REVISED NATIONAL STRATEGY OF TUBERCULOSIS CARE AND PREVENTION IN INDONESIA 2020-2024 AND INTERIM PLAN FOR 2025-2026

THE MINISTRY OF HEALTH REPUBLIC OF INDONESIA
2023

Foreword from the Director of Communicable Disease Prevention and Control

Our praise and gratitude to God Almighty for completing the revision of the 2020–2024 National Tuberculosis Control Strategy and the 2025–2026 Interim Plan. Highest appreciation to the entire team and all stakeholders who have played a significant role in preparing this document.

The revision of the 2020–2024 Tuberculosis National Strategy and the 2025–2026 Interim Plan was carried out based on the achievements of tuberculosis control during 2020–2022 and adjustment to post-pandemic conditions under COVID-19, the evaluation results from the JEMM and EPI reviews, and also the transformation of the national health system in 2022.

Document adjustments on key interventions, activities, indicators, targets, and implementation arrangements. During the preparation period for the revision of the National Strategy for Tuberculosis Care and Prevention the 2025–2026 Interim Plan, several workshops and discussions were held involving cross-programs, cross-sectors, TB experts, international partnership organizations, community organizations, non-governmental organizations (NGOs), professional organizations, academics, and the private sector.

We hope that the revised document for the National Strategy for Tuberculosis Care and Prevention 2020-2024 and the interim plan 2025-2026 will be an additional reference to adapt and develop in the current condition of tuberculosis control in Indonesia. This document will be a useful guide for all stakeholders involved in tuberculosis control and could support the achievement of tuberculosis elimination in Indonesia.

Jakarta, 17 March 2023
Director of Communicable Disease Prevention and Control

dr. Imran Pambudi, MPHM

Foreword from the Director General of Disease Prevention and Control

Assalamu'alaikum Wr. Wb.

Salam sejahtera*,*

Om Swastyastu, Namo Buddhaya, Salam Kebajikan,

The Indonesian government, together with the global community, has made a commitment to TB elimination by 2030. In line with this, in 2020, the 2020-2024 Tuberculosis National Strategy document was prepared, which refers to the 2020-2024 National Medium-Term Development Plan (RPJMN). The 2020-2024 Tuberculosis National Strategy document contains ambitious strategies, interventions, and activities, as well as targets to reduce TB as soon as possible. However, there are several challenges that slow down efforts to achieve TB elimination by 2030, one of which is the COVID-19 pandemic. The current TB Global Report has highlighted the disruption of TB control programs in many countries with high caseloads, including Indonesia.

A comprehensive evaluation of the TB program in Indonesia to be carried out in 2022, such as the Joint External Monitoring Mission (JEMM) and the Epidemiological Review of TB, provides an overview of the current state of the tuberculosis control program in Indonesia and recommendations that can be made moving forward. Given the need to accelerate the elimination of tuberculosis, adjust to the post-pandemic situation of COVID-19, and adapt to the transformation of the national health system launched in 2022, it is necessary to revise the National Strategy for the Tuberculosis Prevention and Care for 2020–2024 and the interim plan for 2025–2026.

The Revised National Strategy for Tuberculosis Prevention and Control of Tuberculosis 2020–2024 and the Interim Plan 2025–2026 are prepared by adjusting the main interventions, activities, indicators, targets, and implementation arrangements, taking into account the changing context as mentioned above. The interim plan for 2025–2026 will be included in the next National Strategy for Tuberculosis Control (2025–2028).

We are pleased to thank all parties who have contributed and assisted in the preparation of this important document, both from the government sector and the private sector, international organizations, non-governmental organizations, and tuberculosis patient groups at the central and regional levels throughout Indonesia.

Hopefully, this document can be used as an additional reference for planning and implementing tuberculosis prevention and control in Indonesia and intensifying efforts to eliminate tuberculosis in Indonesia by 2030. I invite all stakeholders to provide optimal support to fight tuberculosis. Together, we can overcome tuberculosis!

Jakarta, 17 March 2023
Director General
of Disease Prevention and Control

Dr. dr. Maxi Rein Rondonuwu, D.H.S.M., M.A.R.S.

Writing Team and Contributors

Advisors	Dr. dr. Maxi Rein Rondonuwu, D.H.S.M., M.A.R.S.	Director General of Prevention and Disease Control, MoH
	dr. Imran Pambudi, MPHM	Director of Communicable Disease Control and Prevention, MoH
Coordinator	dr. Tiffany Tiara Pakasi, MA	National TB Program Manager, MoH
Writing team	Prof. dr. Ari Probandari, MPH, PhD.	Universitas Sebelas Maret, Surakarta
	dr. Martina Bintari D	Individual Consultant
	dr. Betty Nababan, M.Epid	Zero TB Yogyakarta
	drg. Devi Yuliastanti	Individual Consultant
	Syarifah Khodijah, SKM	Individual Consultant
	Deni Harbianto, SE, M.Ec.	Individual Consultant
	dr. Setiawan Jatilaksono	WHO Indonesia Office

Contributor			
Sulistyo, SKM, M.Epid	National TB Program	Prof. Dr. dr. Sudijanto Kamso, SKM	TB Expert Committee
Totok Haryanto, SKM, MKes	National TB Program	dr. Pandu Riono, MPH, PhD	TB Expert Committee
Nurul Badriyah, SKM	National TB Program	Dr. dr. Erlina Burhan, Sp.P(K), M.Sc	TB Expert Committee
dr. Galuh Budhi Leksono Adhi	National TB Program	Dr. dr. Fathiyah Isbaniah, SpP(K), MPd.Ked	TB Expert Committee
dr. Meilina Farikha, M.Epid	National TB Program		
Ratna Dilliana Sagala, SKM, MPH	National TB Program	dr. Nastiti Kaswandani, Sp.A(K)	TB Expert Committee
Suhardini, SKM, MKM	National TB Program		
Windy Oktavina, SKM, MKes.	National TB Program	dr. Rina Triasih, M.Med(Paed), Sp.A(K)., PhD.	TB Expert Committee
Rita Ariyati,SKM,MM	National TB Program		
dr.Astrid Septrisia Paat	National TB Program	dr Pompini Agustina, Sp.P	TB Expert Committee
Dwi Asmoro, SKM	National TB Program	dr. Carmelia Basri, M.Epid.	Senior TB Advisor
Sarah Nadhila, SKM	National TB Program	Muhammad Noor Farid, SSi, PhD	TB Expert Committee
Bawa Wuryaningtyas, MM	National TB Program		
TO Childhood TB	National TB Program	dr. Kirana Pritasari, MQIH	Chairman of CCM
TO DR TB	National TB Program	Khaula Karima, SKM	Secretariat CCM
TO TB PPM	National TB Program	dr. Adang Bachtiar, MPH, DSc	Chairman of TWG TB
TO TB AKMS	National TB Program		
TO TB OR	National TB Program	Dr. drg. Helwiah Umniyati, MPH	TWG
TO TB HR	National TB Program		
Monitoring and Evaluation Team	National TB Program	dr. Bey Sonata	TWG
		Siti Rofiqoh	TWG TB
IT Team	National TB Program		
Dr. dr. Soedarsono, Sp.P(K).	TB Expert Committee	drg. Dyah Erti Mustikawati, MPH	PPTI
dr. Bachti Alisjahbana, Sp.PD(K), PhD.	TB Expert Committee		
		Budiarti Setyaningsih, SKM, MKM	PPTI
Dr. dr. Agus Dwi Susanto, Sp.P(K), FISR, FAPSR	TB Expert Committee	dr.Heny Akhmad	STPI

Thea Y Hutanamon	STPI	dr. Rony Chandra	TB STAR USIAD
Aris Subakti	STPI		
Nurul Nadia Luntungan	STPI	Tiar Salman	TB STAR USAID
dr. Diah Handayani, SpP	KOPI TB		
Budi Hermawan	POP TB	dr. Ferdiana	TB STAR USAID
dr. Regina Loprang	WHO		
Yoana Anandita, SKM	WHO	dr. Gracelina	UNICEF
Jonathan L Marbun	WHO		
dr. Retno Kusuma Dewi, MPH	WHO	dr. Pandu Harimurti	World Bank
dr. Aditya Wicaksono	USAID	dr. Ferdiana	TB STAR USAID
dr. Fauziah Asnelia TBPS	USAID	dr. Gracelina	UNICEF
dr. Imran Syed TBPS	USAID	dr. Pandu Harimurti	World Bank
Siva Anggita	TB STAR USAID		

Head of Provincial Health Office/Head of Disease Prevention and Control from 34 provinces
Director General for Public Health, MoH
Director General for Health Services, MoH
Director General for Pharmaceutical and Medical Devices
Director General for Health Workforce
Director General for Health Policy Agency
Head of Planning and Budgeting Bureau, MoH
Head of Legal Affairs Bureau, MoH
Head of Communications and public services Bureau, MoH
Director of Centre for Data and Information Technology, MoH
Director for Health Promotion and Community Empowerment, MoH
Director for Nutrition and Maternal and Child Health, MoH
Director for Communicable Disease Prevention and Control, MoH
Director for Non-Communicable Disease Prevention and Control, MoH
Director for Primary Health Services, MoH
Director for Referral Health Services, MoH
Director for Health Service Facilities, MoH
Director for Health Services Quality, MoH
Director for Pharmaceutical Production and Distribution, MoH
Director for Pharmaceutical Management and Services, MoH
Director for Medical Devices Production and Distribution, MoH
Head of Department of Program and Information, Secretary of General Inspectorate, MoH
Head of Department of Program and Information, Secretary of DG of Communicable Disease Prevention and Control, MoH
Working team of Diabetes Mellitus, MoH
Working team of HIV and Sexual Transmitted Infection, MoH
Coordinating Minister for Human Development and Culture
Coordinating Ministry for Political, Legal, and Security Affairs
Coordinating Ministry for Economic Affairs
Ministry of Internal Affairs
Ministry of Religious Affairs
Ministry of Law and Human Right
Ministry of Education, Culture, Research and Technology

Ministry of Social Affairs
Ministry of Manpower
Ministry of Villages, Disadvantages Regions and Transmigration
Ministry of National Development Planning
Ministry of State-owned enterprises
Cabinet Secretary
National Research and Innovation Agency
National Agency of Drug and Food Control
Ministry of Communication and Information
Directorate of Nutrition and Public Health, Ministry of National Development Planning
Directorate of Synchronization and Governing Issues III, Ministry of Home Affairs
Deputy of Health Insurance for Primary Health Care, BPJS Kesehatan
Deputy of Health Insurance for Referral Health Services, BPJS Kesehatan
TWG TB
CCM
Yayasan KNCV Indonesia
POP TB Indonesia
PPTI
KOPI TB
STPI-Penabulu
WHO Indonesia
USAID Indonesia
USAID-TBPS
USAID-TB Star
USAID-TB Prevent TB
PERDOKI
PERSI
ARSSI
PKFI
ASKILIN
ADINKES
World Bank
UNICEF

Table of Content

List of Acronyms

ACF	Active Case Finding
ADINKES	Asosiasi Dinas Kesehatan Seluruh Indonesia (Association of District Health Office Indonesia)
AIDS	Acquired Immune-deficiency Syndrome
ANC	Antenatal Care Servicess
APBD	*Anggaran Pendapatan dan Belanja Daerah* (Regional Government Budget)
ARSADA	*Asosiasi Rumah Sakit dan Balai Kesehatan Paru Indonesia (Association of Indonesian Hospitals and Lung Health Centers)*
ARSABAPI	*Asosiasi Rumah Sakit dan Balai Kesehatan Paru Indonesia (Association of Indonesian Hospitals and Lung Health Centers)*
ARSSI	*Asosiasi Rumah Sakit Swasta Indonesia* (Indonesian Private Hospital Association)
ART	*Asosiasi Rumah Sakit Swasta Indonesia (Indonesian Private Hospital Association)*
ASDK	*Aplikasi Satu Data Kesehatan* (One-Health Data Application)
BBKPM	*Balai Besar Kesehatan Paru Masyarakat* (Community Lung Health Referral Hospital)
BKN	*Badan Kepegawaian Negara* (National Staffing Agency)
BKPM	*Balai Kesehatan Paru Masyarakat (Community Lung Health Center)*
BKS	*Belanja Kesehatan Strategis (Strategic health purchasing)*
BNP2TKI	*Badan Nasional Penempatan dan Perlindungan Tenaga Kerja Indonesia* (National Labour Placement and Protection Agency)
BPJS	*Badan Penyelenggara Jaminan Sosial (The National Implementer of Social Security, there are two branches: the BPJS-Kesehatan for health and the BPJS-Ketenagakerjaan for employment related social security)*
BPPSDM	*Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan* (National Agency on Development and Empowerment of Human Resource for Health)
BSL2+	Biological Safety Level Two Plus
CBMF	Community-based Monitoring Feedback
CCM	Country Coordinating Mechanism
CLM	Community Led-Monitoring
CHW	Community Health Worker
CRG	Coumminity Rights and Gender
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
CST	Care, Support, and Treatment
CXR	Chest X-Ray
DHIS 2	District Health Information System 2
DHO	District Health Officer
DM	Diabetes Mellitus
DOTS	Directly Observed Treatment Short course
DPM	*Dokter Praktik Mandiri* (Private General Practitioners)

DPPM	District-based Public-Private Mix
DR TB	Drug Resistant Tuberculosis
DS TB	Drug Sensitive Tuberculosis
DST	Drug Susceptibility Test
EPI Review	Epidemiological Review
EPTB	Extrapulmonary tuberculosis
ESO	*Efek Samping Obat* (Side Effects of Drugs)
Fasyankes/Faskes	*Fasilitas layanan kesehatan* (Health Service Facilities)
FEFO	First Expired, First-Out
FIFO	First In, First Out
HIPTEK	*Himpunan Pemeriksaan Tenaga Kerja Indonesia* (Indonesian Association on Health Workers' Screening Providers)
HIV	Human Immunodeficiency Virus
IDAI	Ikatan Dokter Anak Indonesia (Indonesian Pediatrician Association)
IK	*Investigasi Kontak* (Contact Investigation)
IO PPM	Implementing Organization for Public-Private Mix
IT	Information Technology
IWAPI	*Ikatan Wanita Pengusaha Indonesia* (Indonesian Association of Women Enterpreneurs)
JEMM	Joint External Monitoring Mission
Jetset TB	*Jejaring Riset Tuberkulosis Indonesia* (Indonesian Tuberculosis Research Network)
JKN	*Jaminan Kesehatan Nasional* (National Health Insurance Scheme)
KALK	*Komite Akreditasi Laboratorium Kesehatan* (Health Laboratory Accreditation Committee)
KAN	*Komite Akreditasi Nasional* (National Accreditation Committee)
KOPI TB	*Koalisi Organisasi Profesi untuk Tuberkulosis* (Coalition of Professional Organizations for Tuberculosis)
KPLDH	*Ketuk Pintu Layani dengan Hati* (Knocking Door Service with Heart)
L0	Level null, healthcare facilities in the level of community
Lapas	*Lembaga Pemasyarakatan* (Correctional/Penitentiary Services)
LKNU	*Lembaga Kesehatan Nahdlatul Ulama* (Nahdatul Ulama Health Agency)
LPA	Line probe assay
LPA Lini2	Second line - line probe assay
MCU	*Medical Check-up*
MESO	*Manajemen Efek Samping Obat* (Management of Drugs' Side Effects)
MICA	Monthly Interim Cohort Analysis
MTBS	*Manajemen Terpadu Balita Sakit* (Integrated Management of Childhood Sickness)
MTPTRO	*Manajemen Terpadu Pengendalian Tuberkulosis Resistan Obat* (Programmatic Management of Tuberculosis Drugs Resistance)
mWRD	Molecular WHO-recommended rapid diagnostics
NAAT	Nucleic acid amplification test
NAAP	National AIDS Program
NGO	Non-Government Organization
NHA	*National Health Account*
NIK	*Nomor Induk Kependudukan* (Identification Number)
NSP	*National Strategic Plan*

NSPK TBC	*Norma, Standar, Prosedur dan Kriteria untuk Program Tuberkulosis* (Norms, Standards, Procedures and Criterias for Tuberculosis Program)
NTP	National Tuberculosis Program (*Program TB Nasional*)
OAT	*Obat Anti Tuberkulosis* (Anti TB Drugs)
OR	*Operational Research*
P2P	*Pencegahan dan Pengendalian Penyakit* (Prevention and Disease Control)
PAPDI	Perhimpunan Dokter Spesialis Penyakit Dalam Indonesia (Indonesian Association of Internal Medicine Specialists)
PBI	*Penerima Bantuan Iuran* (Government paid National Health Insurance recipient)
PCare	*Primary Care BPJS Kesehatan* (Health Insurance data system for Primary Care)
PCR	*Polymerase Chain Reaction*
PDP	*Perawatan Dukungan Pengobatan* (Care Support and Treatment)
PDPI	Perhimpunan Dokter Spesialis Penyakit Dalam Indonesia (Indonesian Association of Internal Medicine Specialists)
PERSI	*Perhimpunan Rumah Sakit Seluruh Indonesia* (Indonesian Hospitals Association)
Persit	*Persatuan Istri Tentara Kartika Chandra Kirana* (TNI AD) (Wives Association of Indonesian Army)
PETA	*Pejuang Tangguh* (a name of a patient support group for MDR-TB)
PHC	Primary Health Care
PHO	Provincial Health Officer
PHKP	Patients' Rights and Responsibilities
PIA Ardhya Garini	*Persatuan Isteri Anggota TNI Angkatan Udara* (Wives Association of Indonesian Air Forces)
PIS-PK	*Program Indonesia Sehat melalui Pendekatan Keluarga* (Healthy Indonesia Program through Family Based Approach)
PITC	*Provider initiated test and counseling*
PKH	Program Keluarga Harapan (the government specific interventions for families considered to be poor based on the National Bureau of Statistics criteria)
PLHIV	*People living with HIV*
PKK	*Pembinaan Kesejahteraan Keluarga* (Family Welfare Empowerment)
PMDT	Programmatic Management Drug Resistant Tuberculosis
POLRI	*Kepolisian Negara Republik Indonesia* (Indonesia National Police)
POP TB	*Perhimpunan Organisasi Pasien Tuberkulosis* (Association of Tuberculosis Patients Organizations)
PPE	*Personal Protective Equipment*
PPI	*Pencegahan dan Pengendalian Infeksi* (Infection Control)
PPM	*Public Private Mix*
Pusdatin	*Pusat Data dan Informasi Kementerian Kesehatan RI* (Centre for Data and Information, Ministry of Health, Republic of Indonesia)
Pusjak PDK	The Centre of Health Policy, Financing and Decentralization of the MoH

QA	Quality Assurance
Risfaskes	Riset Fasilitas Kesehatan (Health Facilities Research)
RPJMD	*Rencana Pembangunan Jangka Menengah Daerah* (Provincial or District Mid-Term Development Plan)
RPJMN	*Rencana Pembangunan Jangka Menengah Nasional* (National Mid-Term Development Plan)
RR/MDR TB	*Rifampicyn Resistant/Multi Drug Resistant Tuberculosis*
Rutan	*Rumah tahanan* (Detention Centre)
SDIDTK	Stimulasi Deteksi dan Intervensi Dini Tumbuh Kembang (Stimulation of Early Detection and Intervention of Growth and Development)
SIHA	*Sistem Informasi HIV AIDS* (HIV/AIDS Information Systems)
SIMRS	*Sistem Informasi Rumah Sakit (Hospital Information System)*
SIKDA	*Sistem Informasi Kesehatan Daerah* (Provincial or District Health Information Systems)
SIP	*Sistem Informasi Provinsi* (Provincial Information Systems)
SIPD	Sistem Informasi pembangunan Daerah (Regional Development Information System)
SITB	*Sistem Informasi Tuberkulosis* (Tuberculosis Information Systems)
SNARS	*Standar Nasional Akreditasi Rumah Sakit* (National Standard of Hospital Accreditation)
SPM	*Standar Pelayanan Minimal* (Minimal Service Standards)
STPI	Stop TB Partnership Indonesia
TemPO	*TEMukan pasien secepatnya, Pisahkan secara aman, Obati secara tepat* (FAST Strategy)
ToT	*Training of Trainers*
TPT	*Terapi Pencegahan Tuberkulosis* (Tuberculosis Preventive Therapy)
TST	Tuberculin Skin Test
UBM	Smoking Cessation Services (Upaya Berhenti Merokok)
UKP	*Upaya kesehatan pribadi (individual health effort)*
UKS/M	*Usaha Kesehatan Sekolah/Madrasah* (School based health efforts)
USAID	United States Agency for International Development
USD	United States Dollar
WBP	Warga Binaan Pemasyarakatan (Inmates)
WGS	*Whole Genome Sequencing*
WHO	World Health Organization
WIFI TB	Wajib Notifikasi Tuberkulosis (mobile application for TB mandatory notification)
XDR	Extensively drug resistant

ACF	Active Case Finding
ADINKES	Asosiasi Dinas Kesehatan Seluruh Indonesia (Association of District Health Office Indonesia)
AIDS	Acquired Immune-deficiency Syndrome
ANC	Antenatal Care Servicess
APBD	*Anggaran Pendapatan dan Belanja Daerah* (Regional Government Budget)

ARSADA	*Asosiasi Rumah Sakit dan Balai Kesehatan Paru Indonesia (Association of Indonesian Hospitals and Lung Health Centers)*
ARSABAPI	*Asosiasi Rumah Sakit dan Balai Kesehatan Paru Indonesia (Association of Indonesian Hospitals and Lung Health Centers)*
ARSSI	*Asosiasi Rumah Sakit Swasta Indonesia* (Indonesian Private Hospital Association)
ART	*Asosiasi Rumah Sakit Swasta Indonesia (Indonesian Private Hospital Association)*
ASDK	*Aplikasi Satu Data Kesehatan* (One-Health Data Application)
BBKPM	*Balai Besar Kesehatan Paru Masyarakat* (Community Lung Health Referral Hospital)
BKN	*Badan Kepegawaian Negara* (National Staffing Agency)
BKPM	*Balai Kesehatan Paru Masyarakat (Community Lung Health Center)*
BKS	*Belanja Kesehatan Strategis (Strategic health purchasing)*
BNP2TKI	*Badan Nasional Penempatan dan Perlindungan Tenaga Kerja Indonesia* (National Labour Placement and Protection Agency)
BPJS	*Badan Penyelenggara Jaminan Sosial (The National Implementer of Social Security, there are two branches: the BPJS-Kesehatan for health and the BPJS-Ketenagakerjaan for employment related social security)*
BPPSDM	*Badan Pengembangan dan Pemberdayaan Sumber Daya Manusia Kesehatan* (National Agency on Development and Empowerment of Human Resource for Health)
BSL2+	Biological Safety Level Two Plus
CBMF	Community-based Monitoring Feedback
CCM	Country Coordinating Mechanism
CLM	Community Led-Monitoring
CHW	Community Health Worker
CRG	Coumminity Rights and Gender
CSO	Civil Society Organization
CSR	Corporate Social Responsibility
CST	Care, Support, and Treatment
CXR	Chest X-Ray
DHIS 2	District Health Information System 2
DHO	District Health Officer
DM	Diabetes Mellitus
DOTS	Directly Observed Treatment Short course
DPM	*Dokter Praktik Mandiri* (Private General Practitioners)
DPPM	District-based Public-Private Mix
DR TB	Drug Resistant Tuberculosis
DS TB	Drug Sensitive Tuberculosis
DST	Drug Susceptibility Test
EPI Review	Epidemiological Review
EPTB	Extrapulmonary tuberculosis
ESO	*Efek Samping Obat* (Side Effects of Drugs)
Fasyankes/Faskes	*Fasilitas layanan kesehatan* (Health Service Facilities)
FEFO	First Expired, First-Out
FIFO	First In, First Out
HIPTEK	*Himpunan Pemeriksaan Tenaga Kerja Indonesia* (Indonesian Association on

	Health Workers' Screening Providers)
HIV	Human Immunodeficiency Virus
IDAI	Ikatan Dokter Anak Indonesia (Indonesian Pediatrician Association)
IK	*Investigasi Kontak* (Contact Investigation)
IO PPM	Implementing Organization for Public-Private Mix
IT	Information Technology
IWAPI	*Ikatan Wanita Pengusaha Indonesia* (Indonesian Association of Women Enterpreneurs)
JEMM	Joint External Monitoring Mission
Jetset TB	*Jejaring Riset Tuberkulosis Indonesia* (Indonesian Tuberculosis Research Network)
JKN	*Jaminan Kesehatan Nasional* (National Health Insurance Scheme)
KALK	*Komite Akreditasi Laboratorium Kesehatan* (Health Laboratory Accreditation Committee)
KAN	*Komite Akreditasi Nasional* (National Accreditation Committee)
KOPI TB	*Koalisi Organisasi Profesi untuk Tuberkulosis* (Coalition of Professional Organizations for Tuberculosis)
KPLDH	*Ketuk Pintu Layani dengan Hati* (Knocking Door Service with Heart)
L0	Level null, healthcare facilities in the level of community
Lapas	*Lembaga Pemasyarakatan* (Correctional/Penitentiary Services)
LKNU	*Lembaga Kesehatan Nahdlatul Ulama* (Nahdatul Ulama Health Agency)
LPA	Line probe assay
LPA Lini2	Second line - line probe assay
MCU	*Medical Check-up*
MESO	*Manajemen Efek Samping Obat* (Management of Drugs' Side Effects)
MICA	Monthly Interim Cohort Analysis
MTBS	*Manajemen Terpadu Balita Sakit* (Integrated Management of Childhood Sickness)
MTPTRO	*Manajemen Terpadu Pengendalian Tuberkulosis Resistan Obat* (Programmatic Management of Tuberculosis Drugs Resistance)
mWRD	Rapid, sensitive molecular tests for detecting TB
NAAT	Nucleic acid amplification test
NAAP	National AIDS Program
NGO	Non-Government Organization
NHA	*National Health Account*
NIK	*Nomor Induk Kependudukan* (Identification Number)
NSP	*National Strategic Plan*
NSPK TBC	*Norma, Standar, Prosedur dan Kriteria untuk Program Tuberkulosis* (Norms, Standards, Procedures and Criterias for Tuberculosis Program)
NTP	National Tuberculosis Program (*Program TB Nasional*)
OAT	*Obat Anti Tuberkulosis* (Anti TB Drugs)
OR	*Operational Research*
P2P	*Pencegahan dan Pengendalian Penyakit* (Prevention and Disease Control)
PAPDI	Perhimpunan Dokter Spesialis Penyakit Dalam Indonesia (Indonesian

	Association of Internal Medicine Specialists)
PBI	*Penerima Bantuan Iuran* (Government paid National Health Insurance recipient)
PCare	*Primary Care BPJS Kesehatan* (Health Insurance data system for Primary Care)
PCR	*Polymerase Chain Reaction*
PDP	*Perawatan Dukungan Pengobatan* (Care Support and Treatment)
PDPI	Perhimpunan Dokter Spesialis Penyakit Dalam Indonesia (Indonesian Association of Internal Medicine Specialists)
PERSI	*Perhimpunan Rumah Sakit Seluruh Indonesia* (Indonesian Hospitals Association)
Persit	*Persatuan Istri Tentara Kartika Chandra Kirana* (TNI AD) (Wives Association of Indonesian Army)
PETA	*Pejuang Tangguh* (a name of a patient support group for MDR-TB)
PHC	Primary Health Care
PHO	Provincial Health Officer
PHKP	Patients' Rights and Responsibilities
PIA Ardhya Garini	*Persatuan Isteri Anggota TNI Angkatan Udara* (Wives Association of Indonesian Air Forces)
PIS-PK	*Program Indonesia Sehat melalui Pendekatan Keluarga* (Healthy Indonesia Program through Family Based Approach)
PITC	*Provider initiated test and counseling*
PKH	Program Keluarga Harapan (the government specific interventions for families considered to be poor based on the National

	Bureau of Statistics criteria)
PLHIV	*People living with HIV*
PKK	*Pembinaan Kesejahteraan Keluarga* (Family Welfare Empowerment)
PMDT	Programmatic Management Drug Resistant Tuberculosis
POLRI	*Kepolisian Negara Republik Indonesia* (Indonesia National Police)
POP TB	*Perhimpunan Organisasi Pasien Tuberkulos*is (Association of Tuberculosis Patients Organizations)
PPE	*Personal Protective Equipment*
PPI	*Pencegahan dan Pengendalian Infeksi* (Infection Control)
PPM	*Public Private Mix*
Pusdatin	*Pusat Data dan Informasi Kementerian Kesehatan RI* (Centre for Data and Information, Ministry of Health, Republic of Indonesia)
Pusjak PDK	The Centre of Health Policy, Financing and Decentralization of the MoH
QA	Quality Assurance
Risfaskes	Riset Fasilitas Kesehatan (Health Facilities Research)
RPJMD	*Rencana Pembangunan Jangka Menengah Daerah* (Provincial or District Mid-Term Development Plan)
RPJMN	*Rencana Pembangunan Jangka Menengah Nasional* (National Mid-Term Development Plan)
RR/MDR TB	*Rifampicyn Resistant/Multi Drug Resistant Tuberculosis*
Rutan	*Rumah tahanan* (Detention Centre)
SDIDTK	Stimulasi Deteksi dan Intervensi Dini Tumbuh Kembang (Stimulation of

	Early Detection and Intervention of Growth and Development)
SIHA	*Sistem Informasi HIV AIDS* (HIV/AIDS Information Systems)
SIMRS	*Sistem Informasi Rumah Sakit (Hospital Information System)*
SIKDA	*Sistem Informasi Kesehatan Daerah* (Provincial or District Health Information Systems)
SIP	*Sistem Informasi Provinsi* (Provincial Information Systems)
SIPD	Sistem Informasi pembangunan Daerah (Regional Development Information System)
SITB	*Sistem Informasi Tuberkulosis* (Tuberculosis Information Systems)
SNARS	*Standar Nasional Akreditasi Rumah Sakit* (National Standard of Hospital Accreditation)
SPM	*Standar Pelayanan Minimal* (Minimal Service Standards)
STPI	Stop TB Partnership Indonesia
TemPO	*TEMukan pasien secepatnya, Pisahkan secara aman, Obati secara tepat* (FAST Strategy)
ToT	*Training of Trainers*
TPT	*Terapi Pencegahan Tuberkulosis* (Tuberculosis Preventive Therapy)
TST	Tuberculin Skin Test
UBM	Smoking Cessation Services (Upaya Berhenti Merokok)
UKP	*Upaya kesehatan pribadi (individual health effort)*
UKS/M	*Usaha Kesehatan Sekolah/Madrasah* (School based health efforts)
USAID	United States Agency for International Development
USD	United States Dollar
WBP	Warga Binaan Pemasyarakatan (Inmates)
WGS	*Whole Genome Sequencing*
WHO	World Health Organization
WIFI TB	Wajib Notifikasi Tuberkulosis (mobile application for TB mandatory notification)
XDR	Extensively drug resistant

Definitions

Catastrophic costs due to tuberculosis	The total costs incurred by patients with tuberculosis to treat tuberculosis completely, which exceeds the maximum limit of expenditure per family income per year during undergoing treatment. For example, the maximum expenditure limit is 20% of total family income (WHO, 2017)
Tuberculosis contact investigation	Systematic tracking and investigation aimed at people in household contact and in close contact with pulmonary tuberculosis patients with positive or presumptive sputum examination results / drug resistant tuberculosis cases.
Household contact	People living in a house at least one night or frequently living with a positive smear-pulmonary tuberculosis patient or presumptive/case of drug resistant tuberculosis in the past three months before the pulmonary tuberculosis patient receives anti-tuberculosis drugs.

List of Table

List of Figure

Summary

Indonesia has set six tuberculosis prevention strategies in Indonesia for 2020-2024 to achieve TB elimination in 2030, including:

1. Strengthening commitment and leadership of central, provincial, and district government to support the acceleration towards tuberculosis elimination in 2030.
2. Increasing access to high-quality and patient-centered tuberculosis diagnosis and treatment services.
3. Optimization of promotion and prevention efforts, provision of tuberculosis preventive therapy, and infection control.
4. Utilization of research findings and technologies for screening, diagnosis, and management of Tuberculosis.
5. Increasing communities, partners, and multisectoral participation in TB elimination efforts.
6. Strengthening program management through health system strengthening.

However, the COVID-19 pandemic has slowed the implementation of those strategies. Hence, to keep track of achieving the target of elimination of a decrease of incidence up to 65 per 100,000 population in 2030, acceleration is needed. While the six strategies are still relevant, there is a need for bold key interventions and activities to improve the implementation of the strategies by revising the national action plan for tuberculosis care and prevention 2020-2024 and developing an interim plan for 2025-2026, by conducting the interventions including:

Strategy 1:

- Advocate the allocation of funding for tuberculosis control at the village level;
- Review/amend regulations for facilitating the implementation of chest X-ray screening facility, DR-TB, and ART initiation in Puskesmas.

Strategy 2:

- TB active case finding (ACF) in TB high-risk populations with sensitive tools for screening and diagnosis and streamline the reporting of TB patients detected through ACF into the main TB information system;
- Integration of TB contact investigation activities with CXR screening (when available and complementary) and TB preventive treatment provision;

- Streamline the contact investigation by community health workers (CHW), referral to CXR screening or health facilities, and reporting of CHW contribution;
- Procure short-term TB regimen for adults;
- Transportation support for community volunteers to mobilize participants in mass screening;
- Scale up DRTB treatment initiation centers to reduce the delay of treatment and initial loss to follow-up;
- Procure and implement the latest recommended DR TB regimen;
- Provide counseling and support to DRTB patients and link peer supporters in each PMDT site to support adherence to DRTB treatment;
- Provide enablers, tracing the DR TB patients by the community health volunteers and operate shelters for DRTB patients under treatment;
- Contact investigation of DRTB patients by the community health workers or volunteers;
- Add laboratories that can perform culture, LPA, and DST of the latest recommended drugs;
- Make available non-sputum-based diagnostic tools for TB detection in children (KVP- children) and PLHIV, such as LF LAM, NAAT for fecal and cerebrospinal fluid, biopsy specimens in primary health facilities and district hospitals;
- Scale up HIV testing to TB patients in all TB service facilities: PITC training,
- Support community volunteers to accompany TB patients for HIV test if it is not in the same health facilities: transportation support;
- CXR screening for PLHIV and integrating the PLHIV who do not have active TB into the TPT program;
- Bidirectional screening of TB and DM, CXR screening for DM patients, and developing and scaling up a one-stop service for TB and DM.
- Strengthen district public-private mix (DPPM) activities by expanding quality TB care and patient-centered services within the scope of government-private activities to improve access to quality TB services.
- Initiate the utilization of child-friendly formulations of TB drugs and short treatment regimens for non-severe TB in children.
- Strengthen information and education on KOPI TB members related to pediatric tuberculosis, TB-HIV, TB-DM, and TPT.

Strategy 3:

- Optimize the administration of tuberculosis preventive treatment by the provision of short-regimen TPT for TB high-risk populations and link the provision with ACF to these populations;
- Preventing and controlling tuberculosis infection by Improving infection control in congregated settings

Strategy 4:

- Continue supporting research and innovation to support the TB program
- Develop mechanisms for adapting diagnostic tools, vaccines, and new drugs/regimens
- Conduct surveys to enable TB burden estimation
- Implement community-based and led research

Strategy 5:

- Develop promotion strategies on TB (including DRTB, TB HIV, childhood TB, TPT, TB-DM, TB screening, and BPJS information), which include human rights and gender components;
- Coordination on TB screening in congregated settings
- Coordination with the Ministry of Social Welfare to request their support for TB patients support (shelters, transportation, nutrition, enablers)
- Coordination with philanthropy organizations and corporate social responsibilities.
- Implementation of LAPOR TB, apps to receive feedback, complaints, and suggestion from communities
- Legal literacy and the know your right campaign;
- Engagement of paralegal and legal support for TB patients experiencing human rights abuse
- Strengthen organizational capacities of community organizations: supervision, managerial capacity building
- Mobilize marginalized communities and underserved key vulnerable populations to overcome barriers to access to TB services and social security

Strategy 6:

- Develop and implement innovative and effective training methods, internet-based
- Develop the model of engaging CHW in the primary care settings (recruitment, reward, training);

- Strengthen the capacity of the provincial and district health offices and health facilities to use TB information systems;
- Update SITB to accommodate more TB activities (TPT, ACF, community), and to have a better link with the other information system, ex. SIMRS and the main health data
- Coordination, monitoring, and evaluation meeting with BPJS at the national and provincial level
- Logistic system strengthening

The estimated cost for TB Program in 2024-2026 is Rp 51,407,434,000,000, - with details per year as follows:

- In 2024, IDR 11,835,076,000,000
- In 2025, IDR 18,236,110,000,000
- In 2026, IDR 21,336,248,000,000

Chapter 1. Introduction

1.1. Global and national commitments to end the epidemic of Tuberculosis

The global commitment to end Tuberculosis is outlined in the **End TB strategy** that targets a reduction in Tuberculosis deaths by up to 90% in 2030 compared to 2015, a reduction in the incidence of Tuberculosis by 80% in 2035 compared to 2015, and no household experiences catastrophic costs due to TB in 2030. In the End TB Strategy, it is emphasized that the target is expected to be achieved with innovation, such as developing vaccines and new TB drugs with short-term regiments (WHO, 2019e).

The global commitment of the End TB strategy was followed up with the **WHO Global Ministerial Conference** meeting in Moscow in November 2017, attended by 117 delegates from various countries. Three agreements were reached at the meeting: 1) to increase multi sectoral cooperation, 2) to evaluate target achievement, and 3) to build accountability in achieving the End TB strategy target in 2030 (WHO, 2019f). At the 71st World Health Assembly in May 2018, WHO was asked to develop a framework of action to accelerate the achievement of the End TB strategy. The work plan is called the Multisectoral Accountability Framework (MAF-TB). Each country is expected to assess each component, involve all stakeholders, adopt, implement, and monitor the implementation of MAF-TB (WHO, 2019c).

A United Nations High-Level Meeting (UNHLM) was held in the same year, which was attended by state leaders and high government officials from countries with high Tuberculosis cases. The meeting reached a commitment to increase the implementation scale of Tuberculosis Preventive Treatment in high burden countries. It is expected that the Tuberculosis Preventive Treatment could reach a total of 30 million people worldwide, including 4 million children under five years old, 20 million Tuberculosis contacts and 6 million people with HIV in 2022 (Stop TB Partnership, 2019b).

