TPT in household contacts and people with HIV. This makes it easier to identify

the extent of cover of both activities and reinforce the notion that they are part of the same continuum. The number of contacts evaluated for each index case suggests that efforts are extended beyond the immediate household contacts (columns 1 and 2 of Table 14 show the ratios in West Kalimantan to illustrate this point)

- Tuberculin skin testing is in use in different clinics and covered by insurance, providing an opportunity for the eventual introduction of antigen-based skin tests
- Ongoing efforts to digitize the collection and analysis of data on the TB preventive pathway and generation of indicators presents an opportunity to strengthen the monitoring of the three key TPT indicators (evaluation of risk groups, initiation of TPT and treatment completion). In at least one site a mobile app is in use to collect data on the cascade. TPT completion was reported in at least one province visited.
- Health care workers were aware of all three TPT regimens recommended in the guidelines (3HP, 3RH and 6H) and these were available in sites visited

Table 14. Cascade of TB contact investigation, West Kalimantan, 2019-2022

	Number of index cases whose contact has been investigated	Number of contact identified	Number of contact that investigated	Number of contact that qualified as TBC Suspect	Number of contact that examined as TBC Suspect	Number of contact that diagnosed with TBC	Number of contact that received TPT
2019	1	1	1	0	0	0	0
2020	439	1199	1137	76	53	6	4
2021	1037	9854	9816	1052	879	26	27
2022	1001	5435	5362	1175	955	70	56

## Observations from site visits - IPC

- **Administrative controls:** sites visited mentioned the triage of presumptive or confirmed TB patients with direct referral to the TB clinic. The increasing use of rapid molecular diagnostics with a short turnaround time will promote fast triage and start of appropriate treatment. Other safe practices like providing TB/HIV care as a one stop to limit exposure and collection of sputum in outdoor booths were also observed. The use of medical masks by patients and cough etiquette in the context of COVID-19 were also helpful for TB IPC. In at least one prison visited an isolation room was available to separate infectious persons.
- **Environmental controls:** healthcare facilities were seen to observe natural room ventilation, keeping doors that face each other - and the windows behind them - open and the AC switched off.
- **Respiratory protection:** Use of surgical masks is culturally acceptable, and COVID-19 has reinforced these practices and shown their wide scale feasibility, both for the healthcare workers and general public. N95 respirators have been used in laboratories.
- **Core components:** in at least some of the hospitals and Puskesmas visited there was a committee or at least a focal person responsible for infection control, including TB. In several hospitals an IPC plan and a monitoring team were also available and mainly focussing on TB. A print copy of the SOP for IPC dated 2022 was present on site in at least one hospital TB clinic where it was requested.

## Challenges

### Challenges, TPT

- Low TPT coverage was observed in all sites visited and well below target in all risk groups. In some sites there was no TPT given to people with HIV and prisoners. The large number of contacts for an index case may also suggest expansion of investigation to individuals at low risk and could overwhelm resources and inflate the denominator and dilute coverage indicators (Table 14)
- The “cascade of care” almost invariably showed a sharp drop between the number of “contacts investigated” and those started on TPT. For people with HIV, the data presented usually stopped at testing for TB disease and the start

of ARVs without showing numbers starting TPT. Screening for TB in people at risk is over-reliant on sputum microscopy in individuals who declare symptoms and more sensitive detection algorithms employing chest radiography (CXR), computer-aided detection on CXR, mWRD and - in people with HIV - C-reactive protein, are eschewed, although included in the screening methodology used by the Zero TB initiative in Yogyakarta. CXR is critical to TB screening and to the investigation of other conditions in primary healthcare: its absence at the Puskesmas level is a major constraint to service delivery. This may lower staff confidence in ruling out TB definitively before embarking on TPT. There is no systematic approach to monitor adherence (directly or electronically) or to manage drug safety proactively. There are limited numbers and capacity of community cadres to conduct contact investigation and TPT provision. Health workers often do not refer contacts for investigation from hospital to Puskesmas.

- Testing for TB infection relies exclusively on tuberculin skin testing (TST), which at times is out of stock and only available against purchase in people without ID cards. TST is produced in-country by only one company (Biofarma), suggesting fragility in terms of reliable, stable continued supply. Reportedly, procurement by NTP is in preparation and Biofarma will resume production in 2023. Importation of TST is not possible, given that it is not on the GDF procurement list, hence GF is not supporting this pathway. It is not clear if alternative pathways are being explored. There is no plan to diversify supplies or to introduce more specific antigen-based skin tests or IGRA in the public sector.
- Delay in data entry into SITB and data inconsistencies between volumes and regimens used were observed in some sites. It is likely that TPT data from HIV care are under-reported to the TB sector. Data on TPT completion was only seen once during the visit, for a small number of individuals, and it was very incomplete. Cascade of care statistics were not available for vulnerable populations like migrants and prisoners.
- TPT regimens were available to varying extent and very often 6H predominated, forfeiting the benefits of a less toxic and burdensome treatment. No evidence was presented for the use of TPT for MDR-TB. One-month daily isoniazid and

rifapentine (1HP) was not used, consonant to the national guidelines that do not yet recommend it.

- Healthcare workers showed hesitancy to give TPT. This reluctance was often projected onto the eligible individuals themselves, claiming difficulties to convince healthy people to start and stay on TPT. Lack of conviction about the value of TPT, and undue concerns about toxicity and risk of generating drug-resistance abound among frontline staff. Other barriers cited for TPT scale-up include lack of training of healthcare workers on the latest TPT guidelines, extra workload, low demand by healthcare facilities for TPT, shortage of medication in stock, and unavailability of TST, which is considered mandatory for contacts 5 years and older (a TST test result was at times required even in contacts <5 years).

## **Challenges, IPC**

- **Administrative controls:** extensive use of insensitive tools like symptom screening and sputum microscopy in place of more sensitive ones like chest radiography and mWRD lower the chances of detecting TB earlier and diagnosing drug-resistant TB. There is thus an increased risk of TB transmission and treatment with inadequate regimens.
- **Environmental controls:** in some sites the patient waiting areas were not well ventilated; there is no instrument in place to assess how environmental controls in facilities conform with the requirements in national guidance.
- **Respiratory protection:** while staff use surgical masks, N95 respirators were not used consistently in the sites where patients were being seen. Staff do not take TPT and while chest-radiography screening is offered to them it is not clear how often this is actually done.
- **Core components:** a shortage of staff training in TB IPC was observed in many sites visited

## **Recommendations**

### **Priority recommendations, TPT**

1. Expand TPT massively among all populations at risk in continuity with active TB case finding in line with the vision of the TB-NSP and Presidential

Declaration. This will require an articulated approach to raise awareness about the importance of TPT and the opportunities that will be lost if progress is not achieved. Priority actions include, but are not limited to, action at community level with the support of community cadres and civil society to bring more comprehensive care closer to household contacts; PMTPT training of healthcare workers; addressing TPT hesitancy in both healthcare staff and people at risk; inclusion of prisoners, migrants, and other vulnerable populations in efforts. Lessons learnt from initiatives like the ZeroTB project and [IMPAACT4TB](#), including adherence planning and pharmacovigilance, need to be communicated and success stories replicated at scale.

2. Expand the use of shorter rifamycin-based regimens in preference over 6H. The addition of 1HP to the national guidelines would pave the way for its use in the country.
3. Promote use of better diagnostics to rule out TB disease (see also section of the report on Active TB case finding) and to confirm TB infection. More accurate screening and diagnostic algorithms should be employed extensively and closer to the people who need them (e.g., digital CXR made available at the Puskesmas level; introduction of CAD). Access to TST can be improved by finding a national or international solution for TST production or procurement and the newer antigen-based tests introduced for better identification of contacts  $\geq 5$ y and other populations. The unavailability of tests of TB infection should not be a barrier to TPT in situations where risk of infection is high.
4. Collect more comprehensive data to generate key TPT indicators by subpopulation to allow an analysis of progress towards the respective targets in the national guidelines to be made. This would require capture of data from HIV care, prisons, migrant centres, and other sectors implementing preventive action. Better data on other aspects like the use of TPT for MDR-TB and drug stocks would also serve other programmatic action. The SITB dashboards and resources should be developed with system users to help them evaluate programme performance.

### **Priority recommendations, IPC**

1. Continue efforts to strengthen administrative controls in hospitals and Puskesmas primarily through better and earlier detection and treatment of

people with TB, as well as triage, isolation of people with TB or under evaluation for TB, and respiratory hygiene.

2. Provide more support to healthcare staff in TB infection control through training, effective periodic screening, and offering TPT and personal protection equipment. This should extend to all workers who deal with people with TB in facilities (including those working in OPDs) as well as the community, among whom awareness should be increased. TB Infection control bodies in all establishments need to be implemented to undertake surveillance for occupational infection and safety.

### **3.13 Human Resource for Health for TB care and prevention**

#### **Background**

To end TB by 2030 in Indonesia, the Republic of Indonesia has to address issues of human resource for health (HRH) so that the tasks and responsibilities of the TB program can be carried out effectively. The 2020 JEMM noted several points on HRH as follows:

- The Wasors had to cover large populations and at the same time had to handle multiple other roles and responsibilities, while their number was too few. Additionally, their turnover was high (48% annually in some provinces). This situation prevented them from giving sufficient time and effort to conducting supervision of the TB program. At the central level, the NTP did not have adequate staff to support provinces and districts and ensure the TB priorities were handled well.
- The expectations of the central government to have dedicated existing health staff and voluntary professional associations to engage a large number of private providers were not met yet.
- HR for public health functions did not perform well. Essential activities such as recording and reporting, supervision, and performance monitoring, engaging providers on the quality-of-care issues, tracing patients lost to follow-up and ensuring continuity of care, contact investigation, screening in high-risk groups, TB preventive treatment, and facilitating social support to patients and their families (which is needed to enable adherence and reduce economic suffering), were not done as expected.
- Decentralized provinces and districts determined the staffing policy and management, and in many cases, the deployment, training, and supervision of adequate numbers of public health staff were not prioritized.

#### **Context and progress**

The NTP has been identified as a strategic health issue by the Republic of Indonesia. A special regulation, the Presidential decree number 67/2021 has been enacted to focus more attention on TB care and prevention. The main mission of this regulation



is to end TB in this country with 270 million people. This regulation was issued because TB is still a crucial health issue and causes huge health and socio-economic burden to the population of Indonesia. This strategic regulation aims to provide a comprehensive solution at national and local levels by strengthening coordination between the central and local governments. The regulation also specifies an integrated and sustainable set of interventions for the prevention and care of TB that should be implemented at the management level, health care facilities, and community level. This massive effort is needed to achieve the target of ending TB by 2030.

On the other hand, COVID -19 Pandemic disrupted the Indonesian health system in 2020-2021. Many routine programs, including TB care and prevention, were disrupted by this global pandemic. The TB program was marginalized because resources were diverted and focused on overcoming the pandemic, in addition to a reduced number of active health workers and health cadres at the community level. The COVID-19 pandemic may affect the achievement of TB care and prevention milestones for many years to come and will require that the government at all levels assess the capacity of HRH to accelerate action against TB.

The government of Indonesia has specified the strategy to strengthen the HRH at the national, provincial, and district levels, as is clearly stated in Presidential Decree no 67/2021 (chapters 19 & 20). The regulation ordered all stakeholders to conduct:

- HRH capacity strengthening in TB programs.
- need assessment on quantity and quality of HRH, as well as provision of trained HRH at the management level and in health service facilities to accelerate TB control.
- routine HRH mapping.
- planning and budgeting of training activities for staff in program management and health workers at the province and district levels.
- integration of the topic of TB in the curricula of health education.

Recently the MoH developed a health system transformation agenda and plan which is being implemented. The health system transformation agenda and plan aims for a strategic change in six pillars of the Indonesian health system: primary care, referral system, health system resilience, health financing, HRH, and digital health technology.