Table 1. UNHLM's target for Indonesia year 2018-2022

Indicators	Year					Total
	2018	**2019**	**2020**	**2021**	**2022**	
Number of drug-sensitive tuberculosis treated	570,300	858,400	808,400	758,200	707,900	3,703,200
Number of child tuberculosis treated	62,600	65,000	68,000	69,000	70,000	334,600
Number of MDR-TB cases treated	4,200	6,400	14,200	20,500	21,900	67,200
Number of TB contacts aged under 5 years old received Tuberculosis Preventive Treatment	21,830	65,140	93,010	118,120	140,230	438,330
Number of TB contacts aged more than 5 years old received Tuberculosis Preventive Treatment	42,800	99,892	208,553	355,873	444,196	1,151,314
Number of PLHIV received Tuberculosis Preventive Treatment	13,766	4,306	3,923	4,659	3,179	29,833
Number of people received Tuberculosis Preventive Treatment	78,400	169,340	305,490	478,650	587,600	1,619,480

Source: Stop TB Partnership, 2019a

The Ministry of Health the Republic of Indonesia developed a roadmap for Tuberculosis elimination in Indonesia for 2020-2030. In that document, it was stated that the target of the reduction in tuberculosis incidence to 65 cases per 10,000 population in 2030. The target of tuberculosis elimination is included in Presidential Decree No 67/2021 on tuberculosis control.

1.2. Rationale for the revision of NSP TB 2020-2024 and development interim plan for 2025-2026

The COVID-19 pandemic from 2020 has impacted the achievement of the TB control target. The World Health Organization (WHO) in 2023 has launched a flagship initiative to bring together countries and stakeholders to redouble efforts and accelerate the TB response. It will prioritize getting progress back on track, following the severe impact of the COVID-19 pandemic that threaten to derail recovery. The focus of the initiative will be on ensuring universal access to prevention, care and the latest tools and technologies to combat TB on the road to Universal Health Coverage (UHC). This follows the first flagship initiative titled "FIND. TREAT. ALL. #ENDTB" launched in 2018, in

collaboration with Stop TB Partnership, and The Global Fund. To achieve 2030 targets, NTP should take action to achieve these indicators in 2024-2027 periods.

	INDICATORS	TARGETS
	**1. Universal access to WHO-recommended quality TB diagnosis and treatment for all**	**90%** (End TB Strategy target is ≥ 90% by 2025) *This is equivalent to approximately **40 million people** reached with WHO-recommended rapid molecular tests and TB treatment regimens between 2023- 2027*
	**2. Universal access to WHO-recommended rapid diagnostic tests for all**	**100%** (End TB Strategy target is ≥90% by 2025)
	**3. Universal access to TB preventive treatment for all**	**90%** (End TB Strategy target is ≥ 90% by 2025) *This is equivalent to at least **35 million people** reached with TB preventive treatment between 2023- 2027*
	**4. Financial risk protection for vulnerable people with TB (process indicator)**	**100%** All (eligible) people with TB, have access to health and social benefits package so they don't endure financial hardship because of TB disease
	**5. License a new TB vaccine to accelerate TB incidence decline (process indicator)**	**Licensing of at least one new TB vaccine** by 2025
	**6. Sustained and adequate financing for TB services and TB research and innovation (process indicator)**	Reaching **US$22 billion annually by 2027** **US $5 billion per year for research by 2027**

Figure 1. WHO DG flagship initiative to #ENDTB 2023-2027

Hence, the modeling from WHO Global TB Report 2022 provides a prediction on the level of impact of the COVID-19 pandemic on an estimated number of people developing TB and dying from TB (Figure. 2). The modeling illustrates that in the COVID-19 pandemic context, there is an increased risk of morbidity and mortality.

Figure 2. Projected impact of comprehensive TB interventions in Indonesia 2019-2030

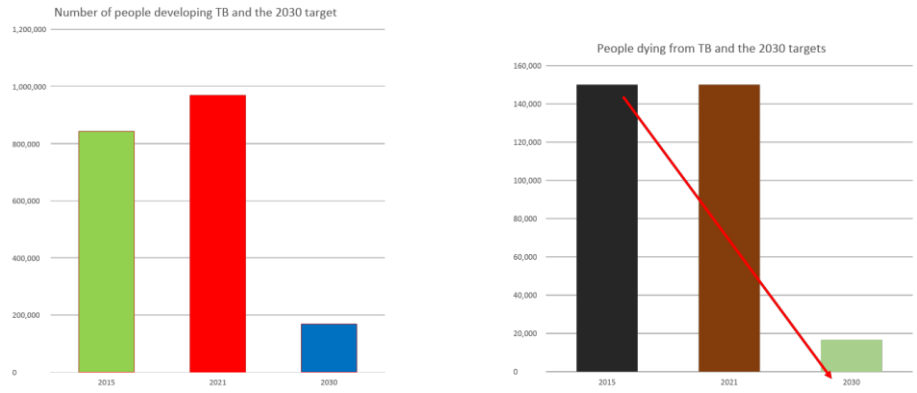
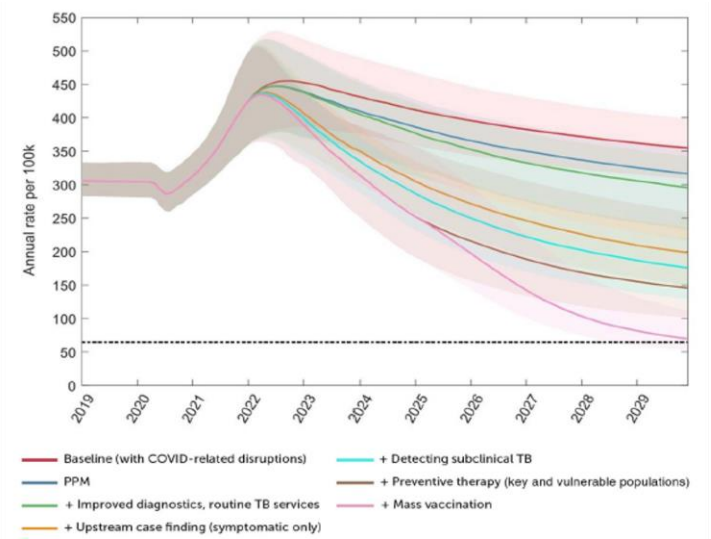


Figure 3. STPs modeling of TB incidence due to the COVID-19 disruption and key interventions to accelerate the improvement of TB incidence (Global Plan to end TB 2023-2030)



COVID-19 pandemic impacts the TB control program in Indonesia, which will prevent the acceleration of TB elimination in 2030. Figure 3 illustrates the short-term decrease TB incidence projection model in 2020, due to COVID-19 lockdown. However, in the long-term, there will be service disruptions and substantial increase of TB incidence. **The model also illustrate that Indonesia has opportunity to end TB in 2030, if the following interventions increased linearly during 2022 to 2025 and sustained afterward,** including: **(1) the comprehensive TB interventions consist of Public-Private Mix for TB; (2) improved diagnostics; (3) active case finding of people with symptoms of TB; (4) detecting subclinical TB; (5) preventive therapy mainly for key and vulnerable population; and (6) mass vaccination with new TB vaccine** (STP, 2022).

Specifically, **the Epi Review in 2022 gave four recommendations,** mainly to: **(1) Measure and estimate TB burden** by collecting data to explore causes of TB case notification in 2019-2020. It includes the exercise to link the SITB with the BPJS record and conduct TB prevalence survey; **(2) Improvement/recovery post-pandemic and case notification strengthening.** It aims to achieve a number of case notifications, at least as the one before the pandemic. It includes a review of issues of under-diagnosis vs. under-reporting. TB screening should be improved. **(3) Intensify surveillance and conduct vital registration**. It should cover efforts to ensure the sustainability of data sharing, to create a linkage between SITB and SIMRS for data mopping up, to review deduplication, and to include tuberculosis in the menu of the national health service facility survey (Risfaskes); **(4) Integrate routine health information systems in the current context of digital transformation.** Specific collaboration between NTP and the

Digital Transformation Office should be continued. Any infrastructure should be utilized to obtain additional data for TB and its risk factors/comorbidities. The DTO dashboard should be made with individual information and validation by the MoH. A review of the process of data entry in SITB should be conducted. Instead of using the TB-03 form, automatic client management systems in SITB are more recommended than manual administrative systems.

The Joint External Monitoring Mission (JEMM) 2022 provides 10 key recommendations as described as follows:

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 artificial intelligence.
2. **Increase the capacity of the primary health care system** (Puskesmas and below) to diagnose TB by equipping these facilities with chest x-ray capability while also expanding mWRD coverage among them.
3. Ensure **active case finding is twinned with TB preventive therapy** for the full public health benefit of an active TB case finding to accrue.
4. **Address the human resource constraints** at all system levels, including at the central, provincial, district, and health facility levels.
5. Address HIV-associated TB as a low-hanging fruit to **find people with HIV and to improve TB treatment outcomes in HIV-associated TB**.
6. Address inadequacies in the clinical management of children with TB by **enhancing the capacity to diagnose TB among children** at the Puskesmas level (CXR, mWRD, training of health care workers).
7. **Re-orient diagnostic network capacity for primary care** and improve quality and performance by establishing a clear and costed plan for supervision, EQA, and quality management systems for peripheral laboratories while diversifying mWRD/RMD platforms, emphasizing on-site placement at primary care.
8. **Engage with relevant ministries** such as the Ministry of Social Affairs (MoSA) to link patients with TB, both DS TB and DR TB, to social support programs as critical components of care for these patients who are often socio-economically disadvantaged.
9. Engage with those driving the health and **digital transformation agenda** to evolve TB information that meets the objectives of the TB response.
10. Mobilize **adequate financial resources for TB** by creating an episodic JKN payment mechanism for primary health care under TB Strategic Health Purchasing to incentivize providers to identify and notify TB, implement adherence monitoring, and complete treatment for TB patients.

Considering the recommendations from the Epi Review and JEMM 2022 and reviews on the TB program performance in 2022, the Minister of Health Republic of Indonesia gave a specific direction for the tuberculosis control program in 2023, which is summarized in the following points:

1. To achieve 90% of national TB case estimation, there should be 16,700 case notifications per week and mandatory reporting of unreported cases from all health facilities
2. Increase the reporting coverage from any public and private hospitals, Puskesmas and clinics
3. Monitor hospitals type B/C/D, particularly in 25 districts in eight priority provinces, for TB elimination that has SITB users but have not reported TB cases.
4. Accelerate the solution to connectivity issues between molecular rapid test information systems with other applications.
5. Routine monitoring and feedback of zero reporting from health facilities.
6. Implementation of contact investigation and provision of TB preventive treatment to close contacts.
7. Utilization of TB case reporting platforms, e.g., NAR TBC and WIFI TB, for healthcare facilities that are not able to access SITB.
8. Utilization of SITB registration number for National Health Insurance claims.

1.3. Coherency with the national development plan

The Indonesian Government is committed to improve the quality of healthy human resources through increasing access and quality of health services towards universal health coverage. Comprehensive Tuberculosis care and prevention will support the development of qualified and competitive human resources. This is very relevant to Indonesia's development agenda 2020-2024 as stated in the National Medium-Term Development Plan (*Rencana Pembangunan Jangka Menengah Nasional*/RPJMN) 2020-2024. In line with the 2020-2024 RPJMN, the tuberculosis care and prevention strategy is also a part of the national health policy and development strategy 2020-2024 and the Long-Term Health Plan 2005-2025 (*Rencana Jangka Panjang bidang Kesehatan*/RPJPK) of the Ministry of Health Republic of Indonesia. The main objectives of tuberculosis prevention listed in the 2020-2024 RPJMN and the national health development strategy of the Ministry of Health Republic of Indonesia 2020-2024 is to reduce the incidence of tuberculosis from 319 per 100,000 population in 2017 to 190 per 100,000 population by 2024 (Kementerian Kesehatan RI, 2020; Kementerian PPN/Bappenas Republik Indonesia, 2020).

The six strategies mentioned above are elaborated in the National Strategy for Tuberculosis Care and Prevention in Indonesia 2020-2024. Addressing the challenges of TB control program implementation during the period of 2020-2022, revision of NSP 2020-2024 and interim plan for the periods of 2025-2026 are needed for mitigating the impact of the COVID-19 pandemic on the Indonesian TB control program and tracking back to the roadmap to TB elimination. Based on the lessons from the COVID-19 pandemic, the Ministry of Health the Republic of Indonesia has revised the National Health Development Strategy 2020-2024, which is regulated under the Ministry of Health Decree No 13/2022. The document mentions six pillars of health transformation, which are also a form of translation of the national health system reform, including 1) Primary Services Transformation; 2) Referral Services Transformation; 3) Health System Resilience Transformation in dealing with outbreaks, diseases, public health emergencies; 4) Health Financing Transformation; 5) Human Resource of Health Transformation; 6) Health Technology Transformation.

Efforts towards tuberculosis elimination in Indonesia by 2030, as mandated in the 2020-2024 RPJMN and the National Health Development Strategy 2020-2024 will be achieved by implementing six strategies, namely:

1. Strengthening commitment and leadership of central, provincial, and district government to support the acceleration towards tuberculosis elimination 2030.
2. Increasing access to high-quality and patient-centered tuberculosis diagnosis and treatment services.
3. Optimization of promotion and prevention efforts, provision of tuberculosis prevention therapy and infection control.
4. Utilization of research findings and technologies for screening, diagnosis, and management of Tuberculosis.
5. Increasing communities, partners, and multisectoral participation in TB elimination efforts.
6. Strengthening program management through health system strengthening.

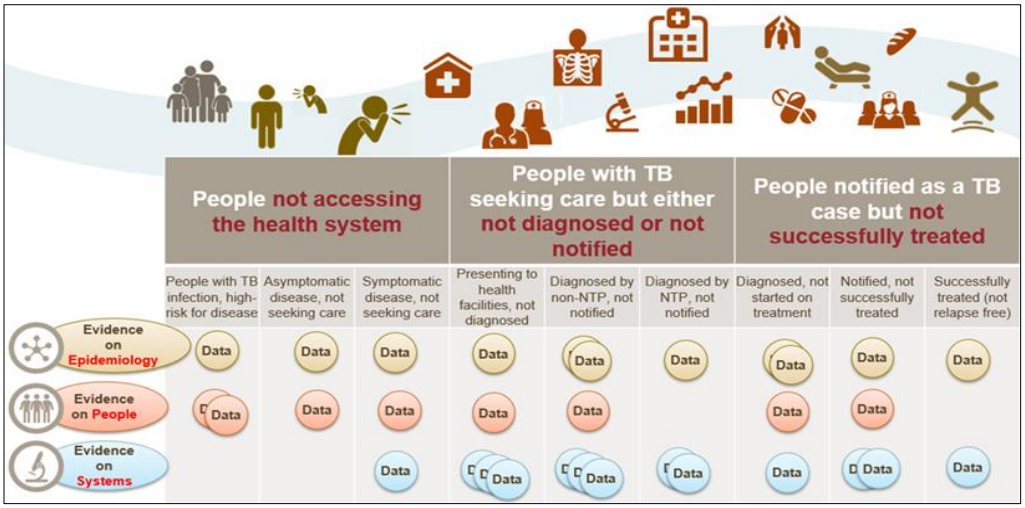
1.4. Framework and Development Process of National Strategic Plan for Tuberculosis Control in Indonesia 2020-2024 and Interim Plan for 2025-2026

1.4.1. People-centered planning framework

The draft-making of the National Strategy of Tuberculosis Care and Prevention in Indonesia 2020-2024 (TB NSP) uses the People-Centered Planning Framework (PCF) recommended by WHO. The PCF framework consists of **three main components**, namely:

- Sustainable health services (**along a continuum of care**);
- Planning based on **three types of data,** including epidemiological data, characteristics of affected people, and evidence of a health service system related to tuberculosis control; and
- **Three planning steps** which are 1) problem identification and prioritization, 2) root-cause analysis, and 3) intervention optimization.

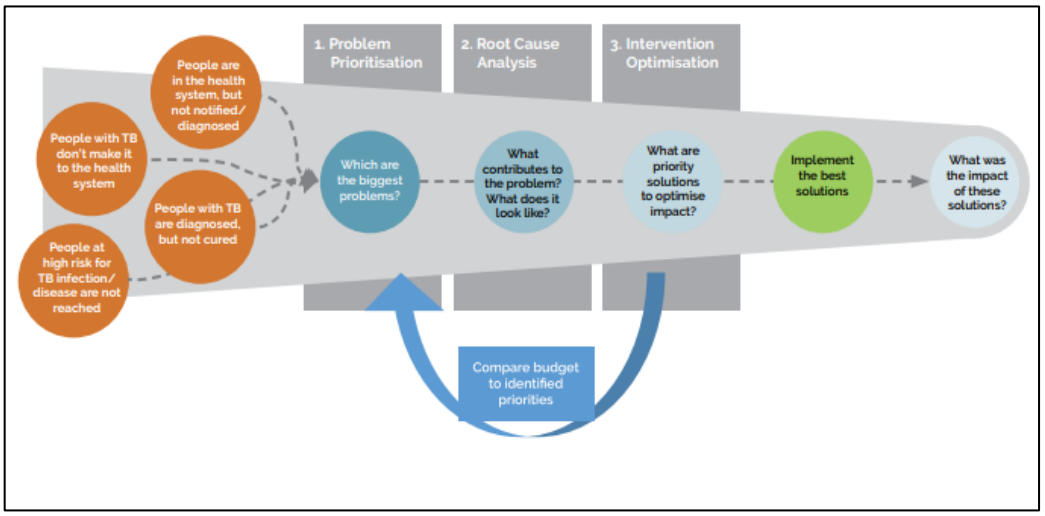
Figure 4. People-centered framework for TB program planning and prioritization



Source: (WHO, 2019d)

In the PCF framework, sustainable health services are provided systematically by paying attention to the level of vulnerability of the community to the emergence of TB symptoms. The level of vulnerability of the community to TB include (1) people not accessing the health system, (2) people with TB seeking care but either not diagnosed or not notified, and (3) people notified as a TB case but not successfully treated. Furthermore, the data related to epidemiology, population and health system are consolidated and presented in a framework of sustainable tuberculosis services according to the three levels of community vulnerability as explained in Figure 4 above. After the data consolidation, the planning process begins with determining priority problems (problem prioritization) related to TB on a scale of 1-5 (not priority - high priority). The next step after determining the priority of problems is an identification and root cause analysis of the priority problems, and then followed by determining the interventions that optimize the intervention (strategic intervention optimization) to solve the root problem. The interventions that have been selected are then optimized by modeling methods. In summary, this planning process can be illustrated as Figure 5 below:

Figure 5. Three planning steps within the PCF framework



Source: (WHO, 2019d)

1.4.2. Development process

The Revised National Strategy of Tuberculosis Care and Prevention in Indonesia 2020-2024 and the interim plan is developed as a reference and guideline for the implementation of interventions for tuberculosis care and prevention in 2024-2026. The process of formulating the revised NSP 2020-2024 and interim plan 2025-2026 was held from December 2022 to March 2023 with a series of meetings as following:

1. Preparation meetings (December 2022)
2. Joint External Monitoring Mission 2022 (December 2022)
3. Document Reviews (January 2023)
4. 1st-country dialogue meeting (January 2023)
5. Workshop with stakeholders (24-27 January 2023)
6. National Monitoring and Evaluation meeting (31 January - 3 February 2023)
7. Modeling, costing, and budgeting (February 2023)
8. Drafting the revised NSP 2020-2024 and interim plan 2025-2026 (February 2023)
9. 2nd country dialogue meeting (22 February 2023)
10. Preliminary Meeting the revised NSP 2020-2024 and interim Plan 2025-2026 (1-2 March 2023)
11. Finalization of the document (March 2023)

Chapter 2. Gap and Root Causes Analysis

2.1. Indonesia context

Geography and population: Indonesia is the largest archipelago in the world, with an estimated total of 17,504 islands. The country is ranked fourth globally in population, with a population of more than 268 million. The population includes numerous ethnic, cultural, and linguistic groups, speaking 724 distinct languages and dialects (Mahendradhata et al., 2017). Compared to the 2015-2016 period, the population growth rate in 2017-2018 has slightly decreased, from 1.14% to 1.07%. The total birth rate decreased from 2.41 in 2010 to 2.28 in 2015. In 2018, the population increased to 264.2 million. It is projected that Indonesia will have an aging population in 2030 (Kementerian PPN/Bappenas Republik Indonesia, 2020).

One of the characteristics of the Indonesian population is the disparities between islands and provinces. The majority of the population lives on Java Island (58%) and Sumatra Island (22%), even though the area of Java is less than 7% of the total Indonesian land area. In 2017, approximately 55.2% of the population was living in urban areas, while the remainder was living in rural areas. The number of people living in districts has been projected to rise to 67% by 2025. The country is in the midst of a fundamental demographic shift as the working-age population has increased relatively to the rest of the population (Mahendradhata et al., 2017).

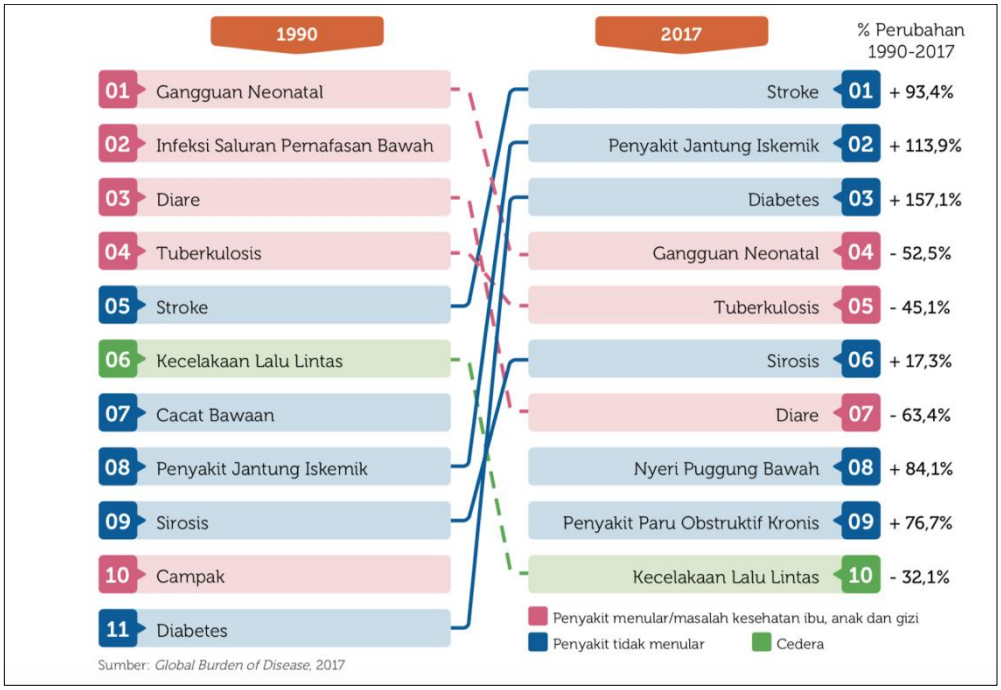
Political context: The country is headed by an elected executive President and Vice President. The country has undergone a decentralization policy since 1999. In a decentralized system, the majority of national expenditure and service delivery are delegated from the central government to provincial and district governments. The President and Vice President, regional heads (Province and District) and members of the House of Representatives (Central, Provincial, and District) are elected through direct elections by Indonesian Citizens. In order to accelerate the elimination of tuberculosis in Indonesia by 2030, Presidential decree No. 67/2021 was launched. Regarding strengthening the collaboration among relevant stakeholders, there was an establishment of the national collaborative network of multi-stakeholders led by the coordinating ministry of human development in 2022.

Economy and development: Indonesia's economy is relatively strong and politically stable. It is now the fourth largest economy in East Asia – after China, Japan, and the Republic of Korea. Globally, Indonesia is also ranked as the 6th highest economic growth in East Asia and 34th in the world in 2018, according to the World Bank. The total poverty rates have been declining, coupled with gradual improvements in social indicators. However, the number of urban-poor in districts is on the rise, largely because

of rapid urbanization. In 2017, 13% of rural and 7% of urban people were poor. Urban poverty has thus been projected to surpass rural poverty by 2020 (Mahendradhata et al., 2017).

Disease burden: Indonesia faces a double disease burden due to the increase of non-communicable diseases and the high incidence of communicable diseases. Malnutrition is still a major health problem. Around 30.8% (7 million) of children under the age of five experiencing stunting (Kementerian PPN/Bappenas Republik Indonesia, 2020). Meanwhile, the problem of overweight and obesity in adults has increased to five times higher than the 2019 RPJMN target in a period of three years (2016-2019) (Gani & Budiharsana, 2018). The maternal mortality rate in Indonesia of 305 per 100,000 live births is the highest maternal mortality rate in Southeast Asia (Gani & Budiharsana, 2018). **Tuberculosis was one of the five main causes of disease burden in 2017. Diabetes, which is also a risk factor for tuberculosis, is the third largest contributor to disease burden** (Gani & Budiharsana, 2018; Kementerian PPN/Bappenas Republik Indonesia, 2020).

Figure 6. Changes of disease burden (Disability Adjusted Life Years/DALYs) in Indonesia year 1990 and 2017

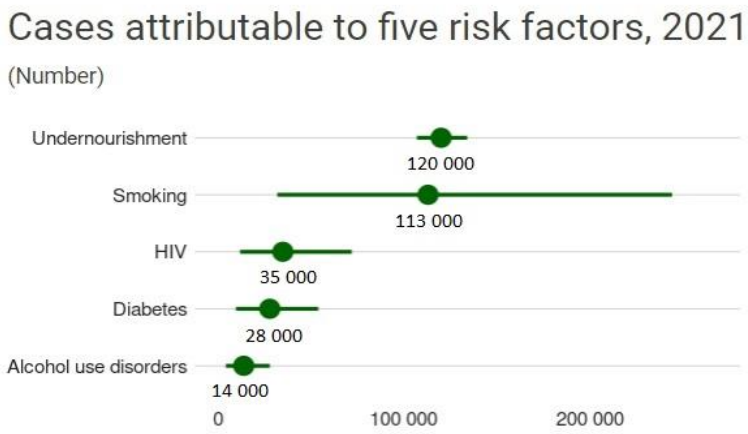


Source: (Kementerian PPN/Bappenas Republik Indonesia, 2020

Besides Diabetes, there were an increased number of several risk factors for Tuberculosis in Indonesia, namely (i) smoking behavior, (ii) malnutrition, (iv) HIV

infection, and (v) excessive drinking of alcohol (WHO, 2019a). However, more recent data on 2021 revealed those risk factors are still related to Tuberculosis With undernourishment being the greatest risk, followed by smoking, HIV, diabetes, and alcohol use disorders (Figure 7).

Figure 7. Number of TB cases attributable to five risk factors, 2021



Source: (WHO, 2022)

Health development strategy: The health development strategy was developed in a five-year period, adjusted to the national medium-term development planning. The health development strategy for the period 2020-2024 is directed toward a healthy, productive, independent, and just society (Kementerian Kesehatan RI, 2020). To achieve this vision, the Ministry of Health establishes several missions: (1). Strengthening the quality of health efforts reaching all Indonesian population; (2). Empowering people and prioritizing health development; (3). Increasing the availability, equity, and quality of health resources; and (4). Strengthening good, clean, and innovative governance. Health development in the period 2020-2024 aims to achieve an increase in the quality of universal health coverage, to increase prevention and control of disease and also the management of public health emergencies, and to create a healthy and fit community through community empowerment and health prioritizing (Kementerian Kesehatan RI, 2020). In 2020, based on the Ministry of Health Decree No. 13/2022, the health development strategy for 2020-2024 was revised. The revised strategy mainly states the health transformation strategy that is implemented in Indonesia up to 2024. The health transformation strategy covers: (1) primary healthcare transformation; (2) referral healthcare transformation; (3) health resilience system transformation; (4) health financing system transformation; (5) human resource transformation; and (6) health technology transformation (Ministry of Health RI, 2020)

To monitor the achievement of health development, a Minimum Service Standard in the health sector has been established. This is in accordance with Government Regulation Number 2 the Year 2018 concerning Minimum Service Standards or *Standar Pelayanan Minimal* (SPM) governing the types and quality of basic services which constitute Obligatory Government Affairs and is the minimum right of every citizen. Minimum Service Standards are used by the central government to formulate national policies, provide incentives and administrative penalties for the head of the district, and will serve as an instrument for allocating Special Allocation Funds or Dana Alokasi Khusus (DAK) to the regions.

Indonesian health systems: The Indonesian health system has a mixture of public and private providers, operated with public and private financing. In 2021, 10,292 Puskesmas provides first-level community-based health services (*upaya kesehatan masyarakat*/UKM) and individual health services (*upaya kesehatan perorangan/* UKP). The first level UKM includes essential UKM and UKM development. Essential UKMs are: a). health promotion services; b). environmental health services; c). maternal, child, and family planning health services; d). nutrition services; and e). disease prevention and control services. Essential UKM is obligatory for every Puskesmas, while UKM development is flexibly adapted to the situation and conditions. The first level of UKP is implemented in the form of a) outpatient; b) emergency services; c) one-day care; d) home care; and/or e) hospitalization based on consideration of the needs of health services. Furthermore, there are 2,813 puskesmas at the sub-district level that provide smoking cessation services (Upaya Berhenti Merokok/UBM). However, UBM services are only effectively available in 120 districts or equivalent to 34.2 percent of the target for 2024. The Ministry of Health, in the 2020-2024 Strategic Plan, aims for 100 percent or as many as 350 districts to have UBM services.

Government hospitals are managed by the Ministry of Health, the police/military, other ministries and BUMNs, as well as local governments (provincial and district). The total number of hospitals in 2021 was 3,042 hospitals, Consisting of 2,522 General Hospitals (RSU) and 520 Specialized Hospitals (RSK). General hospitals consist of 36 hospitals managed by the Ministry of Health (1.2%), 63 hospitals by other ministries and state-owned enterprises (2,1%), TNI/POLRI with 168 hospitals (5.5%), and local governments with 847 hospitals (27.8%), while private sector operates the largest number of hospitals with 1,928 hospitals (63.4%) (Ministry of Health Indonesia, 2022).

The public system is administered in line with the decentralized government system in Indonesia, with central, provincial, and district government responsibilities. The Ministry of Health is responsible for the management of some tertiary and specialist hospitals, provision of strategic direction, setting of standards, regulation, and ensuring

the availability of financial and human resources, and also taking a leading role in the supervision of social insurance schemes. There are also several other central government ministries and agencies involved in the health sector; for instance, the Ministry of Home Affairs, the Social and Health Security Board (Badan Penyelenggara Jaminan Sosial – Kesehatan/BPJS-K), and the National Board of Population and Family Planning (Badan Kependudukan dan Keluarga Berencana Nasional/BKKBN). Provincial governments are responsible for the management of provincial level hospitals, providing technical oversight and monitoring of district health services, also coordinating cross-district health issues within the province. District governments are responsible for management of district hospitals, and the district public health network of community health centers (Puskesmas) and associated sub district facilities (Mahendradhata et al., 2017).

The use of technology to strengthen the referral system is one of the concerns in the 2020-2024 RPJMN. The intended use of technology includes the development of online referrals, expansion and development of telemedicine, digitalization of medical records, and expansion of mobile health services / flying health care (Kementerian PPN/Bappenas Republik Indonesia, 2020).

Moreover, Indonesia faces challenges in terms of access to health services. The availability and distribution of basic service facilities is still a problem especially in the Underdeveloped, Border and Archipelago (Kementerian PPN/Bappenas Republik Indonesia, 2020). Data from Riskesdas 2018 shows that only 37.1% of 254,087 households said that access to hospitals was easy. The proportion of perceptions of ease of access to hospitals was greater in urban households compared to rural areas (53.9% vs. 14.6%). Perception of easy access to Puskesmas was stated by 39.2% of 275,416 households. Similar to the findings on hospital access perceptions, perceptions of ease of access to Puskesmas were also higher for urban communities compared to rural areas (46.1% vs. 31.0%). In addition, the availability of health workers has not been optimally met the standards (Gani & Budiharsana, 2018).

In the context of primary healthcare transformation, the role of Puskesmas as the backbone of the health system in Indonesia has been highlighted. The focus of the primary healthcare transformation covers education to the community, primary prevention, secondary prevention, and improvement of the capacity of primary healthcare facilities. The education of the community should be conducted by strengthening the role of cadres, campaigns, movements and by utilizing existing digital platforms and community champions. Primary healthcare transformation covers the addition of a number of routine immunizations to 14 types and the improvement of that coverage. Secondary prevention focuses on screening 14 diseases as the causes of

high mortality (including tuberculosis), stunting, and antenatal care improvement. Revitalized network and service standards in Puskesmas, Posyandu, and a home visit will be the prioritized activities to improve the capacity of primary healthcare facilities.

Health Care Costs and Financing: The Current Health Expenditure (CHE) in Indonesia has been steadily increasing since 2005. In 2021, the CHE reached US$175, or 4% of the Gross Domestic Product (GDP). The government's contribution to healthcare increased from 24% of CHE in 2010 to 64% in 2021. This has led to a decrease in out-of-pocket (OOP) expenses from 61% of CHE in 2010 to 25.1% in 2021. Moreover, much of the recent increase in healthcare spending has been due to COVID-related expenses, whereas more investment is needed for primary care, preventive, and promotive healthcare activities (JEMM Report, 2022).

Government has been developing a compulsory national health insurance scheme designed to pave the way for the achievement of universal coverage. This scheme, known as National Health Insurance (Jaminan Kesehatan Nasional/JKN), was intended to support and fund health services for the entire population of Indonesia from 2019. The JKN brings together all major health insurance schemes (Askes, Jamkesmas, Jamsostek and Jamkesda) under a single agency - the Social Protection Managing Agency (BPJS Kesehatan) (Wiseman et al., 2018). Coverage of National Health Insurance membership increased from 187,9 million in 2017 to 246 million (83% of population) in 2022 (Data from BPJS-K, as of November 30, 2022). BPJS-K has pledged to finance social insurance coverage for the poorest 40% of the population registered as premium payment beneficiaries (PBI). As of October 2022, the Central government has subsidized the premium for 110.8 million members (41%), while local governments have paid an additional 38.7 million members. This means that 55% of all current JKN memberships are subsidized (The National Social Security Council, 2022).

Apart from JKN financing, the government also offers other vertical financing systems for healthcare, which are distributed across different levels of government and funding flows. This creates a fragmented governance system and unnecessary management expenses. Theoretically, some of the financing mechanisms on both the supply and demand side, such as DAU, BOK Kinerja, and Strategic Health Purchasing/Belanja Kesehatan Strategis, have the potential to encourage better performance and accountability in the TB program.

The National Development Planning Ministry, BAPPENAS, has acknowledged the challenges in ensuring the sustainability of GFATM and other international investments in this context and has adopted a multi-component approach to addressing the challenges. It includes increased central and sub-national funding, increased private

sector participation, and gains in efficiency. In addition to capitation funding for the JKN and the current vertical, demand-side scheme for funding health programs, the Government of Indonesia is exploring other financing and financial flow schemes, including pooled financing, performance-based reimbursement, and incentive schemes. The various schemes are intended to either reduce transaction costs (as well as confusion as to what is permitted under the current plethora of financial flow mechanisms) or to increase the cost-effectiveness of service delivery, thus creating fiscal space for health so the country can guarantee sufficient resources for priority health programs. The BAPPENAS framework for program sustainability also includes the increased engagement by non-state actors in general and CSOs Specific steps have already been taken to implement this policy in the form of a regulation that provides a government-wide mechanism for channeling government funds to CSOs

The NTP has already started with important reform steps, including collating critical information on the program expenditures, planning and implementing strategic health purchasing, and finalizing a national regulation platform for TB elimination (Presidential decree 67/2021). Also, as a follow-up, BAPPENAS has laid out in further detail the strategy to strengthen the national health system in the health sector reform strategy disseminated amidst the COVID-19 pandemic response. Thus, the direction for the health sector also reflects the additional challenges posed by the pandemic.
There is already an agreement that the Government would lead the development of the national transition plan. The challenges are to work on the details of the process, such as:

- Regulatory framework for funding and budget allocation, i.e., for community intervention through CSOs
- Clear role and functions of line ministries in TB control program,
- Role and functions of subnational government, including different fiscal capacities.

To overcome the challenges, the prime mover of changes is the availability of a presidential decree that mandates specific roles and functions of government institutions (including its funding consequences), followed by removing regulatory barrier activities led by BAPENNAS and Ministry of Finance. The HSS SR (ADINKES) is key in engaging Provincial and District governments related to domestic funding from APBD.

Community Participation in Health Development: Community participation in health development was strengthened by the existence of the Healthy Living Community Movement (*Gerakan Masyarakat Hidup Sehat*/Germas) mandated by Presidential Instruction No. 1 of 2017. It is expected that Germas will be implemented by all elements of the community. The Healthy Living Community Movement includes increased physical activity, consuming vegetables and fruit, not smoking, not

consuming excessive alcoholic beverages, regular check-ups, cleaning the environment, and using latrines (Kementerian Kesehatan RI, 2020).

In social life, there are various social organizations, both religious-based (e.g., Muhammadiyah, Nahdlatul Ulama, etc.) and social organizations, such as Family Welfare Empowerment (Pembinaan Kesejahteraan Keluarga/PKK). In carrying out community health programs, health cadres have been formed in each village / district.

People affected with TB have been part of the program. Around 2012, some tuberculosis survivors' groups were established in several cities/districts. Started the first group Pejuang Tangguh (PETA) in DKI Jakarta and followed by Semangat Membara (SEMAR) in Semarang, Arek Nekat (Rekat) in several cities in East Java, Terus Berjuang Pejuang Sehat Bermanfaat (PESAT) in Medan, Kareba Baji in Makassar, etc. In recent, 22 organizations are ready to support NTP, especially for supporting DR tuberculosis care at the PMDT hospitals. The number is still low compared to PMDT services in Indonesia. Those organizations are gathered under the umbrella organization for TB survivors in Indonesia called POP TB Indonesia (Perkumpulan Organisasi Pasien Tuberkulosis Indonesia) established in 2016.