The transformation of HRH defines a new way to produce more competent health workers and to distribute HRH evenly all over Indonesia. Transformation is expected to be completed in the year 2024 and is very relevant to the issue of HRH in TB care and prevention in the country. The lack of medical specialists (particularly lung specialist) and the lack of competent health workers in primary care are major obstacles to TB care and prevention programs. In the transformation plan, HR education and training will be modified to provide more access to education and training for HRH in any part of Indonesia.

A training program is one of the measures to provide competent HRH in TB care and prevention. Many training programs have been conducted to improve the competency of existing health workers. The MoH designed training activities which were then cascaded to the provinces and districts. This training program targets all facets of the program including program management and includes technical staff and community cadres.

The NTP has looped in the private sector and partners who are expected to play crucial roles in TB care and prevention including ACF and retrieval of people who have been lost to follow up. Local health systems are inclusive and accommodate the private sector and partners. These factors have motivated the NTP to extend training activities to the HRH in the private sector.

The country is gearing up to the development of a new TB-NSP which is to be implemented by the government and all stakeholders. The changing TB landscape in terms of developments in diagnostics, care and treatment will require that existing and new staff will need to be trained or re-trained to achieve a HRH configuration and skill mix appropriate for the implementation of the new TB-NSP.

## **HRH Relevant Findings**

### **HRH Staffing Pattern and Capacity**

Data on HR management from national, provincial, and district levels only includes information from government-owned (public) facilities and HRH contracted with the grant from the GF. Information on HRH from the private sector is not included in the available public sector HR management system. Currently (2022) of the 95 staff available at the NTP level, only 11 are active civil servants, down from 13 people in

2021 ( see table 15 and 16) and they are responsible for implementing the tasks and responsibilities of the NTP all over Indonesia.

At the national and provincial levels, the staffing pattern is complete, and it is not the case at the district level. Information from the MoH shows that there are many HRH working on TB in a managerial capacity (national, province and district TB officers or coordinators) who have not been trained on TB. The proportion of trained HRH at the national and provincial levels is better than at the district level.

Table 15. HR Data on the National TB Program Management 2022

HR data of the National TB program management \*

	Wasor = PHO/DHO TB Program coordinator) Government staff				Technical Officer (TO_recruited through the GFATM funding)							
	Province		District		PMDT (Prov)		TO PPM Provinsi		FE PPM (districts)**		TO TB Progam***	
	#	Trained	#	Trained	#	Trained	#	Trained	#	Trained	#	Trained
National	62	58	543	478	35	14	40	26	167	79	322	143
North Sumatera	3	3	39	36	1	1	3	3	8	7	25	20
Yogyakarta	1	1	5	4	1	-	1	-	7	-	5	-
West Kalimantan	2	2	14	14	1	1	1	1	2	2	10	8
North Sulawesi	2	2	15	13	1	-	0	0	0	0	5	-
<b>National GAP</b>	<b>4</b>		<b>65</b>		<b>21</b>		<b>14</b>		<b>88</b>		<b>179</b>	

\* not including TB health provider in the TB health facilities

\*\* FE PPM = Field Executive PPM (post in districts)

\*\*\* TO TB program = Technical Officer for General TB Program

Table 16. TB Central Unit Staffing 2021

<b>TB Central Unit Staffing*</b>	
National TB Program	Person
Civil Servant	13
Staff (Recruited through the GFATM Funding)	76
USAID TB Sustaining Technical and Analytical Resources (STAR)	6
<b>Total</b>	<b>95</b>

\*Including GFATM project management and admin staff

## Capacity Building & Training

Capacity building and training are important to improve the capability and capacity of HRH in TB care and prevention. However, the opportunity to participate in the training program conducted by the government is not accessible to all HRH, with health care workers in rural areas and non-civil servants often missing out.

On the other hand, provincial and district governments have not translated the training program designed by the central government correctly. Aims, objectives, and activities that have been designed by the NTP are only occasionally achieved as planned.

Frequent rotation of TB staff affects the availability of trained TB staff in healthcare facilities. The newly appointed TB staff are often the ones who are untrained due to the limitation of the training program.

Training on SITB is also rare and only a few TB officers have participated in this programmatic training. Data that have been collected have not been analysed due to a lack of data officers in healthcare facilities and at the DHO/PHO.

### **Gaps in HRH Quantity**

The inadequacies in quantity and quality of HRH is obvious, particularly at the district and community levels. These inadequacies span all facets of the TB program including program management area, within the healthcare facilities, and at the community level. As noted at the NTP level, the number of staff, who are civil servants (recruited and remunerated by the government) is only 11 personnel (compare this with the hundreds of people who work at the central unit of the NTP in India), and it seems very hard for this amount of personnel to organize, manage, and support TB care and prevention interventions and activities in 34 provinces and more than 500 districts in Indonesia.

Technical officers in the frontline are facing difficulties to manage their time allocation due to multiple job holdings. Wasors hold several programs and have commitments and other assignments besides TB. This multi-tasking phenomenon is not well addressed by the PHO and DHO, as seen commonly. The workload of TO and Wasors has not been calculated well and the full-timer equivalent (FTE) to handle TB care and prevention activities has never been defined.

Turnover of TB staff was identified in the 2020 JEMM as an important issue and it remains an issue that has also come to the fore in the current JEMM. Good HRH management practices for staff working in TB care and prevention have not been implemented, particularly in the function of planning, performance management, and incentives.

Community health cadres are working based on a social contract rather than a formal one. Their performance and incentives are not managed by the health authority. The status of the informal worker in the TB program affects their motivation. Besides, many of them are mostly in late adulthood and are concerned with their own safety.

### **HRH Protection**

Health care workers providing TB and other health services in a TB endemic setting such as Indonesia are at risk of infection with Mycobacterium tuberculosis and should be well protected. The risk of infection with Mycobacterium tuberculosis is higher among HRH working in busy general OPDs, in general respiratory wards, and in dedicated TB care units. Data on TB infection and disease rates among health care workers in Indonesia is unavailable (see section 3.10) but as in other similar settings, it is to be expected that the burden of TB disease in health care workers is higher among them than in the general population. There is a need to develop comprehensive measures to protect HRH, including community cadres, from exposure to TB infection.

### **HRH Recommendations**

The HRH recommendations highlighted below are based on the context of health system transformation agenda, the implementation of the Presidential Decree no 67/2021, the findings of the JEMM and the discussions with JEMM experts and members. These recommendations cover all main issues identified in this thematic area.

#### **Immediate Action (within 2-4 months):**

- Rapidly assess the HRH situation to determine the number of available HRH and their capacity so as to have a better estimate of the HRH needs and gaps for the implementation of new tasks and responsibilities that will come out of the new TB-NSP and those that have been written in the Presidential Decree no 67/2021. While HRH needs and gaps are important at all levels, determining HRH capacity and needs is particularly critical in the district and primary care settings (public and private sectors).
- Develop a TB HRH plan and begin to implement it to ensure there is a right number of TB staff, with the right competencies, at the right period (time) and right place.

- Conduct a job analysis to develop a standard capacity of TB HRH, including defining precise job descriptions and ToRs. Define a clear job description for each level of TB HRH.
- Build the capacity of TB HRH based on standard capacity by training staff. Capacity building of TB staff should cover program management for staff in managerial positions, TB service quality for frontline health care workers in healthcare facilities, and essentials of community engagement for community (health cadres).
- Utilize the TB Acceleration team of Presidential Decree No. 67 to ensure local policy on HR for TB:
  - Availability & retention of adequate staff for TB.
  - Capacity building (use innovative, virtual training mechanisms).
  - Provide appropriate career pathways.
  - Local funding to translate Presidential Decree no 67 into local strategic action.
  - Staffing of HRH should be adjusted accordingly to the well-defined workload, proposed new interventions (new business process), and new targets.
- Redesign the work on TB activity to improve efficiency and effectiveness.
- Define achievable performance indicators
- Develop a clear and fair incentive scheme

#### **HRH Quantity:**

- Recruit and deploy additional staff based on the calculation of "workload indicator staffing needs (WISN)". It is a routine program in the healthcare facilities which have been trained with ABK program.
- Include HRH from the private sectors and partners when counting numbers of TB staff as part of the integrated HRH approach for TB care.
- Define performance management (indicators and achievement parameters) for all HRH involved in TB control (TB staff in management, TB staff in healthcare facilities, and health cadres)
- Provide incentives and formal contracts for all health cadres to ensure their commitment and engagement in TB care and prevention.

**HRH Quality:**

- Develop capacity building platforms for greater participation of communities in delivering TB activities, increase local organizations' capacity to access local government funding (Swakelola Type 3). Before that, conduct training need assessment and design new training method to develop the competency of HRH (virtual training, team-based training, etc).
- Align training agenda from central government and local government. The result of this training program should be measured systematically.
- Utilize log activity report to calculate the time spend on the TB program.
- Support healthcare institutions to conduct TB IPC to protect HRH.
- Utilize communication platform to strengthen coordination and supervision mechanism.
- Develop a new strategy to achieve the prior target in PPM, for example: expand the scope of the PPM initiative, targeting at least a 10-fold increase in GP engagement. This will require the deployment of sufficient paid staff to support private providers as they notify cases and ensure treatment completion.

### **3.14 Universal health coverage and regulatory framework for TB**

#### **Context and progress**

Tuberculosis services are included in the essential health service package and are covered by the national social health insurance. The government of Indonesia has specified the essential health services package through minimum service standards (MSS) for health, and as part of a benefits package of its mandatory social health insurance program, Jaminan Kesehatan Nasional (JKN). 90% of the population is already covered by JKN. MSS are sets of basic services, established by central government ministries and institutions from various sectors, that local district and municipal governments must provide to all citizens (based on Government Regulation 2/2018 and Ministry of Health Regulation 4/2019). The MSS package for tuberculosis includes all health investigations that follow within 12 months from the identification of a person with presumptive TB.

National TB Control is regulated by the government of Indonesia Presidential decree number 67 of 2021 to end TB. This Presidential Regulation was issued considering the fact that TB is still a major health problem in Indonesia and poses very complex health, social, economic, and cultural problems to the general population. To solve these problems, comprehensive, integrated, and sustainable set of prevention and care for TB efforts are needed so that the national target for TB elimination by 2030 can be achieved.

A comprehensive health system transformation is ongoing in Indonesia with the overall aim to improve population health outcomes, based on the transformation of six pillars: primary care, secondary care, health system resilience, health financing, health talent and health technology. The blueprint for the digital health transformation strategy until 2024 provides an ambitious and considered overhaul of the generation and use of digital health information in Indonesia. Simplification of data entry is one of the key principles described and to be implemented.

The information on people with TB disease held in the Pcare information system<sup>19</sup> of BPJS-K is an opportunity to understand the coverage of the official NTP SITB

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<sup>19</sup> The BPJSK information system for primary level of health care



surveillance system (through record linkage exercises), but also an opportunity to inform national and subnational estimates of TB disease burden (Table 17). In response to these findings and also recommendations made from previous epidemiological and programme reviews for TB in the country an agreement was signed in August 2022 between BPJS-K and MoH (letter PM.01.01/III/3726/2022 by the General Directorate of Healthcare Services) to ensure linkage of information across these two databases on people who are treated for TB disease. This currently relies on manual data entry on both systems, rather than a simpler and more efficient integration or interoperability solutions between the BPJS-K information system, Pcare, and SITB, but it is still a demonstration of commitment to the sharing of data between these systems. TB patients must be reported by the healthcare facilities for these facilities to get reimbursed and reporting of TB data has become one of the parameters used for hospital accreditation.

Table 17. Comparison of annual data on people with TB disease that are captured in BPJS's Pcare and NTP's SITB information systems.