Gender Equality and Fulfillment of Human Rights: Gender inequality is still a national development problem in Indonesia. Data from Susenas (2015) shows that female labor force participation is only around 51% compared to men at 82%. The 2014 data shows that women's representation in the House of Representatives is only around 17%. On the other hand, gender equality has become a part of Indonesian government policy.

Indonesia ratified CEDAW in Law No 7 the year 1984, including the right of health to women. Women have been categorized as a vulnerable group by the National Commission on Human Rights in Indonesia, but their rights to health are predominantly linked to reproductive health. A much wider understanding of their right to health, including the context of diseases such as TB, is needed because they often experience injustices related to their position within a patriarchal societal situation regardless of the specific illness or condition. Moreover, Indonesia also already has a law concerning the establishment of the National Commission on Violence Against Women (Komisi Nasional Perempuan), Precedential Degree No 181, the year 1998.

Moreover, Indonesia has a law about the establishment of the National Commission on Violence Against Women (Presidential Decree No 181, the year 1998, Presidential Decree Number 65, the year 2005). Indonesia acknowledges ten forms of gender-based violence faced by women, such as rape, sexual persecution, sexual exploitation, sexual

violence, physical violence, psychological violence, economic neglect, and dangerous practices that control the freedom and sexuality of women.

Currently, there are limited or no socialization with TB patients and contacts, as well as with workers in TB program about gender-based violence, even though most healthcare workers in Indonesia are women who are more vulnerable to such violence. Existing laws should be capitalized to support the rights of people of all genders affected by TB and people who work in TB programs.

The study of Spiritia found no clear finding of gender-based discrimination; however, this does not imply that there is no actual gender-based discrimination in the practices. In the TB Stigma Assessment, Women and men face a similar degree of TB Stigma. Women reported feeling more stigmatized than men (16% vs. 14%). However, the overall stigma level among men was slightly higher than among women (36% vs. 33%).

Currently, the NTP has published a handbook on ending TB in schools in collaboration with the Ministry of Education and Cultural Affairs. If implemented, this model may promote TB to girls and boys at schools. This is important for teenage girls, who seem to have a higher proportion of TB cases compared to their male teenagers (WHO Country Profile Indonesia, 2022).

JEMM Review 2020 and 2022 have included a recommendation to create a comprehensive National TB Gender Responsive Framework to begin to address gender-related issues in TB Care. This may need to be developed in coordination with the Ministry of Women's Empowerment and Children Protection, which is not a part of the Presidential Decree on TB. Nonetheless, the NTP has the responsibility to mainstream gender as it is a larger development agenda applicable to all SDGs.

The roles of biological differences between women and men, harmful gender norms such as decision-making at the household level by men as well as socio-economic, environmental and cultural determinants of their needs, vulnerability, and risks to TB. The gender role of masculinity causes men to think they are strong, don't want treatment, don't wear masks, and make their families easily infected, including at work. Women who are burdened with domestic roles such as cooking and taking care of children because women infected with TB to delay treatment which results in death. (Penabulu,2022)

The Republic of Indonesia's Constitution guarantees the protection of citizens' rights in accordance with the principles of human rights, including regarding health. Six laws were identified in the review that mandate citizens' Right to life; Right to the highest attainable standard of physical and mental health; right to non-discrimination and

equality; Right to privacy; Right to “informed consent,”; Right to information; Right to be free from torture or cruel, inhuman or degrading treatment or punishment; and the Right to participation.

Health is the most fundamental individual and public right. According to Law (UU) No. 36 of 2009 concerning Health, health is a state of health, both physical and mental, physical, mental, spiritual, and social, that enables everyone to live productively, socially, and economically.

The issuance of Presidential Decree No. 67 of 2021 is a form of strong political commitment from The Indonesian government to handling TB. The commitment is also aligned with the commitment of Indonesia at the global level, both the Political Declaration on TB agreed upon at UNHLM 2018 as well as the 2030 SDG Agenda.

The study by Spiritia foundation in 2018 found considerable barriers for TB people and their families to get comprehensive knowledge on TB-whether it would be prevention, diagnosis, treatment, care, and support. What might constitute a violation of their rights to health is also that the right to privacy, right to information, right to liberty, or right to freedom from stigma and discrimination, among other are not widely known.

Penabulu study on gender and Human Rights to TB identified aspects of human rights that have not been fully accommodated. For example, the right to health is one of the most crucial human rights groups in dealing with TB; even though they are given cost waivers in treating TB, the physical burden and other financial challenges that people with TB face reduce their enjoyment of the right to health. Loss of income and work, as well as costs that must be removed from the place of residence to health care institutions, are some examples of human rights issues that arise as a result of TB. This has not been accommodated in the legal framework for handling TB, especially Presidential Decree Number 67 0f 2021.

Practices of Article In the RPJMN,2020-2024 it was stated that *"…the national development strategy must ensure a gender perspective to achieve a more just and equitable development for all Indonesians both men and women…"*. In addition, the fulfillment of human rights has also become a national policy. Fulfillment of human rights is seen as one of the strategies to realize Indonesia as a developed, independent and just nation. The government has determined "*the need to implement guarantees of protection of human rights and the fulfillment of justice in the development process*". In the same study was also found that human rights literacy among respondents was low. There was some challenge to understanding the seven basic rights relevant to people with tuberculosis.

2.2. The Progress and Challenges of Tuberculosis Control in 2016-2022

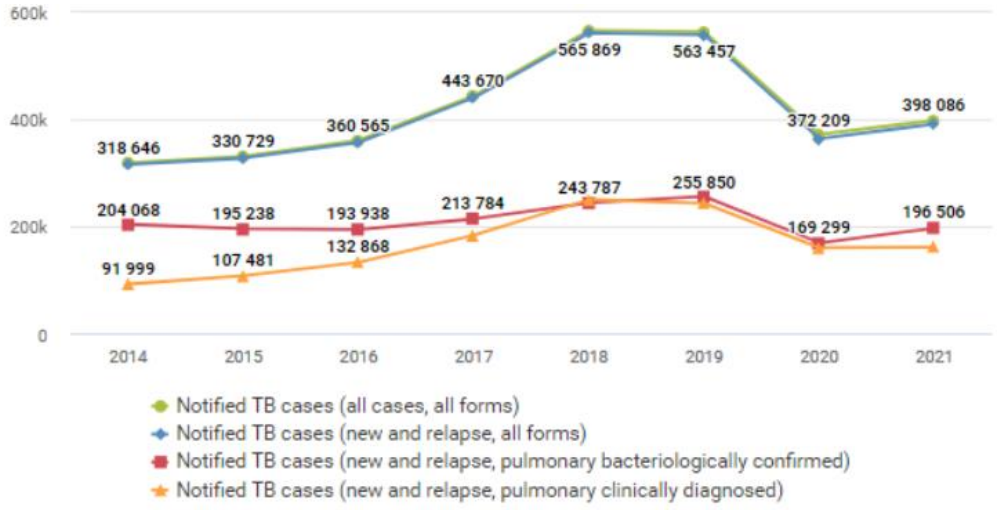
The burden of tuberculosis: According to WHO report 2019, Indonesia is on the list of 30 countries with the highest tuberculosis burden in the world and ranks third highest in the world related to Tuberculosis incidence rates. The incidence of tuberculosis in Indonesia in 2018 is 316 per 100,000 population; and it was estimated that around 845,000 people suffer from tuberculosis in 2018. The WHO report 2019 also estimated that the number of deaths caused by tuberculosis in Indonesia, excluding HIV, was around 35 per 100,000 population or there were about 93,000 people dying from tuberculosis in 2018 (WHO, 2019a).

The highest burden of disease was estimated to be in the young and productive 25-34 age group, with a prevalence of 753 per 100,000 population. The National Tuberculosis Prevalence Survey 2013-2014 has shown that males had a higher prevalence rate compared to females (1,083 per 100,000 vs 461 per 100,000). There was a higher burden of Tuberculosis in the urban (846 per 100,000 population) compared to rural settings (674 per 100,000 population) and among the elderly over the age of 65 years (1,582 per 100,000) (Kementerian Kesehatan RI, 2015).

The household out-of-pocket expenditure was approximately 133 USD for drug-sensitive TB and 2,804 USD for MDR TB patients. The proportion of households experiencing catastrophic costs due to drug sensitive tuberculosis is 36% (43% in poor households and 25% in non-poor households). The proportion of households experiencing catastrophic costs due to MDR TB is 83%. Catastrophic costs in poor households are due to tuberculosis patient status as breadwinners, job loss, and previous medical history (Fuady et al., 2018).

Notification and Treatment of Drug-Sensitive Tuberculosis: The number of tuberculosis cases finding and reporting (hereinafter referred to as "tuberculosis case notification") has increased sharply since 2017 due to efforts to find tuberculosis cases in hospitals. Tuberculosis case notifications increased from 443,670 cases in 2017 to 565,869 cases in 2018. Although notification of tuberculosis cases has increased from 2017 to 2018, bacteriological diagnosis of tuberculosis has decreased by around 5% among reported tuberculosis cases in 2017 and 2018. There has been a decline in the notification of TB cases from 2019 to 2021 due to the COVID-19 pandemic (Figure 8).

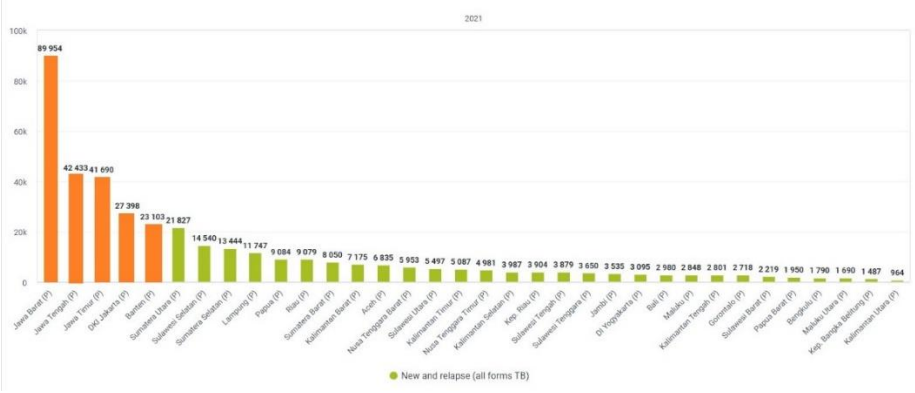
Figure 8. Number of notified TB cases in Indonesia 2014-2021



Source: (Epi review, 2021)

At the provincial level, five provinces contributed to 57% of totally new and relapse notifications, i.e., West Java (105,794 cases), East Java (71,791 cases), Central Java (65,014 cases), DKI Jakarta (41,441 cases) and North Sumatera (35,035 cases) in 2018. Demographically, these five provinces are the most highly populated in Indonesia (WHO, 2019b). In 2021, the five provinces that most contributed to TB notification were West Java (89,954 cases), Central Java (42,433 cases), East Java (41,690 cases), DKI Jakarta (27,398 cases) and Banten (23,103 cases) (WHO, 2022).

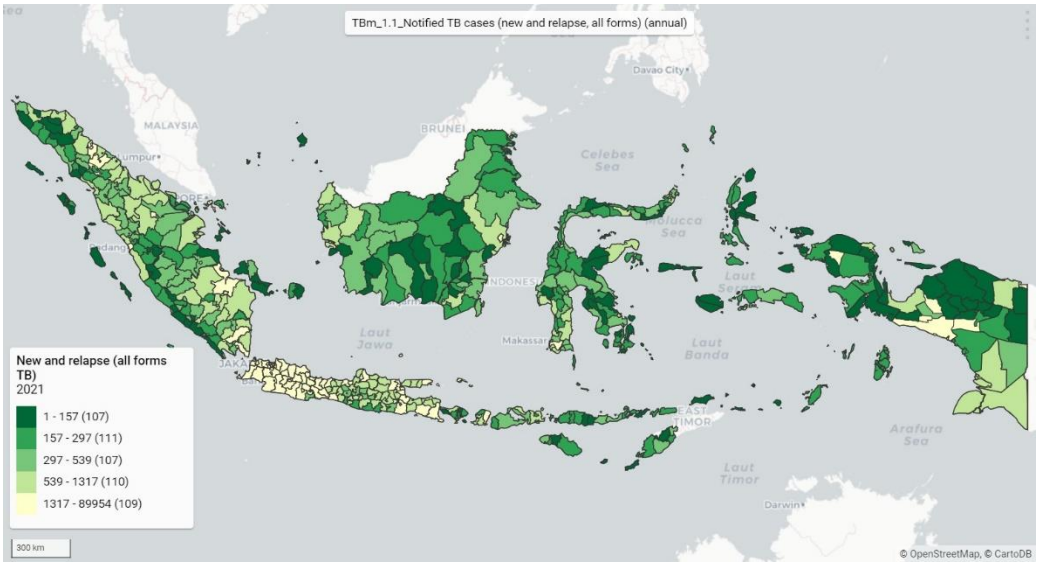
Figure 9. Number of TB notifications (all forms, new and relapse) by provinces, 2021



Source: WHO, 2022

However, the Tuberculosis case finding at the district level does not reflect the high case findings in the most populous areas. The highest number of reported tuberculosis cases were from Bogor, Bandung municipality, East Jakarta municipality, Medan municipality, and Makassar municipality (WHO, 2019b). In 2021, five districts that reported the highest TB cases were Bogor (11,475 cases), Bandung municipality (8697 cases), East Jakarta municipality (8,303 cases), Tangerang (6,259 cases), and Bekasi municipality (5853 cases).

Figure 10. TB case finding (all forms, new and relapse) notified by districts, 2021



Source: (WHO, 2022)

In 2021, it was estimated to be about 969,000 TB cases. However, only 432,600 cases (44.7%) have been detected and reported to the NTP.

Tuberculosis treatment coverage has not yet reached the WHO recommended target, although it increased substantially from 53% in 2017 to 67% (61-73%) in 2018. In 2017, the success rate of treatment among new and recurring tuberculosis cases and among drug-sensitive tuberculosis cases that were previously treated were still below the global target of 90% (84.7% and 71.7%, respectively). The proportion of drug-sensitive tuberculosis-recovered cases has decreased, while the proportion of cases who completed treatment has increased. This is consistent with data showing decreased confirmed bacteriological tuberculosis cases among the reported cases. There is an increasing trend of treatment success in cases of drug-sensitive TB and TB-HIV (60% in 2015 to 70% in 2017). According to the WHO Global TB Report 2022, the success rate of treatment of RR/MDR TB patients from cohort 2019 was 47%. There were 17% of

patients died, 4% failed the treatment, and 21% lost-to-follow up from the same cohort. A retrospective cohort study by Mashuri et al. (2022) found COVID-19 pandemic affects the tuberculosis cascade of care in various patterns. In Yogyakarta, after the pandemic, there was a moderate reduction in access to TB services and worse outcomes (started treatment: 76% vs. 78%; completed treatment: 72% vs. 75%; successfully treated: 67% vs. 69%). In Bandung, by contrast, uptake of TB services was proportionally higher during the pandemic (started treatment: 68% vs. 62%; completed treatment: 61% vs. 58%; successfully treated: 55% vs. 51%).

Smoking, malnutrition, and diabetes mellitus (DM) are risk factors associated with the incidence of tuberculosis in Indonesia. It was estimated that more than 113,000 cases of tuberculosis are related to smoking behavior. Malnutrition and DM contributed to more than 120,000 and 28,000 cases of tuberculosis (WHO, 2022). The National Tuberculosis Prevalence Survey in 2013-2014 found that the proportion of tuberculosis cases was twice as high among patients who reported a history of diabetes mellitus, smoking, or living with tuberculosis patients compared with those who did not report the presence of all three factors. The proportion of tuberculosis cases among the population who reported a history of tuberculosis was 7 times higher than that of those who did not (3.7% vs. 0.5%) (Kementerian Kesehatan RI, 2015). Those key and vulnerable populations are major equity concerns since they have increased exposure to TB infection, have limited access to health services, or are at increased risk of TB, including clinical and social risks. Reaching key and vulnerable populations in TB response, that is equitable and conforms to human rights is essential to end the TB epidemic. Addressing co-morbidities is a key for reducing TB deaths (JEMM, 2022).
Indicators of the Sustainable Development Goals in 2018 also showed that there was an increase in risk factors associated with tuberculosis such as HIV, diabetes and smoking (WHO, 2022). HIV prevalence increased from 0.1% in 2000 to 0.4% in 2018 in adults aged 15-49 years. In 2018, UNAIDS estimates that there were 770,000 people (570,000 - 1,100,000) living with HIV for all ages (UNAIDS, 2019).

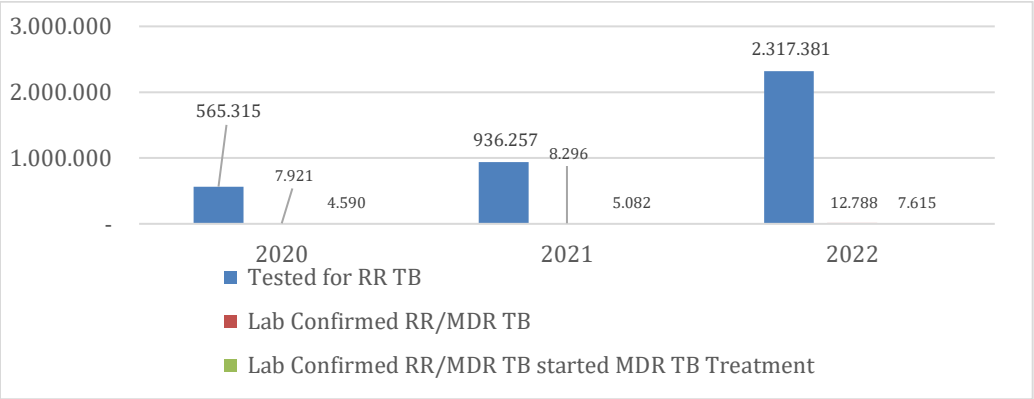
Screening the high-risk population is considered quite important. The results of the 2013-2014 Tuberculosis Prevalence Survey showed that 42.5% (181 of 426) cases of tuberculosis did not have symptoms of ≥14 days or bloody cough but had abnormal lung x-ray results (Kementerian Kesehatan RI, 2015). A Patient Pathways Analysis study conducted in 2017 found that only 24% of people with symptoms of tuberculosis visited healthcare facilities. The study also showed that 74% of people began seeking treatment in private health facilities, both formal and informal health service providers. Meanwhile, diagnostic capacity in formal private health service facilities is still very limited. Other results from Patient Pathways Analysis showed that there were 2% of

people with symptoms of tuberculosis seeking treatment at Level 1 / L1 (general practitioners / primary clinics) and 59% at Level 2 / L2 (hospitals) (Surya, Setyaningsih, Nasution, et al., 2017).
JEMM 2022 reveals that screening for DM in TB has been a national policy. ACF is implemented with various procedures, including symptom screening with low yield and Chest X-Ray and molecular WHO-recommended rapid diagnostics (mWRD) testing with high yield.

Detection and Treatment of Drug-Resistant Tuberculosis Cases (DR TB): Antituberculosis Drug Resistance Survey (*Survei Resistensi Obat Anti Tuberkulosis*/SROAT) in 2017-2018 estimated the proportion of Rifampicin Resistant (RR) among new smear-positive tuberculosis cases was 2.6% (1.9–2.5%) and 17.8% (12.5–24.7%) among re-treatment smear-positive tuberculosis cases. The proportion of multi-drug resistant tuberculosis (MDR TB) cases among new smear-positive tuberculosis cases were 1.4% (0.9–2.2%) and among re-treatment tuberculosis cases were 12.4% (8–18.7%) (Badan Penelitian dan Pengembangan Kesehatan dan Direktorat Jenderal Pencegahan dan Pengendalian Penyakit, 2018). The estimation of MDR TB incidence in 2022 was 10 cases per 100,000 population or 28.000 cases in total (WHO, 2022).

Indonesia has made some progress in the **Programmatic Management of Drugs-resistant Tuberculosis (*Manajemen Terpadu Pengendalian Tuberkulosis Resistan Obat*/MTPTRO**)". In 2022, a total of 1.812 rapid molecular testing machines (Xpert MTB/Rif) are available nationwide. Examination of presumptive TB cases for drug resistance (Xpert testing) sharply increased from 565.315 cases in 2020 to 2.317.381 cases in 2022. In addition, the number of DR-TB case notifications increased from 7921 in 2020 to 12.788 cases in 2022 (Figure 11). Access to second-line drug susceptibility testing among DR-TB patients also increased. Currently, 21 culture laboratories, 12 drug-susceptibility test (DST) laboratories, and 7-line probe assays (LPA) laboratories are well-established to serve the 34 provinces through the sputum transport mechanism. In 2022, there were 38% of DR-TB patients had DST results (increased from 31% in 2018), and 51% of patients had second-line LPA results (increased from only 14% in 2018).

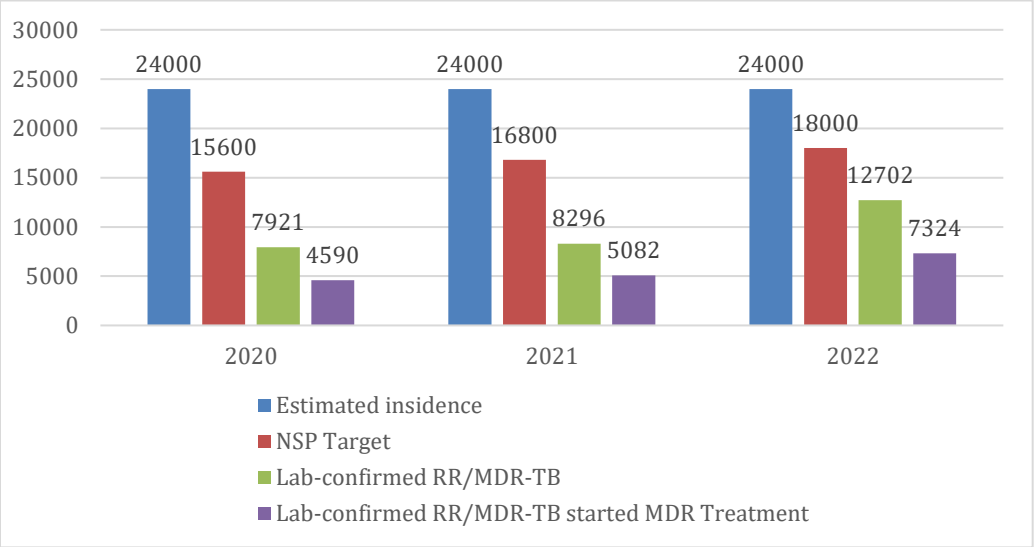
Figure 11. Drug resistant tuberculosis case finding 2020-2022



Source: National Tuberculosis Program, January 2023

Despite the huge increase in the testing of presumptive TB for drug resistance, the National TB Program still struggles to close the gaps in case notification and treatment coverage. About 67% of the 24,000 estimated DR-TB cases in the country were still not notified in 2020, yet the gap was slightly reduced to 65% in 2021 and 47% in 2022. The proportion of DR-TB patients who initiated second-line TB treatment was still below the target, which is only 58% in 2022 (Figure 12).

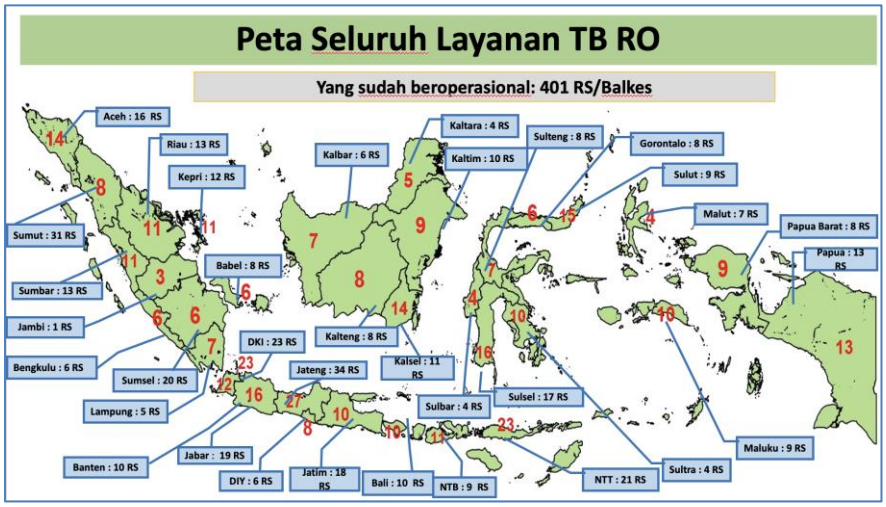
Figure 12. Finding and treatment cascade of drug-resistant tuberculosis 2020-2022



To provide access for all DR-TB patients to treatment, NTP has expanded the availability of DR-TB treatment initiation centers (hospitals, balai kesehatan) and satellites

(Puskesmas, clinics). At the end of 2020, there were 289 DR-TB treatment initiation centers available in 203 districts. In December 2022, there were 401 DR-TB treatment initiation centers in 324 districts and 5.733 satellites available in 34 provinces (Figure 13).

Figure 13. Distribution map of DR-TB service facilities in Indonesia per December 2022



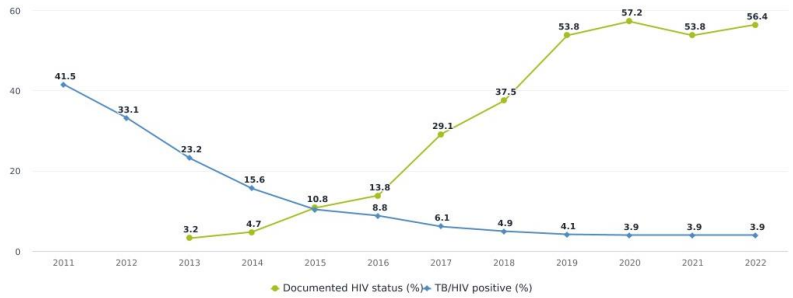
Source: National TB Program Ministry of Health RI, 2022

Treatment for DR TB patients in Indonesia aligns with the latest WHO recommendation. Longer (individual) DR-TB treatment regimen without injectable agents has been implemented since October 2019, while the shorter all-oral regimen has been used since August 2020 (Ministry of Health Republic of Indonesia, 2019). In 2022, treatment of DR-TB using BPaL regimen has been available since June 2022 under operational research setting in six hospitals in four provinces, which later expanded to nine other hospitals in the same four provinces. NTP is also planning to provide BPaL/BPaLM treatment regimen under a programmatic setting.

Programmatic management of drug-resistant TB still faces many challenges, such as low case notification, low treatment enrollment rate, low treatment success rate, and DR-TB treatment services not yet available in all 514 districts. The main reasons for the high treatment gaps are RR-TB confirmed patients not traced, socioeconomic barriers to access treatment, patients unaware of RR TB diagnosis, and insufficient community support at the pre-enrolment stage. NTP has designed numerous interventions and innovations to overcome the challenges and improve the achievement of the DR-TB program.

TB-HIV: WHO estimates that the incidence of tuberculosis with HIV (TB-HIV) coinfection is 8.1 (95% CI: 3.3-14) per 100,000 population or around 22,000 (95% CI: 8,900-38,000) TB-HIV cases in 2018 (WHO, 2022). The proportion of MDR-TB patients with HIV infection was 3-5% in 2014-2016 and 5% in 2018. The proportion of tuberculosis patients tested for HIV increased from 3.2% in 2013 to 56.4% in 2021. Conversely, the proportion of HIV positive among tuberculosis patients who tested for HIV decreased from 23% in 2013 to 3.9% in 2021 (WHO, 2022).

Figure 14. Case proportion trend of TB cases tested for HIV and HIV-positive cases 2013-2021



Bali Province has the highest proportion of tuberculosis cases tested for HIV or with known HIV status (81.4%), while West Java Province is the province with the lowest number of TB-HIV cases (33,4%) (Figure 16) (WHO, 2022). Across districts (Figure 15), only 75 (15%) met the expected benchmark of 80% tuberculosis cases, knowing their HIV status.

Figure 15. Case proportion of Tuberculosis cases tested for HIV by province 2021

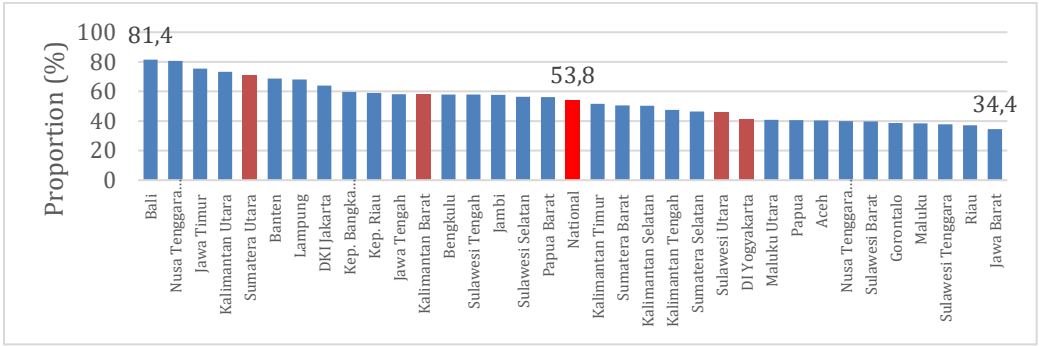
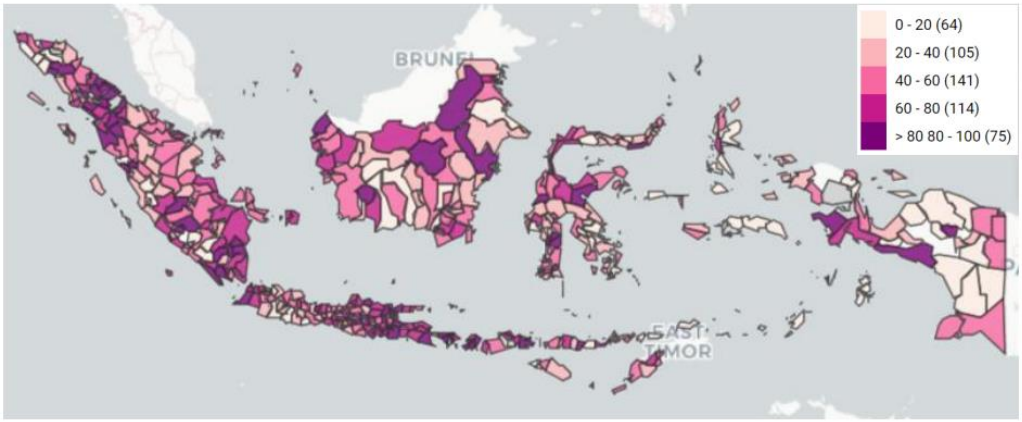


Figure 16. Distribution of Tuberculosis cases with known HIV status by districts 2021

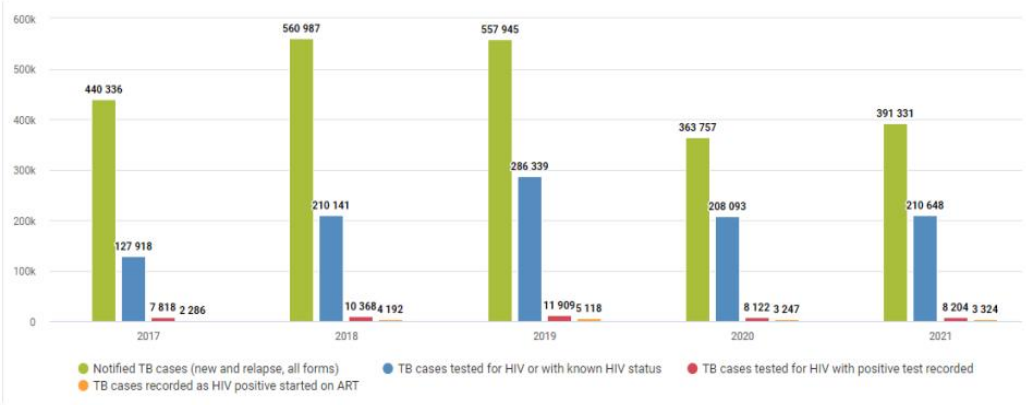


Source: Indonesia Tuberculosis epidemiological review 2022 (WHO, 2022)

In 2018, there were 210, 141 tuberculosis patients who were tested for HIV or whose HIV status was known. Of these, 10,368 (5%) cases were tuberculosis cases with HIV infection. However, only 4,192 (40%) started antiretroviral therapy, although it has increased from 29% in 2017. The success rate of treatment in TB/HIV patients increased from 60% in 2015 to 70% in 2017. In 2021, only 41% of people with TB/HIV were given ART, which amounts to 3324 out of 8204 individuals (Figure 18). None of the provinces achieved coverage of more than 75%. Only six provinces had a coverage rate between 50-75%, namely Kepulauan Riau (67%), DKI Jakarta (61%), Bali (59%), Kepulauan Bangka Belitung (57%), Banten (54%), and Jawa Timur (51%). On the other hand, the coverage of ART among people with TB/HIV in provinces on Kalimantan island was consistently very low, with rates below 25%. This lack of ART coverage has led to less favorable treatment outcomes among group DS/TB-HIV.

An increase in tuberculosis patients knowing their HIV status and starting ARV therapy needs counseling. The counseling is carried out routinely by health staff with good communication capacity or counselors available in health services to assist in compliance with taking medicine, in line with what is stated in the efforts to accelerate the management of TB-HIV collaboration.

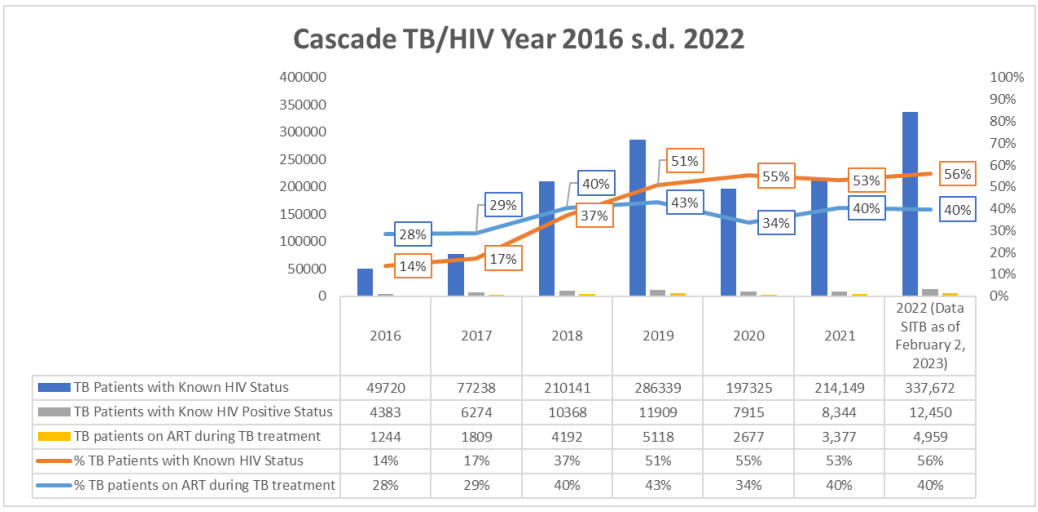
Figure 17. Cascade of care for TB-HIV



Source: (Epi Review, 2022)

In 2022, there are 337,672 (56%) TB patients known their HIV status with 12,450 TB Patients have HIV. In addition to that, 4,959 (40%) TB-HIV cases enrolled in treatment. ART for TB/HIV increased significantly from a plateau to 40%. HIV coinfection reduces TB treatment success rate (58%). Although some specific project-supported sites are reaching more PLHIV, TPT coverage of newly diagnosed PLHIV is low (11%).

Figure 18. TB-HIV cascade in Indonesia, 2016-2022



	2016	2017	2018	2019	2020	2021	2022 (Data SITB as of February 2, 2023)
TB Patients with Known HIV Status	49720	77238	210141	286339	197325	214,149	337,672
TB Patients with Know HIV Positive Status	4383	6274	10368	11909	7915	8,344	12,450
TB patients on ART during TB treatment	1244	1809	4192	5118	2677	3,377	4,959
% TB Patients with Known HIV Status	14%	17%	37%	51%	55%	53%	56%
% TB patients on ART during TB treatment	28%	29%	40%	43%	34%	40%	40%

Source: (National TB Program, 2023)

JEMM 2022 identified various levels of HIV testing across the provinces, from 30% to 100%. Barriers to testing cover the lack of HIV testing services, test kit stock-outs, and stigmatizing approaches by providers. There is a problem with reporting due to SITB-SIHA non-interoperability contributing to inaccurate numbers. Currently, TB-HIV is not part of DPPM engagement, and private hospitals are not testing. There is a mandatory screening for both TB and HIV implemented for prison inmates on entry.

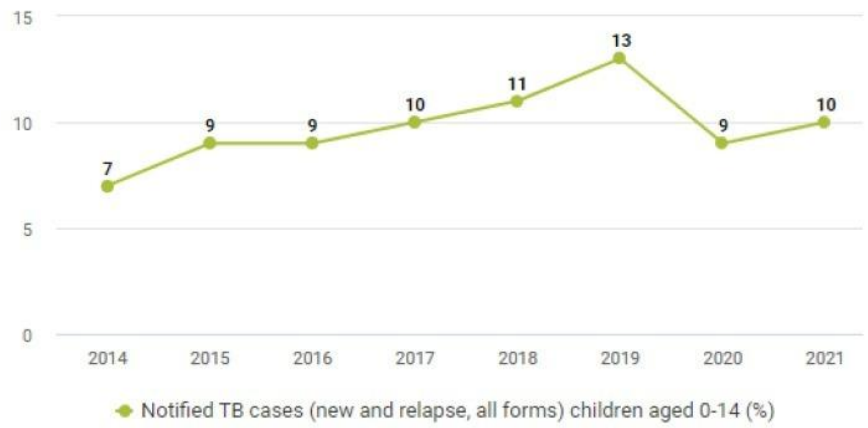
A low level of ART for TB-HIV patients has been identified to represent reporting issues between TB and HIV services. ART initiation issues can also happen due to long travel distances (centralized services), delays until after IP or TB treatment completion, and poor communication between TB and HIV services. HIV services still use primarily Efavirenz-based ART instead of Dolutegravir. TB screening for PLHIV has been implemented using GeneXpert but lacks documentation.