Year	FKTP (number of "TB patients in primary BPJS health facilities")	SITB (number of TB cases notified)	SITB (number of TB cases treated)
2019	678290	568987 <sup>+</sup>	568987 <sup>+</sup>
2020	484490	393323	362418
2021	418424	443235	403168
2022	445045*	611390**	502422**

<sup>+</sup> SITB could not differentiate diagnosis from start of treatment this year. The feature was introduced in 2020.

\* January – September 2022. \*\* January – 7 December 2022

Other relevant findings on progress since 2020 are:

- The publication of new guidelines for Posyandu Prima (the health facility level below PHC, i.e., Puskesmas) include TB screening investigation.

- Very close engagement and collaboration between the digital transformation office and NTP teams is in place.
- Major improvements in SITB quality and coverage.
- Mandatory notification of TB legal framework is in place. Reporting of people with TB happens for BPJS facilities to ensure payment is processed (not yet for GPs).
- Some data linkages between SITB and SIMRS in 5 large-scale chain of hospitals

## **Constraints**

### **Health system transformation:**

- There are major gaps observed and reported on human resources for health, and lack of TB training for new staff, particularly in the primary health care level (Puskesmas).
- There are missed opportunities to strengthening the public health function of Puskesmas e.g., the regulation that prevents CXR machines from being installed in Puskesmas.
- There is still no agreement for data sharing and carrying out record linkage of BPJS -K and SITB historical data, a missed opportunity to better inform understanding of trends in burden.
- There is absence of social assistance mechanism to obtaining TB services for those without JKN membership.

### **Digital health transformation:**

- Lack of clarity on the timelines and transition plan for SITB – will it be transitioned out? If not, improvements are required urgently through an in-depth assessment of the SITB technology stack and architecture by involving DTO, PUSDATIN, NTP, and SITB developer, e.g., very slow processing time for data entry, leads to under-reporting everywhere including in private clinics.
- Lack of clarity on the objectives of the TB surveillance system, which should guide data collection for the needs of the TB programme (46 variables remain for TB) e.g., programme and case management, progress with

national/international targets, implementation of national/international strategies.

- Traditionally, there has been very limited TB data sharing within (e.g., SIHA, SIMRS, lab) and beyond (BPJS) health databases.
- Limited routine analysis, interpretation, and use of data to guide action, including use of SITB dashboards at all levels.

#### **Presidential Decree no. 67 2021 to end TB:**

- Commitment at the local government level (province, district, sub-district, village) does not match the levels of ambition of the national level. Implementation plans are still being developed, advocacy for additional funding at the local level is limited.
- Implementation of this decree will be complicated due to the underlying transformation of the health system and the digital health transformation.
- Targets in the decree were set based on our understanding of TB based in the pre-COVID-19 era. There is uncertainty of the TB burden in the post-COVID era (both level and trends) due to COVID-19 impact on TB services and TB co-morbidities.

#### **Recommendations**

##### **Health system transformation:**

1. Review and update the regulation that bans use of CXR in Puskesmas, to increase capacity for screening for TB and other health conditions.
2. Set up a technical group to develop methods for carrying out record linkage of historical (2019-2022) BPJS and SITB data (ensuring confidentiality of patient records) to inform trends in burden estimation.
3. Prepare technical guidelines on how to provide JKN eligibility for TB suspects and TB patients without JKN membership.

##### **Digital health transformation:**

1. Ensure the close collaboration with DTO for the duration of the implementation of this transformation agenda and define clear objectives for the TB programme.

2. Implement improvement to SITB (if this is maintained as the TB surveillance system): IT specialist to assess system performance and to identify reasons for slow processing time, discuss with users to improve acceptability of the system, review, and update SITB dashboards to address surveillance system needs.
3. Define clear objectives for the TB surveillance system that address the relevant needs of the NTP, identify corresponding data items to collect and indicators to report and ensure these are included in the implementation of this transformation.
4. Develop guidance and training courses (eLearning) for data interpretation and use for programmatic purposes and for all levels (including health facility).

**Presidential Decree no. 67 2021 to end TB:**

1. The secretariat of the coordinating mechanism and advocacy groups, such as Stop TB Partnership Indonesia, to monitor the implementation of this regulation for the acceleration of progress towards ending TB at local government level, with associated regulations, HR policy and plans, and dedicated budgets.
2. Use existing data (hospital mortality data, retrospective linkage of records across TB databases within and beyond health) and generate new data to inform TB burden estimation e.g., vital registration with standard coding of cause of death (starting from sample vital registration), TB prevalence survey.

### **3.15 Intensified research and Innovations for TB care and prevention**

#### **Context**

The National TB program of Indonesia has addressed the various challenges and recommendations of the 2020 JEMM through implementation of their current TB strategic plan 2020-2024. In their National TB Strategic plan of 2020-2024, there are six TB prevention strategies and one of them included 'Utilization of research findings and technologies for screening, diagnosis and management of TB'.

One of the objectives of the 2022 JEMM was to review the activities related to TB Research and Innovation.

#### **Progress**

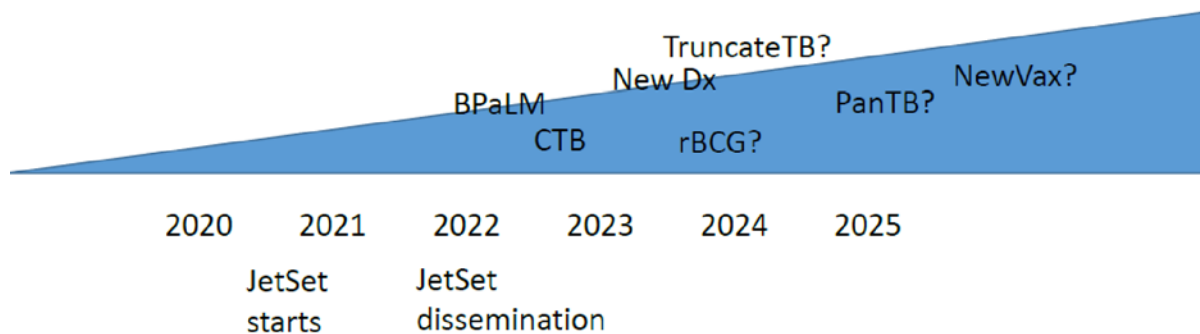
##### **Evaluating the TB research environment in Indonesia.**

- There exists a National TB Research network in Indonesia, JetSet TB, established in 2017, that has established a country-specific research agenda for 2020-2024. A list of priority research areas have been developed using systematic analysis and this aligns with Presidential decree 67/2021. JetSeT TB also provides capacity building workshops and in collaboration with NTP, holds an annual research conference (INA TIME).
- The country also has trained local TB researchers and provides a good opportunity to carry out TB research. Mostly these researchers are universities and research institutions in Indonesia. These researchers have both local and international collaboration in research activities, e.g., TB Patient Cost Survey 2020 conducted by a consortium of institutions coordinated by Gadjah Mada University.
- No specific funding is allocated specifically for TB research within the NTP and local government budgeting. Restructuring of National Institute of Health Research and Development (NIHRD) has further complicated the issue of research implementation funding within the MoH.
- The country uses SITB, established in 2020, as the primary TB recording and reporting (R&R) system. Country-wide vital registration system is still absent and will require high-level commitment to implement.

- Though Indonesian researchers participate in advanced research on drugs, vaccines, and diagnostics development, it is not at a scale commensurate with needs for transformational products, particularly in diagnostics and vaccines.
- Areas that are yet to be initiated in the Indonesian TB research arena include:
  - Predictable regulatory processes for review of clinical trials and TB products.
  - Policies and practice for open access to and open data for scientific research financed by public funds.

### Indonesian Vision for TB Research.

The Indonesian vision for TB research needs to be updated, as the priority and operational agenda currently set by the National JetSet TB team seems to be slightly outdated given the fast-moving TB research environment of the world. Operational research needs from 2 years ago may not be aligned with evolving TB care and prevention needs, current opportunities, and emerging product pipeline. Given below is an example of the forthcoming few research agenda in Global TB research and innovations area.



If Indonesia wants to be a leader in TB research, then Indonesia has to move faster. The team should start thinking and build its capacity to do vaccine trials, health technology assessment, modelling etc.

### Constraints and Gaps

- a. No provision of specific budget for implementing research in the local TB budget. TB burden estimation surveys/studies is funded primarily from donors at the national level. Shifting of NIHRD to Badan Kebijakan Pembagunan Kesehatan(BKPK) – the health development agency and movement of

researchers to Badan Riset dan Inovasi Nasional (BRIN) – the National Research and Innovation Agency, has further complicated and widened this gap and made research difficult to follow.

- b. Many new and innovative models have been used for active case finding like Jemput Daku (North Sumatera), Ketuk Pintu 2020 (North Sumatera), Permata TB / Perumnas / Sintang/ Sehati TB (West Kalimantan). However, none of them have been analysed to look at the best model with the highest case yield. This is mainly because there is a lack of capacity in data analysis, data interpretation and program evaluation.
- c. Lack of communication & coordination between researchers & health officers in most areas is also another lacunae identified.
- d. Newer concepts of research like health technology assessment, health modelling, vaccine candidate research etc needs to be strengthened.

## **Recommendation**

1. Provide a budget for research at the provincial or district level so as to focus on regional research priorities. This will help to plan and conduct operational research around regional, or district level problems and the result thus obtained can be implemented in the program early and results seen.
2. Build local and national capacity for
  - I. analysis of both qualitative and quantitative research data.
  - II. Writing and disseminating policy briefs.
  - III. health technology assessment and modelling.
3. Form an Operational Research Cell that can be positioned at the Directorate of Disease Prevention and Control, with a member from the NTP. This will help to prioritize TB-related OR, plan and execute research priorities as per the need of the NTP rather than individual research. Few of the suggested topics for operational research are given below:
  - I. Compare the different models of active case finding in terms of case yield, cost effectiveness & feasibility of large-scale implementation.
  - II. Health systems research - experiment how leveraging UHC payments can improve performance (World Bank).
  - III. Increasing testing - Leveraging post-covid PCR capacity for systematic screening.

- IV. Operational research for mortality reduction by using verbal autopsy in order to identify if early case finding prevents TB-related deaths.
  - V. Paediatric TB – various diagnostic algorithm to diagnose paediatric TB and develop a non-sputum based diagnostic test.
  - VI. Feasibility of giving TPT for PLHIV in terms of screening, drug delivery and adverse reactions.
4. Plan periodic dissemination meeting – both at national and provincial level and follow good public health practices.
  5. Plan a TB prevalence survey – national and district level, to estimate the burden of TB disease and infection in Indonesia.



### 3.16 Procurement and Supply Management (PSM)

Provision of TB medicines and other needed supplies is essential to the success of a TB Program. The Presidential Decree no. 67 of 2021 highlights the importance of provision of quality TB drugs necessary to reach TB elimination in the country.

TB medicines and supplies procurement is mixed funded. Based on funding, procurement is also different with varying elements of consideration.

Table 18. Sources of funds for various TB products in Indonesia

Commodities	Funding source
First line drugs for DSTB Adults	GOI (intermittent regimen) GF (daily regimen)
First line drugs for DSTB Paediatrics	GOI
TPT medicines	GOI, GF
Second line drugs	GOI, GF, StopTB grant for pediatric Depending on availability of local suppliers
Diagnostics	DAK (Special Allocation Fund), GOI and GF as buffer at central

GOI= Government of Indonesia, GF= Global Fund

First line drugs for adults is currently in transition from intermittent regimen of Category 1 kits to daily regimen. Since Government of Indonesia (GOI) fund is restricted to procure from local suppliers and while production of daily regimen is currently being built locally, the Global Fund is supporting the procurement of daily regimens from the Global Drug Facility (GDF). The transition plan started in 2021 with 80% of intermittent regimen needs procured with funds from GOI supplemented by 20% daily regimen procured using funds from the GF, then progressed in 2022 with 50% intermittent and 50% daily regimen share. The target of the transition is by 2023 the government will procure 100% of the daily regimen requirement of the country from local suppliers.

Leadtime for either international or domestic medicine procurement is long and on average takes 12 months. For international procurement, it takes 2-3 months to place and confirm order including payment via GF, production of 4-6 months and 2-4 months of pre-shipment custom clearance for a total range of 8 – 13 months. Starting from 2022, there is an additional requirement of getting approval from the Ministry of Trade, which will add to this timeline. Domestic medicine procurement takes 12 months and is variable depending on the capacity of local suppliers to supply.

### **Achievements**

The Government has sustained its commitment to TB medicine procurements. The GOI has significantly procured TB medicines that are available locally in the country, which includes bedaquiline 100mg, levofloxacin 250mg, delamanid 50mg, rifapentine 150mg, among others, while GF supports the medicines which are not available in the country and therefore GOI could not purchase.

Since the last JEMM in 2020, the country has phased out mostly the category 2 DSTB kits and injectables as a core medicine in the DRTB regimen. The program has phased in new WHO-recommended medicines and regimens including the shorter treatment regimens for TBI which are rifapentine-based regimens and 3RH. The program has also started the transition and use of the daily DSTB regimens in addition to making available and to begin to use new paediatric DRTB medicines. The use of all oral DRTB short treatment regimens has been.

The TB information system allows the capture of data needed for medicine quantification and pharmacovigilance analysis. The intention is for SITB to be used as

a logistics management information system, where all facilities at all levels should be able to use and record all logistics transactions from order placement, distribution, and consumption through SITB. Furthermore, the NTP together with in-country partners are highly technical and are actually using these data for analysis as an early warning system to come up with informed decisions.

## **Challenges**

The transition plan for fully procuring daily regimen of DSTB by 2023 has several uncertain elements. Currently, there is only 1 supplier available and capable of producing the daily regimen. The capacity of this supplier to produce 100% country requirement is not certain. In addition, the supplier still has to work and process the product registration with Badan Pengawas Obat dan Makanan (BPOM) or Indonesia's Food and Drug Administration, and then eventually include it in the e-catalogue so Gol may be able to procure it. This whole process is pressed for time as the Gol procurement has to be done by Q2 2023. If the supplier would not be able to prepare all these by then, the Gol may have to go back to procuring the intermittent regimen, which would delay the transition.

Lead time for procurement is long, requiring advance planning of medicine procurement of at least 1 year ahead, otherwise there could be stock outs. This is more important when the program has plans of changing or implementing new regimens to adopt the latest recommendations of WHO as the availability of medicines could take 1 year which should be included as a factor in the implementation plan.

There were reports of pockets of shortages from the field visits of TST, TPT, paediatric FLD, and Xpert cartridges. Enquiring further, the issues could be due to supplier's incapacity to supply the country's requirement for TST and paediatric FLD, underreporting of TPT cases which lowers the amount of medicines needed during quantification for procurement and distribution of TPT medicines, and in some areas challenges in planning and delay in procurement of Xpert cartridges using the DAK (Special Allocation Fund). Although SLDs shortages were not reported, at the central level quantification and early warning system alerts a possible shortage by Q2 2023 of bedaquiline (Bdq). The shortage is mainly a result of non-availability of local suppliers and or no capacity to supply the program's full requirement.

There were also reports of shifting patient treatment from daily regimen in the intensive phase to intermittent regimen in the continuation phase. This means that the kits are broken up at the facilities and not used according to the policy guides of 1 kit per patient. This then warrants the program to review if a kit is indeed the best packaging for DSTB medicines, considering the usefulness of the kit, storage space and the reporting and requisition.

There were reports of slow performance of SITB resulting in delay in data entry. The last GDF mission noted that reporting of commodities in SITB is unreliable especially on Xpert cartridges stock inventory and consumption. Users indicated that the use of SITB necessitated the need to bring the office laptop home so that the work of uploading or updating data into the system can be completed. At the central warehouse, they take one whole week to update deliveries in the system. This made the data in the SITB unreliable and thus, should be analysed and used with caution.

## **Recommendations**

To improve the TB product supply system the 2022 JEMM recommends that the GOI/NTP undertake to do the following:

- Full coverage of procurement of all DSTB medicines and Xpert cartridges using government funding with adequate buffer, while sustaining sufficient procurement of DRTB medicines. The GoI is strongly advised to stop the procurement of intermittent regimens of DSTB and resolve barriers in procurement and implementation of daily regimen for 2023.
- Establish a PSM working group (not just at the national level) and conduct, ahead of the procurement schedule, a yearly planning, coordination and discussions with stakeholders including in-country suppliers to quantify the actual demand, incorporate buffer, prepare the supply, and plan the distribution, to address the issues in planning, quantification, procurement, and supplier's capacity.
- Address the issue of patient shifting from daily regimen to the intermittent regimen by reviewing requisitions from facilities, regular monitoring, and supervision, and reiterating the policy to actual implementation.
- Take into account the lead-time of procurement to decide on the transition to new WHO recommended regimens (BPaL/M) and subsequently place

medicine orders for 2023-2024 requirements. To avoid shortages, the NTP should place SLD orders urgently for requirements until Dec 2023 and then plan to place another order when the transition is finalized.

- Work to improve data entry completeness and promptness for TB cases and logistics information in SITB at all levels (health facilities, district, and province) in parallel with improving performance capacity of the SITB information system.

## **3.17: Financing the TB Response**

### **Background and Context**

#### **Macroeconomic Picture**

Spending for health is to some degree, in any country, related to the economy and economic growth. Although COVID-19 still presents uncertainties, the World Bank assessment is that Indonesia's economy can grow 5.2% by the end of 2022, up from 3% in 2021. This, however, is lower than economic growth projections for neighbouring countries-Vietnam, the Philippines and Malaysia, expected to grow 6.6%, 6.3% and 6%, respectively.

The state budget deficit threshold in 2022 was pegged at 4.85%, lower than 6.14% realization in 2020 and 5.82% outlook in 2021. Under a 2020 government regulation, the deficit has to return to a maximum of 3% in 2023, which will bring a heavy fiscal burden. There is also an increase in the debt ratio (thus increasing interest expenses), an increase of inflation from below 2% in 2021 to 5.7% in 2022 (which will primarily drive up the prices of imported food commodities), and reduced stimulus from the government<sup>20</sup>.

#### **Health financing**

The health financing system in Indonesia is complex and fragmented (Figure 25).

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<sup>20</sup> World Bank, website, December 1, 2022; Indonesia Economic Outlook, 2022, A Ray of Recovery Amid Clouds of Uncertainty, January 2022, Independent Observer

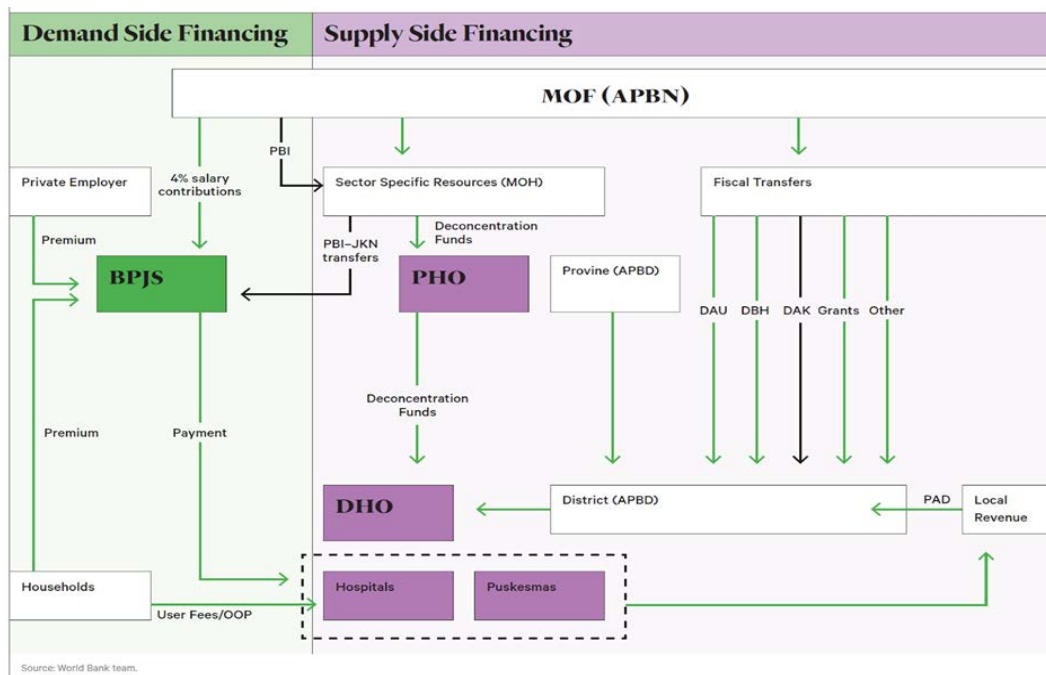


Figure 25. Health Financing Flows of Funds

1. General funding flows for health services and public health programmes are via:
  - 1) supply-side programme financing through central and local government funds, including external support. There are multiple funding flows that support various levels of structure and activities; and
  - 2) demand-side financing through BPJS-K, the administration agency for JKN, which is a major source of revenue for health service provision (though still only 14.6% of total health expenditure in 2021, down from around 25% pre-COVID).

Current (total) health expenditure (CHE) has increased steadily from US\$ 34 per capita in 2005 to US\$ 175 or 4% of GDP by 2021<sup>21</sup>. The public sector's contribution to health has increased from 24% of CHE in 2010 to 64% by 2021 (and from 3.9% of the total government budget in 2010 to 10.1% in 2020), with a reduction in out-of-pocket (OOP) expenditure from 61% of CHE in 2010 to 25.1% in 2021 (Table 19 below). However, 38% of DS TB patients and 80% of DR TB patients still incur catastrophic costs. Furthermore, much of the increase in the past 2 years relates to

<sup>21</sup> [https://apps.who.int/nha/database/country\\_profile/Index/en](https://apps.who.int/nha/database/country_profile/Index/en)

COVID expenditures, whereas now health expenditure needs to be improved and expanded for primary care, promotive and preventive activities.