National sub-working group TB-HIV including NTP, NAP, and TB and HIV partners, meets quarterly. However, the similar coordination forums at provincial and district levels are no longer functioning, hence, poor integration at the facility level with weak ART referral systems, although selected Puskesmas had one-stop services.

Tuberculosis management in children: WHO estimated that about 9% of tuberculosis in children under 15 years among all reported tuberculosis cases. There are around 89,000 new cases among all new tuberculosis cases per year. Among children younger than 15 years, the incidence of tuberculosis is estimated to be almost the same between girls and boys (WHO, 2022). In Indonesia, the proportion of tuberculosis cases under 15 years old in 2021 is 10%.

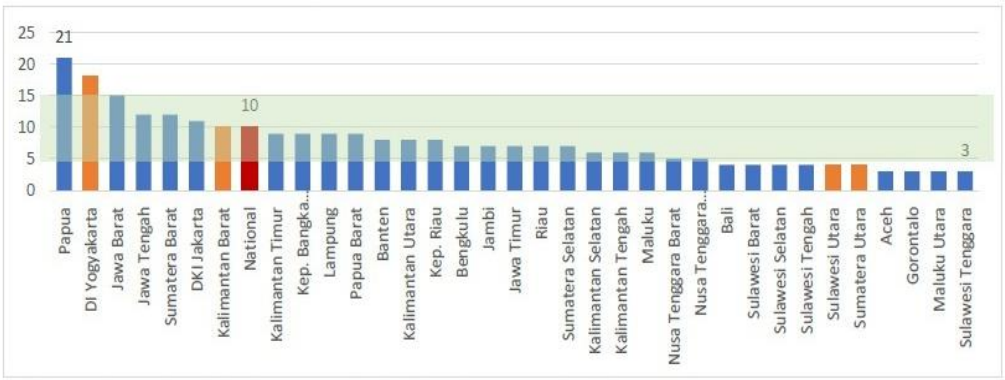
The trends of the proportion of childhood TB cases increased significantly from 7% in 2014 to 13% in 2019, which is almost double the initial rate (figure 19). However, there was a notable drop in 2020, with a percentage of 9%. The drop in childhood TB notifications in 2020 was observed in five provinces, including West Java, Central Java, DKI Jakarta, East Java, and Banten. West Java contributed to almost 40% of total childhood TB notifications in Indonesia, and the decline in childhood TB notifications in 2020 was higher than the overall notification drops. In 2019, half of the childhood TB notifications were reported from hospitals, which had a higher proportion of notification drop in 2020 compared to Puskesmas. There seem to be different practices in diagnosing childhood TB across provinces, with Papua and DI Yogyakarta having higher proportions than other provinces (figure 20). Further investigation is necessary to understand the practice of diagnosing TB across provinces, especially in those with very high and very low proportions (Epi review, 2022).

Figure 19. Proportion of childhood TB (0–14-years old) among new and relapse TB cases



Source: (Epi Review, 2022)

Figure 20. Proportion of childhood TB (0-14 years old) among new and relapse cases, by province level, 2021

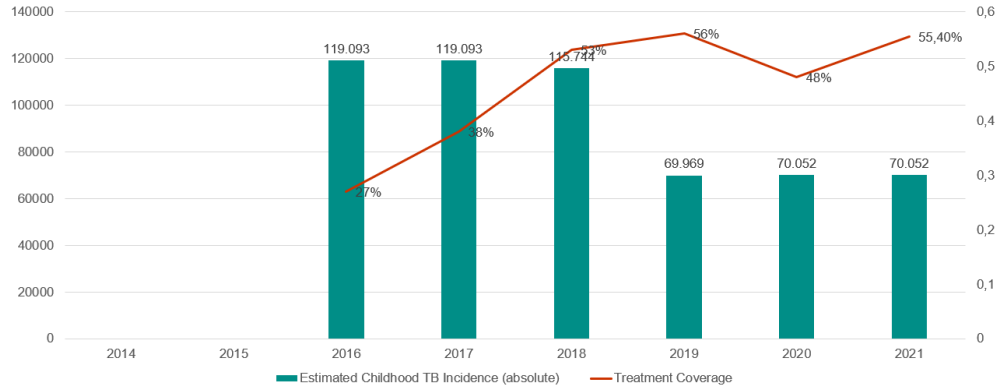


[a] Orange bars are provinces to be visited during the 2022 joint external monitoring mission.

Source: (Epi Review, 2022)

Ministry of Health data shows the number of tuberculosis case findings (found and treated and reported (notified)) in children were 38,808 in 2021, or about 55,4% of the estimated incidence of tuberculosis cases. Tuberculosis notification cases in children under 15 years old showed an increase from 2016 to 2019 and stable in 2021. Nonetheless, the scope of tuberculosis detection and treatment in children under 15 years is still far below the global target of 90% (figure 21).

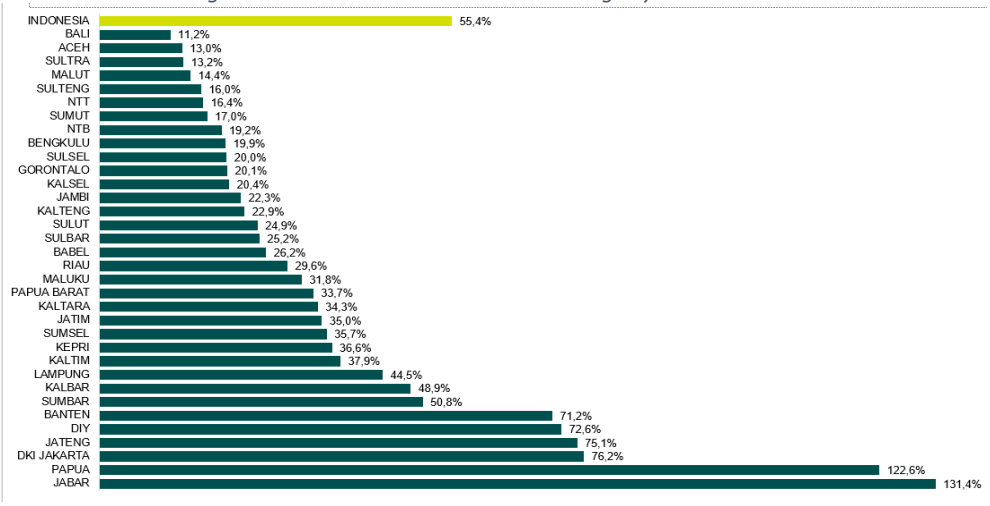
Figure 21. TB treatment coverage in children 2014-2021



Source: (National TB Program, 2022)

At the provincial level, there are five provinces where the coverage of tuberculosis detection and treatment in children is above the national average (55%). The five provinces are Banten, DIY, Central Java, DKI Jakarta, Papua, and West Java (figure 22).

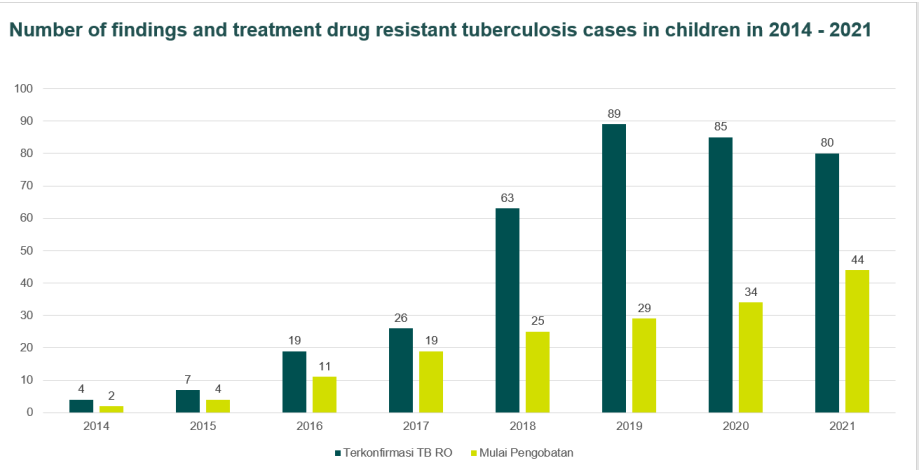
Figure 22. Childhood TB Treatment Coverage by Province 2021



Source: (National TB Program, 2022)

Notified cases of drug-resistant tuberculosis in children under the age of 15 years showed a sharp increase, especially in the last two years (2017-2019). In 2021, the number of notified drug resistant tuberculosis cases in children was 80 cases. However, the increased case finding of drug-resistant tuberculosis in children was not followed by an increase in the number of children starting drug-resistant tuberculosis treatment (figure 23).

Figure 23. Number of findings and treatment drug resistant tuberculosis cases in children in 2014-2021

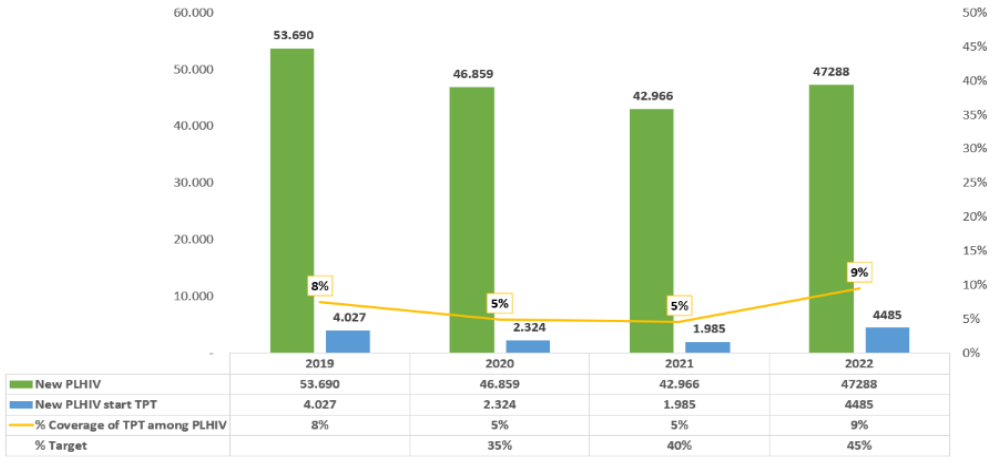


Source: (National TB Program, 2022)

Tuberculosis preventive therapy: At present, there is no evidence of latent tuberculosis incidence rates at the national level. The estimated burden of latent tuberculosis cases was around 2,795,994 people who come in contact with active tuberculosis cases (Waworuntu, 2019). A study in West Java Province estimated that the prevalence of Latent TB infection in patients with HIV infection and a history of using syringes is 28% (Meijerink et al., 2015). The proportion of latent TB infection in HIV-positive patients without a history of needle use is 30% (not significantly different from those with a history of needle use). Research by the Directorate General Ministry of Law and Human Rights Republic of Indonesia in 2016 showed that the prevalence of latent TB infection among prisoners was 52% (Natalius, 2019). Research in Yogyakarta estimated the prevalence of latent TB infection by 45% of all children who have contact with pulmonary tuberculosis cases with a positive smear (Triasih et al., 2015). Health workers and students of the health profession are vulnerable groups to being infected with tuberculosis (Apriani et al., 2019b).

Access to latent tuberculosis infection management is also low. In 2021, only 5 % of HIV-positive people were given tuberculosis prevention therapy. The coverage of TPT among PLHIV increased to 9% in 2022. However, this figure did not reach the target of 45% in 2022. The availability of TPT for PLHIV is limited. Only 6H and 3HP FDC are available in most provinces. In addition to that, the concerns of clinicians about side effects, the burden of health workers, and the fear of drug interactions can be the barriers to TPT for PLHIV implementation. In addition to that, lack of community health literacy on TPT for PLHIV.

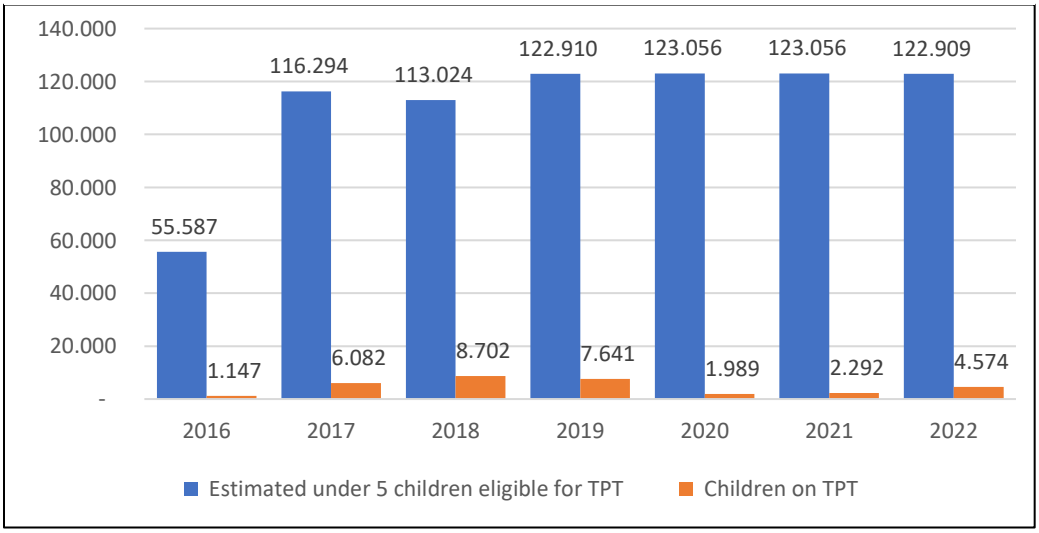
Figure 24. Coverage of TPT among PLHIV 2019-2022



	2019	2020	2021	2022
New PLHIV	53.690	46.859	42.966	47288
New PLHIV start TPT	4.027	2.324	1.985	4485
% Coverage of TPT among PLHIV	8%	5%	5%	9%
% Target		35%	40%	45%

In Only 3,7% of children under 5 years who have a household contact history of a bacteriologically confirmed tuberculosis case received tuberculosis prevention therapy. The number of children under 5 years who received preventive treatment with Isoniazid (PP-INH) reported in 2019 was only 7,641 cases. In 2020 and 2021, only 1,6% and 1,9% of children under 5 years received TPT, the coverage decreasing compared to the previous year. In 2022 (data updated February 2, 2023), only 3,7% or 4,574 cases (Epi Review, 2022).

Figure 25. Number of under 5 children received TPT 2016-2022

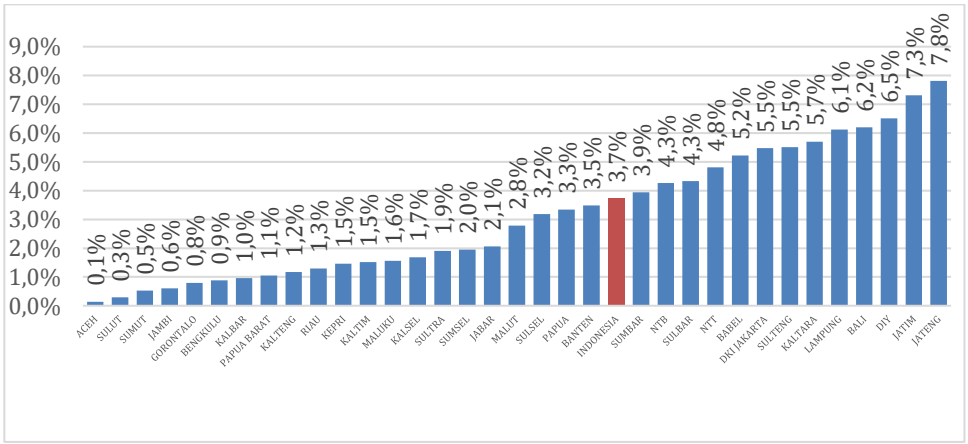


Source: (National TB Program, 2022)

Based on figure 25 above, TPT coverage for children under 5 years of age was still very low compared to the national TPT coverage target (90%). TPT coverage was only around 2.1% (1,147 / 55,587) in 2016 and was increased to 5.2% (6,082 / 116,294) in 2017 and 7.7% (8,702 / 113,024) in 2018 among the estimated children under the age of 5 who have a family contact history of a bacteriologically confirmed tuberculosis case and receive a TPT. However, in 2019 there was a decrease in the coverage of children under 5 years who received TPT by only 6.2% (7,641/122,910) among the estimated children under 5 years who were eligible to receive tuberculosis prevention therapy. Impact of covid-19 coverage TPT in 2020 was a significantly decreasing by only 1,6% (1,989/123,056) and in 2021 was 1,9% (2,292/123,056). In 2022, that improve coverage of children 5 years who received TPT by 3,7% (4,574/122,909).

At the provincial level, the highest TPT coverage for children under the age of 5 years was reported in South Java at 7,8%; higher than the coverage of TPT in children under 5 years old nationally (figure 26).

Figure 26. TPT coverage under 5 children by province, 2022



Source: (National TB Program, 2022)

In addition to providing TPT for children under 5 years old, TPT is also recommended for other high-risk groups such as household contact >5 years, people with immunocompromised, prisoners, health care workers, people living in a boarding house, people living in the military barrack and people using drug injection. The number of household contacts who received TPT dropped substantially in 2020, with a partial recovery in 2021 (Epi Review, 2022). The Ministry of Health recorded in 2021, there were 3,501 household contacts of TB patients who were given TPT, with 1,589 (43%) completing the treatment.

Public-Private Mix:

The Public-Private Mix (PPM) is a strategy to increase access to high-quality TB services. In Indonesia, the concept of the Public-Private Mix (PPM) is implemented on a district basis, which is known as the District-based Public-Private Mix (DPPM). DPPM aims to encourage all the health facilities providing TB services to be involved in the TB internal and external network so that all presumptive TB can be identified as soon as possible and TB patients can be treated and recorded in the TB information system. The DPPM team, led by the district health office, manages the TB network among all healthcare facilities and community organizations to support patient treatment. Up until February 2023, 225 DPPM teams had been established.

Aside from the DPPM team, the Coalition of Professional Organizations for TB Control (Koalisi Organisasi Profesi untuk Penanggulangan Tuberkulosis/KOPI TB) also plays important role in the TB PPM concept. KOPI TB is an association of professional organizations that commit to being involved in TB control at the national, provincial, and district levels through the PPM TB network. They work as a facilitator, speaker, mentor, or coach in their workplace and other health facilities to ensure the TB workforces can provide standardized TB care.

At the central level, 17 professional organizations are involved in the coalition (KOPI TB Pusat). Up to February 2023, 30 Province-KOPI TB have been established at the provincial level and 203 District-KOPI TB at the district level.

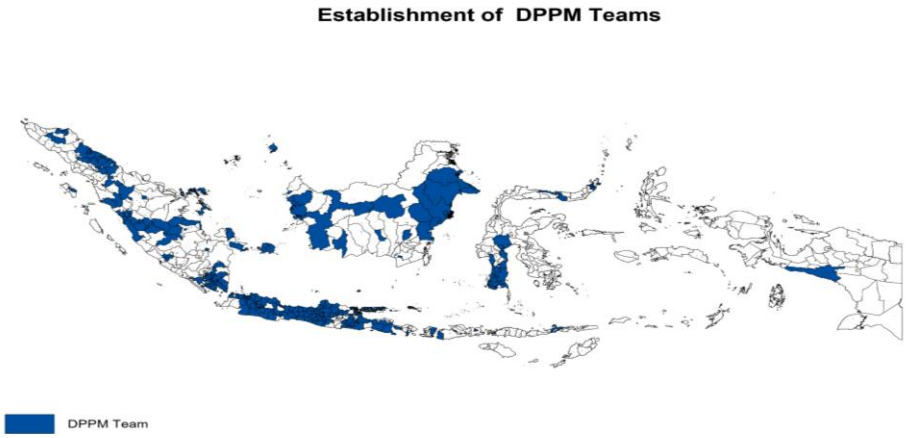


Figure 27. Mapping of Establishment of DPPM Teams

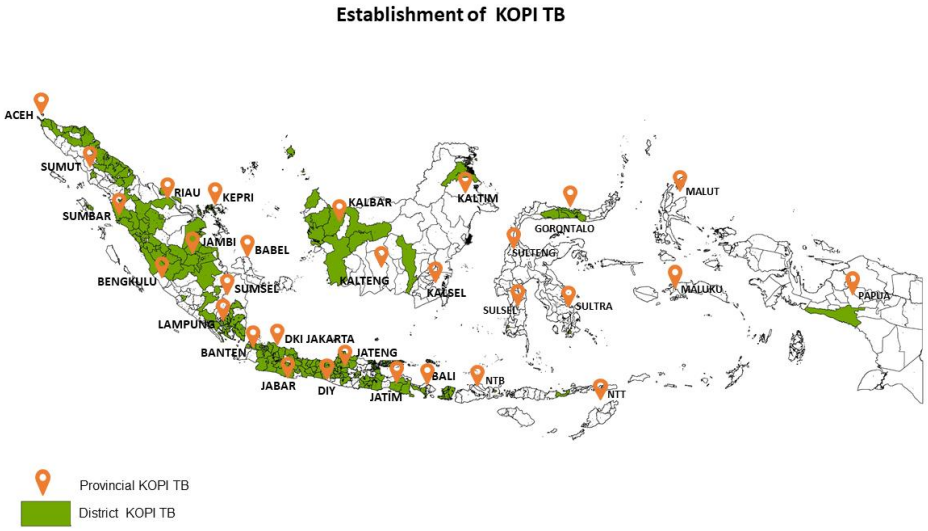
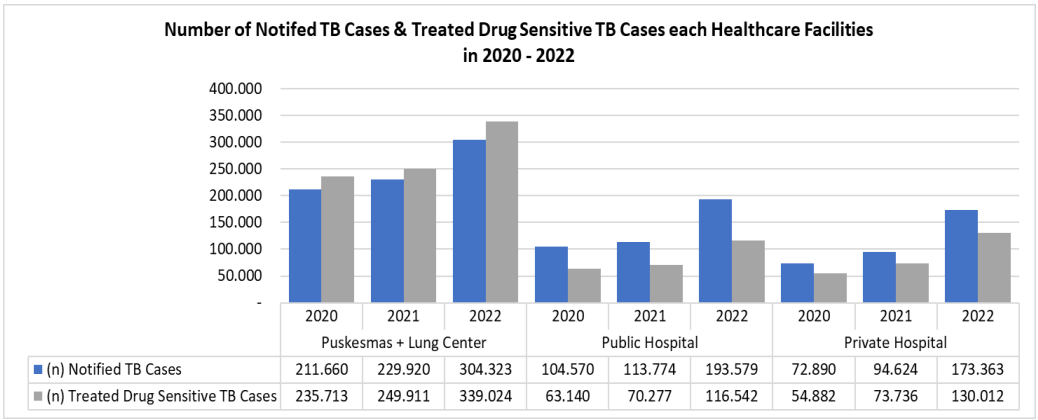


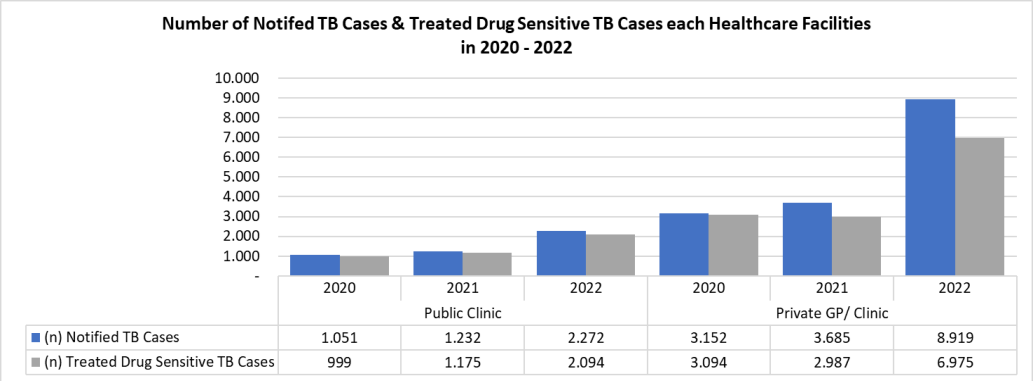
Figure 28. Mapping of Establishment of KOPI TB

The PPM team monitors the healthcare facility engagement and TB case notification at all levels and types of HCFs, from primary, secondary, to tertiary HCF. In general, the health facility reported confirmed and treated TB cases tends to increase from 2020 – 2022. The number of notified TB cases in 2022 is higher compared to 2021, which is 393,323 notified and 357,828 treated TB cases in 2021 increase to 717,941 (74%) notified and 594,647 (66%) treated TB cases in 2022 (figure 29).

Figure 29. Number of Notified Tuberculosis Cases & Treated Drug Sensitive Tuberculosis Cases in each Healthcare Facilities in 2020-2022



	Puskesmas + Lung Center			Public Hospital			Private Hospital		
	2020	2021	2022	2020	2021	2022	2020	2021	2022
(n) Notified TB Cases	211.660	229.920	304.323	104.570	113.774	193.579	72.890	94.624	173.363
(n) Treated Drug Sensitive TB Cases	235.713	249.911	339.024	63.140	70.277	116.542	54.882	73.736	130.012

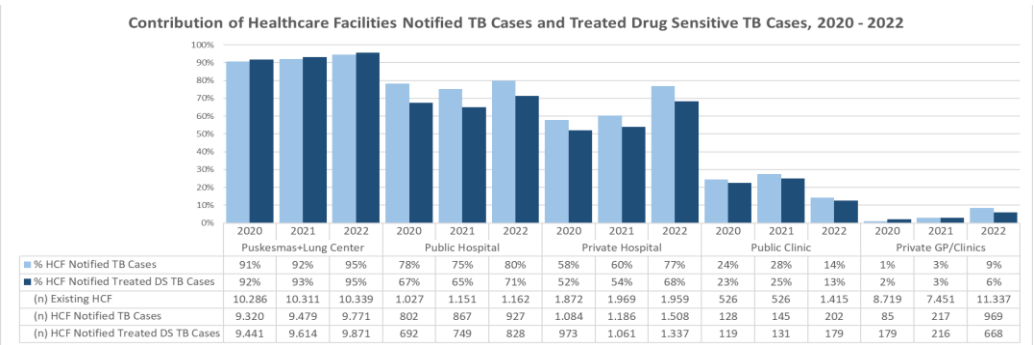


Source data: 2020-2021: Final Global TB Report and 2022: SITB & WIFI TB data as of February, 2nd 2023

Among public HCFs, the Puskesmas and Lung Center (BKPM/BBKPM) reports the most on detecting notified and treated TB cases, with 45% of the total notified cases and 57% of the total treated TB cases in the country. Whereas, among private HCF, the most notified and treated TB cases were reported by private hospitals, with 25% of the total notified cases, and 22% of the total treated TB cases. Meanwhile, private GPs and clinics continue to report infrequently. GPs and clinics account only for 1% of all confirmed TB cases and 1% of all treated TB cases. Nonetheless, HCF reporting of confirmed and treated TB is increasing yearly. Compared to 2020, there is an increase of 182% in TB cases notified and 125% in treated TB cases by private GPs and clinics in 2022. From the data given, the effort of the DPPM approach can increase the engagement of HCF in the TB program, as well as the reporting of notified and treated TB cases.

Along with the regular monitoring of HCFs reporting TB cases, PPM also mapped and monitored all types of HCFs that provide general healthcare services and potentially provide TB services. All potential HCFs need to be engaged in the TB program to increase TB case notification and provide high-quality TB care.

Figure 30. Contribution of Healthcare Facilities Notified and Treated Drug Sensitive TB Cases in 2020 - 2022



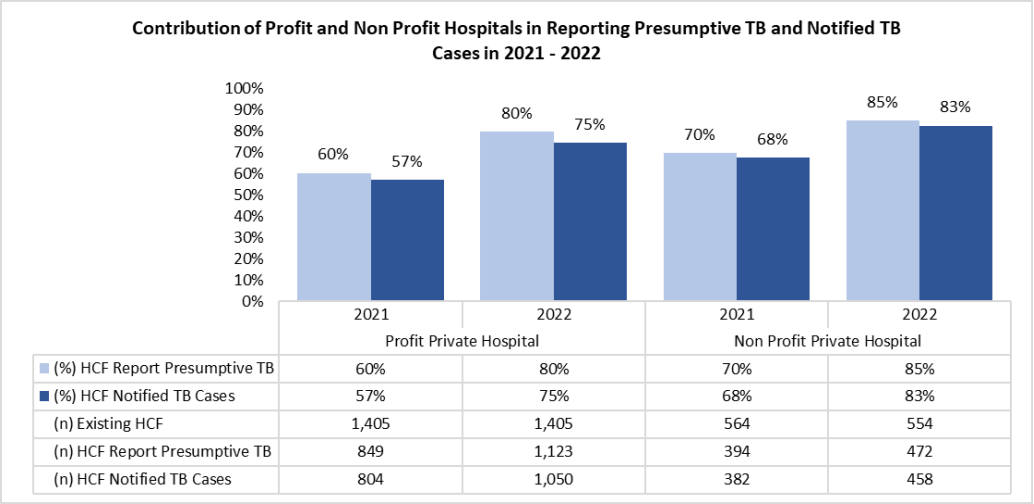
Source data: 2020-2021: Final Global TB Report, 2022: SITB & WIFI TB data as of February, 2nd 2023

In 2022, 95% of puskesmas and lung centers, 80% of public hospitals, 77% of private hospitals, 14% of public clinics, and 9% of private GP/clinics have been notified TB cases, although not all of them have reported treated-drug sensitive (DS) TB cases (figure 30).

All types of HCFs reporting TB cases tend to increase from 2020 to 2022. However, TB case notification from private providers, especially GPs and clinics, needs to be strengthened and increased. According to the above data, GPs and clinics report only 1% of all notified TB cases. The engagement of GPs and clinics is important as they become the first point of contact for patients who have TB symptoms and make sure all patients receive standardized TB care.

Private hospitals are classified into two types based on their ownership: profit and non-profit hospitals. Profit private hospitals are owned by a state-owned enterprise (Badan Usaha Milik Negara, or BUMN), a regional-owned enterprise (Badan Usaha Milik Daerah, or BUMD), a company, or an individual. Non-Profit Private Hospitals consist of various organizations, such as faith-based organizations, NGOs, social organizations, etc. In total, Profit-oriented Private Hospital has nearly three times more hospitals than the Non-Profit private hospital.

Figure 31. Number of Profit and Non-Profit Hospitals Reporting Presumptive TB and Notifying TB Cases in 2021 - 2022



	Profit Private Hospital		Non Profit Private Hospital	
	2021	2022	2021	2022
(%) HCF Report Presumptive TB	60%	80%	70%	85%
(%) HCF Notified TB Cases	57%	75%	68%	83%
(n) Existing HCF	1,405	1,405	564	554
(n) HCF Report Presumptive TB	849	1,123	394	472
(n) HCF Notified TB Cases	804	1,050	382	458

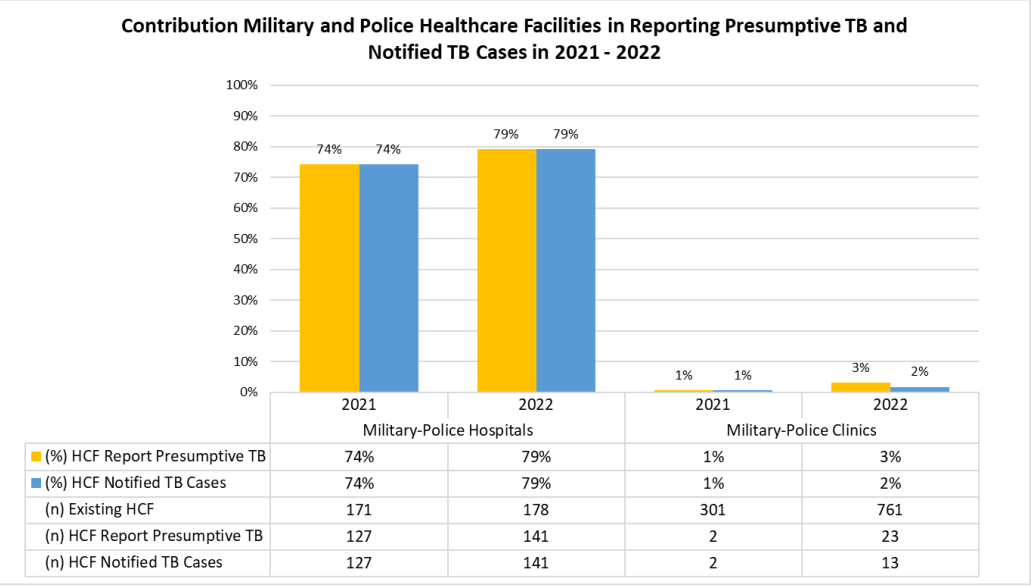
Source data: 2021: Final Global TB Report, 2022: SITB & WIFI TB data as of February. 2nd 2023

Regarding recording and reporting, the percentage of Non-Profit Private Hospitals that reported and notified both presumptive and TB cases are higher than Profit Private Hospitals. In 2022, 85% of non-profit private hospitals reported presumptive tuberculosis, and 83% notified TB cases, whereas 80% of profit private hospitals

reported presumptive tuberculosis and 75% notified TB cases. Despite the gap between HCF-reported presumptive and notified TB cases, there has been an increase in the number of HCF engaged and contributed to TB reporting among each hospital category up to 15-20% from 2021 to 2022 (figure 31).

Aside from Private Hospitals, Public Hospitals also play an important role in the TB program. Some examples are Military and Police HCFs, in which some of the potential HCFs contribute to the notification of TB cases.

Figure 32.Contribution of Military and Police Healthcare Facilities in Reporting Presumptive TB and Notifying TB Cases in 2021 - 2022



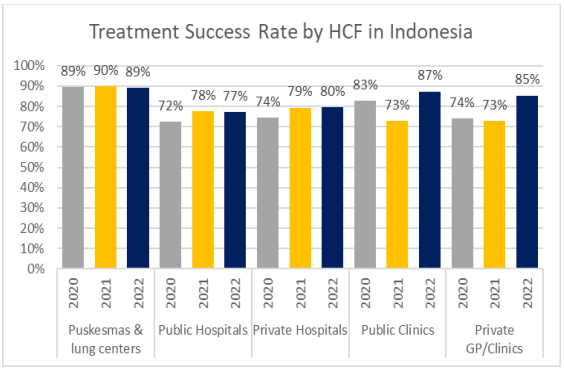
	Military-Police Hospitals		Military-Police Clinics	
	2021	2022	2021	2022
(%) HCF Report Presumptive TB	74%	79%	1%	3%
(%) HCF Notified TB Cases	74%	79%	1%	2%
(n) Existing HCF	171	178	301	761
(n) HCF Report Presumptive TB	127	141	2	23
(n) HCF Notified TB Cases	127	141	2	13

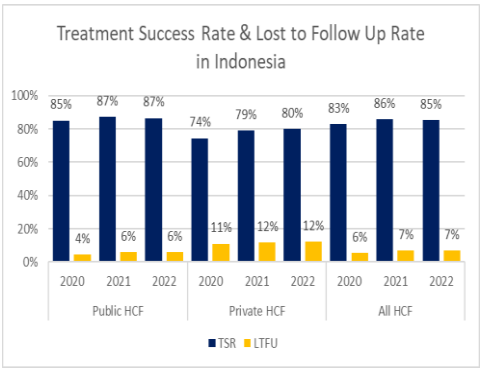
Source data: 2021: Final Global TB Report, 2022: SITB & WIFI TB data as of February, 2nd 2023

The number of registered public hospitals in 2022 is 1,162, of which 15% (n = 178) were Military and Police hospitals. Of 1,415 public clinics, 53% (n = 761) of them were Military and Police clinics. Until 2022, 79% of Military and Police Hospitals and 2% of clinics have notified TB cases. Although there is an improvement in the proportion of Military and Police HCFs from 2021 to 2022, the gap between the Military and Police HCFs, which have not notified TB cases remains high (figure 32).

In addition to the indicators of HCF engagement status and TB case notification, the treatment success rate (TSR) indicator is essential to be monitored regularly to evaluate the quality of TB care in healthcare facilities.

Figure 33. Treatment Success Rate by HCF in Indonesia and Lost to Follow-Up Rate in Indonesia





Source data: 2020-2021: Cohort data in 2019-2020 as submitted in Final Global TB Report, 2022: Cohort data in 2021, SITB & WIFI TB data as of February. 2nd 2023

The TSR in the public HCF for the last three years is around 85-87%, while in the private HCF is around 74%-80%. The TSR in private HCF tends to increase, up to 5%, from 2020 to 2022. However, the rate of loss to follow-up (LTFU) in 2020-2022, both in the public and private HCF, did not meet the target, which is 5% for the maximum rate (figure 33).

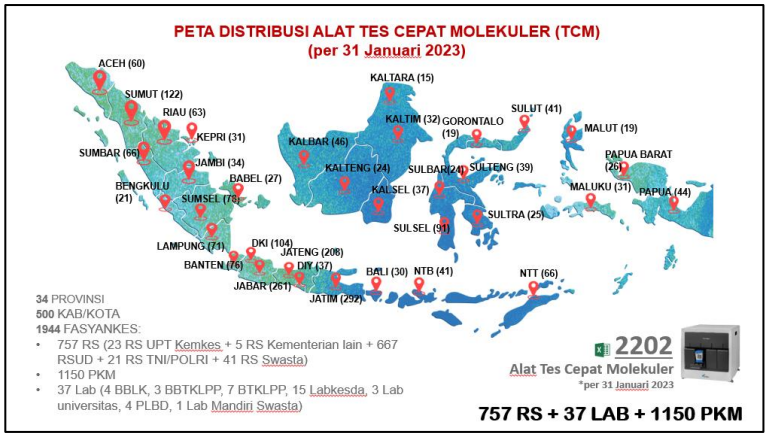
Despite the fact that the number of HCF-reported TB cases and TB case notifications has been steadily increasing in recent years, there are still significant gaps in the number of HCF-reported TB cases. Only 68% of private hospitals and 6% of private clinics/GPs reported TB cases. Furthermore, the treatment success rate across all health facilities falls short of the target (90%). Efforts to increase the engagement of healthcare facilities, particularly private primary healthcare facilities, are necessary. The PPM approach remains a fundamental effort to ensure that all TB patients receive standardized TB care and that all healthcare facilities can diagnose, treat, and notify TB patients.