Table 19. Indonesia Health Expenditures 2015-2021

Health Financing Scheme	2015	2016	2017	2018	2019	2020	2021	2015	2016	2017	2018	2019	2020	2021
<b>General Government Health Expenditure</b>	154,6	197,5	211,0	229,3	253,6	324,6	436,6	43.1%	49.2%	50.0%	51.2%	51.9%	57.7%	64.0%
Ministry of Health	20,1	23,0	19,7	21,3	21,1	65,0	164,0	5.6%	5.7%	4.7%	4.8%	4.3%	11.6%	24.0%
Other Ministries / Govt Institutions	7,8	9,0	8,1	9,6	9,5	26,3	30,2	2.2%	2.2%	1.9%	2.1%	2.0%	4.7%	4.4%
Province Government	13,0	15,0	14,3	15,5	16,2	21,3	22,5	3.6%	3.7%	3.4%	3.5%	3.3%	3.8%	3.3%
District Government	50,5	73,9	75,8	79,7	88,4	106,9	106,6	14.1%	18.4%	18.0%	17.8%	18.1%	19.0%	15.6%
Village Government					5,1	11,5	12,7					1.0%	2.0%	1.9%
Social Health Insurance	63,2	76,6	93,1	103,1	113,3	93,5	100,5	17.6%	19.1%	22.1%	23.0%	23.2%	16.6%	14.7%
<b>Private Health Expenditure</b>	59,8	61,4	67,9	68,8	77,3	73,6	74,8	16.7%	15.3%	16.1%	15.4%	15.8%	13.1%	11.0%
Private Insurance	10,0	12,2	13,7	14,1	17,2	16,1	16,5	2.8%	3.0%	3.3%	3.1%	3.5%	2.9%	2.4%
Non profit institution	3,4	4,2	4,8	4,8	5,8	7,1	7,0	0.9%	1.1%	1.1%	1.1%	1.2%	1.3%	1.0%
Corporation	46,4	45,1	49,3	49,9	54,3	50,4	51,3	12.9%	11.2%	11.7%	11.1%	11.1%	9.0%	7.5%
<b>Out-of-pocket</b>	144,0	142,9	142,8	149,9	157,5	164,8	170,9	40.2%	35.6%	33.9%	33.5%	32.2%	29.3%	25.1%
<b>Total Health Expenditure (THE)</b>	358,3	401,8	421,7	448,0	488,3	563,0	682,3	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
THE proportion to GDP	3.1%	3.2%	3.1%	3.0%	3.1%	3.6%	4.0%							
CHE proportion to GDP	2.9%	3.0%	2.9%	2.8%	2.9%	3.4%	3.8%							
GGHE per GDP	1.3%	1.6%	1.6%	1.5%	1.6%	2.1%	2.6%							
THE per kapita	1,4 jt	1,6 jt	1,6 jt	1,7 jt	1,8 jt	2,1 jt	2,5 jt							

Source: Ministry of Health, December 2022

Indonesia committed to universal health coverage beginning in 2014. The 2004 National Social Security System Law required health insurance for the entire population, and the 2011 Law on the Implementing Agency of Social Security established a national social security agency Badan Penyelenggara Jaminan Sosial Kesehatan (BPJS-K) to undertake implementation of the UHC program Jaminan Kesehatan Nasional (JKN). This scheme has expanded its coverage progressively, reaching 246 million (89% of the population) as of November 30, 2022<sup>22</sup> (increased from 187.9 million and 222.2 million at the time of the 2017 and 2020 JEMMs, respectively).

Enrolment will eventually be mandatory for all, with the formal sector (civil servants and salaried employees in the private sector) having already been enrolled by employers based on a premium equivalent to 5% of their salary. Through BPJS-K, the

<sup>22</sup> The National Social Security Agency for Health (BPJS-K) <https://www.bpjs-kesehatan.go.id/bpjs/home>



government has committed to financing social insurance coverage for the poorest 40 percent of the population who are registered as premium payment beneficiaries (PBI). As of October 2022, the Central government subsidized premium for 110.8 million members (41%), while local governments contributed premium payment for an additional 38.7 million members, meaning that in total 55% of all current JKN memberships are subsidized<sup>23</sup>. The Presidential Regulation No. 67 of 2021 further mandated automatic enrolment for any TB patient yet unenrolled in the JKN program. This regulation awaits guidelines for facilitating this enrolment process.

Provider payment mechanisms under JKN are not explicitly linked with treatment outcomes. JKN offers comprehensive benefits that will help reimburse most health interventions, but JKN's current reimbursements do not cover the full cost of care. In the National Health Accounts, 79.4% of the total IDR 99.47 trillion health spending in the JKN scheme in 2021 was at the hospital level and only 15.7% at primary care. Primary care spending as a percentage of spending in JKN has either stagnated or declined year-over-year since 2014.

In addition to financing through JKN, the government provides other vertical financing systems for health, which are fragmented across multiple levels of government and funding flows, resulting in uncoordinated governance, and unnecessary management costs. In theory, some of the financing instruments from both the supply side financing (e.g., DAU, Biaya Operasional Kesehatan –BOK Kinerja ), and demand side (Strategic Health Purchasing/Belanja Kesehatan Strategis) have the potential to incentivize better performance of and improved accountability in TB program.

### **TB financing**

Investing in TB care makes sense. For every dollar (or IDR) invested in TB care, there is a return of 45 dollars (or IDR)<sup>24</sup>. TB patients are mostly in the age bracket of 40-59, i.e., working age, so they will lose employment and/or income with TB, and this has a high economic, social, and family cost. TB spending is mostly at the hospital level, with about 84.5% of TB money under JKN being spent at the hospital level in 2018 (the

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<sup>23</sup> The National Social Security Council Monitoring and Evaluation Information System Dashboard <http://sismonev.djsn.go.id/kepesertaan>

<sup>24</sup> The Economics of Optimism, "The Economist", January 22, 2015

latest year for which data are available) while OECD countries spend less than 50% at the hospital level<sup>25</sup>.

According to the National TB Program’s (NTP’s) 2022 report to WHO, domestic TB funding increased from 2015-19, dipped in the first year of the pandemic, increased in relation to COVID financing, but then decreased again in 2022 with the end of COVID funding (Figure 26). There are considerable uncertainties around these numbers due to incomplete subnational tracking, but domestic funding plus Global Fund funding provides almost all of the overall TB funding. Indeed, this domestic contribution may be underestimated as it does not include health insurance disbursements (claimed under the diagnosis of TB) and likely also still omits some local government funds. This should be compared to all health programs outside TB, HIV, malaria, and immunizations, where external funding is less than 1%. The GF funds continue to be a major source of TB program financing especially at the subnational levels.

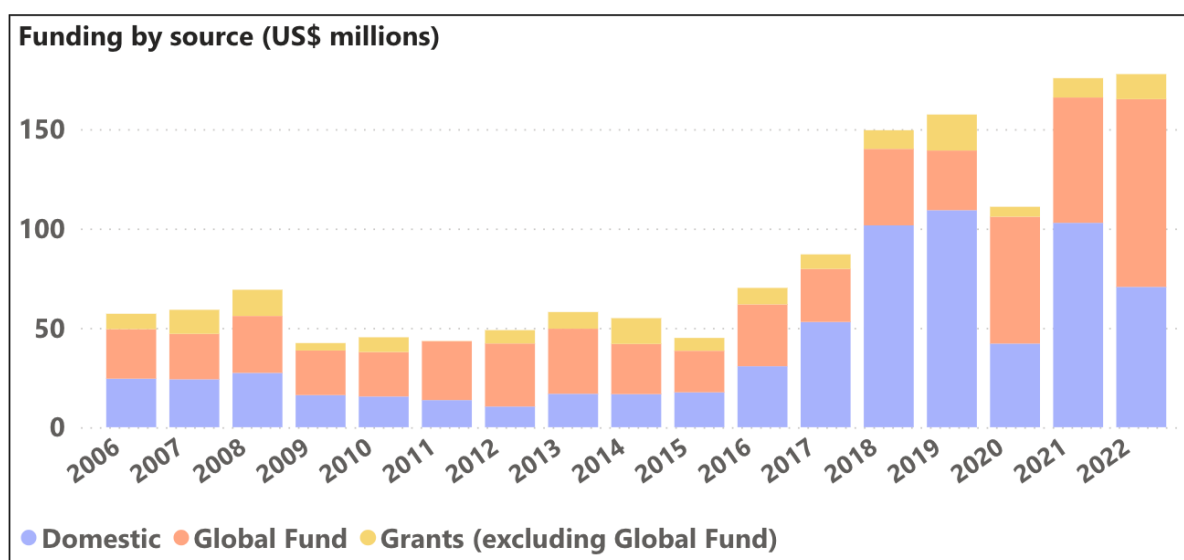


Figure 26. TB funding by source (US\$ millions)

**Source:** WHO TB Finance Profile (<https://www.who.int/tb/country/data/profiles/en/>)

The central level government expenditures include staff and operational costs for the NTP at the central level, and procurement of key commodities (e.g., TB drugs and GeneXpert cartridges). At the sub-national levels, most of the central transfers are not

<sup>25</sup> Ministry of Health, Disease Accounts, Tuberculosis, April 2022.

earmarked for health (e.g., General Allocation Fund/DAU, Shared-revenue fund/DBH) but these are used to support salaries for public health personnel. DAK (a special allocation fund) is specifically allocated for health with further granular earmarking (medicine, commodities, operational expenditures, etc).

Specifically for TB, JKN currently covers basic TB services at primary health care level (FKTP) through capitation payments, and at higher level facilities (FKRTL), through case-based group (CBG) payments. The BPJS-K payments exclude services or commodities that are provided by the TB program such as TB drugs, specimen transportation, and diagnostics such as GeneXpert tests.

An increasing number of TB patients who are diagnosed at hospitals pose additional challenges in TB treatment initiation. According to MoH regulations, hospitals should initiate TB treatment only for complicated TB cases, and uncomplicated TB patients should be referred back to PHC facilities<sup>26</sup>. However, many patients apparently are not willing to go back to PHC facilities and prefer to stay under hospital care. In the 2018 National Health Accounts, TB expenditures under JKN were 84% for hospital inpatient care, 7% for hospital outpatient care, and just 9% in primary care. JKN has had cost overruns in general (not specifically for TB) in the past few years pre-COVID, so such levels of secondary-care disbursement for a disease that is meant to be treated primarily under capitation-based primary care – and using primarily program-supported drugs – is a concern for BPJS-K.

For a middle-income country like Indonesia, the sustainability of the NTP is an obvious issue. However, the Global Fund increased its support to Indonesia for 2021-2023, and COVID-19 dominated the health policy discussions in recent years, so some decisions about transition have naturally been postponed. However, this agenda is now more urgent than ever.

The gaps for TB financing are estimated to have widened, in part due to increased disease burden as a result of the COVID-19 pandemic (Figure 27 below). At the same time, absorption is an issue, particularly with donor funds, with a significant proportion of the Global Fund TB grant going unspent.

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<sup>26</sup> Ministry of Health Regulation No.5 Year 2014 about The Clinical Guidelines for Primary Health Care

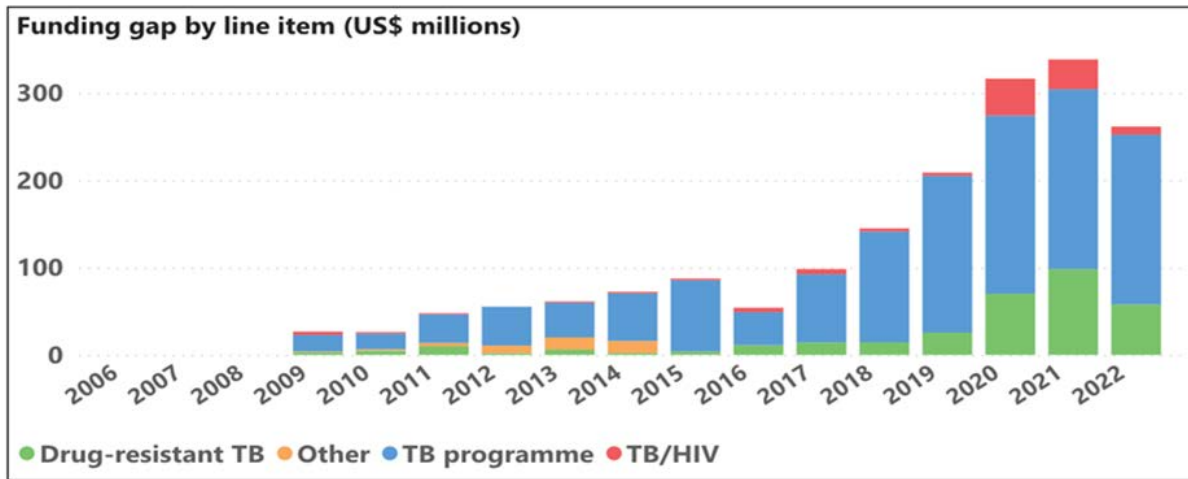


Figure 27. Funding gap by line item, 2009-2022 (Source: World Bank, 2022)

## Findings

### Supply-side financing

Government general financing sources at subnational level for TB program are APBD<sup>27</sup> or Local Government Budget, and Central government transfers. For the latter, it comprises of funds transfers that are already earmarked and channelled directly to the district level, namely the Special Allocation Funds for Infrastructure (Dana Alokasi Khusus Fisik or DAK Fisik), and DAK Non Fisik (for operations and specific programs such as fee waiver program for maternal and stunting services). The MoH also transferred Deconcentration Funds for the province level to enact some of the central functions such as supervisory activities, and capacity building.

The earmarked transfers may be used to support the TB Program: DAK Fisik for construction and equipment; and DAK Non Fisik under Biaya Operasional Kesehatan (BOK - Health Operations Funds – or also called BOK Puskesmas<sup>28</sup> or BOK Kinerja) are the main source of funds for active case finding, contact tracing, and other

<sup>27</sup> For simplification purposes, the APBD Local Government Budget is actually a local government financial pot that consists of un-earmarked central transfer (General Allocation Funds – DAU), Local Revenue (PAD – Pendapatan Asli Daerah), and other sources such as Shared Revenue Funds (Dana Bagi Hasil).

<sup>28</sup> For fiscal year 2023, BOK will be divided into BOK for the Health Office (provincial, district, and for food and drug supervision) and BOK for the Puskesmas. BOK Puskesmas=BOK Kinerja is financial assistance from the central government through the MoH to improve the performance of Puskesmas and its network in an effort to run promotive and preventive health services according to the Minimum Service Standards (SPM) in the health sector.

outreach activities, and has been linked with a TB program indicator (successful treatment) since 2020. Most local health authorities draw clear lines for the use of BOK funds for more traditional public health functions, while JKN capitation revenues are for individual services at ambulatory settings. The JEMM team found that capitation funds are used mainly for stationery and health supplies (e.g., masks) outside of utilization for medical services.

## **Demand-side financing**

There has been some notable progress for financing TB care, including progress towards strategic health purchasing (SHP/BKS) for TB, the use of TB certification as a requirement for JKN empanelment credentialing, work on a billing code for drug-resistant TB, and a revised decree on the use of capitation. These areas of progress are discussed in more detail below.

### **A. Strategic Health Purchasing Pilot**

Under Presidential Regulation No. 67 of 2021 on Tuberculosis (TB) Elimination, individual health services (UKP) for TB patients are covered by national health insurance (JKN) while public health services (UKM) including antituberculosis drugs, specimen transportation systems, and reagents for diagnostic equipment are budgeted through the national TB program (NTP).

Based on Law No. 40 year 2004 about Social Protection Program/SJSN and Presidential Regulation Number 82 of 2018 about Health Insurance, BPJS-K is required to develop the health service payment system to increase efficiency and effectiveness. The President also instructed government institutions to conduct research and innovation to achieve effective and efficient TB care<sup>29</sup>. From previous studies (including JKN claims data analysis and interview data<sup>30</sup>, it is clear that the current JKN provider payment arrangements (capitation payments at primary care level and InaCBGs at the hospital level) do not encourage improvement of TB service quality, as indicated by low rates of TB case finding and reporting, nor efficient TB service delivery, as indicated by high rates of referrals to hospitals for uncomplicated TB cases leading to high service costs and insufficient community outreach. As

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<sup>29</sup> Presidential Regulation No. 67, year 2021 on TB Elimination.

<sup>30</sup> Documents are available upon request through MOH Pusjak PDK.

outlined in the 2020 JEMM report, the idea of TB Strategic Health Purchasing (TB SHP) in Indonesia is to address these issues through adjustments to the JKN schemes.

The TB SHP component includes adjustments to benefit package plus:

- adjustments to the contractual relationship between BPJS and health facilities (such as the inclusion of TB certification in BPJS credentialing; see below);
- changes to incentivize delivery of TB services at the primary care level (including fee-for-service payments to incentivize the diagnostic tests and notification for TB, and design of an episode payment with milestone payments for 2 months and 6 months of treatment to incentivize supervision of a full course of treatment); and
- strengthening of monitoring systems (including integration between JKN and National TB Program (NTP) data platforms to improve the ease and completeness of reporting).

Preparations for the TB SHP pilot have been taken up by the health financing policy department of the MOH (Pusjak PDK), and under its technical working group a new model and pilot has been designed for two districts: Denpasar (Bali) and Kota Medan (North Sumatera). In these two districts, the JEMM team found that there has been impressive buy-in, preparation, and DHO-BPJS-K collaboration on the TB SHP pilot preparation and design.

#### **B. Additional demand-side financing issues**

Linked to the collaboration during the SHP pilot preparations, excellent progress has also been made on the idea of TB certification, using a process of self-assessment by private facilities. The branch BPJS-K offices in Medan and Denpasar have issued letters strongly encouraging private primary care facilities to obtain the TB readiness certificate, as an assessment criterion for JKN re-credentialing. Based on JEMM site visits, this has been interpreted as a strong mandate for private providers to get involved in TB care. To date, 134/136 BPJS-K's private primary cares in Medan and 40/84 (with additional 28 in ongoing progress) in Denpasar have obtained the TB

readiness certification<sup>31</sup>. This is a very promising approach to drive further engagement of private primary providers in District Public-Private Mix (DPPM) networks, and thus, in TB care.

In late 2022, a letter was sent by BPJS-K to the Director of Prevention and Control, Communicable Diseases (P2PM) at MoH stating that hospitals are now required to have a reporting Register Number from the Regency/City Health Office (i.e., from SITB) before their Hospital Ina CBG's tariff claim is paid by BPJS Health. This "no notification; no reimbursement" concept, which is in line with Article 12 of the Presidential Regulation No. 67 year 2021 on TB, is an important way to enforce mandatory notification.

Thirdly, a drug-resistant TB code and its related software grouper for the hospital case-based group payment (InaCBG) has been implemented using a temporary code, with a longer-term solution currently under discussion. This has the potential to reduce or remove reliance on donor (GF) funding for DR-TB clinical costs.

Finally, the revised MoH decree on the use of capitation payment allows the funds to support health promotion and prevention including outreach activities. This is an important step as JKN capitation is the largest and most flexible source of revenue for Puskesmas. This opens the door, for example, for inclusion of TB preventive treatment (TPT) under BPJS-K purchasing.

## **Challenges**

### **Supply-side financing**

Indonesia's intergovernmental financing arrangement is complex and has created challenges for efficient public service management and delivery. The following are the challenges in supply-side government financing:

Limited capacity in planning and budgeting at the subnational level continues to be a determinant factor for the weak TB program implementation at the sub national levels. Local planners continue to use the historical method (i.e., basing future plans on past efforts) for TB program planning and budgeting. The program menu provided by the central level to guide the use of the earmarked central transfers (DAK) can be a helpful

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<sup>31</sup> Data per December 16, 2022

tool, but it is rarely adjusted to local needs by using information on local epidemiology, basic service delivery capacity in both public and private, and the local funding landscape. By contrast, planning coordination at Bappeda and the budget plan consultation with the local parliament may create incoherence in an already sound plan.

The unavailability of budget line codes for TB activities at subnational level has prevented more coordinated local planning. The latest version of the Ministry of Home Affairs (MOHA)'s Code of Account in 2021 has only one code for a budget line up to sub activity level, which is for activities related to presumptive TB cases, and no other codes for activities on TB treatment. The absence of these codes reduces the ability of local health managers to allocate local budget funds for much needed TB activities. This also makes it practically impossible to track public expenses on TB program activities, which is needed to provide a comprehensive view of TB financing at subnational levels. This issue compounds the already weak capacity in planning and budgeting at province and district levels.

There is no reporting back on which of the activity budgets are in fact spent. The MoH through its financing office Pusjak PDK is in the early stages of developing a standardized reporting system for each district back to the center. The reporting system is key to validation of the central transfer system based on performance indicators and will allow comparisons of spending patterns with outcomes across the over 500 districts in Indonesia.

There are delays in the information on, and the availability of central transfer funds, thus oftentimes missing the local budget cycle timeline and hampering better planning at the province level. Global Fund funding can also be delayed, as it must go to the MoH at the central level, then provincial level, and then district level.

**Limited use of public funds for social contracting in TB:** Despite the availability of a mechanism for channelling public funds to non-state actors (e.g., civil society organizations, private providers), very few Provincial Health Offices (PHOs) and District Health Offices (DHOs) have implemented social contracting for TB-related activities. The *Swakelola Tipe 3* (Self-Management Type 3) mechanism allows the public sector to use non-state entities / institutions as an extension of the formal



healthcare system in delivering community-based interventions. This mechanism could also be useful for institutionalizing DPPM staffing, and for providing surge support to efforts such as TPT or active case finding. Factors that have hampered implementation include: i) The candidate non-state organizations have limited capacity (e.g., they rarely have the required three years of financial audit and have limited skills in proposal development and management); ii) PHOs and DHOs fear audits; and iii) the absence of a communication exchange platform between local health authorities and local non-state actors<sup>32</sup>.

Capitation funds are intended to be flexible, but in general Puskesmas are not aware of how to use capitation funds for TB activities. In other areas such as North Sumatera, local guidelines on how capitation funds can (and cannot) be utilized may create barriers to allocation for TB care.

**Pro-health tax revenues remain limited.** The National Mid-Term Development Plan (RPJMN) aims to reduce the prevalence of novice smokers to 8.7% by 2024. In this context, it has been estimated that an increase of the tobacco excise tax by 25% per annum with 5 layers of excise tax in 2022 would have reduced the number of new smokers by 4.8 million smokers, including more than 1 million premature deaths avoided, more than 0.6 million men in the lowest income group being spared catastrophic health spending, and another 0.6 million coming out of extreme poverty. And while there was IDR 102.8 trillion additional excise tax between 2019 and 2022, an estimated IDR 254.8 trillion of excise tax would have been raised in 2022<sup>33</sup>. These revenues would easily cover the proposed health sector transformation plan envisaged by the Ministry of Health. Meanwhile, for sugar-sweetened beverages (SSBs), there are rising trends in consumption and distribution of sugar content in packaged sweetened beverages in Indonesia, making this commodity potentially subject to excise tax. The Center for Indonesia's Strategic Development Initiatives (CISDI) in a 2022 report<sup>34</sup> estimates that a 20% increase in SSB prices due to the tax

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<sup>32</sup> Engaging with Civil Society in the Health Sector, World Bank, September 2019  
<https://documents1.worldbank.org/curated/en/637901568357782768/pdf/Engaging-with-Civil-Society-in-the-Health-Sector-in-Indonesia.pdf>

<sup>33</sup> Ministry of Health, Pusjak PDK estimates, September 2022

<sup>34</sup> Center for Indonesia's Strategic Development Initiatives. (2022). Demand Price Elasticity of Sugar Sweetened Beverages in Indonesia. Jakarta: CISDI.

implementation would result in an average of 17.5% decrease in SSB consumption, and revenues of IDR 3.7 billion per year.

## **Demand-side financing**

### **A. Strategic Health Purchasing Pilot**

The perverse JKN incentives related to TB, as noted in the 2020 JEMM report, still exist. I.e., capitation encourages referrals out of the PHC level to the secondary care level, and the hospital payment approach incentivizes case retention.

Despite this, the modifications to TB service incentive mechanisms have not been prioritized. Although there has been good progress over the past 2 years in defining the potential practical details of how strategic health purchasing for TB would work, there is still no commitment to undertake a pilot. This is largely because there is a challenging technical regulatory environment for establishing the legal basis for any payment modifications and addressing the risk of audits for piloting the modifications of JKN payment mechanism for TB services at the primary care level (i.e., adding incentives for TB services outside the capitation).

Despite the Presidential Regulation No. 67 year 2021 that encourages testing innovative approaches for TB care, there has been no agreement on providing incentives through the JKN scheme because there are still differences of opinion regarding responsibility for financing individual services (UKP) and public health services (UKM). For example, the horizontal referral mechanism for diagnostics is not accompanied with any type of additional financial transfer of payment, creating no incentives for health facilities at the receiving end. BPJS-K will not pay for diagnostics, citing Article 12 of the Presidential Regulation No 67 of 2021, which calls on NTP to pay for diagnostics.