Tuberculosis laboratory: The TB laboratory network operates at four main levels (National, Regional, Provincial, and district levels) according to the complexity of the services provided. Three designated reference laboratories ((1) BBLK Surabaya for TB culture and Drug Sensitivity Testing (DST), (2) Department of Microbiology, University of Indonesia, Jakarta for molecular tests, and (3) Balai Laboratorium Kesehatan Bandung (West Java Province) for sputum smear microscopy networking) oversee the laboratory network in coordination with NTP laboratory team.

Access to mWRD low complexity NAAT tests is improved by distributing 2202 Gx machines in 1,944 health facilities of 500 districts. This means that about 97% of the 514 districts in Indonesia already have access to mWRD low-complexity NAAT tests. The Gx machines already existing in 500 districts are spread across 757 hospitals, 37

laboratories, and 1150 primary health care (Figure 33). The diagnosis service with mWRD low complexity NAAT tests and the provision of mWRD low/moderate complexity NAAT test diagnostic tools will be expanded going forward according to national needs.

Figure 34. Distribution of 2202 GX Machines (mWRD low complexity NAAT) of January 2023



There are 21 TB culture labs, of which 12 perform TB-Drug susceptibility testing (phenotypic DST). Seven laboratories perform rapid molecular Line probe assay (LPA) testing for second-line DST for the program. At the peripheral level, 7927 microscopy laboratories provide diagnosis for TB, and 1944 mWRD low complexity NAAT laboratories provide a diagnosis for TB and RR- TB. In 2022, specimen transport and referral systems operated in 498 (about 96.8%) of 514 districts covering about 12,107 of 16,689 health facilities (peripheral, public, and private hospitals, clinics, and prisons) in the country connecting sputum microscopy labs with mWRD low complexity NAAT laboratories, as well as regional and national reference laboratories.

Figure 35.Distribution of culture laboratories, sensitivity tests and certified LPA

Research and innovation: The Indonesian Tuberculosis Research Network (Jejaring Riset Tuberkulosis Indonesia/JETSET) has been formed since 2017. Mapping research and research in the field of tuberculosis has been started since 2017. The national tuberculosis research meeting has been held routinely since 2017. The relevant and quality tuberculosis research was chosen in the meeting. The 2017, JEMM recommendation to establish a Center of Excellent tuberculosis has not yet been implemented due to organizational structure constraints at the Ministry of Health's Research and Development Board.

A national action plan for tuberculosis research and innovation in Indonesia 2017-2019 has been prepared and disseminated to various stakeholders. However, funding for tuberculosis research from the Ministry of Health is only two percent of the total Ministry of Health budget. In addition, only a few provinces and districts have included research and innovation in the Regional Action Plan for tuberculosis prevention. The existing Regional Action Plan may still use research on a national scale as the basis for its preparation.

Some tuberculosis operational research working groups at the provincial or district level formed in 2005-2017 still function despite no systematic, planned meetings and activities. In addition, operational research conducted by the working groups has contributed to tuberculosis prevention policies and programs, but an effort is needed to improve its sustainability (Probandari et al., 2016).

Capacity building for tuberculosis program staff at the national level in the analysis of surveillance data has been carried out. However, there is still a need to increase the capacity of program data analysis for tuberculosis program staff at the local level.

The Policy Brief preparation workshop to encourage tuberculosis control program policies provided input from research evidence has been conducted nationally. Furthermore, similar initiatives need to be implemented for program planning at the local level.

Rewarding for tuberculosis innovation has also been carried out by the Ministry of Health in 2019. In certain areas, initiatives have begun to give awards for tuberculosis innovation, such as in East Java Province and Bandung Municipality in West Java Province (Information from the Tuberculosis Expert Committee meeting in Indonesia December 2019, unpublished).

In 2020, the MoH launched a document of the Priority Agenda of TB research and innovation in Indonesia 2020-2024.

Community participation: Community participation is an essential component in tackling tuberculosis in Indonesia. Social organizations (CSOs) such as Aisyiyah, the

Nahdlatul Ulama Health Institute (LKNU), TB Patient Organization Organizations (POP), and drug-resistant tuberculosis survivor organizations such as PETA and REKAT have been involved in tuberculosis prevention efforts. Community engagement activities in tuberculosis prevention in Indonesia include contact investigations, evaluating the quality of tuberculosis services, providing social support for tuberculosis patients, advocating for local governments, and raising funds for tuberculosis-related activities (Comprehensive Community Based Monitoring and Feedback Framework in TB Program in Indonesia, not published).

However, there is still an important role in managing tuberculosis which still requires community participation. For example, peer support is still needed to support the treatment compliance of tuberculosis patients through counseling. In every Puskesmas, there is a monitoring mechanism for program evaluation regularly every three months with a Mini Workshop forum. Mini Workshop needs to be utilized to monitor program evaluation by involving the community.

In 2017, Stop TB Partnerships developed a community-based monitoring framework using an online application called One Impact. LKNU and Aisyiyah have assessed the quality of TB services in their work area every six months. Meanwhile, in several provinces, feedback mechanisms have been developed at the local level, such as QLUE in Jakarta and Cacak in Surabaya.

The National TB Program has collaboration with patient support group (POP TB Indonesia) develop a feedback mechanism from patient and the community effected in October 2022. LAPOR TB is an application that can be used for instruments that can help health facilities, communities and partners to assess TB service quality from a patient perspective. So far, there have been 79 complaints that have been received and have been responded to through a mediation mechanism.
The community also has an important role in mobilizing collaboration between multi-sector, civil society, affected communities, and other stakeholders to strengthen the regulatory and legal framework (including funding from village fund and sub-district funding through advocacy) for patient-centered approach from national, provincial, and district level to involve with TB program, including protecting human rights and gender issues.

CSOs also have an educate and promote TB control in the community by involving community workers or cadres. One of the results achieved was the existence of referrals of presumptive to health facilities and increased treatment outcomes as the role of cadres in accompanying patients during treatment.

Strengthening the health system: The governance of the National Tuberculosis Program is directed to encourage districts as the backbone of program implementation in the field. In every district health office, there is a TB *wasor*, a staff dedicated to managing the TB program. The TB Wasor is responsible for supervising and monitoring the program.

TB program recording and reporting use the Integrated Tuberculosis Information System (SITB) as well as written reports. The system is used for recording and reporting drug-sensitive tuberculosis. JEMM 2020 observations (not published) showed that in some healthcare facilities SITB is not used even though computers are available. Forms for diagnostic referrals, treatment cards and other forms have not been updated according to the standards of the ongoing National Tuberculosis Program. Many Puskesmas print and copy these forms independently. Data completeness is still a problem in recording and reporting. Address and household contacts are several examples of incomplete information that are often found. In addition, JEMM 2020 also found differences in the number of cases reported in the tuberculosis information system and reported by healthcare facilities with the number of cases recorded in the medical record. Patients treated with regimens outside the national TB program were not reported. In addition, SITB has not been used for real-time reporting in some Puskesmas, because the workload of Puskesmas staff is quite high. At the Puskesmas, SITB is only one of approximately seven online data systems from various programs. In addition, the problem of internet speed is a challenge in some areas. TB program staff usually manage other programs or tasks. Information on treatment for patients referred to other health facilities is also difficult information to obtain (WHO, 2020).

WIFI-TB is an information system for recording tuberculosis case reports for Independent Practitioners, but the system has not been maximally used. Sharing monitoring and data review between SITB and SIHA is still limited because SIHA only has aggregated data.

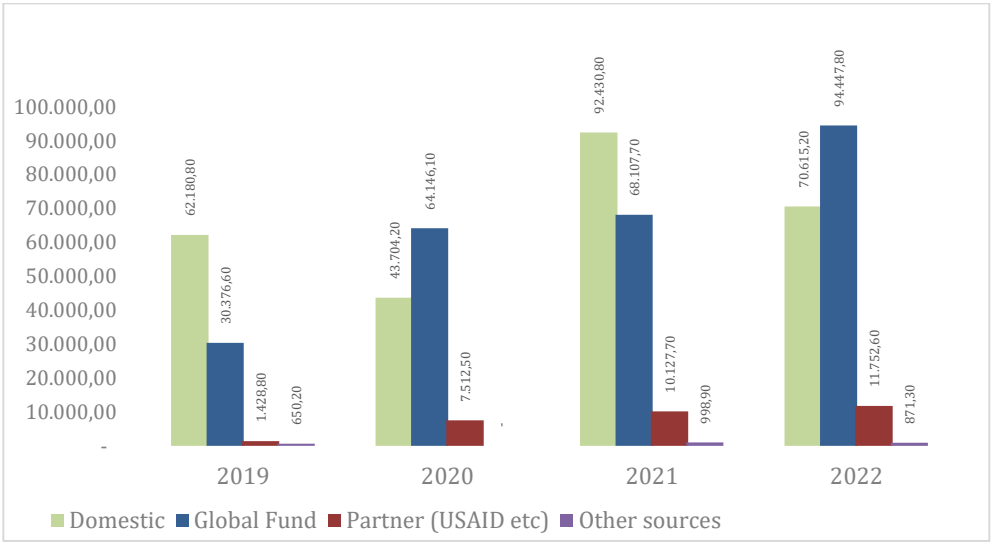
The capability to use and interpret data at various levels still needs to be improved. Tuberculosis program staff need to increase their capacity to manage and use data to support programs, for example, to identify and resolve data duplication problems. Communication between units within health care facilities (for example, between outpatient, laboratory, and pharmacy) in recording and reporting could be more optimal.

Supervision carried out in each district, as well as from province to district, has yet to be implemented consistently. Likewise, supervision visits from the National Tuberculosis Program have yet to be carried out routinely. Program review meetings

discussing data validation and coordination at various levels have yet to be regularly conducted to detect and solve program problems.

Tuberculosis program funding: National Tuberculosis Program funding sourced domestically, mainly from the Government, continues to increase, but the role of funding from donors is still significant. Before 2017, the largest funding for the tuberculosis program came from donor grant funding (Global Fund). After 2017, with the establishment of tuberculosis as one of the national priority diseases, there is a big commitment from the government to fund the cost of the tuberculosis program. The increase in funding commitments is also supported by the existence of the National Health Insurance program since 2014. However, in 2020 due to the COVID-19 pandemic, funding from donors has increased again. An overview of the amount of funding for the tuberculosis program based on funding sources can be seen in figure 36.

Figure 36. Funding sources for National TB program in Indonesia, 2019-2022



Another biggest source of financing comes from household spending (*out of pocket*). Information on program financing from the local government to date has only been a rough estimate due to the absence of a regional financial reporting system that has detailed and complete program information. The absence of this data makes it difficult to develop program-specific health accounts derived from the National Health Account (NHA) (WHO, 2003).

On a national scale, the source of funding for public health programs is funding from the national social health insurance program, or National Health Insurance (JKN). The biggest source of funding at the level of health service facilities comes from JKN program payments from the BPJS Kesehatan. The second largest funding for health

programs and services comes from the central and regional government budgets. Donor funding can be channeled through the government budget (Planned Grants) or directly (Direct Grants). The largest funding for the tuberculosis program comes from the Central Government through the APBN scheme (providing supply side needs, health workers, diagnostic and laboratory equipment, medicines, and program management needs). The funding through the national social insurance financing scheme – JKN, is used for advanced care for people with Tuberculosis. The amount of grants from donors varies greatly according to the program offered. The various funding channels received by health facilities, especially for each type of funding, have been determined to make it difficult to plan and potentially cause inefficiencies in implementing program activities.

Mobilization of the tuberculosis program funding from the government still needs to be pursued. In general, government funding for health in Indonesia is still relatively low compared to countries with comparable economic levels. However, given the limited capacity of government fiscal space, both national and regional, other efforts need to be done is to increase the efficiency of financing. Financing efficiency can be done by ensuring that limited resources/funds are allocated to interventions that have effective programs (cost-effective) or 'allocative efficiency'. In implementing program activities, it is also necessary to guarantee compatibility with algorithms and service standards to ensure technical efficiency. The fragmentation of financing that is currently happening is the biggest challenge to be able to realize efficiency.

JEMM 2020 found that capitation payment of JKN motivates primary care providers to up-refer their tuberculosis symptomatic cases. Meanwhile, hospitals are motivated to retain TB patients because of the case-based payments available. Combined with patient preference, this has led to a predictable increase in hospital-based tuberculosis care. The greater use of primary care for tuberculosis can produce better care at lower cost, reduce loss to follow-up, bring care closer to the patient to reduce time and income loss for patients, and make the provision of public health functions more manageable (WHO, 2020).

JEMM 2020 also observed two major barriers to MDR-TB care related to JKN. First, patients seeking a GeneXpert test often need to go to a hospital (since most machines are at secondary level). However, as per standard guidance across all health areas, such hospitals require a referral letter. This barrier can be overcome via the fee-for-service payment for Xpert. Second, a number of hospitals were found to delay MDR-TB treatment initiation because they were concerned that the National Tuberculosis Program would provide only drugs but not reimburse other clinical care expenses since MDR-TB is currently deemed to be under the NTP and is therefore not part of the JKN payment scheme.

Enrollment in JKN will eventually become compulsory for everyone, with the formal sector (including civil servants and salaried employees in the private sector) already being enrolled by their employers based on a premium equivalent to 5% of their salary. The Presidential Decree No. 67 of 2021 also mandates automatic enrollment for any TB patient not yet enrolled in the JKN program, but guidelines for this process are still pending. Under JKN, provider payment mechanisms are not explicitly linked to treatment outcomes. While JKN offers comprehensive benefits that can reimburse most health interventions, the 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, with only 15.7% at the primary care level. Spending on primary care as a percentage of JKN spending has remained stagnant or declined yearly since 2014 (JEMM, 2022).

Tuberculosis program services are largely funded by national programs, while others have been integrated into the JKN benefit package, namely diagnostic and consultation services at the primary level. Financial protection from possible catastrophic spending is one of the goals of universal health coverage. However, research by Fuady et al., (2018) showed that households still have the opportunity to bear the catastrophic cost of tuberculosis. The household's out-of-pocket expenditure was 133 USD for drug-sensitive tuberculosis patients and 2,804 USD for MDR TB patients. The proportion of households experiencing catastrophic costs due to drug-sensitive tuberculosis is 36% (43% in poor households and 25% in non-poor households). The proportion of households experiencing catastrophic costs due to MDR TB is 83%. Catastrophic costs in poor households were caused by the status of tuberculosis patients as breadwinners, job loss, and previous medical history (Fuady et al., 2018).

The amount of the budget allocation can serve as a tool for monitoring the commitment of government funding contributions both at the Central and Regional levels. Currently, program financing information is still constrained in terms of availability and quality of data. Existing government budget and expenditure reporting systems are unable to answer program needs. The mechanism for recording funding and budgeting reports from the government is still in the development stage, for example the establishment of a budget nomenclature that can be used to evaluate program funding with a detailed level of activity. It is very important that the tuberculosis program has a study on the use of health funding data by referring to the health account system (NHA), considering that the NHA is highly dependent on input/financial data available. The same is true for the JKN program, BPJS's willingness to release all health care service claims (medical costs) spent on tuberculosis, the guaranteed availability of visits from the p-care system for primary services, and e-claims for hospitalization. Therefore, it is necessary to improve financial information and program financing.

The results of the latest 2019 health facility census study by the Indonesian Ministry of Health Research and Development which were analyzed using the WHO's Service Availability and Readiness Assessment (SARA) instrument showed weaknesses in the readiness of health facilities for the tuberculosis program. Although most health facilities claim to provide tuberculosis services, diagnostic capacity is still a weak point for the health facility's readiness. This illustrates the problem of readiness in terms of health service providers.

The involvement of private funding and community social organizations (CSO) has not provided a complete picture related to their contribution in program financing. This becomes an obstacle in recording and reporting, especially related to CSO financing mechanisms that use Type III Self-Management (Planned and supervised by the Ministry / Institution / Regional Apparatus as the person in charge of the budget and implemented by the Community Organization), in accordance with Presidential Decree No. 16 of 2018 concerning Government Goods and Services Procurement.

Adjustment of TB control and care during COVID-19 pandemic: National guideline of TB control program during COVID-19 pandemic issued. The guideline covers innovations in care delivery with monthly dispensing of drugs, digital monitoring, teleconsultation, hotline, etc.

2.3. Problem prioritization of TB control in Indonesia

Considering the existing epidemiological evidence, population characteristics and the health system implemented in Indonesia, the stakeholders have made a consensus on the sequence of tuberculosis control gaps in Indonesia as follows:

1. People with Tuberculosis diagnosed, but not started treatment;
2. People with Tuberculosis symptoms who are not seeking care;
3. People with Tuberculosis presenting to health facilities but not diagnosed;
4. People with Tuberculosis diagnosed by health service providers, but not notified;
5. People notified as Tuberculosis case but not successfully treated; and
6. People with Tuberculosis infection or high risk to develop Tuberculosis.

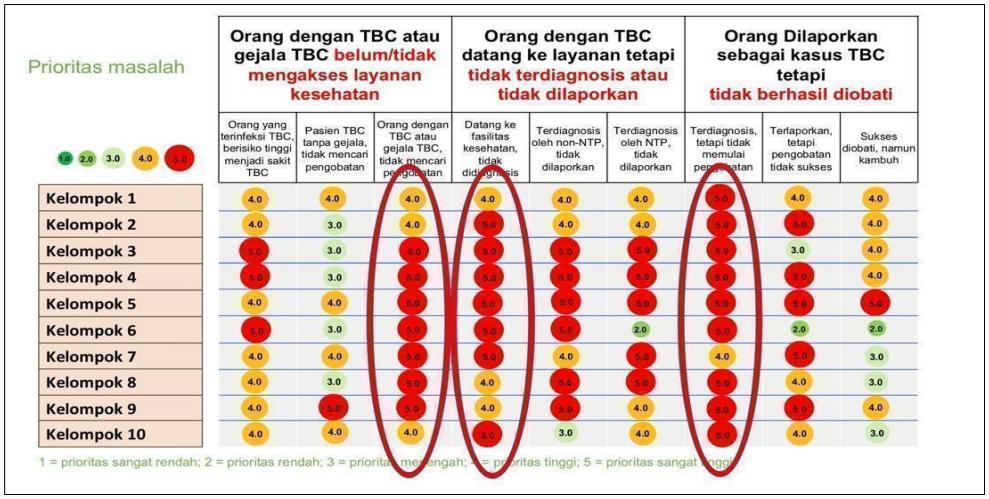


Figure 37. Problem's prioritization according to the people-centered framework

Source: Problems identified at the National Consensus Meeting on the Development of National Strategy for TB Care and Prevention in Indonesia 2020-2024, Jakarta 14-18 October 2019

While those prioritizations are still relevant for the context of the post COVID-19 pandemic, emphasis on specific interventions are needed to improve the effectiveness of intervention along the continuum of care.

2.4. Root cause analysis along the continuum of care

2.4.1. People with tuberculosis or its symptoms who do not access health services

Results of the 2013-2014 Tuberculosis Prevalence Survey showed that 43% of patients with TB symptoms did not seek treatment and 31% sought treatment on their own. This largely contributed to the low coverage of TB treatment, which only reached 67% (61-73%) in 2018; and that means there are still 33% (27-39%) of TB cases that have not been diagnosed nor reported.

People with tuberculosis or symptoms of tuberculosis may not or have not accessed health services due to lack of knowledge about tuberculosis. Data from the 2013-2014 Tuberculosis Prevalence Survey showed that prior knowledge about tuberculosis is one of the factors that influence treatment seeking behavior. From those patients who reported symptoms of coughing for ≥14 days or coughing up blood or abnormal X-ray results), only 26% sought treatment at a health facility. As many as 43% did not seek treatment and 31% did the treatment themselves. The proportion who did not seek treatment was higher in men. When they were asked about the reasons, 75% of those who did not seek treatment said that they felt the symptoms were not serious

(Kementerian Kesehatan RI, 2015). Findings from the 2013-2014 TB prevalence survey show that in the study population reporting cough symptoms ≥14 days or coughing up blood or abnormal X-ray results), 77% knew the main symptoms of TB, 66% knew how TB was transmitted, and 76% knew that TB can be cured. However, only 22% knew that TB treatment is free (Kementerian Kesehatan RI, 2015).

The Community, Rights and Gender (CRG) assessment conducted by Spiritia Foundation (2019) shows that the lack of knowledge about tuberculosis occurs in men and women (Marguari et al., 2019). Men with tuberculosis symptoms tend to postpone treatment compared to women. Furthermore, men often seek treatment only when they experience more severe symptoms. Meanwhile, for women, barriers to treatment include household chores and responsibilities, and the need to consult their husband first before accessing healthcare (Marguari et al., 2019).

All factors above highly contribute to the low coverage of tuberculosis treatment and management, with only 67% (95%CI of 61-73%) treated cases in 2018. Therefore, there are at least 33% (27-39%) tuberculosis cases that were untreated or underreported.

Unreported high-risk populations such as high smoking prevalence, increased DM prevalence, high undernourished prevalence, and increased elderly population need to be a concern and a collaboration in service integration to improve tuberculosis case finding and treatment is needed.

In 2020, Indonesia started ACF in some detention centers, Islamic boarding schools, and high-risk groups such as close contacts of TB patients, PLHIV and people with DM. MoH has established MoU with 6 big chain private hospitals (255 facilities) in 30 provinces to increase TB case finding. The Zero TB Project in Yogyakarta has shown an increased yield of ACF by targeting contacts and focusing on high-risk groups. On the other hand, a large proportion of TB cases (74.6%) first sought care from informal or private providers. However, JEMM 2022 identified some challenges related to ACF, including: (1) Most ACF activities rely on symptom-based screening followed by WHO recommended rapid diagnostics. In some projects/areas also use CXR. (2) The ACF results in relatively stagnant and low overall TB case-notification during 2019-2022; (3) District in Yogyakarta with unusually high proportion of notified pediatric TB (1423/33.4%) of 4363 TB patients reported through November 2022. (4) ACF yield is dependent on populations screened, higher in target high risk groups and low in general population; (5) CXR not available at Puskesmas or prison; (6) resource shortage of cartridges limited ACF; (7) TB infection diagnosis with TPT not routine component of ACF; (8) private sector engagement progressing slowly. Hence, JEMM 2022 recommended the NTP Indonesia to (1) increase access to CXR/AI as a basis of ACF screening; (2) define relevant

high-risk groups for ACF (TB contacts, DM, PLHIV, others), (3) Carry out operational research to understand the unusually high pediatric TB rate observed in Yogyakarta, (4) Assure uninterrupted supply of health commodities (cartridges), (5) Include TB infection diagnosis/TPT as a component of ACF; (6) Implement recommendations 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.

2.4.2. People with TB seeking care but either not diagnosed nor reported

Coming to health facilities, not diagnosed: Although health facilities in the public and private sectors (all levels) at the primary and referral health facilities level have high diagnostic coverage, only 26% of the population undergo treatment at facilities with TB diagnostics. Patients who do not seek treatment at the facility depend on referral to a health facility with a diagnostic capacity or an undiagnosed risk.

Tuberculosis Prevalence Survey Results 2013-2014 showed that pulmonary X-ray contributed to the addition of 181 (42.5%) total cases of asymptomatic Tuberculosis in the 2013-2014 TB prevalence study. Detection of cases with screening for symptoms only can cause a large number of cases to go undetected. From the cases found in the study, 261 of 426 (61%) had negative sputum results. This case could have been missed by routine case detection, which only relied on a microscope. From the total research cases in Tuberculosis Prevalence Survey 2013-2014, the proportion of cases diagnosed clinically was highest in the 0-14 years age group (Kementerian Kesehatan RI, 2015).

National Tuberculosis Program data showed that from the new and relapse tuberculosis cases for all types reported to the National Tuberculosis Program in 2017; around 49% were bacteriologically confirmed tuberculosis cases, 42% were clinically diagnosed, and 10% were extrapulmonary TB. Trends in the detection of bacteriologically confirmed tuberculosis cases tend to decrease, while the trend of clinically diagnosed tuberculosis case finding and extrapulmonary tuberculosis tends to increase (WHO, 2019b).

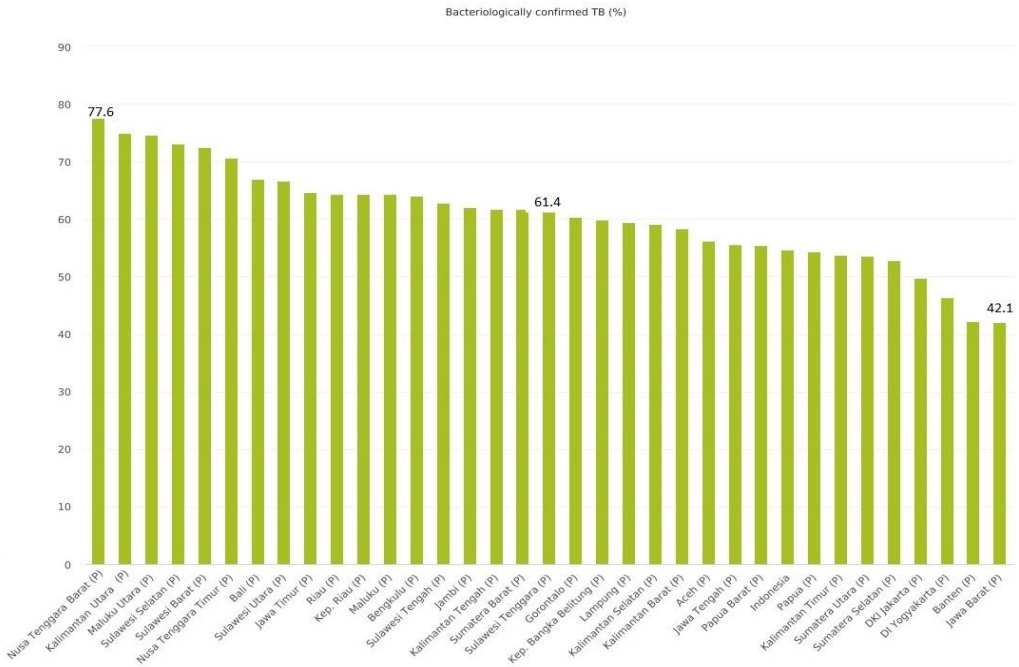
The proportion of new and recurring tuberculosis cases reported in children under 15 years was within the expected range of 5-15%. The challenge was the lack of diagnosis and reporting of TB cases in infants (under 5 years) and excessive diagnosis of TB cases in older children (5-14 years).

Access to molecular rapid test diagnostic services among new cases and relapses remains one of the challenges. In 2017, only 2% of new cases were tested by molecular rapid diagnostic tests; that number increased to 12% in 2018.

To properly diagnose tuberculosis, a bacteriologic confirmation of diagnosis is essential. The national average bacteriological confirmation was 48.5% in 2018 and 54,7% in 2021. Four provinces below the national average have high case-finding rates (DKI

Jakarta, Central Java, West Java and Banten). Those provinces accounted for almost half of all case-finding figures and a province that conducts sweep cases in large hospitals and clinics with a high proportion of clinically diagnosed tuberculosis cases (WHO, 2022).

Figure 38. Percentage of bacteriologically confirmed among new cases of pulmonary TB by province 2021

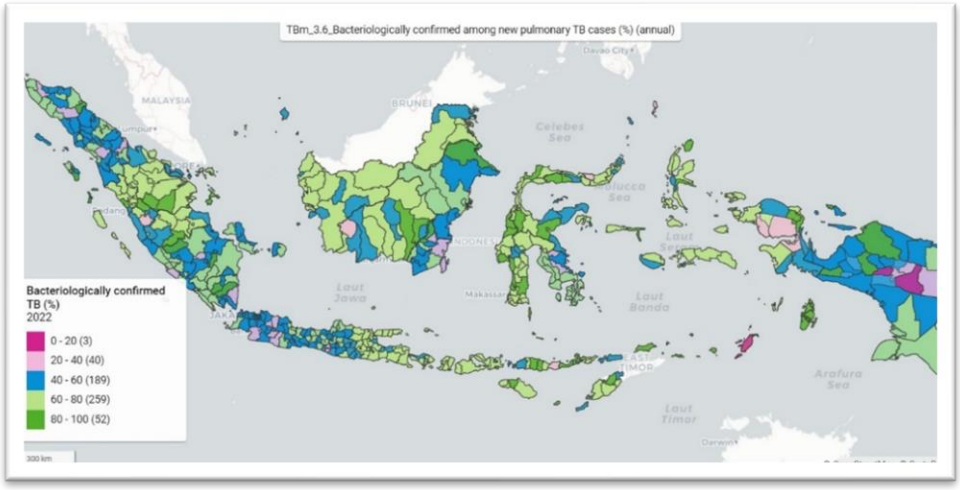


In 2019, 294 (57%) districts had a proportion of new bacteriological confirmed pulmonary TB cases of 60-100%; and others districts had a proportion of confirmed bacteriological TB cases below 60%. Among the districts with a proportion of bacteriologically confirmed tuberculosis cases less than 60%, there are 10 districts with a proportion of new cases of bacteriologically confirmed pulmonary tuberculosis ≤30%. The districts are South Sorong (1,5%), North Tapanuli (17,6%), Yahukimo (20,9%), Penukal Abab Lematang Ilir (21,3%), Bogor Municipality (24,5%), Metro Municipality (25,2%), Payakumbuh Municipality (25,6%), Teluk Bintuni (28,1%), South Tangerang Municipality (28,3) and Tomohon Municipality (29,3). The low proportion of new cases of bacteriologically confirmed pulmonary tuberculosis in 115 districts must be addressed (WHO, 2019b).

Figure 39. Proportion of bacteriologically confirmed among new cases of pulmonary TB in 2019

Source: (*WHO, 2019b)*

Figure 40. The proportion of bacteriologically confirmed among new cases of pulmonary TB in 2021



Source: (*WHO, 2021)*

The percentage of extrapulmonary tuberculosis cases continues to increase from 6.4% in 2014 to 10.2% in 2019 and then decreased to 8.8% in 2021 (figure 41). Additional investigation is required to comprehend the ongoing decrease in the proportion of extrapulmonary tuberculosis (EPTB) cases among new tuberculosis cases in 2021. At the provincial level there were three provinces, namely Papua (19%), DI Yogyakarta (18%), and Bali (15%), with the highest proportion of EPTB cases. However, the proportion of EPTB cases was considerably lower in Sulawesi islands, Maluku, East Nusa Tenggara, Central Kalimantan, Aceh, North Sumatera and South Sumatera. The differences in the proportion of EPTB cases between provinces may be explained by the varying proportions of childhood tuberculosis in each province. Hence, it is crucial to ensure

that EPTB is accurately diagnosed in areas where the proportion is high and, conversely, to enhance the capacity to diagnose EPTB in locations where the proportion is low (Epi review, 2022).

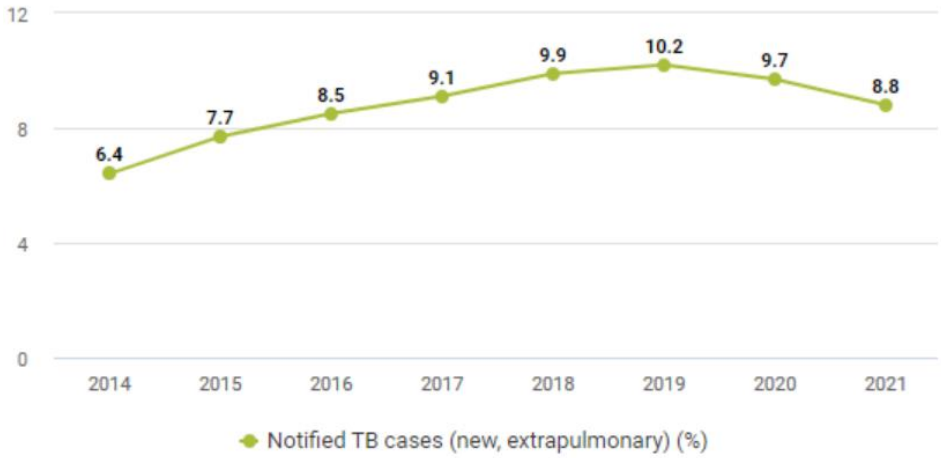


Figure 41. Extrapulmonary among new Tuberculosis cases, national level

People diagnosed with tuberculosis but not reported: Standard Operating Procedures (SOPs) for data validation and cleaning, manual recording and reporting systems or documentation related to technical support/troubleshooting SITB in health facilities are not available. The old version of the registration form is still in use. The use of incorrect or incomplete forms is still found. At present, there is no link between the HIV recording and reporting system (SIHA) and SITB. There is no national laboratory data reporting system. There is no automatic monitoring of the completeness of SITB filling and there is no routine system to validate the number of reporting health facilities.

Not all health service facilities have provided DOTS services. Only 57% of hospitals, 25% of Correctional Institutions and Detention Centers, 6% of clinics and 3% of doctors practicing independently have become DOTS services.

Internal and external networks in health facilities are still not optimal. Since the removal of TB cases in hospitals and clinics (starting in 2017), the proportion of cases originating from hospitals has risen (Tuberculosis surveillance report 1st-2nd quarter of 2019).

Based on 2016-2017 TB Inventory study, the estimated level of TB under-reporting in Indonesia was 41% (15% PHC, 62% hospital, 96% lab/GPs/clinics). The level of under-reporting was still relatively high; especially in non-public health centers (71%), clinically diagnosed TB patients (55%), extra-pulmonary TB (58%), and children (54%). An inventory study also found that of 7,323 total study cases found in the private health

facilities, 5,099 were underreported. Of 14,749 total study cases found in the public health facilities, 4568 were under-reported (WHO, 2018)

The Tuberculosis Epidemiology Review in Indonesia in 2019 also found that seven districts did not report notifications in 2018, namely Deiyai, Landak, Maybrat, Nduga, Arfak Mountains, Puncak, Tambrauw. This happens because there are no DOTS facilities in the region (WHO, 2019b). Only 18.6% of TB cases in private services are bacteriologically confirmed. For the 2015-2016 inventory study data, the proportion of TB children diagnosed was higher in private health facilities than in government facilities (23.7% vs 15.3%) (WHO, 2019b).

2.4.3. People reported as a TB case but not successfully treated

People who are diagnosed as tuberculosis case, but they do not start treatment: Based on the results of the TB Inventory Study it was found that Government health service facilities referred to around 1,667 (11%) while private facilities referred to around 692 (10%) drug sensitive (DS) TB patients diagnosed to other health facilities for treatment but there were no data on how many of the referred cases really start treatment. The Tuberculosis Inventory Study (TB-IVS) also showed 1,010 cases of DS TB in unknown private and public clinical laboratories where these cases were treated. Both of these things indicate that there are still many TB cases that have been diagnosed but do not get standard treatment.

The number of drug resistant tuberculosis services in Indonesia as of 12 February 2020 was 233 hospitals and 2,502 satellites of resistant tuberculosis services in 34 provinces and 117 districts.

An epidemiological study in 2019 found that the average delay in treatment of drug-resistant tuberculosis cases after being diagnosed was 41 days. This issue needs serious attention so that all patients with confirmed drug resistant tuberculosis receive immediate treatment before transmitting to others (WHO, 2019b).

About 42% of DR-TB patients (5173 out of 12788) who were diagnosed were not starting treatment in 2022. The proportion of DR-TB patients who started treatment remains far below the target (58% in 2020, 61% in 2021, and 58% in 2022). The biggest gap was found in Bengkulu and Maluku provinces, where only 29% of drug-resistant tuberculosis patients started treatment in 2022. No province in Indonesia reached the target of 95% treatment enrollment. The three provinces with the highest DR-TB treatment enrolment rate were Kepulauan Riau (89%), Yogyakarta Special Region (81%), and Aceh (75%).

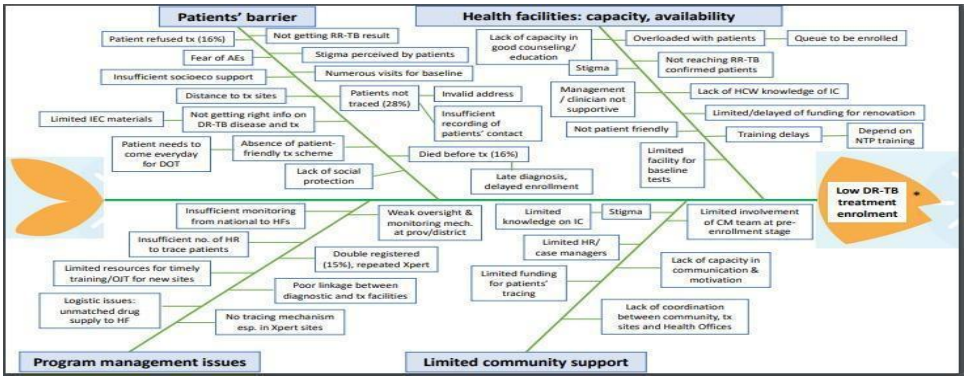


Figure 42. Root cause analysis of low DRTB treatment enrollment

There are four groups of barriers that prevent DRTB patients from starting their treatment: patient barrier, health facilities' barrier, program management, and lack of community support (figure 40). The TB program will address those barriers to improve treatment enrollment.

The proportion of TB-HIV coinfection cases receiving ART and Tuberculosis Prevention Treatment (TPT) was 47% and 44% in 2013. However, it has declined (40% on ART and 37% on TPT in 2018). In 2018, there were 6 176 TB/HIV patients who were not on ART, and 60% were from DKI Jakarta, East Java, West Java, Papua, and Central Java (WHO, 2019b).