### **B. Additional demand-side financing issues**

There is not currently a plan for scale-up of the work on TB certification and credentialing since this work has only recently been implemented. The addition of TB certificates in the JKN re-credentialing process is still manual and has not been integrated with the Health Facility Information System (HFIS), although there have

been significant results regarding the commitment and involvement of private health facilities in TB services.

The “no notification; no reimbursement” concept requires further socialization and expansion not only in hospitals but also in PHC. In the JKN managed care concept, PHC is the first point of contact for patients. However, for TB, there are no specific incentives associated with reporting TB cases at the PHC level, unlike in hospitals where there are InaCBGs for TB.

The ICD code and reimbursement rates for DR-TB remain under discussion. The use of temporary codes has helped flag DR-TB cases but is not sufficient to provide reimbursement amounts that are in accordance with the economic costs of DR-TB case management.

BPJS-K has work to do in terms of utilization review and monitoring of quality and abuse. For example, protocols do not yet exist for reviewing appropriateness of admissions and unnecessary readmissions within 30 days. Anecdotally, there is poor coding and fraudulent upcoding of claims to top-up reimbursement levels, counteracted by only limited post-utilization reviews. A register review found a number of TB readmissions within 30 days, suggesting either poor quality care or induced demand resulting in two payments for the two admissions.

The interoperability of information systems between BPJS-K and MoH has not materialized, after 4 years of discussion, and has prevented effective TB disease surveillance, and overall efficiency in public health financing. Matching data on TB cases between BPJS-K and local health authorities continues to rely on manual processes.

TPT is not included as an explicit benefit under JKN, making it challenging to implement at scale.

In the area of demand-side financing, BPJS-K treats public and private providers almost equally – both are funded to provide clinical services. But on the supply side, historic NTP funding for items such as GeneXpert machines and cartridges remains biased to public providers. Regulatory barriers at district level, aimed at preventing self-dealing and corruption, were reported to inhibit the provision of public commodities

to private facilities – even if such provision could serve a public good. This results in a more cumbersome system where patients, samples and/or drugs must constantly move between public and private sectors for each patient.

## **Recommendations**

### **Supply-side financing**

The MoH/NTP and partners are advised to:

**Strengthen subnational capacity to construct a virtual budget pool via district level action plans for TB** - a process that has been pursued in some districts but far from all to improve subnational planning and budgeting for TB. This process should not just outline activities to be funded, but also clearly assign funding streams for each activity. NTP should also take advantage of any broader efforts to simplify public financial management in health, e.g., any pooling of distinct funding streams. As part of this work, NTP should raise awareness and involve subnational levels on new performance-based initiatives such as BOK Kinerja/BOK Puskesmas that is linked with performance indicators including successful TB treatment and enhance BOK Kinerja/BOK Puskesmas with an additional TB indicator that encourages TB case finding. The implementation of BOK Kinerja will complement the GF-funded RSSH activities with Asosiasi Dinas Kesehatan (ADINKES), the association of local health authority.

Work with Pusjak PDK, MoF, Ministry of Home Affairs (MoHA), DTO and other relevant actors to promote the existing agenda on financial reporting back to the central level, to use the recently introduced TB budget code, and to develop additional TB codes. This should allow for reporting back on what is spent on TB in all of the funding streams. Toward the end of 2022, efforts were initiated to strengthen the capacity of Pusjak PDK in health financing by supporting the design of a new health financing and accounts system, including institutionalizing routine data collection on the allocation, implementation, and realization of up-to-date budgets to inform the resource needs of local governments and health facilities and to guide decision-making in health financing at the local and national levels. The NTP should disseminate the revised nomenclature and codes for government budgets that include specific codes for TB, once they are available.

Communicate clearly the plan for financial flows to the subnational level to be in time for the planning and budgeting cycle, and ensure the timely availability of technical guidelines for the fund implementation.

Develop a guideline for use of *Swakelola tipe 3* social contracting for TB, including defining desired roles of non-state actors in the TB response. Based on this, PHO and DHO can do social contracting. This would need to be paired with a strengthening of CSO capacity to be social contractors, including increased capacity for audits and financial management. Such capacity can be built in part by gradually increasing the percentage of donor funding going to regional CSOs and smaller sub-sub-recipients, and by creating a CSO network to access funding collectively.

Develop a simple guidance document on how PHC can use capitation funds for TB. The capitation payment is purposely flexible, and public providers might minimize rules and constraints for its use. Internal yet relatively simple financial management systems can track expenditures month-over-month for review and ongoing improvement to address priorities including TB care. If financial management systems are standardized at the district level, comparative reviews can identify best practices for use of funds for TB care.

Increase resource mobilization from pro-health tax revenues (tobacco, sugar sweetened beverages) that will have twofold benefits: increased fiscal space for health in general; and reduced risk behaviour related to TB (smoking, diabetes).

## **Demand-side financing**

### **A. Strategic Health Purchasing pilot implementation**

The MoH/NTP and partners are advised to

Advocate to raise awareness on Strategic Health Purchasing and the need to implement the TB payment modifications pilot. This could include development of advocacy materials that includes a budget impact analysis (BIA) that examines the increased cost at primary care level as PHC care is strengthened, but the overall cost savings through averted outpatient costs, admissions, and readmissions to hospitals. A draft budget impact analysis by the World Bank and domestic experts in late 2022 estimates annual savings of around 100 billion IDR.

Undertake high-level communication between the MoH and BPJS-K leaders to encourage the implementation of the TB SHP pilot:

1. The Minister of Health needs to communicate with the BPJS-K President Director to form a joint legal team to find the legal basis needed for piloting modifications to the JKN payment mechanism and for integrating JKN and NTP reporting platforms for TB cases. Ideally, clear dates for initiating the pilot would be decided, which would be technically possible in early 2023. Other countries, such as the United States, have developed generic regulations that allow pilots to go forward if there is presumptive evidence of i) cost effectiveness and/or ii) improved quality. Every pilot initiated under the regulation requires an evaluation of impact and can be stopped if failing to achieve its claimed objectives.
2. The Minister of Health should instruct Pusjak PDK and NTP to identify which individual (UKP) TB service components need to be covered by JKN outside of the current payment mechanism, and then negotiate with BPJS-K to pilot-test them using strategic health purchasing methods. Specifically, this needs to focus on who reimburses for TB diagnostic testing, and how.

If the pilot cannot be initiated in the short term, BPJS-K should consider in the medium-term to create an episodic JKN payment mechanism for primary health care under TB Strategic Health Purchasing to incentivize providers to i) identify and notify TB, ii) implement adherence monitoring, and iii) complete treatment for TB patients. The concept of new payment models was received and welcomed in a meeting with the Minister of Health during the Mission. Perhaps it was best summed up by the Disease Control Director in Medan DHO who said “This is a war for TB; we need ammunition from BPJS-K. What can you pay for this, what is your contribution? We must win.”

## **B. Additional demand-side financing issues**

To expand on the current effort in two districts, Pusjak PDK and NTP should work with partners to develop a scale-up plan for TB certification, and BPJS-K should include the TB service readiness requirements/certification in the BPJSK credentialing process to recruit more private health care facilities into the TB provider network, thus widening access to TB care. Pusjak PDK and NTP will need to coordinate with BPJS-

K on when to issue a broader communication on this linkage between TB certification and JKN re-credentialing, modeled on the letters issued by BPJS-K branch offices in Medan and Denpasar. Broader implementation of this process will be made easier by allowing facilities to use the Health Facility Information System (HFIS) to input TB certificate components into the JKN re-credentialing process.

The NTP and BPJS-K should work on further socialization of the “no notification; no reimbursement” concept. The next step is to extend this concept to the PHC level by identifying the consequences or the specific incentives that can influence the behaviour of reporting and recording TB cases at PHC facilities. One example would be to link TB notifications, along with other priority SPM indicators, in a revised performance-based capitation.

The discussion on an ICD code and reimbursement rate for DR-TB should be concluded, and the resulting guidance implemented, as soon as possible. The addition of the ICD code for DR-TB needs to be accompanied by a revision of the InaCBGs logic grouper to produce a more representative tariff output. The use of a special CMG (top up) tariff code is also very likely to be considered to accommodate DR-TB cases that require certain additional services.

All stakeholders will need to monitor closely and to actively participate in the implementation of the recently signed MOU on data exchange to ensure the implementation of interoperability of information systems between MoH and BPJS-K including for TB at all levels of service. In the medium-term, efforts should be made to better prepare the MoH, PHO, and DHO to routinely review JKN utilization data for quality, appropriateness, and outcomes. There is a need to build capacity, especially skills in data management and analysis related to JKN data. A one percent sample of claims is routinely put on the web by BPJS-K to encourage this ongoing tracking, review, and analysis, although this is only hospital claims data.

**BPJS-K should look at TPT as an explicit benefit and develop new payment approaches for it.** TPT could be initially modelled for costs and cost-effectiveness, and then potentially added into the benefits package. Prevention could result in savings to the program overall in future years. In the recent past, BPJS-K has modelled

new benefits through University of Indonesia experts, and later included new benefits related to screening and prevention for other types of health problems.

In the medium-term, **funds now flowing through NTP for drugs and equipment such as the GeneXpert machine and cartridges should move to BPJS-K.** BPJS-K would then adjust payment amounts to cover the necessary machines, supplies, and drugs to allow both public and private providers to participate in the delivery of high-quality TB care. This would leave the NTP to focus on its core functions of governance, planning, training, sharing of data, surveillance systems and planning for possible innovations such as distribution of a new TB vaccine. In this area, Indonesia should follow the best practices of other countries such as South Korea, EU-15 countries, and Taiwan in moving funds under the social insurance organization to purchase inputs – through services – for the health system.



## **Annexes**

### **Annex 1. Provincial observations and recommendations on ACF**

#### **West Kalimantan**

Risk groups for ACF: contacts, HIV, migrant workers, religious schools, prisoners, diabetes. Data on cascade presented for contacts and people with HIV

#### **Main observations:**

- Notification data does not differentiate TB patients detected actively from passively.
- No data on ACF coverage among risk groups other than contacts and people with HIV
- Contact investigations: case to contact ratio > average household size (4.2).
- ACF dominated by symptom screen followed by mWRD (DSSM in prison). CXR rarely used
- No systematic call-up of risk groups for CXR (prisoners symptom screened at admission and then only passively)

#### **Recommendations:**

- Increase access to CXR for ACF
- Generate ACF coverage indicators by different risk groups
- Integrate ACF with TPT algorithms
- Assess the yield of ACF in groups targeted locally (eg boarding schools) as part of prioritizing efforts
- Assess the reliability of district level burden estimates and target-setting

#### **North Sumatera**

#### **Findings:**

- Community contact screening for ACF – “substantial” yield. Symptom plus CXR screen among 2,973 contacts – if positive then Xpert. TST included; around 20% positive.
- Prison screening is well implemented with high yield of DS and DR TB

- Mass screen at Islamic boarding schools and schools on World TB Day

### **Challenges:**

- Uncertain yield of TB cases from ACF and how many are treated
- Resource shortages including TST and Xpert cartridges
- Still 2.3% annual chance of developing active TB in prison, despite screening on entry and every 3 months, due to overcrowding, no TPT, and screening only via symptoms
- Household contacts who were not at home during cadre/PHC staff visit are not systematically re-visited for screening.

### **Recommendations:**

- Identity populations for targeted implementation of ACF using symptom+CXR+sputum mWRDT
- Integrate TPT into ACF in household CI - detect-treat-prevent
- Screen prison entry for TB infection with TST and CAD or teleradiology CXR; provide 3HP
- Implement simple digital self-reporting of symptoms by missed contacts, linked to SITB

## **North Sulawesi**

### **Findings:**

- ACF campaign in civilian sector is ongoing, however limited exclusively to the contacts of TB patients. In 2022 contacts were investigated for 827 index TB cases (14%), 3690 contact cases were identified, 130 were qualified as presumed TB, all of them were tested by molecular methods, and, finally 10 (7.7%) TB patients was identified.
- ACF in prisons is ongoing, using symptom screening, mWRD and TST.

### **Challenges:**

- ACF campaign in the civilian sector is limited only to contact investigations and is fragmented. Although Puskesmas report that all index patients have CI,

hospitals show suboptimal CI completion. There aren't enough human resources and existing staff are poorly reimbursed for the work they do (voluntary)

- CXRs are not available neither at Puskesmas nor in prison

### **Recommendations:**

- Prioritize CI for all bacteriologically confirmed TB index cases as one of most effective ways to find missing cases. Invest more in human resources to boost coverage.
- Expand ACF activities to PLHIV (beyond contacts investigation and prisoners). Consider expanding to other high-risk groups: malnourished, diabetes, history of previous TB, chronic lung disease, urban poor homeless, refugees, migrants.
- Implement CXR/AI as part of ACF for high risk groups contacts, prisoners, PLHIV and other high-risk groups.

### **D.I. Yogyakarta**

#### **Main Accomplishments:**

- Several approaches to find missing TB cases
- Adopted WHO-recommended diagnostic tests (GeneXpert, TCM) since change in national policy (June 2021)
- Implementation of diagnostic network involving hospitals and primary care, with specimen transportation linkages
- >75% of adult TB patients with TCM/GX result available, mostly for diagnosis, with high levels of DST coverage for rifampicin (Xpert MTB/RIF®)

#### **Challenges:**

- Stagnant and relatively low overall adult case notification 2019-2022, despite deployment of high-sensitivity diagnostics (reflected in overall 'treatment coverage' <50% of estimated incident burden, <40% if limited to adults)
- Unusually high proportion of pediatric TB cases (1425 (33.4%) of 4263 TB patients in 2022) – unclear if valid or what are the epidemiologic drivers

- Several activities/ interventions carried out in project mode (e.g., MICA, PPM, Zero TB and patient support) heavily dependent on donor funds
- Who owns the clinical follow-up of ZTB (visits, tests, care)? Impact on health system & person?
- Program costs + Dx test costs + case management of presumptives must be considered

### **Recommendations:**

- Expand screening and testing
  - Expand diagnostic access at primary care level (including private providers), with more on-site placement of POC instruments and optimized transport networks
  - Develop innovative models to improve identification of presumptive TB from private clinics and GPs, such as streamlined screening and specimen referral
  - Locally fund & scale mobile X-ray ACF activities, targeting contacts & high-risk groups
  - Fund (at national or subnational programmes) those interventions found effective (e.g., ZeroTB ACF with high yield)
- **Understand gaps to guide response**
  - Explore private pharmacy surveillance of anti-TB drugs sales, to identify under-reported TB cases and priority private providers for engagement
  - Validate rapid rise in pediatric cases, including basis of diagnosis at hospitals, routine source case investigations, and address any possible over-reporting.
  - Conduct local inventory survey to understand low treatment coverage and improve local burden estimates.

## **Annex 2. Provincial observations and recommendations for childhood TB**

### **North Sulawesi**

#### **Findings**

- Case finding is low compared to the estimated number of cases: in 2022, there were estimated to be 711 childhood TB cases but only 268 were identified.
- TPT coverage also low, only 91 contacts of index cases received TPT in 2022, however this represents an increase from 2020 where only one contact received TPT. Coverage of TPT for childhood TB cases found through household contact investigation is also very low: 0.02-4.3% from 2019 to 2022.
- Stock of child friendly Fixed Dose Combinations (FDCs), TST, and TPT in North Sulawesi are limited.
- Tuberculin test is not being done by physicians at health facility due to: no insurance coverage, limited supply, fear of supply wastage (hence waiting for several cases before opening vial; unknown use of vial after opened).
- Overall, diagnosing childhood TB remains a challenge at the primary health care level and the hospital level in both the public and private sectors, but performance is better in the public sector:
- Health care workers rely on the scoring system for diagnosing childhood TB, but seemed unfamiliar with the system. As TST supply is limited, few tests were being done and it appeared providers were hesitant to refer childhood TB cases for chest X-ray due to fear of radiation. It also appears that providers were not attempting to collect sputum samples for childhood TB cases which indicates the lack of ability to perform sputum induction and other methods to get samples.
- Health providers were under confident in diagnosing childhood TB and often referred cases to paediatricians
- Over referral of patients due under confidence in diagnosis could be contributing to delays in treatments as patients diagnosed by paediatricians would be referred back to Puskesmas (near the patients' domicile) for treatment

- Treatment coverage is lower than the TB cases identified in the hospital visited

## Challenges

- **Recording & Reporting:** Pediatricians at private clinics, who mostly detect childhood TB cases do not record/report to WifiTB or other online system; on the other hand, in Puskesmas where the recording of TB is better, TB in children is rarely diagnosed because of lack of confidence of the doctors.
- **Contact investigation only targets household with children under five years**, which might contribute to very low findings of childhood TB cases at community level[rt7]
  - Treatment initiation is delayed partly due to patient being referred back to the Puskesmas (domicile) for treatment, which also relates to recording-reporting in the system.
  - Health workers have not been trained for quality sample collection.
  - Tuberculin test distribution to health facility is allocated and estimated where there are very limited number of cases found.
  - Health workers have limited knowledge on diagnosing childhood TB and on TPT, TPT medications are not available at Puskesmas, poor community understanding.
  - Screening pregnant mothers with TB symptoms at the hospital visited is not routinely done.

## Recommendations

- **Diagnosis:** technical guidelines for health workers need to be updated; capacity development of physicians is needed for diagnosing childhood TB at primary health level.
- **Referral network needs to be strengthened:** Inventory of paediatricians needs to be mapped; network needs to be developed from Puskesmas/private clinics to hospital for case referral, diagnosis, treatment, recording-reporting.
- **Quality of laboratory:** capacity development of health workers is needed for SOP compliance, quality sample collection, recording & reporting.

- **Treatment needs to be provided the soonest**, if possible at the point of diagnosis, instead of sending back the patient to the primary health facility where they reside before providing treatment.
- **Treatment success**: monitoring of patient treatment needs support through community involvement.
- **Capacity building on management of childhood TB needs to be provided** at professional education curriculum, and upon 'entry' of work in Puskesmas/health facility, either through e-learning, on the job training, and 'centre of learning' health facilities.
- Stool specimen for the diagnosis of childhood TB needs to be introduced.

## **West Kalimantan**

### **Findings**

- Six paediatricians treat TB as per national guidance and have been trained on child TB.
- Follow usual approach to diagnosis by paediatricians – symptoms, CXR, TST, Score system.
- Child-friendly FDCs available but there have been stock-outs – phasing out loose drugs and non-daily treatment.
- Use of 3RH for TPT – not 3HP
- For bacteriological confirmation, use of GA, not stool yet.

### **Challenges**

- Lack of CXR in Puskesmas makes it challenging to diagnose child TB at that level and will be challenging to use 4-month regimen for non-severe TB.
- Reluctance to use TPT – low uptake.
- Very few MDR TB cases in children.

### **Recommendations**

- Paediatrician training on new TB guidelines.
- Access to 3HP as well as 3RH.
- Increase access to CXR.

## **D.I. Yogyakarta**

### **Findings**

- Active case finding activities in urban and rural sites that include young child contacts.

### **Challenges**

- Very high proportion of pediatric TB cases – 1425 or 33% of 4263 TB in 2022.
- Test for infection and TPT uptake is very low.

### **Recommendations**

- Operational research to validate pediatric cases including diagnosis at hospitals and routine source case investigation.
- Strengthen and expand support for TPT.

## **North Sumatera**

### **Findings**

- TB in young children (<5 years) and older children (5-14 years) represents just 2% and 3% respectively of the notifications to the provincial TB program.
- A low proportion of TB is EPTB which may reflect low child TB numbers. It is unclear which types of EPTB are common, but visit to referral hospital confirms that severe TB in children and adolescent is not uncommon.
- Treatment coverage for children (<15 years) in 2021 was only 17%, it is not clear how much is due to a gap in notifications of children being treated or how much is due to a gap in detection and treatment.
- While quality care is provided by paediatric specialist inpatient services at referral level, there seems to be poor connection with peripheral services and a passive approach to contact management and TPT.
- The Indonesian paediatric scoring system is used to support clinical diagnosis but has low visibility.
- There is some screening of schools and among adolescents at pesantrens, especially coinciding with World TB Day.



## **Challenges**

- Disconnect between paediatric specialist services and community, between facilities and health offices
- Children with TB present to paediatric services not TB services, but lack of capacity and confidence on child TB in primary level paediatric services.
- Child TB being managed in the private sector but no data from reporting.
- Low notification: <5% of all TB caseload and very few young children notified despite being high-risk group for severe TB.
- Extremely low TPT coverage among contacts - TPT recently introduced in Aug 2022
- Low awareness on childhood TB - hesitancy of caretakers for their children to be tested and given TPT, discrimination against children infected with TB at schools.

## **Recommendations**

- A provincial child TB Working Group that strengthens outreach to primary care providers.
- Provide trainings, training tools and job aides to service providers and community health workers.
- Information, education and communication of child TB among health workers and communities
- Integrate case finding and TPT for household contacts.

### **Annex 3. List of members of the 2022 TB JEMM**

1. **Jeremiah Chakaya Muhwa, WHO Consultant, Team leader**
2. Snehal Bhagat, Global TB Caucus, Advocacy thematic lead
3. Setiawan Jati, Laksono WHO, Indonesia
4. Vineet Bhatia, WHO, SEARO, TB treatment and care thematic lead
5. Mohammed Yassin, The Global Fund
6. Kenneth Castro, USAID, Active case finding thematic lead
7. Alex Golubkov, USAID
8. Puneet Dewan, Bill and Melinda Gates Foundation, TB laboratory thematic lead
9. Alexei Korobitsyn, WHO Global TB Program
10. Obert Kachuwaire, The Global Fund
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12. Mukta Sharma, WHO Indonesia
13. Lisa Stevens, FHI 360, TB/HIV thematic lead
14. Maria Regina Christian, WHO Indonesia,
15. Stephen Graham, WHO Consultant, Child and adolescent TB thematic lead
16. Yuka Onishi, UNICEF Indonesia
17. Dennis Falzon, WHO, HQ, TB prevention thematic lead
18. Erik Post, KNCV
19. William Wells, USAID, TB financing thematic lead
20. Jack Langenbrunner, USAID,
21. Pandu Harimurti, World Bank
22. Ernesto Jaramillo, WHO Global TB Program, Social Protection thematic lead
23. Thea Y Hutanamon, Stop TB partnership Indonesia
24. James Malar, Stop TB Partnership, Community Rights and Gender thematic lead
25. Meirinda Sebayang, Jaringan Indonesia positive (the positive Indonesia network)
26. Babis Sismandis, WHO, HQ, Lead, Universal Health Coverage and Regulatory framework
27. Agnes Dzokoto, The Global Fund
28. Zaza Munez, Global Drug Facility, Stop TB Partnership, PSM thematic lead
29. Padma Priyadarsin, National Institute for Research India, TB Research and Innovation thematic lead
30. Andreasta Meliala, CHPM FKKMK Universitas Gadjah Mada, Human resources for TB thematic lead
31. Carmelia Basri Senior TB and HIV advisor
32. Imran Farooq Syed, USAID TB private sector, Public Private Mix

#### **National team member**

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2. Sudijanto Kamso, Chair, Indonesia TB Expert Committee
3. Tjandra Yoga Aditama, Pulmonologist, Indonesia TB expert committee

4. Pandu Riono, Epidemiologist, University of Indonesia, Indonesia TB Expert Committee
5. M. Noor Farid, Statistician, University of Indonesia, Indonesia TB Expert Committee
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