People who are reported as having tuberculosis cases but do not succeed in treatment: Among people with a diagnostic history of tuberculosis and no longer taking medication, 40.2% reported stopping the drug without being declared cured. As many as 26% stopped treatment because they felt better or had no more symptoms (Kementerian Kesehatan RI, 2015)

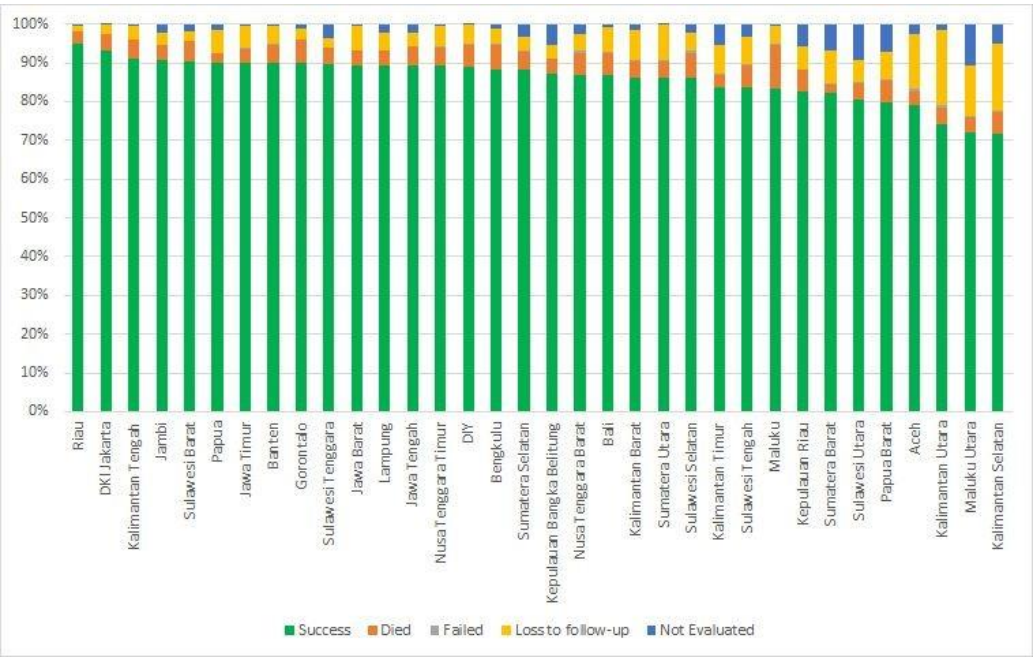
According to a patient pathway analysis in 2017, 27% of the total estimated TB burden was successfully treated, 5% was not successfully treated, and the rest (68%) had no known results. In 2021, the success rate of treatment among new and relapsing cases was 86%, and among drug-sensitive TB cases that were previously treated 80%. This figure is below the global target of 90%. There is a trend of decreasing success rates for drug-sensitive TB cases with positive HIV (70% in 2017 to 68% in 2021).

The proportion of recovering drug-sensitive tuberculosis cases (with bacteriological confirmation at the end of treatment) decreases, while the proportion of cases with complete treatment (without bacteriological examination at the end of treatment)

increases. This finding is consistent with a decrease in bacteriological confirmation among reported cases. According to the WHO report in 2022, the success rate of treatment among the MDR/RR group in 2019 patient cohort was 47%, and among pre-XDR/XDR-TB patients 32%. As the trend of drug-resistant tuberculosis case finding increases, the trend in the success rate of treatment of drug-resistant tuberculosis patients decreases (54,5% in 2012 to 45,4% in 2019) (WHO, 2022).

At the provincial level, Riau Province had the highest rate of treatment success in 2020 patient cohort (94,9%), while the province with the lowest number is South Kalimantan (71,7%) (figure 43). The high proportion of loss to treatment in West Papua (19%), North Kalimantan (17%), DKI Jakarta (14%), Papua (13%) and Riau Island (9%) and the high proportion of deaths is in Bali (11%). These problems require further evaluation and immediate action.

Figure 43. DS TB treatment outcomes (%) by province in 2020 patient cohort



Source: (WHO, 2019b)

Root-causes of problems along the TB continuum of care

1. **Limited access to qualified diagnosis and patient-centered treatment, according to the continuous flow of tuberculosis services**
   - Limited tuberculosis case-findings in Mothers and Children, Diabetes Mellitus patients, HIV and Elderly services, and workplaces;
   - Limited implementation of contact investigations;
   - Limited active tuberculosis case-findings in high-risk and vulnerable populations;
   - Low access to rapid diagnostic tests in government and private health facilities;
   - Current active case finding is not systematic and in small scales;
   - Inappropriate screening and diagnostic algorithms;
   - Lack of access to sensitivity and culture tests (for first- and second-line anti-tuberculosis drugs) in all cases of tuberculosis;
   - Problems of access and quality in the laboratory;
   - Limited number of health service facilities that provide drug resistant tuberculosis treatment;
   - Lack of patient-centered MDR TB cases-management including support to improve medication adherence;
   - Lack of death audits in MDR TB patients;
   - Lack of serious monitoring and evaluation of adverse events;
   - Limited coverage of integrated TB/HIV services;
   - The TB/HIV integration guide is not yet user friendly;
   - Lack of skills of health workers to carry out HIV testing in tuberculosis patients;
   - TB/HIV counseling, information and education strategies for tuberculosis patients who are no longer suitable to their needs;
   - Limited capacity of health workers to conduct counseling, information and education as well as investigative contacts on TB/HIV patients in health care facilities and workplaces;
   - Psycho-socio-economic assistance for TB/HIV patients is not yet optimal;
   - Lack of advocacy with local governments to provide infrastructure at district level hospitals to become ARV centers;
   - Limited ARV satellite services;
   - Limited efforts to address the high proportion of loss to treatment and death from TB
   - Lack of involvement of private health care facilities in standard diagnosis and treatment and also in recording/reporting
   - Limited action at the most peripheral levels (Puskesmas and primary level private providers) and the community
   - Low linkages between information systems for TB detection and treatment with other health information systems (SIMRS, SIKDA/SIP, WIFI TB, Pcare, SIHA, and WIFI TB, BPJS)
2. **Limited access to tuberculosis prevention services**
   - Limited information regarding tuberculosis prevention treatment;
   - Weak management of tuberculosis prevention treatment;
   - Lack of support for tuberculosis prevention treatment;
   - Active case finding is rarely twinned with the provision of TB preventive treatment;
   - Limited coverage of latent tuberculosis services in patients with impaired immunity and other high-risk populations in congregate settings.

Contextual Factors that Contribute to the Low Access to Tuberculosis Services in Accordance with a Continuing Service Framework

1. **Lack of community, partner and cross-sector participation in tuberculosis elimination**
   - Low number of CSOs and patient organizations involved in tuberculosis prevention and treatment at the District level;
   - Lack of coordination at the Ministry level (Ministry of Social Affairs, Ministry of Religion, Ministry of Villages, Development of Disadvantaged Villages and Transmigration, Ministry of Law and Human Rights, Ministry of Education and Culture, Ministry of Manpower and BPJS);
   - Limited collaboration with BAZNAS, philanthropy and companies;
   - Lack of utilization of research findings and digital technology for screening, diagnosis, and treatment of tuberculosis.

2. **Less than optimal program leadership at the district level**
   - Limited policies related to tuberculosis prevention at the district level
   - Limited regulations and resources for managing tuberculosis at the district level
   - The weak role of professional organizations in the implementation of ISTC
   - Lack of coverage of certain tuberculosis services funded by health insurance
   - Existing JKN payment mechanism create preserve incentives for health care facilities
   - Need for improvement in the field of human resources, logistics, information systems and financing for tuberculosis prevention
   - Inadequate capacity to plan, budget, analyze and interpret data at the local level

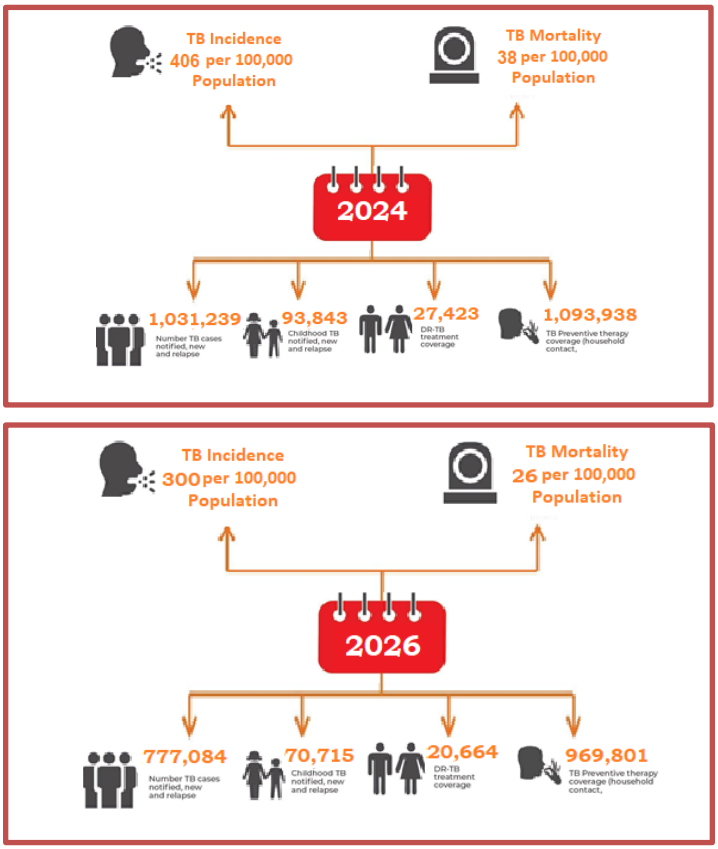
Chapter 3. Objectives and Targets

In general, the Revised National Tuberculosis Strategy for Tuberculosis Care and Prevention in Indonesia 2020-2024 and Interim Plan 2025-2026 aims to accelerate the elimination of Tuberculosis in Indonesia by 2030, and to end Tuberculosis epidemic in Indonesia by 2050.

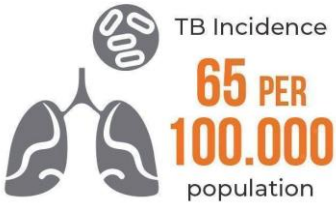
In specific, the objectives are:

1. To strengthen the management of responsive Tuberculosis control in national, provincial, district, and healthcare facility level;
2. To increase the quality of Tuberculosis services which centered on the community needs;
3. To increase access of the community on Tuberculosis control and prevention; and
4. To increase demand and interest of the community on controlling and preventing tuberculosis.

Target by 2024 and 2026



Target towards TB Elimination in 2030



Global Priority Indicators and Targets for Monitoring the Implementation of The End TB Strategy 2023-2027

Treatment coverage
Number of people that developed TB, and were notified and treated, out of the total estimated number of incident cases in the same year (%).

≥ 90%

TB treatment success rate
Number of TB patients who were successfully treated out of all notified TB cases (%).

≥ 90%

Preventive treatment coverage
Number of people living with HIV and children who are contacts of cases who were started on preventive treatment for latent TB infection, out of all those eligible (%).

≥ 90%

TB affected households facing catastrophic costs
Number of TB patients and their households that experienced catastrophic costs due to TB, out of all TB patients (%)

0%

Uptake of new diagnostics and new drugs
Number of TB patients who were diagnosed using WHO-recommended rapid tests, out of all TB patients (%).

Number of TB patients who were treated with regimens including new TB drugs, out of those eligible for treatment with such drugs (%).

≥ 90%

Chapter 4. Strategy and Interventions

4.1. Strategy of National Tuberculosis Program

TB control in Indonesia during 2020-2024 apply six strategies, including:

1. Strengthening commitment and leadership of central, provincial, and district government to support the acceleration towards tuberculosis elimination in 2030.
2. Increasing access to high-quality and patient-centered tuberculosis diagnosis and treatment services.
3. Optimization of promotion and prevention efforts, provision of tuberculosis prevention therapy and infection control.
4. Utilization of research findings and technologies for screening, diagnosis, and management of Tuberculosis.
5. Increasing communities, partners, and multisectoral participation in TB elimination efforts.
6. Strengthening program management through health system strengthening.

The six strategies consist of **three functional strategies** and **three enabling strategies**. **Functional strategies (Strategy 2,3,5)** are technical strategies that target the intervention area: case finding, treatment, and prevention. **Enabling strategies (Strategy 1,4,6)** are strategies that target contextual factors that can be leveraged for the achievement of functional strategies.

The six strategies are synergized with the three pillars of the End TB Strategy. The strategies 2 and 3 are in harmony with the First Pillar of End TB strategy (Integrated, patient-centered care and prevention). Strategies 1 and 5 are two strategies that lead to the Second Pillar of the End TB strategy (Bold policies and supportive systems). Strategy 6 supports the First and Second pillars of End TB strategy. The Third pillar in the End-TB strategy (Intensified research and innovation) is in harmony with strategy 4.

For the Revised National Strategic Plan for TB control 2020-2024 and Interim Plan 2025-2026, the six strategies are perceived as still relevant, with more intensive key interventions and actions.

4.2. Target population and high-risk groups of tuberculosis

The target population of the National Tuberculosis Care and Prevention Strategy in 2020-2024 are all people with TB symptoms and vulnerable high-risk groups. Key interventions of TB care and prevention will be enhanced to reach the most vulnerable

population groups: (1) household contacts of bacteriology confirmed TB cases; (2) clinically high risks: smoker, malnourished, diabetic, elderly, PLHIV and immunocompromised; (3) congregate settings and workplace: inmates of penitentiary/ detention center, urban slums, workplaces (informal and formal), closed mining, closed setting, refugees camps, barracks, and boarding schools; (4) health care workers treated TB patients; (5) people difficult to reach population e.g. Indigenous people, refugees immigrant, foster home, nursing homes. The integration of TB screening activities with the provision of TB preventive therapy will be exercised as the main intervention.

4.3. Intervention approach for TB care and prevention 2020-2024 and interim plan for 2025-2026

National Tuberculosis Program has 334 districts as priority areas in 2020-2024 that will be continued in 2025-2026. These districts contributed to 89% of the national incident Tuberculosis cases.

In 2021, National Tuberculosis Program has priority areas for acceleration of TB elimination in 8 province and 193 districts. The prioritization considers the readiness of resources and contribution to 63% of tuberculosis burden in Indonesia. There are 25 Districts part of 193 Districts priority which are not include in 334 districts.

Based on the above conditions, NTP set the tuberculosis priority areas in 359 districts (70% of total 514 districts). Those districts will receive comprehensive interventions, and the remaining 155 districts will receive essential interventions.

Major efforts are needed to increase treatment coverage include:

- Mandatory notification of Tuberculosis in all health facilities;
- Active case finding among high-risk groups particularly PLWHIV, DM patients and people with malnutrition, key vulnerable population,
- Optimize contact investigation and TB Prevention Therapy;
- Improve quality of recording and reporting in all health facilities;
- Strengthening network of public and private healthcare facilities in tuberculosis case finding, management, and treatment;
- Expand and strengthen tuberculosis diagnostics and treatment;
- Treatment monitoring for drugs sensitive and resistant tuberculosis as per standard;
- Treatment supports up to completion and success; and
- Optimize Tuberculosis information, communication, and education to the community.

Considering the main efforts to increase treatment coverage and success treatment rate, **the following interventions should be conducted:**

Condition	Proportion of TB case load	Description of Intervention
359 Districts (include 193 districts in 8 provinces priority with high burden cases of TB, HIV, DM, DR TB and DPPM program priority)	**91%**	**Comprehensive interventions include:** ● Strengthening of District Public-Private Mix (DPPM) interventions ● Intensification of tuberculosis case finding in Puskesmas and all public and private hospitals ● Two-way screening for TB DM in 161 districts ● Increase DR-TB services by providing ≥ 1 drug resistant referral hospital and all Puskesmas capable of being DR-TB Satellites. ● Initiation of treatment at Puskesmas (240 priority districts of DR-TB) ● Increase TPT coverage for household contacts, such as provide 1 support staff for 1 district in the integration of TPT and ACF (193 districts in 8 provinces), capacity building for health workers and connecting IK with TPT ● Improving access to molecular testing, such as increasing molecular testing coverage at the primary care and private services levels ● Active case finding in community and healthcare facilities settings (193 Districts) ● Increase HIV testing coverage among notified TB patients, such as: HIV testing for TB patients across all TB service providers and capacity building in 121 districts
155 Districts (Estimated Tuberculosis case load < 1.000 and low prevalence of DM)	**9%**	**Essential interventions include:** ● Basic District Public-Private Mix (DPPM) interventions ● Intensification of tuberculosis case finding in primary health services and public hospitals ● Establishment of basic DR-TB services (1 PMDT Hospital and selected satellite health centers) ● Provision of TPT for ODHIV and children < 5 years ● Basic access to molecular testing ● HIV testing for TB patients in HIV services

4.4. Intervention along the continuum of care

4.4.1 Interventions for People with Tuberculosis or symptoms of Tuberculosis who have not/do not access health services

Developing a referral system for presumptive tuberculosis/people with tuberculosis symptoms that comes to health care facilities at community level

Justification: Patient pathway analysis in 2017 shows that 52% of people with symptoms of tuberculosis begin seeking treatment in community-based health services. Community-based health services include basic triage services, health information, and basic prevention and services, including pharmacies (Surya, Setyaningsih, Nasution, et al., 2017). National Tuberculosis Prevalence Survey in 2013-2014 shows that 30.8% of people with symptoms of tuberculosis come to the pharmacy after coughing for 14 days (Kementerian Kesehatan RI, 2015).

Description of intervention: To increase the number of people with symptoms of tuberculosis or with tuberculosis who access health services, it is necessary to intervene to encourage those who have come to L0 services to be diagnosed and reported by creating a referral network of services from L0 to tuberculosis health care facilities that have already existed. The establishment of a service network needs to involve the association of the pharmaceutical profession (IAI, PAFI) in the KOPI TB in the area. It is expected that each region develops a referral system with a related circular required to report the use of drugs and the monitoring process from the Department of Health to all pharmacies. In addition, the government needs to guide Traditional Medicine (Penyehat Tradisional & Tenaga Kesehatan Tradisional) so that if there are patients with symptoms of tuberculosis, they are referred to the Puskesmas.

Involve pharmacies in monitoring tuberculosis treatment.

Justification: Pharmacy services only provide tuberculosis drugs according to the doctor's prescription but are not obliged to monitor, record and report even though the pharmacy has the potential to monitor treatment when involved.

Description of intervention: Advocating BPJS so that tuberculosis can be included in the Referral Program (PRB) service so that the pharmacy can do Medication Therapy Management (MTM).

Expand the scope and quality of public-private mix initiative

Justification: Public-private mix collaboration has been initiated at the district level but has not yet contributed to significant case finding. The contribution of the new public-private mix initiative is around 18% of all case notifications.

Description of intervention: It is necessary to expand the scope and quality of public-private mix initiatives with the target of increasing the number of independent practicing doctors and hospitals involved in tuberculosis control programs. The target of increasing the number of independent practicing physicians involved is at least 10 times and 2 times the number of private hospitals (WHO, 2020). Coordination of PPM activities in districts will be strengthened by the allocation of human resources. Main roles of the allocated human resources are to conduct public health functions such as integration, strengthening of the network of services, and ensuring that data from health services are reported through tuberculosis recording and reporting systems (WHO, 2020).

4.4.2. Intervention to people with tuberculosis symptoms who come to the health facilities but are not diagnosed or not reported

Revising tuberculosis screening and diagnostic pathway

Justification: Among people with tuberculosis with cough ≥14 days or hemoptysis during the National Tuberculosis Prevalence Survey, there were 42.5% with abnormal chest X-ray. An initial study by Alisjahbana et al. (2019) showed that the additional chest X-Ray test for screening of tuberculosis before doing diagnosis test with GenXpert among visitors of Puskesmas is a cost-effective procedure (Alisjahbana et al., 2019). Another study on primary health care at Yogyakarta also showed that the combination of physical examination, sputum test, and chest X-ray give high sensitivity and specificity (Saktiawati et al., 2019).

Description of intervention*:* Rapid Molecular Test (RMT) will be used for diagnosis, meanwhile, a microscopic test will be used to monitor the treatment outcome (WHO, 2020). In addition, tuberculosis diagnosis procedures should be revised by adding chest X-ray as a means of screening as well as a means to maintain the effectiveness of RMT. Screening with chest X-ray is used in special populations with an incidence of more than 1%, such as boarding houses, prisons/detention centers, etc. Analysis of the availability of radiology facilities in primary and referral health services should be conducted (WHO, 2020). In addition to that, it is necessary to develop a referral network and strengthen its recording and reporting system. To strengthen its implementation, breakthrough efforts and technologies such as mobile X-ray, digital X-ray, and teleradiology need to be implemented. The patient pathway analysis needs to be repeated in 2024.

Increasing routine surveillance accompanied by quality supervision at the level of health service facilities.

Justification: IOM has made efforts to mop up Tuberculosis data at the hospital and increase the number of reported tuberculosis cases as well as provide information

about patient treatment outcomes. However, the mopping-up data is not real-time data (WHO, 2020).

Description of intervention: The new SITB surveillance system is pushed into a surveillance system that can monitor and manage program performance in real-time. Additionally, an integration of TB information system, hospital information system (SIRS), and BPJS information system (i.e., P-care, VClaim) will be established to obtain data on TB patients systematically and consistently. By doing so, the TB program does not need to conduct 'mop-up' activities at hospitals massively and at a high cost (WHO, 2020).

Providing access to HIV tests in tuberculosis services at primary care and private providers

Justification: Access to HIV testing in tuberculosis services is not evenly distributed in all districts and is still centralized in public hospitals. Health workers are still hesitant to give ARVs as soon as possible to people with HIV/AIDS who are diagnosed with tuberculosis. Training for tuberculosis program staff to carry out HIV testing at the initiation of health workers can significantly increase the coverage of HIV testing in tuberculosis patients (Herawanto, 2019).

The big population provinces (West Java, East Java, Central Java, Banten and DKI Jakarta) are contributing more than 50% gaps on HIV testing among TB patients where at the end resulting on low program performance in this area. These provinces reporting a significant number of TB notification among public primary care providers and private providers (WHO,2022)

Description of intervention: To ensure HIV testing services are available for tuberculosis patients at all levels of health providers, it is necessary to strengthen the implementation of regulations that require healthcare facilities to initiate HIV testing. Networks between health facilities also need to be strengthened to increase HIV testing referrals from primary care facilities to health care facilities that have HIV services. For this reason, it is necessary to map HIV testing services in each region according to their capacity. To simplify the referral process, a sample transportation system for HIV testing is developed. In addition, it is necessary to decentralize ARVs by creating ARV service satellite health facilities and periodic coordination meetings between supporting health facilities and satellites. The capacity of health workers for TB-HIV needs to be increased through workshops/training for health workers.

Ensuring continuous laboratory logistics for HIV tests among tuberculosis patients

Justification: The logistical availability of HIV reagents has not been sustainable.

Description of the intervention: HIV logistics planning needs to be better implemented by collaborating on HIV logistics planning with the tuberculosis program. In addition, it needs to be ensured that the reporting process is going well and continuously. Support for logistics distribution needs to be strengthened in terms of funding distribution costs, distribution planning, strengthening human resources, and strengthening the recording and reporting system.

Strengthening the implementation of TemPO (*Temukan, Pisahkan, Obati*/Find, Separate, Treat) and tuberculosis infection control and prevention

Justification: Not all health service facilities have implemented the TemPO strategy. One component of the TemPO strategy is a triage of cough symptoms screening for individuals who visit outpatient and inpatient services in health care facilities.

Description of intervention: Strengthening the application of TemPO aims to improve the identification of presumptive or tuberculosis patients in at-risk populations who have come to the service. The TemPO Strategy must become a standard operating procedure in all health service facilities. In the operational standard, the procedure must include the distribution of tasks of health workers and TemPO socialization procedures in health service facilities. Implementing the TemPO strategy should extend to inpatient services by targeting screening and assessment to all hospital patients with respiratory complaints, patients at risk of TB such as malnutrition, DM, elderly, and immune system disorders.

In addition, prevention and control of infections need to be carried out thoroughly in health workers, patients, and the general population. These efforts must be accompanied by a regular monitoring system. The design of educational materials, and training for health workers, including the use of PPE, needs to be done (Apriani et al., 2019a).

4.4.3. People who are reported as TB cases but have not been successfully treated

Using latest technologies to monitor tuberculosis treatment

Justification: The majority of treatment monitoring for drug-sensitive tuberculosis is done by family. Only few patients have health staff or cadres as their treatment observers. The success rate of drug-sensitive treatment is 72% (still below the WHO target of 90%). The survey showed that 40.2% of people with a history of TB treatment stopped taking the drug before being declared cured.

Treatment monitoring for patients with drug-resistant TB is carried out by health workers, and in health care facilities. This creates a social and economic burden for

patients and families because drug-resistant TB patients must come daily to health facilities. The success rate of treatment of patients with drug-resistant TB is 49%.

Description of the intervention: It is necessary to use the latest technologies to monitor tuberculosis treatment, such as mobile apps, electronic reminders, internet-based tuberculosis treatment monitoring, and interactive education materials (Roslina, 2019). The use of the latest technology in tuberculosis monitoring is directed toward facilitating contact between tuberculosis patients, treatment monitors, and treatment service providers during the treatment process.

Implementation of the use of new drugs and short-term standard regimens to improve the quality of treatment of DR- TB patients in Indonesia

Justification: The success rate of treatment in MDR/RR-TB was only 51% in 2014 and tended to decrease to 49% in 2018. The majority of drug-sensitive tuberculosis patients are treated with a standard treatment duration of 6-8 months. DR TB patients are treated with the short-term treatment of 9-11 months and long-term treatment of 18-20 months. The duration of DS TB and DR TB treatment is still complained about by patients and service providers and is seen as one of the causes why patients do not complete treatment.

Description of the intervention: Regulations on the use of new drugs and short-term standard regimens in accordance with the WHO recommendations are needed. The availability of new drugs needs to be encouraged through a rapid registration process so that they can be produced and held domestically to ensure tuberculosis patient access to the best and highest quality tuberculosis treatment. The use of new shorter drug regimens without injection opens the opportunity to decentralize the service of DR TB to primary healthcare facilities. Treatment and monitoring of DR TB in the community can be initiated in order to reduce the burden and challenges of DR TB patients in completing treatment.

4.5. Cross-cutting interventions

Cross-problem interventions are needed for more than one category of tuberculosis treatment series. From the results of the stakeholder consensus meeting, five types of interventions are cross-cutting issues such as policies and regulations, multi-sectoral and multi-program collaboration, health financing, gender equality, and fulfillment of human rights. The following describes interventions that are cross-problem in nature:

4.5.1. Policies and regulations

Develop comprehensive tuberculosis control policies at the district level

Justification: In the era of decentralization in the health sector, district governments have played a major role in providing political support for the prevention of tuberculosis in their regions. The inclusion of tuberculosis management into the Minimum Service Standards (SPM) in the health sector requires operational steps at the district level. To be able to encourage the role of local government in the process of planning and financing, it is necessary to have a comprehensive tuberculosis action plan at the district level.

The policy regarding mandatory reporting of tuberculosis cases including from private service providers is still not optimal and requires strengthening implementation. The application of the policy to independent general practitioners is constrained because of their lack of knowledge about the policy (Kurniawati et al., 2019). On the other hand, the policy is seen as burdening and constraining aspect of patient confidentiality.

Description of intervention: Coordination, consolidation, and dissemination of information on tuberculosis control policies to stakeholders at the district level need to be done. Policies and regulations at the district level need to target aspects of human resources so that human resources related to tuberculosis services and programs can be placed for at least 5 years on their main tasks and functions. Strategic guidelines to improve the government's ability to control tuberculosis need to be developed so that the process of developing tuberculosis prevention policies can be carried out systematically. The policy needs to be formalized through regulations in the regions included in the district Regional Mid-Term Development Plan (RPJMD). The Provincial Government is responsible for providing technical guidance and carrying out the oversight function of implementing TB control in the district.

The mandatory reporting policy needs to be widely disseminated to all health service providers, including the private sector and needs to be linked to the licensing process. In addition, technical regulations are needed so that the implementation of the policy remains in harmony with the principle of service quality.

Ensure district governments have optimal regulations and resources for controlling tuberculosis.

Justification: Tuberculosis, especially drug-resistant tuberculosis, has not been considered a major problem, so no regulation states it is mandatory to support drug-resistant tuberculosis programs. The existing regulations are still general, not

specifically supporting drug-resistant tuberculosis. Funding support and activities in the drug-resistant tuberculosis program is small, only from the health sector and donors. Meanwhile, village regulation interventions have the potential to become a basis for rural access to improve DR TB treatment compliance (Prasetyowati et al., 2019). For the TB-HIV program, only a few district hospitals can become ARV services. A limited number of human resources are available for TB and HIV programs.

Description of intervention: Advocacy is needed to ensure that all government leaders at all levels support the drug-resistant tuberculosis program. Existing regulatory documents need to be refined by including relevant points that support the drug-resistant tuberculosis program. Furthermore, the regulation is encouraged to be an indicator of government performance so that governments at all levels can allocate funds and activities tackling drug-resistant tuberculosis. An advocacy meeting between the Health Office and the Regional Government supported by the Ministry of Health and the Regional Government and professional organizations needs to be held so that the local government can provide related facilities and infrastructure so that the hospital can become an ARV service center.

4.5.2. Multi-sector and cross-program collaboration

Screening and case finding in high-risk populations

Justification: High-risk factors for the incidence of tuberculosis in Indonesia are smoking, malnutrition, and diabetes. The risk of diabetes mellitus is also known to increase the incidence of MDR TB (Saktiawati & Subronto, 2018). The incidence of HIV also tends to increase, thereby increasing the incidence of TB-HIV. Maternal screening is needed because tuberculosis is a determinant of maternal death. Certain populations are also vulnerable to contracting or becoming a source of transmission of tuberculosis, for example, children, the elderly, and health workers. Certain situations also have the potential for tuberculosis transmission such as in certain workplaces, urban slums, and congregate settings such as prisons/remand centers, closed mines (Rodriguez-Fernandez et al., 2016), refugee barracks, and boarding schools. The initial evaluation shows the potential for case finding by screening the pilgrims. JEMM 2022 also recommended strengthening TB screening and active case finding by equipping Puskesmas with digital x-ray with AI, molecular testing, and linkages of TB screening with identification of TB-associated comorbid states. Another recommendation is scaling up the engagement of primary-level private providers.

Description of intervention: Coordination with multi-programs and sectors to screen high-risk populations is needed (smokers, malnutrition, diabetes mellitus, elderly, and people with HIV/AIDS). In addition, intensive case finding through maternal and child

health services is needed. Meanwhile, the investigation of contact from index cases needs to be strengthened in its implementation to find pediatric tuberculosis cases by involving former tuberculosis patients to conduct screening in the community. Screening also needs to be done in certain workplaces, urban slums, and congregate settings (prisons/remand centers), closed mines, refugee barracks, and boarding schools. In addition, active case finding among pilgrims and Indonesian migrant workers also needs to be done (Uyainah et al., 2019).

Active screening and case-finding efforts in the community can involve tuberculosis activists or cadres who have been proven to be effective in significantly increasing the number of tuberculosis cases (Apriani et al., 2019a; Fitriangga et al., 2019). In the future, these interventions must be implemented in every Puskesmas, other primary health facilities. This intervention also was emphasized in the recommendation of JEMM 2022. Efforts to find cases of pediatric tuberculosis need to involve independent general practitioners (Syahrul et al., 2019).

Encourage multi-sector and multi-program collaboration to increase the number of people with drug-resistant tuberculosis who are starting treatment.

Justification: There is no recommendation to stipulate treatment in people with drug-resistant tuberculosis. Many people with drug-resistant tuberculosis do not start treatment for socioeconomic reasons and lack of support. Health workers face human rights and confidentiality issues in requiring people with drug-resistant tuberculosis to start treatment. On the other hand, there is a coalition of professional organizations (KOPI-TB) formed at the district and Provincial levels that has the potential to monitor the implementation of the tuberculosis service network.

Description of the intervention: It is necessary to advocate and disseminate information to the related ministries to provide sufficient support and social protection for patients with drug-resistant tuberculosis to overcome their burden to access. However, advocacy to district governments to establish regulations related to un-voluntary isolation for contagious persons with TB who do not adhere to treatment or who are unable or unwilling to comply with infection prevention and control measures pose significant risks to the public can be implemented especially in urban crowded areas. Patients who are isolated should still be offered the opportunity to receive treatment, but if they do not accept it, their informed refusal should be respected.

There is a need for socioeconomic protection for people with drug-resistant tuberculosis to ensure that they do not experience socio-economic impacts from drug-

resistant tuberculosis treatment through efforts to integrate patient socio-economic protection systems into socio-economic protection schemes located in other Ministries such as the Family Hope Program (PKH). There needs to be a legal umbrella to protect health workers in the treatment of drug-resistant tuberculosis.

In addition, it is necessary to increase the number and quality of health facility services, the availability of funding for the improvement of facilities and infrastructure for infection control and the provision of funding sources for drug procurement. This is done in order to anticipate the implications of the policy implementation that all confirmed drug-resistant tuberculosis patients must be treated.

KOPI-TB needs to be encouraged to be able to play a role in ensuring the quality of tuberculosis services, especially in the implementation of ISTC, ensuring the notification of tuberculosis cases by all healthcare facilities and independent practice physicians. In fact, the function of KOPI-TB can be improved by coordinating and advocating with multi-program and multi-sectoral programs.

The role of community members and organizations of TB survivors will be optimized to increase the number of notified DR-TB patients through pre-DR TB treatment assistance under the coordination of DR-TB health services. The DR-TB Case Managers, either community members or healthcare staff, will ensure the completion of DR-TB treatment on all notified DR-TB patients.

To improve the reliability and consistency of data, it is necessary to conduct multi-stakeholder collaboration between the National Tuberculosis Control Program and BPJS to enable the linkage between SITB data and BPJS data.

Develop communication strategies for Tuberculosis counseling and stigma reduction of drug-sensitive tuberculosis, drug-resistant tuberculosis, and TB-HIV

Justification: Delay in seeking treatment in people with symptoms of tuberculosis occurs in men and women. But the underlying factors differ between men and women. Stigma is more dominant in women than men. Knowledge and awareness about HIV as a risk factor for tuberculosis are still low.

Study by (Dewi et al., 2016) shows that residents in rural Flores's experience limited knowledge about the causes and transmission of tuberculosis so they cannot recognize the symptoms of tuberculosis. In the 2013-2014 Tuberculosis Prevalence Survey, 40.2% of people with a history of tuberculosis reported stopping the drug without being

declared cured. 26% stopped treatment because they felt better or had no more symptoms.

Health promotion activities on drug-sensitive tuberculosis, drug-resistant tuberculosis and TB-HIV are relatively lacking. Stigma on patients, families and officers still exists. The contribution of the private sector's role in the form of CSR funds for public education about drug-sensitive tuberculosis, drug-resistant tuberculosis and TB-HIV has not been optimal. JEMM 2022 recommended to develop, implement and sustain a communication/social mobilization plan to partner with communities.

Description of the intervention: IEC materials about tuberculosis, drug-resistant tuberculosis and TB-HIV with local content need to be developed, including gender-adjusted content. The ability of officers to communicate effectively needs to be improved by including IEC promotion materials and effective TB HIV communication in staff training. Multi-program and multi-sector collaboration are needed to ensure information reaches the public, workplaces, and healthcare facilities. In addition, there needs to be an increased role across sectors and communities in drug sensitive tuberculosis, drug-resistant tuberculosis and HIV-TB IEC. Health promotion needs to be done using social media and carried out in public places involving public figures. Meetings with the TB Subdit with private companies need to be intensified to make collaboration and guidelines related to the use of CSR funds. This intervention also needs to involve CSOs and former tuberculosis patients. Reducing stigma and discrimination needs to be done at the community, workplace and health service facilities. In addition, it is necessary to do counseling for patients.

Encourage multi-sectoral collaboration to increase ARV coverage in people with TB-HIV.

Justification: Integrated management of TB-HIV still faces regulatory constraints regarding therapeutic authority. Minister of Health Regulation Number 30 of 2019 concerning the classification of hospitals states that pulmonary specialists are at least placed in type B hospitals. Indonesian Doctors Competency Standards state that general practitioners working in primary services only reach diagnosis, initial management, and refer (competency level 3A) for TB management with HIV comorbidities.

Description of intervention: It is necessary to revise the Health Ministerial Decree so that the distribution of lung specialists is evenly distributed, not only in type B hospitals and above. Alternatively, TB-HIV competence for general practitioners is upgraded to level 4 (diagnosing and conducting plenary management). This intervention needs to involve the Director General of P2P and the Director General of Health, P2JK, and professional organizations (PDPI, PAPDI, IDAI, etc.)

Conduct a multisectoral study to monitor and evaluate the achievements and challenges of tackling tuberculosis in Indonesia.

Justification: Tuberculosis prevention efforts in Indonesia have received a political commitment from the President, calling for a joint movement to overcome tuberculosis on January 29th, 2020. To accelerate efforts to control tuberculosis in Indonesia 2020-2024, multisectoral studies are needed. The study aims to monitor and evaluate achievements and challenges so that key steps can be realized immediately to accelerate achievement.

Description of intervention: The multisectoral study involved all stakeholders at the national, provincial and district levels. The study uses the PCF approach using epidemiological data, health systems, and others that can describe the achievements and root causes of the problem. Next, a discussion was held to formulate strategies for implementing the appropriate 2020-2024 countermeasures.

Strengthen TB management capacity and support system by engaging the Ministry of Home Affairs (MoHA) for the availability of trained staff and Ministry of Social Affairs (MoSA) to secure social protection.

Justification: The role of multi sectors is considered essential for addressing TB problems. The situation analysis showed that both MoHA and MoSA are the key non-health sectors for addressing the barriers related to human resources related to the TB program and financial barriers of patients.

Description of intervention: Based on the existing Presidential Decree No. 67/2021, MoHA and MoSA will be engaged for improving the availability of trained staff and secure the social protection for TB patients respectively.

4.5.3. Human rights

Strengthening support services and psychosocial protection in tuberculosis patients.

Justification: The economic burden due to tuberculosis is quite high and is a reason for tuberculosis patients not to complete treatment. Current social protection is not enough to mitigate the socioeconomic impact of tuberculosis. Financial support to overcome the loss of income due to tuberculosis, transportation costs, and food supplement costs can substantially reduce the incidence of catastrophic costs. However, these efforts have not been able to support the achievement of the target number of households facing catastrophic costs due to tuberculosis (Fuady et al., 2019). JEMM 2022 recommended the engagement of the Ministry of Social Affairs to secure social protection, to strengthen support systems for people with TB.

Description of intervention: There needs to be support for services and social protection for people reported as tuberculosis cases. For this reason, advocacy needs to be done with local governments to develop innovative policies that ensure the fulfillment of psychosocial support for tuberculosis patients. In addition, it is needed to increase the amount of tuberculosis financing both from domestic and abroad.

Implement a Community Led-monitoring (CLM) framework to improve the fulfillment of human rights and gender justice in tuberculosis services

Justification: A study by the Global Fund in 2018 showed stigma and discrimination from health workers which resulted in motivation to use services. In addition, the study also showed a lack of attention to confidentiality aspects in tuberculosis services (The Global Fund, 2019). Therefore, there needs to be a feedback mechanism from the community for the services provided to tuberculosis patients.

Description of intervention: Community feedback on tuberculosis services is a framework that is implemented by various stakeholders. The stakeholders include the Ministry of Health, Social Organizations, Patient Support Groups, Stop TB Partnership Indonesia, Professional Organizations, and Provincial and District Health Offices. The feedback mechanism is implemented by adopting digital technology so that patients can submit complaints of tuberculosis services quickly.

JEMM 2020 recommended that NTP, in partnership with civil society and the Ministries of Women Empowerment and Child Protection, as well as legal experts, ensure the NSP development team, national and district level TB and health managers, and TB M&E officers, as well as health focal points at the Ministry of Social Services, Ministry of Religious Affairs, Ministry of Villages, Development of Backward Regions and Transmigration, Ministry of Education and Culture, and Ministry of Manpower, needs to undertake gender and human rights sensitization training. This training will cover enabling legal environments, mental health, key populations, gender equality and the interaction between gender and accessing services. To complement this, a comprehensive national TB Gender Responsive Framework also needs to be developed (WHO, 2020).

Indonesia TB Stigma Assessment 2022 (PR Konsorsium-STPI, 2022) recommended human rights literacy in TB services in relation to the Community Feedback Mechanism framework (CBFM) for improving the fulfillment of human rights and gender justice in TB services is recommended to be addressed by related stakeholders.

Strengthening the fulfillment of human rights through policy and legal approaches
Justification: Tuberculosis raises social problems such as job loss. A study by Karyadi (2002) showed that 55% of tuberculosis patients lost their jobs (Karyadi et al., 2002). This figure exceeds the national unemployment rate (5.5%) from a national survey in 1998.

Description of intervention: It is necessary to fulfill human rights by conducting awareness campaigns for tuberculosis patients' rights. Advocacy for policymakers to be able to make regulations that lead to the fulfillment of tuberculosis patient rights needs to be done.

JEMM 2020 recommended that civil society organizations and TB survivor networks, with the support of NTP, should engage legal aid providers at the national and provincial levels to conduct a review of workplace discrimination laws, policies, and remedies, – to ensure the labor rights of people affected by TB are promoted and protected, and where they are not – remedies should be identified. Patients should be supported to access these remedies. As part of this process, sensitization of local judges, magistrates, and mayors on both TB and TB and human rights needs to be undertaken by civil society, the NTP, and legal aid service providers. In addition, patients need to be given legal assistance if they experience discrimination (WHO, 2020).

In line with JEMM 2022 recommendation to undertake Community, Rights, and Gender (CRG) literacy sensitization for all affected communities and health care workers. Strengthening 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.

4.5.4. Health Financing

Increase government investment in health sector financing, including the Tuberculosis program as one of the national priority programs.

Justification: In overall, the financing of Tuberculosis programs from the public sector during 2018-2019 increased, but it decreased in 2020 due to the COVID-19 pandemic. Fortunately, it increased again in 2021 (National Health Account-Pusat Kebijakan Upaya Kesehatan Badan Kebijakan Pembangunan Kesehatan-Ministry of Health).

Description of intervention: Increasing government investment through public financing to complement diagnostic equipment and treatment for health service facilities and more intensive outreach efforts using government networks and various social organizations.

Increase the efficiency of the utilization of funding for the tuberculosis program at the central, regional, and JKN programs.

Justification: Limited government budgets and decreased donor funding encourage the optimal use of existing funds. Implementation of 'overlapping' program activities, fragmented funding, parallel information systems, and a number of other things indicate inefficiencies in the tuberculosis program service system. The potential for linking payments from BPJS to health service providers, the transfer of balance funds from central to the regions is still not linked to the recipient's performance. The mechanism for JKN program payments to PPK creates unwanted incentives (perverse incentives). For example, capitation causes primary healthcare to refer patients, while case-based groups encourage increased outpatient visits to secondary healthcare. JEMM 2022 recommended creating an episodic JKN payment system for primary health care under TB Strategic Health Purchasing to provide an incentive for the providers, particularly to identify and notify TB, implement adherence monitoring, and complete treatment.

Description of intervention: The budget allocation by considering the leverage of the selected intervention in achieving the target set needs to be determined. Study and use of modeling (such as One Health Tools and TB Optima) to assist in the discussion of priority setting, activity arrangement (intervention mix), and budget allocation. Implementation of strategic health spending for tuberculosis programs, for example, by linking performance indicators with transferring balancing funds, performance indicators with health service provider payments, or ensuring indicators of service readiness and quality included in the accreditation assessment or credential process for establishing health service providers into the BPJS Network.

Strengthen financial support from local governments and other ministries for tuberculosis detection and treatment.

Justification: Regulations related to examination rates at the Puskesmas differ in each region. BPJS tariffs have increased so that the number of communities receiving aid contributions (PBI) has decreased. In addition, village/kelurahan governments receive allocations from village/kelurahan funds sourced from the Ministry of Home Affairs,

which can potentially be utilized in tuberculosis case finding. Other ministries, such as the Ministry of Social Services, Human Rights and the Ministry of Population, and BKKBN have the potential to contribute to financial support for tuberculosis patients during treatment.

Description of the intervention: To increase the number of tuberculosis case findings, it is necessary to advocate for local governments to issue local regulations for every Indonesian citizen not to be charged the cost of testing for presumptive tuberculosis. Circular letters from the Ministry of Health need to be made to the Mayor and Regent about priority health programs, including an exemption for tuberculosis examination and treatment fees. In addition, advocacy needs to be done for Bappeda so that people with tuberculosis that meet the poor criteria get PBI category health insurance. The financial support mainly covers fees for the laboratory test, particularly for inpatient services, in addition to existing free tuberculosis treatment. Collaboration with the Social Service, the Population Service, and the Law and Human Rights Office needs to be carried out to encourage financial support for people with tuberculosis during treatment. Considering the potential of Village/Kelurahan funds and sub-district funding as a financing source of tuberculosis care and prevention at the community level, advocacy for the village-level government is needed. Therefore, tuberculosis prevention activities in the community need to be part of the district development plan.

Strengthening financial support through the National Health Insurance for tuberculosis case finding

Justification: Epidemiological evidence and operational research studies indicate the need for the use of lung x-rays as screening before a tuberculosis diagnosis is made. However, the flow has not been adjusted in terms of funding support for the National Health Insurance. In addition, evidence shows that people with symptoms of tuberculosis seek treatment at a pharmacy. Meanwhile, referrals from pharmacy services do not yet exist in the referral system funded by the National Health Insurance. Bi-directional tuberculosis screening activities with comorbid diseases such as diabetes, smokers, and the elderly are unclear aspects of funding, as well as funding for tuberculosis prevention therapy.

Description of intervention: Coordination meetings need to be conducted with BPJS so that the adjustment of the Tuberculosis diagnosis flow by adding screening procedures with chest x-rays, bi-directional screening with comorbid diseases, and preventive tuberculosis therapy can be funded through the JKN scheme. In addition, pharmacy services need to be included in the Referral Program service so that Pharmacy services can conduct MTM (Medication Therapy Management).

Strengthen funding support of National Health Insurance for drug-resistant tuberculosis services

Justification: Patients with drug-resistant tuberculosis experience financial burdens due to illness as well as socio-economic consequences due to loss of productivity during illness and treatment (Fuady et al., 2018; van den Hof et al., 2016). Until now, most of the actual cost components that can be covered by JKN funding such as laboratory examination costs and maintenance costs are still funded by national programs that use foreign aid funds.

Description of intervention: There needs to be improved regulation of funding for drug resistant tuberculosis from the National Health Insurance, especially funding for diagnostic and supportive tests, comorbid management and drug side effects.

Strengthening financial support of National Health Insurance to increase ARV coverage in people with TB-HIV

Justification: BPJS regulations that are currently available do not optimally support TB-HIV programs. Existing JKN scheme financing only covers ARV drugs, while service costs are not covered. The current tiered referral system has not made it possible for TB-HIV patients easy to access ARV services.

Description of the intervention: Coordination meetings are needed to achieve outcomes in the form of a BPJS regulatory draft that accommodates the needs of the HIV TB program, specifically ARV coverage, the availability of BPJS service costs for TB-HIV program patients, and the revised BPJS policy regarding horizontal referral. The flow of ARV services for TB-HIV patients needs to be reviewed and improved for easy access.

4.5.5. Gender Equality

Identifying population, communities, and health care services most affected by gender-related barriers

Justification: TB affects women and girls, men and boys, and the gender-diverse community differently. Gender differences and inequality influence the risk of TB infection, access to and uptake of testing, when and how diagnosis occurs, access to and adherence to treatment, and the social and economic impact of TB. Patriarchal culture causes patients TB men tend to choose not to receive treatment and are reluctant to comply with health protocols susceptible to infections, women's domestic

burdens complicate access to care and TB treatment, and the impact of TB complications make female TB patients vulnerable to divorce (Penabulu, 2022).

The burden of caring for children predominantly depends on women as housewives. This is a challenge for women with TB who have children under five. Penabulu Foundation's research found that female patients with children under five must find their own solutions when they have to choose to look after their children or follow the TB treatment and recovery process. (Ref: Policy Paper TB Response in The Framework of Human Rights and Gender Equality in Bandung Municipality, 2022, Penabulu Foundation)

Work done by women tends not to be covered by insurance and requires them to pay out of pocket. Women also need to care for their lifetime reproduction rights (Penabulu-study Qualitative, 2020)

Description of the intervention: Gender-related barriers and enablers will be considered at the community level of TB programming, case detention, and diagnosis, community TB care delivery, stigma, and discrimination reduction, and community mobilization and advocacy.

Strengthening community and implementing partners sufficiently skilled and knowledgeable about gender programming.

Justification: Lack of TB-related gender balance within the community and health force. Women, both patients and patients' families, experience a direct impact when they or their family members are diagnosed with TB. When directly affected, domestic burdens become women's thoughts to seek treatment. If the family has TB, then women (either as mothers or wives) will become primary companions for TB patients (Penabulu, 2022).

Alawiyah & Pelangi (2021), who did a social and gender analysis on TB in villages during PR TB 'Aisyiyah activities in 2020, also noted that women face problems with access, control, and participation in TB care. Regarding access, women are constrained in accessing health services due to road conditions, availability of vehicles, and time constraints due to domestic work and/or public work. Meanwhile, in regard to control, female patients tend to need permission from family members to access health services during the treatment and assistance process. Regarding participation, even though they are not TB patients, female family members often need to find additional work and continue to carry out their domestic duties as caregivers when a family member is sick with TB.

Description of Intervention: Training TB providers and community about the impacts of gender on TB vulnerability and gender-responsive care, including gender-related stigma and discrimination inserted to all trainings.

Collaborating gender-related programming among TB and HIV

Justification: Indonesia Stigma TB Assessment by Konsorsium Komunitas Penabulu-STPI (2022) recommended having multi-sectoral engagement and action to reduce stigma by recognizing the social and economic hardship faced by people affected with tuberculosis and KVP, including HIV.

In TB Program Review 2022 was found that there is a challenge in 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, pediatrics', access to funding and support services (including mental health), leadership among young women in Boarding School context (JEMM, 2022).

Description of Intervention: Integrating HIV into eliminating TB-related stigma and discrimination with multi-stakeholder involvement can work synergistically with large campaigns in the area that go beyond the two diseases.

Strengthening gender-related monitoring and evaluation

Justification: For monitoring and reporting, data on TB cases and the results of routine treatment of patients should be updated, stored, and integrated nationally. Data must also be easily accessible to the public and updated regularly. Although the data is nationally integrated, it can only be analyzed by region. In Bandung, data is divided by location and sex but not by age or category of a vulnerable society (Penabulu, 2002).

JEMM Review 2020 and 2022 have included a recommendation to create a comprehensive National TB Gender Responsive Framework to begin to address gender-related issues in TB Care.

Description of Intervention: the sex and age disaggregated data, together with a socio-economic group, geography, and cultural, will be collected, updated, and analyzed in monitoring and evaluation to improve gender equality and access to TB services. Gender assessment should be undertaken and will inform the most appropriate program to advance gender equality by using gender-responsive and gender-transformative interventions (Male, Female, Others).

4.6. Community Systems Strengthening and Community Service Delivery

The community is an important key that plays a role in the success of TB control. Empowerment and community involvement are needed to raise awareness, willingness, and ability to break the chain of TB transmission. The problem of TB disease is not only the government's responsibility to overcome; it requires collaboration and synergy between health programmers as the leading sector, providers, and community health workers as a bridge between health services and the community.

Community involvement in improving health outcomes is needed to protect and support their members. Community support for health and social welfare has advantages in its close connections with communities, its ability to communicate through people's own culture and language and to articulate the needs of communities, and its ability to mobilize the many resources that community members can bring to the processes of policy-making and decision-making and to service delivery.

Community involvement brings the community actors and systems into full partnership with national health and social welfare systems, particularly to ensure that their work for health is better understood and adequately funded. Achieving this goal is vital for making progress toward universal access to health care and realizing the rights of everyone to achieve the highest attainable standards of health, no matter who they are or where they live. Community Systems Strengthening (CSS) is needed toward this goal which develops the roles of key affected populations and communities, community organizations and networks, and public- or private-sector actors that work in partnership with civil society at the community level in the design, delivery, monitoring, and evaluation of services and activities aimed at improving health. CSS has a strong focus on capacity building and on human and financial resources to enable communities and community actors to play a full and effective role alongside health and social welfare systems.

The core components of community systems are considered essential for creating functional, effective community systems and enabling community organizations and actors to fulfill their role of contributing to health outcomes are:

1. Enabling environments and advocacy – including community engagement and advocacy for improving the policy, legal and governance environments and removing affecting the social determinants of health.
2. Community networks, linkages, partnerships, and coordination – enabling practical activities, service delivery and advocacy, maximizing resources and

impacts, and coordinated, collaborative working relationships with multi-stakeholders at every level

3. Resources and capacity building – activities to ensure human resources from the community with appropriate personal, technical, and organizational capacities; financing (including operational and core funding) and material resources (infrastructure, information, and essential medical and other commodities and technologies).
4. Community activities and service delivery – accessible to all who need them, evidence-informed, and based on community assessment of resources and needs.
5. Organizational and leadership strengthening – including management accountability and leadership for organizations and community systems.
6. Monitoring and evaluation, and planning – including M&E systems, situation assessment, evidence-building and research, learning, planning and knowledge management.

CSS supports both community-led and community-based responses. Both are important to deliver programs to communities, and responses can be community-led (if led by the community) and community-based (delivered in the community).

1. **Community-led monitoring**. This intervention is independently implemented by local community organizations to improve accessibility, acceptability, and affordability quality (AAAQ). Independent accountability mechanisms designed, led, and implemented by POP TB Indonesia, working closely with care recipients and key and vulnerable populations. On October 2022, POP TB Indonesia launched laportbc.id as a platform to monitor the feedback from the community on TB services as part of CBMF, now known as community-led monitoring (CLM). The structured data collection and analysis will produce evidence-based recommendations for improved accessibility, acceptability, affordability, and quality (AAAQ) and the impact of health programs and services.
2. **Community-led research and advocacy**. Activities that support advocacy activities that are designed and led by community organizations, networks, and civil society actors, especially advocacy led by marginalized, criminalized, under-served, key, and vulnerable populations to increase political commitment and local funding at the sub-national level. Research and advocacy can relate to the quality of health services and programs, financing of programs, legal and policy reform, including human resources, and/or human rights barriers (such as age and gender inequities, stigma, discrimination, criminalization, violence, and breaches of confidentiality). TB stigma

assessment was implemented by PR Community Consortium Penabulu – STPI in 2021 -2022. The assessment is conducted in 8 provinces, 40 districts, 3200 respondents. The result shows demonstrate TB affected people and survivor experiences related stigma (self-stigma, secondary stigma family, stigma in communities, from healthcare workers, and workplace).

3. **Community capacity building and leadership development.** Activities that support establishing, strengthening, and sustainability of community-led organizations to provide and improve health and other services to address HIV, TB, and malaria. This includes developing the capacity and leadership of key and vulnerable populations and supporting organizations that have trust in engaging with these communities. Community-led and community-based services are known and recognized; organization providing these services are engaged in joint planning and implementation, and their role and impact reflected in national planning and resource mobilization. Under the Global Fund support, there are some of the community-based services that is being organized by CSOs and FBOs.
4. **Community engagement, linkages, and coordination**. Activities to create an interlinked and coordinated system of community-based and community-led programs and services that engage, inform, and deliver TB services to people in key, vulnerable and other populations not benefitting from health programs. This includes social mobilization to inform and engage communities in decision-making about TB services and policies.

Community-led and community-based responses are a part of Community Systems Strengthening support. Both are important to deliver programs to communities and can be implemented by the community as an individual or organization (NGO). Support for community-led organizations can improve outreach and TB screening programs among people at high risk, in remote areas, and people with other diseases (HIV, DM).

People's meaningful participation in decision-making about TB-related policy and programs that affect them is an integral element of the right to health, and rights literacy within a community by helping the community to know their rights with respect to TB need assistance from legal or paralegal professionals. Protection from sexual exploitation, abuse, and harassment (PSEAH) can be integrated into community awareness activities.

Gender has a profound impact on the risk of TB exposure, transmission, and access to and delivery of TB services. TB prevention programs should be informed by and respond to how gender impacts on individual, household, and community practices. Advocacy is

needed with community leaders, women's and men's groups, and others on the importance of TB access to service for all.

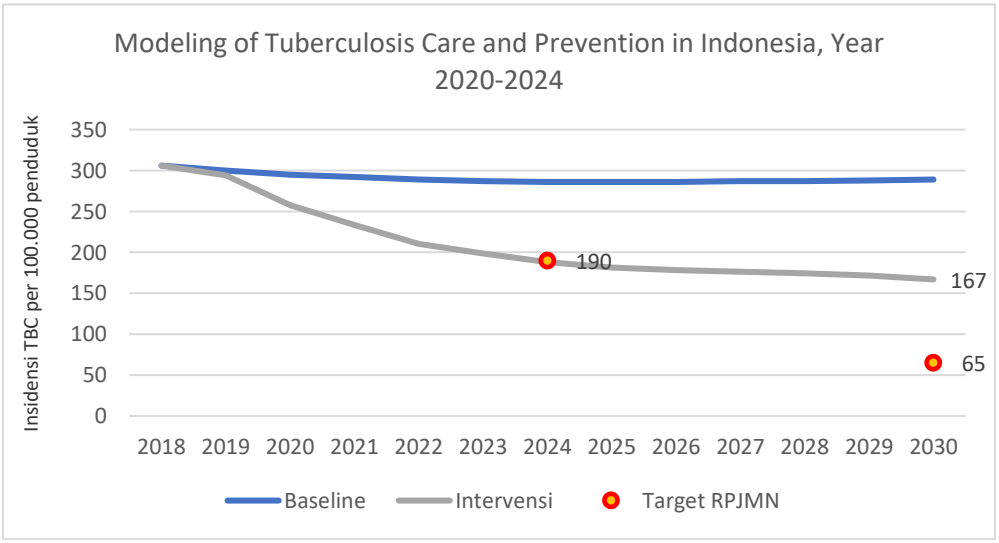
The involvement of the community in tuberculosis control is needed to: (1) improve the awareness of the community on tuberculosis; (2) conduct early tuberculosis screening; (3) provide support to initiate treatment; (4) improve patient adherence, particularly identifying and communicate any treatment side-effects to health staff; (5) provide psychosocial and gender-related supports and (6) Conduct advocacy on decision making to improve tuberculosis control program, including advocacy for sustainable funding from all resources.

One of the efforts to increase TB case finding in the community is existing a CHW. CHW provides health education and referrals for health facilities and provides support and assistance to communities, families, and patients with preventive health measures and gaining access to appropriate curative health and social services. CHWs also create a bridge between health facilities, social and communities that may have difficulty accessing these services.

4.7. Intervention Optimization

Modeling of the National Strategy for Tuberculosis Care and Prevention in Indonesia 2020-2024 is part of efforts to accelerate Tuberculosis elimination in Indonesia by 2030; The target is to decrease the incidence of Tuberculosis by up to 80% compared to the incidence rate in 2015. That target was optimized by tuberculosis epidemiology modeling using the Tuberculosis Impact Model and Estimate (TIME) that was combined with cost modeling to provide the Incremental Cost-Effectiveness Ratios of Interventions/ICER) applied from 2020 to 2024. Modeling in figure 44. represents the projection of tuberculosis incidence in the current situation of the National Tuberculosis Program (termed as 'Baseline) and by some assumptions. The assumptions include that each intervention will be improved in both coverage and targets, step wisely from 2020 to 2024. Interventions included in the model include: 1) expansion of diagnosis among presumptive Tuberculosis cases using molecular rapid diagnostic by 75% in 2024; 2) coverage of notification and treatment by 90%; 3) tuberculosis treatment success rate by 90%; 4) coverage of Tuberculosis preventive treatment focuses on household contacts by 68% in 2024, and 5) coverage of Tuberculosis screening among DM by 40% in 2024.

Figure 44. Modeling of TB Care and Prevention in Indonesia in the year 2020-2024



With that modeling, it is estimated to decrease incidence from 319 per 100,000 population in 2018 to 188 per 100,000 in 2024. This projection is in line with the target of Tuberculosis incidence in the RPJMN by 190 per 100,000 population.

However, the application of those interventions will only decrease the tuberculosis incidence by 167 per 100,000 population by 2030. This target is still far from the Tuberculosis elimination target of 65 per 100,000 population. Hence, more innovative strategies are needed including new technologies (Tuberculosis vaccine, short term regiment for drug sensitive tuberculosis cases, and others) during the year 2025-2030 to achieve the target of tuberculosis elimination in 2030.

The model for Achieving TB Elimination in 2030

The Covid-19 pandemic 2020-2021 significantly changing the landscape of TB burden in Indonesia. In general, TB incidence is reversed back to the level before 2010.

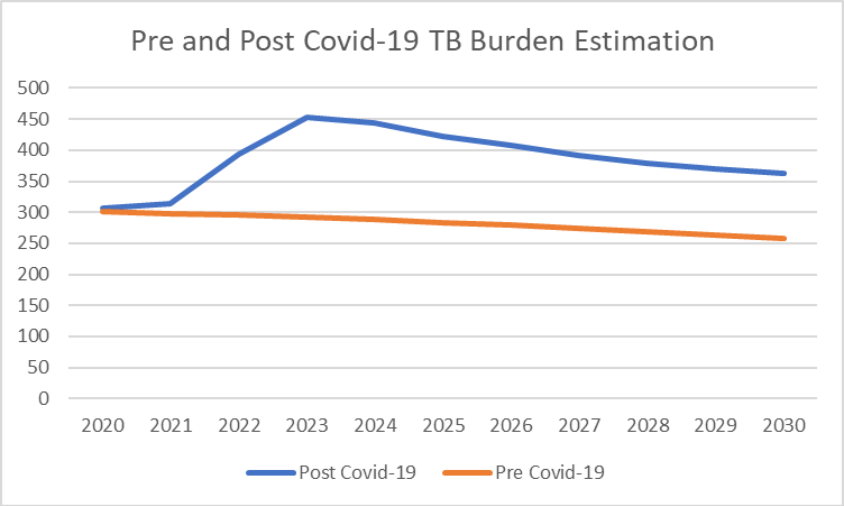


Figure 45. Modeling of TB Care and Prevention in Indonesia in the year 2020-2024

To address TB burden changes after pandemic and ensuring country to meet with original NSP targets by 2030, NTP has optimize the intervention plan to accelerating tuberculosis elimination by developing a new modeling based on the model developed by Stop TB Partners for the Global Plan to end TB 2023-2030.

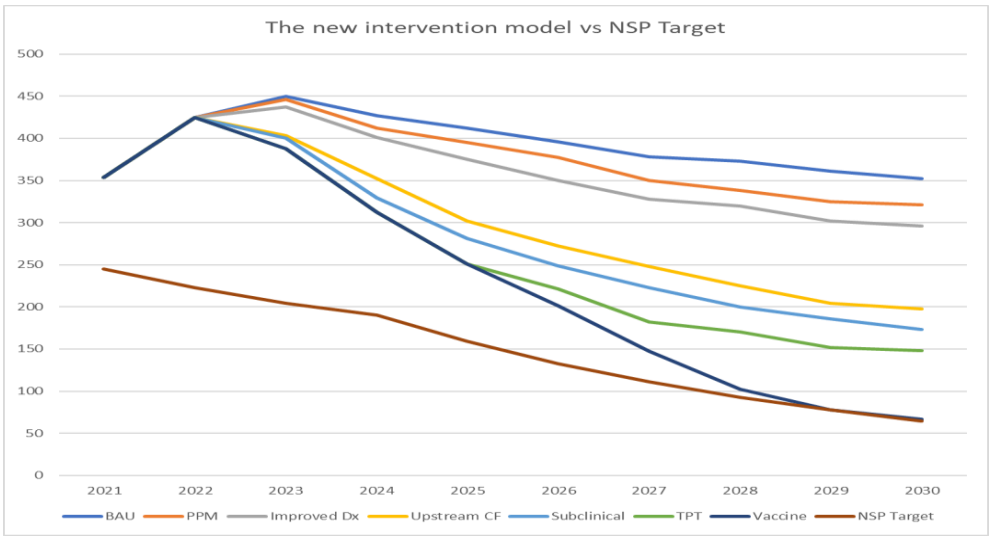


Figure 46.Projected Impact of Comprehensive TB Interventions in Indonesia 2021-2030

Figure 46 shows model projections for TB incidence in Indonesia 2021-2030. The model projects a step increase of incidence from 301/100K population in 2020 to 354/100K in 2021 because service disruptions during pandemic will lead to a substantial increase in TB incidence. The increase trend will achieve its peak in 2023 and gradually decrease

afterwards. It is clear that the country cannot achieve the 2030 target with business as usual (BAU) model. The model projects that Indonesia could end TB by 2030 if the following interventions are scaled up linearly from 2022 through 2025 and maintained thereafter:

a. Engage with 90% of private providers (Hospitals, Clinics, and Stand-Alone GPs), improving standard of diagnosis and treatment to same levels as in public sector;
b. Modernize TB diagnostics throughout routine TB services (public and private) so that 90% of people with symptomatic TB are diagnosed when presenting for care;
c. The active finding of people living with symptomatic TB (active case finding, plus creating demand for existing TB services);
d. Among those with symptomatic TB, active case-finding and demand generation to decrease the delay-to-diagnosis by 30%;
e. Find and treat 30% of people with subclinical TB before they develop symptoms;
f. Per WHO guidelines, full uptake of TPT amongst all-age household contacts and PLHIV;
g. Post-exposure vaccine with 60% efficacy, rolled out to cover 65% of people with LTBI each year.

Realistic scenario of Intervention in 2023-2030

The model projects that Indonesia could reduce half of its current burden by 2030 if those sets of interventions are scaled up linearly from 2023 through 2026 and maintained thereafter.

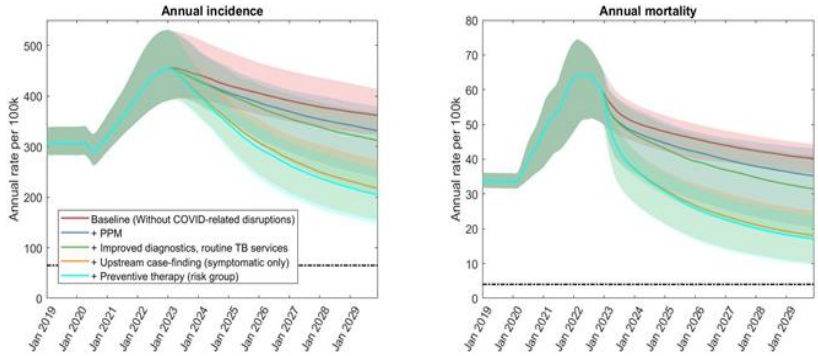


Figure 47.Yearly planned intervention of realistic modelling for 2023-2030

Based on the similar model, NTP has develop a realistic scenario of intervention for period of 2023-2026 which consider current situation, progress, and achievement of national TB program up to end 2022. The model project the impact of key interventions as agree during NSP revision workshop in January-February 2023.

a. Public-private Mix (PPM): Efforts to coordinate TB care across all healthcare providers in the country, whether public or private. When successfully engaged, it is assumed that private providers (Hospitals, Clinics, and Stand-Alone GPs) have more accurate diagnosis and improved treatment completion rates, to the same levels as the public sector. The effects are to reduce diagnostic delays, as well as post-treatment recurrence. Assumed coverage: 80% of patient visits to the private sector are to an engaged private provider
b. Improved diagnostics: Improving the accuracy of diagnostic tools employed in routine TB services, in both the public sector and engaged private sector. Could be achieved by widening access to molecular diagnostics, including improved sample referral systems. Modelled as an increase in the probability of successful diagnosis per patient visit. Assumed coverage: Sufficient to ensure that per care seeking visit, there is a 90% chance of successful diagnosis and initiation on treatment
c. Upstream case-finding: Targeted at symptomatic who have not yet sought care. Measures could include active case-finding or initiatives to address barriers in access to care, e.g., engagement of community volunteers or effective awareness programs. Assumed coverage: Sufficient to reduce the average delay to care seeking, amongst people with TB symptoms, by 30%
d. Preventive therapy: Implementation of preventive therapy amongst all eligible populations, with a focus on PLHIV and household contacts. Assumed coverage: 80% of all eligible individuals

	2023	2024	2025	2026
Private sector engagement	62%	68%	74%	**80%**
Improved diagnosis (Public)	81%	82%	84%	**85%**
Improved diagnosis (Private)	19%	41%	63%	**85%**
Upstream case-finding	10%	15%	20%	**30%**
Preventive therapy (risk group)	58%	64%	72%	**80%**

Figure 48. Yearly planned intervention 2023-2023 and afterwards

4.8. Key interventions and activities

The key interventions and activities per strategy are described as follows:

Strategy 1. Strengthening commitment and leadership of central, provincial, and district government to support the acceleration towards tuberculosis elimination 2030

Key interventions and activities conducted in this strategy include:

- Developing, establishing and ensuring the implementation of policies related to comprehensive tuberculosis control at the central, provincial, and district level. Activities to support this intervention are:
    - Develop and disseminate the tuberculosis action plan to all stakeholders, including activity reports in provincial and district
    - Strengthen the role and responsibility of the central and local governments in the tuberculosis control Conduct dissemination meetings of tuberculosis action plan to all stakeholders
    - Strengthen government capacity at the national, provincial, and district levels in implementing a sustainable tuberculosis control action plan
    - Strengthen coordination and collaboration among central, regional, village governments, communities, stakeholders and other multi-sectors for tuberculosis control
- Ensure that district have optimal regulations and resources for tuberculosis control. Activities related to this key intervention are:
    - Reviewing existing regulations in ministries/institutions related to tuberculosis control and adopt it as per local context
    - Providing tuberculosis regulation in each ministry/institution according to the target group;
    - Develop policies/regulations governing the needs of trained and adequate human resources for tuberculosis management;
    - Ensure of financial support from local government for tuberculosis program staff capacity building;
    - Develop regulations related to tuberculosis control in congregate settings.
- Advocating central and local governments to address psychosocial and economic factors experienced by people with tuberculosis and their families. Activities related to this key intervention are:
    - Advocating central and local governments to develop regulations on support for people with tuberculosis;
    - Increase the capacity of heads of local governments (provinces, regencies/cities) regarding tuberculosis.

- Standardize services to form a service network that facilitates the referral system and quality assurance. Activities related to this key intervention are:
    - Advocate to BPJS to include TB disease d in the Referral Back Program service;
    - Improvement of referral regulations and financing of DR TB from JKN / BPJS (related to supporting examinations, comorbid management and ESO).

Strategy 2 (Increasing access to high-quality and patient-centered tuberculosis diagnosis and treatment services)

Key interventions and activities conducted in this strategy include:

- Optimize early detection and treatment for drug-sensitive Tuberculosis. Activities related to this key intervention are:
    - Conduct intensified case finding in collaboration with Maternal and Child program;
    - Conduct intensified case finding with diabetes mellitus (DM) services, smoking cessation, elderly services.
    - Conduct contact investigation on tuberculosis index cases;
    - Conduct active case finding of in high-risk workplace;
    - Conduct active case findings in urban slums and other unreachable areas;
    - Conduct Tuberculosis active case findings in *congregate setting* i.e. prison/detention center, closed mines, refugees' barrack, boarding hall and religious boarding school;
    - Conduct active case findings through routine medical checkups for Islamic pilgrims before departure;
    - Conduct tuberculosis screening through medical checkup among health staff who in contact with tuberculosis patients;
    - Treatment based on the latest recommended guidelines;
    - Adoption of new technologies in monitoring of Tuberculosis treatment;
    - Coordinate and validate data at the service level to ensure that all patients diagnosed with tuberculosis receive treatment as per standard;
    - Tuberculosis screening for Indonesian Migrant Workers;
    - Provide the necessary requirement to conduct active case finding in congregate setting;
    - Provide the necessary requirements for active case finding in high-risk groups out of the health facilities.
- Optimize early detection and treatment of drug-resistant TB. Activities related to this key intervention are:

- Carry out early detection efforts on drug-resistant Tuberculosis that are integrated with intensive case finding efforts on maternal and child health (MCH) services;
- Adoption and implementation of the latest diagnosis, care, and treatment guidelines of DRTB;
- Provide the latest recommended treatment of DRTB;
- Strengthen DRTB services in Puskesmas;
- Provide support to DRTB patients in each step of the cascade to obtain desirable treatment outcome;
- Increase universal access to high quality drug-resistant Tuberculosis diagnostic and treatment services in prison, police hospital, and military hospital;
- Ensure quality assured service of DRTB;
- Strengthen the Pharmacovigilance national committee;
- Manage and monitor adverse event of DRTB treatment and mortality audit;
- Development of Information, Education and Communication (IEC) materials for patients, community and health workers, especially on the drug adverse events;
- Strengthen the role of the community and former tuberculosis patients to improve treatment outcomes of drug-resistant Tuberculosis;
- Adoption of new technologies in monitoring of Tuberculosis treatment;
- Provide and advocate palliative care support for DRTB patients.

● Optimize procedure for integrated diagnostic testing and treatment of drug-sensitive and drug-resistant Tuberculosis. Activities related to this key intervention are:
  - Regular updating of diagnosis algorithm to improve case finding of Tuberculosis and drug-resistant Tuberculosis;
  - Improve Rapid Molecular Test access and utilization in all districts in Indonesia and ensure cartridge logistics availability;
  - Increase access to bacteriologic culture testing and first- and second-line drugs sensitivity testing, in patients with high-risk for MDR and XDR-Tuberculosis;
  - Improve the specimen transportation system and network for Tuberculosis diagnostic testing, for both drug-resistant and drug-sensitive Tuberculosis;
  - Integration of Tuberculosis diagnostic testing quality improvement into the national accreditation system (ISO 15189), SNARS, KALK;
  - Multi program coordination to strengthen and stabilize Tuberculosis examination laboratories including quality strengthening;
  - Development of laboratory diagnosis, networking, and quality assurance in accordance with the global guidelines that have been adapted to the situation in Indonesia;

- Utilization of various diagnostic tools or methods that have been recommended by WHO to support the diagnosis and management of drug-sensitive and drug-resistant Tuberculosis;
- Improve the function/role of large health laboratory centers/health laboratory centers/regional health laboratories in the development, training, supervision and strengthening the quality of the Tuberculosis laboratory;
- Strengthen the laboratory infrastructure and equipment including work safety and security in the laboratory through laboratory renovation support and meeting the needs of key equipment which includes microscopic examination, culture, sensitivity and molecular testing laboratories;
- Increased human resource capacity for laboratory culture, sensitivity and molecular testing through ToT, refreshment training, on the job training, and workshops;
- Increasing the human resources capacity of microscopic laboratory through tiered training which includes ToT, refreshment training (provincial, district and health facilities), and workshops;
- Capacity building of national and regional reference laboratories;
- Accelerate the development of culture laboratories and Tuberculosis sensitivity testing to ensure there is at least one culture laboratory in each province and 24 sensitivity-testing laboratories throughout Indonesia;
- Implementation and development of Tuberculosis laboratory information systems integrated with Tuberculosis Program recording and reporting information systems;
- Strengthen the monitoring and evaluation of Tuberculosis laboratory examinations and their networks through supervision and monitoring and evaluation meetings of the Tuberculosis laboratory;
- Utilize whole genome sequencing tests for TB program strengthening.

● Ensuring TB-HIV coinfected patients are diagnosed and treated with antiretrovirals. Activities related to this key intervention are:
  - Support TB screening among PLHIV in all health care facilities;
  - Improve the coverage of HIV-testing in all TB care facilities, with integrated TB-HIV diagnosis services;
  - Develop and disseminate guideline for integrated TB-HIV services;
  - Improve the skills of healthcare workers to conduct HIV test on TB patients;
  - Improve the competence of health staff to conduct counseling, information and education about ARV-anti tuberculosis drugs and adherence of treatment;
  - Improve the ability of health workers to carry out contact tracing of TB-HIV patients in health facilities and their work areas;
  - Improve the psycho-socio economic support for patients with TB-HIV;

- Strengthen access to ARV among TB-HIV patients with ARV in all districts by implementing integrated TB-HIV treatment service and advocating local governments to provide infrastructure for hospitals to be ARV centers;
- Develop TB-HIV task force at the local level;
- TB-HIV joint planning;
- TB-HIV coordination forum.

- Ensure TB-DM patients diagnosed and treated by anti-tuberculosis. Activities related to this key intervention are:
  - Improve the coverage of tuberculosis test in all Diabetes Mellitus services gradually by implementing integrated DM-TB services;
  - Develop and disseminate the guideline of integrated DM-TB which is user-friendly to DM-TB patients;
  - Improve skills of health staff to conduct tuberculosis test among DM patients;
  - Develop communication strategy on counseling, information and education on DM-TB to DM patients and families;
  - Improve capacity of health staff to conduct counseling, information and education on DM-TB to DM patients and families;
  - Improve capacity of health staff to conduct contact tracing of DM-TB patients in health care facilities and working areas;
  - Strengthen access of DM drugs among DM-TB patients in all districts/cities by advocating local government to provide supports to health care facilities;
  - Establish tuberculosis working groups on co-infection and co-morbidities of tuberculosis;
  - Strengthen monitoring of integrated DM-TB services.
- Strengthening DPPM activities through expanding quality TB care and patient-centered services within the scope of government-private activities to improve access to quality TB services. Activities related to this key intervention are:
  - Expand the engagement and strengthen the TB network among public and private healthcare facilities;
  - Improve quality of tuberculosis services in all services providers
  - Strengthen the role of cross programs, multi-sectors, PPM-related stakeholders, and communities on the PPM framework, including professional organizations and health care associations;
  - Strengthen tuberculosis mandatory notification implementation;
  - Strengthen TB diagnostic and treatment access for public and private providers;
  - Linkage between public and private providers with CSO/community initiatives for treatment support, contact tracing, TB-HIV referral and prevention scheme.
- Optimize early diagnosis, management, and treatment of childhood tuberculosis in healthcare facilities. Activities related to this key intervention are:

- Overcoming the problem of under-reporting tuberculosis cases in children under 5 years from the private sector by strengthening the role of professional organizations in the detection and reporting of tuberculosis in children to the national tuberculosis program;
- Overcoming problems of under-diagnosis of childhood tuberculosis in primary health care facilities, including Puskesmas, by improving the capacity of health staff in Puskesmas to diagnose childhood tuberculosis;
- Overcoming problems of under-diagnosis of childhood tuberculosis in primary health care facilities, including Puskesmas, by utilizing accreditation systems; childhood tuberculosis reporting should be added to the evaluation;
- Overcoming problems of under-diagnosis of childhood tuberculosis in primary health care facilities, including Puskesmas, by improving childhood tuberculosis finding through collaboration with other services (MTBS, stunting, etc.);
- Overcoming problems of under-diagnosis of childhood tuberculosis in primary health care facilities, including Puskesmas, by ensuring the quality of childhood tuberculosis management;
- Increase the community's role and public's knowledge about childhood TB by strengthening and utilizing contact investigation to find more childhood tuberculosis cases as well as integrate TPT as a package of services;
- Increase the community's role and public's knowledge about childhood TB;
- Improve the service of drug-resistant tuberculosis in children by providing drug regimens which are user-friendly;
- Improve the service of drug-resistant tuberculosis in children by improving the capacity of health staff on diagnosis and management of drug-resistant tuberculosis in children;
- Improve the service of drug-resistant tuberculosis in children by ensuring the availability of psychosocial support for children with drug-resistant tuberculosis;
- Develop a task force for pediatric tuberculosis.

Strategy 3. Optimization of promotion and prevention activities for tuberculosis, tuberculosis preventive therapy, and infection control

Key interventions and activities under this strategy include:

- Optimize the administration of tuberculosis preventive treatment
    - Update guidelines, SOP, and tools, to manage LTBI and TPT
    - Increase the capacity of human resources (TB programmers, HCWs, community) to conduct TB infection management and TB preventive treatment

- Provide TPT according to the latest recommended guidelines to the population at risk of having TB diseases
- Strengthening LTBI services by integrating to household contact investigation and expanding the scope to others population at risk
- Improve the effectiveness of the promotion strategies on LTBI management
- Provide support to the people taking the TPT by the community health workers

- Preventing and controlling tuberculosis infection
  - Update tuberculosis infection prevention and control according the latest recommendations
  - Strengthen the capacity of healthcare workers on tuberculosis infection control at healthcare facilities
  - Conduct promotion and prevention of TB through education in the community
  - Ensure availability of personal protection in tuberculosis infection and control (IPC)
  - Implementation of tuberculosis infection prevention and control all settings
  - Improve the environment for supporting tuberculosis control and prevention

Strategy 4. Utilization of research findings and technologies for screening, diagnosis, and management of Tuberculosis

Key interventions and activities include:

- Utilizing **Innovative** technologies to support the implementation of the national TB control program. The activities of this intervention are:
  - Simplified and digitalized TB recording and reporting system

- Developed a mechanism to direct Tuberculosis research in line with the Tuberculosis research agenda so it can be useful for the National Tuberculosis Program. The activities of this intervention are:
  - Establish a working group on TB research and innovation at the district level
  - Hold a TB researcher network meeting at least once a year
  - Facilitate networking activities among TB researchers
  - Develop TB research agendas with network members and policymakers
  - Promoting openness in data program usage and research in accordance with applicable regulations

- Advocacy or mobilization of funding for research and innovation on Tuberculosis from various institutions from local and international funding. The activities of the intervention are:
  - Disseminate TB research agenda to research network and donor/funders

- Supporting research, development, and innovation for TB management and control. The activities regarding this key intervention are:
  - Facilitate the process of reviewing TB research that is appropriate for use as advocacy material for improving TB elimination programs;
  - Facilitate researchers and policymakers in research-based TB program policy-making;
  - Increasing the use of research results in evaluating and improving program performance;
  - Encouraging the publication of TB research results in scientific activities in national and international reputable journals;
  - Develop a mechanism to adopt new TB diagnosis tools, vaccines, and new drugs/regimens;
  - Facilitate national research activities that support TB programs;
  - Utilization of PCR based and Nucleic Acid Amplification Tests for tuberculosis diagnosis

Strategy 5. Increasing communities, partners, and multisectoral participation in TB elimination efforts

Key interventions and activities included in this strategy are:

- Increasing community empowerment efforts through intensification of information, education, and communication to the community, especially for the prevention of tuberculosis. The activities of this intervention are:
  - Strengthen information, education and communication strategy;
  - Engagement and empowerment community to be involved actively in TB prevention and control.

- Coordinate with relevant ministries, relevant institutions, local governments (provincial and district), stakeholders, and communities for the implementation of existing regulations and/or policies through the following main activities:
  - Coordination at the Ministry level Coordinating Ministry for Human Development and Cultural Affairs Indonesia, Coordinating Ministry for Political, Legal, and Security Affairs of the Republic of Indonesia, Coordinating Ministry for Economic Affairs, Ministry oh Home Affairs, Ministry of Finance, Ministry of Social Services, Ministry of Religious Affairs, Ministry of Villages, Disadvantages

Regions and Transmigration, Ministry of Public Works and Housing, Ministry of Law and Human Rights, Ministry of Education and Culture, Ministry of Manpower, Ministry of Communications and Informatics, Indonesian Ministry of National Development Planning, Ministry of State Owned Enterprises, National Research and Innovation Agency, The National Agency of Drug and Food Control, Cabinet Secretariat, National Agency for Disaster Management (BNPB), BPJS;
- Encourage the involvement of BAZNAS, philanthropic institutions, Corporate CSR, and other potential partners to increase resources for tuberculosis control;
- Strengthen multi-program and multi-sector commitments in Tuberculosis prevention and control.

- Improve the public feedback mechanism on tuberculosis service quality at health facilities. The main activities include:
  - Support the efforts of the national tuberculosis program in identifying and overcoming service quality challenges by providing public feedback on the quality of tuberculosis services at health facilities;
  - Provide data on obstacles to accessing tuberculosis services that will be used by national, provincial, and district stakeholders as evidence to identify alternative solutions;
  - Provide the operational human resource and CLM response team.

- Ensure that the feedback of the people affected by tuberculosis will be optimized to address ineffective mechanisms. The main activities include:
  - Strengthen responses from health facilities services to community-related to eliminate stigma and discrimination at all levels;
  - Create a friendly environment for patients to achieve treatment success.

- Reduction of stigma and discrimination in high-risk tuberculosis populations and vulnerable populations. The main activities include:
  - Campaign/education for the community to increase knowledge about tuberculosis, especially in schools and workplaces, to remove human rights and gender barriers;
  - Strengthen the tuberculosis community and working groups in creating an environment free from stigma and discrimination for patients and families.

- Establish, strengthen, and ensure the sustainability of civil society organizations, especially those led by key populations, women, TB patients, community networks, or associations. The main activities include:

- Establish civil society organizations and organization based on the community in District that have not yet exist;
- Strengthening the civil society organization and organizations based on community.

- Mobilize marginalized communities, and underserved key vulnerable populations to overcome barriers to access TB services and social security. The main activities include:
  - Mapping of marginalized communities, key vulnerable populations that are underserved in TB programs;
  - Involving the marginal and underserved key vulnerable population in TB program.

- Strengthening the human resources policy, planning, and management of community health workers. The main activities include:
  - Mapping of human resources needed (community health worker and community health volunteer) in health services;
  - Development of technical regulation of human resources of community health workers in TB program;
  - Management of community health workers in TB program.

- Advocacy-led by community civil society and community, particularly representative key population, vulnerable to mobilized local human resources. The main activities include:
  - Advocacy by civil society organizations and communities for stakeholders related to the mobilization of local resources.

- Evaluation of implementation strategy to improve the role of community, partners, and other multi-sector in TB elimination. The main activities include:
  - Evaluation of the implementation strategy to increase community empowerment relevant to tuberculosis prevention.

Strategy 6. Strengthening program management through health systems strengthening

Key interventions and activities included in this strategy are:

- Improving health worker skills in tuberculosis case and program management. The main activities include:

- Conduct in-service training on tuberculosis case and program management at national, province, districts level;
- Conduct training on tuberculosis case and program management in health facilities, including a) Laboratory, b) Primary (including Posyandu Prima) and referral health facility, c) Health worker who does PTIC, d) Health worker who does drug-resistant tuberculosis counseling;
- Conduct e-course/ training on Tuberculosis care and prevention by the long-distance training program for private physicians;
- Conduct post-training evaluation;
- Conduct pre-service training management training on tuberculosis;
- Conduct trainings of tuberculosis management program;
- Conduct trainings on tuberculosis program for the community;
- Conduct capacity building of human resources for health by utilizing information technology (e.g., webinar);
- Training of trainers on tuberculosis care and prevention in primary and referral health facilities, laboratories, PITC, and training for tuberculosis program management for staff at national, provincial, and district levels as well as for cadres;
- Training of integrated logistics management;
- Support monitoring of the performance of health staff through online assessment;
- Provide incentives/salary for tuberculosis program staff.

- Strengthening of tuberculosis surveillance through the utilization of information and communication strategy. The main activities include:
  - Develop a tuberculosis information system to record notification and treatment of tuberculosis cases, which can be linked with other information systems in public and private healthcare facilities or other existing health information systems;
  - Investment in facilities and human resources related to tuberculosis surveillance;
  - Assessment of data quality related to tuberculosis control;
  - Dissemination of tuberculosis program performance data which can be accessed by the public.

- Strengthening financial management of Tuberculosis care, treatment, and prevention. The main activities include:
  - Conduct mapping and estimation of potential financing from national and district levels;

- Strengthening tuberculosis financing in national, provincial and district level;
- Strengthening of tuberculosis financing system through national health insurance;
- Strengthen health financing scheme for DPPM.

- Strengthen logistic management system for Tuberculosis. The main activities include:
  - Plan integrated TB logistics necessities at all levels with bottom-up approach;
  - Mapping of tuberculosis logistics in all levels;
  - Managing logistics to one gate of the pharmacy unit;
  - Distributing logistics in FEFO/FIFO by considering the aspects of sustainable availability, quality, as well as maintained benefits;
  - Coordinate with pharmacies at each level to ensure the availability of TB logistics for both public and private health facilities;
  - Improve the quality of tuberculosis logistic management at all level;
  - Implementation of recording and reporting of tuberculosis logistics using online TB Information System;
  - Monitoring and evaluation with follow-up, including reports, feedback, and improvement efforts according to applicable regulations related to logistic management;
  - Conduct logistic forums involving stakeholders.

- Ensure the available human resources for the tuberculosis program. The main activities include:
  - Develop a database of human resources in health relevant to the tuberculosis program;
  - Assessment of human resources for tuberculosis program;
  - Improve the quantity of human resources relevant to active case finding

Chapter 5. Operational Plan

5.1. Operational plan as per NTP strategy

Tuberculosis care and prevention in Indonesia 2020-2024 will be conducted in conjunction with national policy, which includes: RPJMN 2020-2024, Health Ministerial Decree No 4/2019 on Minimum Service Standards for Health Sector, or Domestic Affair Ministerial No 100/2018, and Health Ministerial Decree on Tuberculosis Control in Indonesia.

5.1.1. Operational Plan for Strategy 1. Strengthening the commitment and leadership of the central, provincial and district government to support the acceleration towards tuberculosis elimination 2030

Number	Activities	Sub-activities	Level of Implementation	Time of Implementation
Intervention 1.1. Developing, establishing and ensuring the implementation of policies related to comprehensive tuberculosis control at the central, provincial, and district level				
1.1.1.	Develop and disseminate the tuberculosis action plan to all stakeholders, including activity reports in provincial and district	1.1.1.1. Develop a national action plan for accelerating tuberculosis elimination 2026-2030	National	2025– 2026
		1.1.1.2 Conduct dissemination meetings of tuberculosis action plan to all stakeholders	Province District	2025-2026
1.1.2	Strengthen the role and responsibility of the central and local governments in the tuberculosis control	1.1.2.1 Advocate relevant ministries to allocate village funding and sub district funding for tuberculosis control	National Province District	2020-2026
		1.1.2.2. Encourage village government to allocate village fund and sub-district funding for tuberculosis control	District	2024-2026
		1.1.2.3 Advocate ministries/higher level institutions and bodies at central, provincial and district levels to provide social support and other complementary support during the treatment	National Province District	2024-2026
		1.1.2.4 Advocate National/Districts Civil Service Agency on	National Province District	2023 – 2026

		placement of Tuberculosis program staff for a minimum of 5 year		
		1.1.2.5 Develop regulation on inter-sectoral collaboration in tuberculosis care and prevention	National Province District	2020 – 2026
		1.1.2.6 Develop regulation to ensure Tuberculosis reporting from all providers, for example Tuberculosis notification as a requirement for Specific Allocation Fund from government, BPJS claims, capitation payments, and medical license	National Province District	2020 – 2026
		1.1.2.7 Establish a tuberculosis control acceleration team at the provincial and district level by involving local and village governments, communities, and other multi-sectors	Province District	2024 – 2026
		1.1.2.8 Strengthen routine monitoring and evaluation of the implementation of tuberculosis control related minimum service standards (SPM)	National Province District	2024 – 2026
		1.1.2.9 Develop a policy for local leaders to accelerate tuberculosis control	Province District	2024-2026
		1.1.2.10 Advocacy related to Integration of tuberculosis data dashboard per district from TB Information system (SITB) into Local Government Information System (SIPD)	District	2024-2026
		1.1.2.11 Involve the Provincial and District Leadership Coordination Forum (Forkompimda) and the Association of All Indonesian Village Governments (Apdesi) in a partnership framework for tuberculosis control	National	2024-2026

1.1.3	Strengthen government capacity at the national, provincial, and district levels in implementing a sustainable tuberculosis control action plan	1.1.3.1 Develop strategic guidelines for government capacity building in tuberculosis control in national level (ministries/agencies)	National	2021
		1.1.3.2 Integrate the Tuberculosis Alert Village into Desa Peduli Kesehatan and Tuberculosis Free District programs into related ministries and institutions	National Province District	2024-2026
		1.1.3.3 Encourage local governments to establish/reactivate Tuberculosis Alert Village and Tuberculosis Free District programs before 2030.	District	2024-2026
1.1.4	Strengthen coordination and collaboration among central, regional, village governments, communities, stakeholders and other multi-sectors for tuberculosis control	1.1.4.1 Conduct regular multi-sectoral and multi-program coordination and consolidation	National Province District	2020-2026
		1.1.4.2 Dissemination of information on tuberculosis care and prevention related policies from central to local governments	National Province District	2024-2026
		1.1.4.3 Mapping the potential role and resource capacity in tuberculosis control from central, provincial, district, village governments, community and multisector	National Province District	2024-2026
Intervention 1.2. Ensure that district have optimal regulations and resources for tuberculosis control				
1.2.1	Reviewing existing regulations in ministries/institutions related to tuberculosis control and adopt it as per local context	1.2.1.1 Identification and analysis of various rules and policies related to TB control in accordance with the development of circumstances, constitutionality and demands of government administration in the local context	National Province District	2020-2026
1.2.2	Providing tuberculosis	1.2.2.1 Provide tuberculosis regulation in each	National	2024-2026

	regulation in each ministry/institution according to the target group	ministry/agency according to the target group	Province District	
1.2.3	Develop policies/regulations governing the needs of trained and adequate human resources for tuberculosis management	1.2.3.1. Coordination meeting with Ministry of Home Affairs, Ministry of administrative and bureaucratic reform, BPPSDM, and BKN to address high turnover staffs	National	2020-2026
		1.2.3.2. Develop policies and regulation about the criteria of human resource of health for tuberculosis management	National Province District	2024-2026
1.2.4.	Ensure of financial support from local government for tuberculosis program staff capacity building	1.2.4.1. Advocacy to local government to include capacity building of tuberculosis program in the local government budgeting	Provincial District	2025-2026
		1.2.4.2. Advocacy to local government to include incentive for health staff in the local govt budgeting	Provincial District	2025-2026
1.2.5.	Develop regulation related to tuberculosis control in congregate settings	1.2.5.1 Identify and analyze policies or regulations relevant to tuberculosis control in congregate settings (dormitory, boarding school, social houses, immigrant shelter, etc.)	National	2024 – 2026
		1.2.5.2. Develop policy in each relevant ministerial/institutional level on tuberculosis control in congregate settings (dormitory, boarding school, social houses, immigrant shelters, etc.)	National	2024 – 2026
Intervention 1.3. Advocating central and local governments to address psychosocial and economic factors experienced by people with tuberculosis and their families				

1.3.1	Advocating central and local governments to develop regulations on supports for people with tuberculosis	1.3.1.1 Develop policies related to health insurance, social protection, protection against stigma and discrimination, guaranteeing the right to get a decent job for people with tuberculosis and tuberculosis survivors	National Province District	2024-2026
		1.3.1.2 Develop policies/regulations on funds for comprehensive assistance of DR TB patients from the beginning to the end of treatment	National Province District	2024-2026
		1.3.1.3 Comprehensive regulatory/regulatory advocacy meetings on DR TB patient supports from the initial diagnosis to the end of treatment	National Province District	2024-2026
		1.3.1.4. Central level coordination related to the continuity of competency development activities for the PKH (program for providing conditional social assistance to poor families who are designated as PKH beneficiary families) team related to TB program	National	2024 – 2026
1.3.2	Increase the capacity of heads of local governments (provinces, regencies/cities) regarding tuberculosis	1.3.2.1. Conduct information sessions on tuberculosis to the local government leaders	National Province District	2024-2026
Intervention 1.4. Standardize services to form a service network that facilitate the referral system and quality assurance				
1.4.1	Advocate to BPJS to include TB disease d in the Referral Back Program service	1.4.1.1 Preparing and agreeing on Referral Back Program / PRB (Program rujuk balik) scheme related to TB with BPJS Kesehatan	National Province District	2024-2026
		1.4.1.2 Ensure tuberculosis is included in the Referral Back Program / PRB (Program rujuk balik) scheme for follow-up by pharmacies	National Province District	2024-2026

1.4.2	Improvement of referral regulations and financing of DR TB from JKN / BPJS (related to supporting examinations, comorbid management and ESO).	1.4.2.1 Coordinate with BPJS Kesehatan to improve the referral rules and financing of DRTB	National Province District	2024-2026

5.1.2. Operational Plan for Strategy 2. Increasing access to high-quality and patient-centered tuberculosis diagnosis and treatment services

Number	Activities	Sub-activities	Level of Implementation	Time
Intervention 2.1. Optimize early detection and treatment for drug-sensitive Tuberculosis				
2.1.1.	Conduct intensified case finding in collaboration with Maternal and Child program	2.1.1.1. Coordinative meeting to integrate Tuberculosis screening with Family Health Directorate through integrated ANC, essential neonatal care, integrated management of children with illness, and integrated management of adolescents' health	National	Twice per year 2020-2026
		2.1.1.2. Dissemination meeting on integrated Tuberculosis screening in maternal and child health services implementation, gradually	Province District	Annually 2020-2024
		2.1.1.3. Integrated Tuberculosis screening and maternal and child health services implementation	Healthcare provider, juvenile detention agencies, women detention agencies, religious boarding school, community-based children and adolescents health services, school health services, orphanage	2020-2026
		2.1.1.4. Monitoring and evaluation of integrated Tuberculosis screening with maternal and child health services implementation	Province District	Every three months 2020-2026
2.1.2.	Conduct intensified case finding with	2.1.2.1. Coordinative meeting to integrate Tuberculosis	National	Twice per year

Number	Activities	Sub-activities	Level of Implementation	Time
	diabetes mellitus (DM) services, smoking cessation, elderly services.	screening in diabetes mellitus services and elderly services in healthcare facilities and communities		
		2.1.2.2. Dissemination meeting on integrated Tuberculosis screening in diabetes mellitus services and elderly services gradually	Province District	Once a year
		2.1.2.3. Integrated Tuberculosis screening in diabetes mellitus services and elderly services implementation	Healthcare provider, elderly community-based screening, nursing homes	2020-2024 2024 - 2026
		2.1.2.4. Monitoring and evaluation of integrated Tuberculosis screening with DM, smoking and elderly services implementation	Province District	Every three months 2020-2024 2024 - 2026
		2.1.2.5 Integrated tuberculosis screening service with smoking cessation counseling	Province District	2024-2026
2.1.3.	Conduct contact investigation on tuberculosis index cases	2.1.3.1. Dissemination of technical guidelines for Tuberculosis contact investigation and integrated SITB module with applications for the community in all provinces gradually	Province District	Annually 2020-2024
		2.1.3.2. Implementation of contact investigation on tuberculosis index cases in all provinces	Health care provider	2020-2024
		2.1.3.3. Monitoring and evaluation of contact investigation	Province District	Annually 2020-2024
2.1.4.	Conduct active case finding of in high-risk workplace	2.1.4.1. Coordination with Ministry of Manpower, local government, and relevant local department, and community regarding regulation on Tuberculosis screening at the workplace	National	Annually 2020-2024
		2.1.4.2. Refer suspect Tuberculosis workers to receive further diagnostic testing and to report suspect Tuberculosis workers in	Workplace healthcare provider and the referral healthcare	2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
		Integrated Tuberculosis information systems		
		2.1.4.3. Monitoring and evaluation on active case findings in workplace	Province District	Annually 2020-2024
		2.1.4.4. Disseminate plan of tuberculosis screening among workers	Province district	Annually 2024-2026
		2.1.4.5. Implementation of tuberculosis screening among workers using CXR	Province district	Annually 2024-2026
		2.1.4.6. Supervision of tuberculosis screening among workers	Province district	Annually 2024-2026
		2.1.4.7. Workshop of tuberculosis control among workers	Province district	Annually 2024-2026
		2.1.4.8. Establishing agents of change for tuberculosis control in workplace	Province district	Annually 2024-2026
2.1.5.	Conduct active case findings in urban slums and other unreachable areas	2.1.5.1. Development of Tuberculosis screening plan in urban slums and unreachable areas by involving community groups (PKK), program (KPLDH/PISPK), or local primary healthcare	National (Tuberculosis sub-directorate Province and districts health department) Local government (Provincial/ District authorities) Local health authorities (Province, district, health authorities) Ministry of Social Services/ Social Services Department (Province, and District level)	Twice in 2020
		2.1.5.2. Dissemination of the Tuberculosis screening plan in urban slums and unreachable areas, gradually	National (Tuberculosis sub-directorate Province and districts health department)	Annually 2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
			Local government (Provincial/District authorities) Local health authorities (Province, district, health authorities) Ministry of Social Services/ Social Services Department (Province, and District level)	
		2.1.5.3. Implementation of Tuberculosis screening plan in urban slums and unreachable areas	PHC Community groups (PKK) Community	2020-2024
		2.1.5.4. Monitoring and evaluation of Tuberculosis screening plan in urban slums and unreachable areas implementation	Province District	Annually 2020-2024
2.1.6.	Conduct Tuberculosis active case findings in *congregate setting* i.e., prison/detention center, closed mines, refugees' barrack, boarding hall and religious boarding school	2.1. 6.1. Conduct standard Tuberculosis screening in prisons and juvenile detention centers	Prison, jail, juvenile detention center	Screening before, at the time the inmates enter, during their time, and before they are released
		2.1.6.2. Conduct standard screening for refugees (migrant), immigration transit shelter, coordination with directorate of immigration based on technical guidelines	Health care facility	Once at the time they spent at Immigration Detention Center
		2.1.6.3. Develop technical guidelines on Tuberculosis management in boarding hall/orphanage, or religious boarding school	Ministry of Health Ministry of Religious Affair Ministry of Social Services	Twice per year
		2.1.6.4. Dissemination of technical guidelines on Tuberculosis management in	Ministry of Health, Ministry of Religious Affair,	Annually 2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
		boarding hall/orphanage, or religious boarding schools	Ministry of Social Services, Provincial government, District government	
		2.1.6.5. Implementation of Tuberculosis management in boarding hall/orphanage, or religious boarding school	Boarding hall/orphanage, or religious boarding school	2020-2024
		2.1.6.6. Monitoring and evaluation of active case findings in congregate settings i.e., prison/detention center, closed mines, refugees' barrack, boarding hall and religious boarding school	Ministry of Health Ministry of Religious Affair Ministry of Social Services Local government Ministry of Law and Human Rights Ministry of Manpower	Annually 2020-2026
		2.1.6.7 Encourage Tuberculosis control policies in mining companies	Ministry of Health Ministry of Industry State-owned enterprises	Annually 2020-2024
		2.1.6.8. Supervision of tuberculosis screening in adult and youth detention centers and prisons	Ministry of Law and Human Right	Annually 2024-2026
		2.1.6.9. Strengthening of the role of supervisor for tuberculosis control among ex-prisoners in the community	Ministry of Law and Human Right	2025
		2.1.6.10. Strengthening the role of staff and community health workers in tuberculosis control in the detention centers	Ministry of Law and Human Right	2025
2.1.7.	Conduct active case findings through routine medical checkups for pilgrims before departure	2.1.7.1. Coordination with the Directorate of Islamic Pilgrims (Hajj and Umrah), and Ministry of Religious Affair	National (Ministry of Health and Ministry of Religious Affair)	Annually 2020-2024 2020-2026
		2.1.7.2. Develop regulation and standard operational procedure (SOP) for tuberculosis detection through general check-up among pilgrims	National (Ministry of Health and Ministry of Religious Affair)	Twice in 2020 2023-2024
		2.1.7.3. Implementation of regulation and standard	Health providers that conduct	2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
		operational procedure (SOP) for tuberculosis detection through general check-up among pilgrims	pilgrims MCU, Association of Travel Agencies for pilgrims	2020-2026
		2.1.7.4. Monitoring and evaluation of the regulation and standard operational procedure (SOP) implementation for tuberculosis detection through general check-up among pilgrims	National (Ministry of Health and Ministry of Religious Affair)	Annually 2020-2024 2020-2026
2.1.8.	Conduct tuberculosis screening through medical checkup among health staff who in contact with tuberculosis patients	2.1.8.1. Conduct tuberculosis screening through medical checkup among health staff who are in contact with tuberculosis patients	Health care facility	Annually 2020-2024 2023-2026
		2.1.8.2 Advocacy for policy related to tuberculosis screening through medical checkup among health staff who in contact with tuberculosis patients	National Province District	2023-2026
2.1.9.	Treatment based on the latest recommended guidelines	2.1.9.1. Procurement of first line drugs	National	2020-2026
		2.1.9.2. Procurement of pediatric anti tuberculosis drugs	National	2020-2026
2.1.10.	Adoption of new technologies in monitoring of Tuberculosis treatment	2.1.10.1. Develop SOP for digitally assisted adherence monitoring application	National (NTP, Ministry of Health)	Once in 2020 2024
		2.1.10.2. Disseminate digitally assisted adherence monitoring) application e.g., using video call, video recording	Province District	Annually 2020-2024 2024
		2.1.10.3. Implementation of digitally assisted adherence monitoring	Health care providers	2020-2024 2025-2026
		2.1.10.4. Monitoring evaluation of digitally assisted adherence monitoring implementation	Province and districts health department	Annually 2020-2024 Twice per year 2025-2026

Number	Activities	Sub-activities	Level of Implementation	Time
2.1.11.	Coordinate and validate data at the service level to ensure that all patients diagnosed with tuberculosis receive treatment as per standard	2.1.11.1. Supervision to healthcare facilities to ensure recording and reporting	Health facility	Twice per year 2020-2024 Annually 2024-2026
		2.1.11.2. Monitoring and evaluation meeting of tuberculosis treatment	Health facility	Annually 2021-2024 Annually 2024-2026
		2.1.11.3. Data validation meeting on tuberculosis to ensure TB patients receive treatment as per standard	Health facility	2021-2024 Annually 2024-2026
		2.1.11.4. Development and implementation of MICA for drug-sensitive Tuberculosis	Health facility	2020-2024 Annually 2024-2026
2.1.12.	Tuberculosis screening for Indonesian Migrant Workers	2.1.12.1. Encourage Tuberculosis control policies for migrant workers	Ministry of Health Ministry of Manpower	2020
		2.1.12.2. Refer presumptive tuberculosis case among Indonesian Migrant Workers to get a diagnostic examination	Workplace healthcare provider and the referral healthcare	2020-2024
		2.1.12.3. Refer tuberculosis case among Indonesian Migrant Workers for treatment	National Province District	2020-2024
		2.1.12.4. Monitoring and evaluating case findings at Indonesian Migrant Workers	BP2MI, Province and districts health department, Healthcare provider	Annually 2020-2024
2.1.13.	Provide the necessary requirement to conduct active case finding in health facilities and congregate setting	2.1.13.1. Develop and update guidelines for tuberculosis control among risk groups in congregate setting	National	2023-2025
		2.1.13.2. Financing for tuberculosis molecular diagnostic tests for	National Province District	2020-2026

Number	Activities	Sub-activities	Level of Implementation	Time
		presumptive cases found in congregate settings		
		2.1.13.3. Dissemination of guidelines or tuberculosis control in congregate setting,	National Province District	2023-2026
		2.1.13.4. Support the engagement of stakeholders for active case findings in other congregate settings	National	2023-2024
		2.1.13.5. Integrate tuberculosis service with smoking cessation counseling	Province District	2024-2026
		2.1.13.6. Develop communication strategy and IEC among high-risk groups of TB in congregate setting, including workplace, detention center, prisons, Indonesia migrant workers, pilgrims, military dormitory, social shelters.	National	2025-2026
2.1.14	Provide the necessary requirements for active case finding in high-risk groups out of the health facilities	2.1.14.1. Procurement of portable CXR at primary health care facilities	National	2024
		2.1.14.2. Operationalize portable CXR with artificial intelligence	193 Districts	2024-2026
		2.1.14.3. Maintenance of portable CXR at primary health care facilities	193 Districts	2024-2026
		2.1.14.4. Develop guidelines of active case finding	National 8 Provinces 193 Districts	2024
		2.1.14.5. Conduct coordination meetings during the implementation of active case finding among the general population and high-risk groups.	National	2024
		2.1.14.6. Conduct dissemination meetings during the implementation of active case finding among the general population and high-risk groups	National 8 Provinces 193 Districts	2024

Number	Activities	Sub-activities	Level of Implementation	Time
		2.1.14.7. Conduct meetings on integrating active case finding in tuberculosis information system	National 8 Provinces 193 Districts	2024
		2.1.14.8. Provide enablers for tuberculosis patients notified from active case finding	193 Districts	2024-2026
		2.1.14.9. Monitoring and evaluation of active case finding	National 8 Provinces 193 Districts	2024-2026
		2.1.14.10. Supervision of active case finding	National 8 Provinces 193 Districts	2024-2026
Intervention 2.2. Optimize early detection and treatment of drug-resistant Tuberculosis				
2.2.1.	Carry out early detection activities on drug-resistant Tuberculosis that are integrated with intensive case finding efforts on maternal and child health (MCH) services	2.2.1.1. Coordinative meeting in integrating drug-resistant Tuberculosis screening with Family Health Directorate through integrated ANC, essential neonatal care, integrated management of children with illness, and integrated management of adolescents' health	National	Twice per year
		2.2.1.2. Monitoring and evaluation of the integration implementation of drug-resistant Tuberculosis screening in MCH services	Province District	Every three months 2020-2024
2.2.2.	Adoption and implementation of the latest diagnosis, care, and treatment guidelines of DRTB	2.2.2.1. Update the guidelines of drug-resistant Tuberculosis management	National	Three times per year 2020-2024
		2.2.2.2. Dissemination of the latest guidelines in Tuberculosis treatment to improve the quality of drug-resistant Tuberculosis care in Indonesia	National Province	Annually 2020-2024
		2.2.2.3. Supervision, monitoring, and evaluation of the guideline's implementation of the DRTB management.	Province District Health care providers for drug-resistant Tuberculosis	Twice per year 2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
		2.2.2.4. Strengthen capacity to implement the latest recommended guidelines to treat drugs resistant tuberculosis	National Province	2024-2026
2.2.3	Provide the latest recommended treatment of DRTB	2.2.3.1. Provision of proper regimen for drug-resistant Tuberculosis	National Province District	2020-2024
		2.2.3.2. Piloting new drugs and regimens for drug resistant tuberculosis	National	2024-2026
		2.2.3.3. Expansion of the implementation of new drugs and regimens for treating drugs resistant tuberculosis	National Province	2024-2026
2.2.4	Strengthen DRTB services in Puskesmas	2.2.4.1 Provide drug-resistant tuberculosis services at DRTB satellite Puskesmas	National 7,946 Puskesmas in 514 districts	2020-2024
		2.2.4.2 Initiation of DRTB treatment in the Puskesmas that conduct DRTB detection test	National 7,946 Puskesmas in 514 districts	2020-2024
		2.2.4.3 Develop and finalize protocol for DR TB services in Puskesmas	National Province District	2023-2026
		2.2.4.4 Pilot preparation for the initial treatment for DR-TB in Puskesmas	National Province District	2023-2026
		2.2.4.5 Establish MoU for baseline tests for DR TB patients in Puskesmas	Province District	2023-2026
		2.2.4.6 Monitoring and evaluation of DR-TB treatment in Puskesmas	National Province District	2023-2026
		2.2.4.7. Drug-resistant Tuberculosis training for local primary healthcare-based drug-resistant Tuberculosis services gradually	Province District	2020-2023
2.2.5	Provide support to DRTB patients in each step of the cascade to obtain desirable treatment outcome	2.2.5.1. Introduce community- and family-based Tuberculosis treatment observer and *digitally assisted adherence monitoring.*	Community	2024-2026
		2.2.5.2. Strengthen patients' education and peer group in health care facilities in each	District	2020-2026

Number	Activities	Sub-activities	Level of Implementation	Time
		step of the treatment cascade to improve access to treatment and treatment adherence		
		2.2.5.3. Provide counseling by the health workers to the patients in each steps of the cascade (since becoming presumptive drug-resistant tuberculosis cases, during treatment, and at treatment completion)	National Province	2020-2026
		2.2.5.4. Provision of enabler and nutrition support for all drug-resistant Tuberculosis patients – Advocacy with all local government and multi-sectoral stakeholder	District Health care providers for drug-resistant Tuberculosis	2020-2026
		2.2.5.5. Development of community-based drug-resistant Tuberculosis treatment monitoring mechanisms (from formation, training, piloting and evaluation and expansion)	Province District Community	2020-2024
		2.2.5.6. Coordination between MoH and communities in enabler provision	National	2024-2026
		2.2.5.7. Monitoring and evaluation of the disbursement of enablers by MoH and communities	National	2024-2026
		2.2.5.8. Assessment of drug-resistant Tuberculosis burden and drug-resistant Tuberculosis service readiness in private services	National Province District	2020-2024
		2.2.5.9. Provision of operational costs for nurses/midwives as treatment observer for drug-resistant Tuberculosis patient	National Province District	2021-2023

Number	Activities	Sub-activities	Level of Implementation	Time
		2.2.5.10. Development of drug-resistant tuberculosis services in 514 districts	Province 514 districts	2020-2026
		2.2.5.11. Improving the competence and quality of DR-TB services through stratification of tuberculosis services where higher level of health services will accompany their lower level	National	2022-2026
		2.2.5.12. Manage and monitor f the use of shelters for drug-resistant Tuberculosis patients	National Province District	2020-2026
		2.2.5.13. Share experiences of successful treatment through routine meetings of drug-resistant Tuberculosis patients at health facilities	Health care providers	2020-2024
		2.2.5.14. Monitor and improve the mechanism for providing psychosocial support for drug-resistant Tuberculosis patients	District	2020-2024
		2.2.5.15. Manage and monitor the use of sanatorium for drugs resistant tuberculosis patients	National Province	2024-2026
2.2.6.	Increase universal access to high quality drug-resistant Tuberculosis diagnostic and treatment services in prison, police hospital, and military hospital	2.2.6.1 Refreshing training for officers in the drug-resistant Tuberculosis selected prison	Selected prison	Annually 2020-2024
		2.2.6.2 Add drug-resistant Tuberculosis service provider prisons (assessment, training)	Selected prison	33 selected prisons until 2024
2.2.7.	Ensure quality assured service of DRTB	2.2.7.1. Issuance of regulations related to standards of Drug-resistant tuberculosis by the local health department	Provinces	Regularly
		2.2.7.2. Increased capacity of officers to implement drug-resistant Tuberculosis service with offline and online training methods.	National	2020-2026
		2.2.7.3. Clinical mentoring of drug-resistant Tuberculosis to health care providers	National	2020-2026

Number	Activities	Sub-activities	Level of Implementation	Time
		2.2.7.4. Implementation of quality improvement activities for drug-resistant Tuberculosis cases (benchmarking, cohort, clinical audit, MICA)	Provinces	Quarterly 2020-2026
		2.2.7.5. Establish a provincial/ regional council for drug-resistant Tuberculosis	National	2020-2024
		2.2.7.6. Support health staff to provide the best quality care to improve treatment outcome	Health care facilities (referral hospital and Puskesmas)	2020-2024
		2.2.7.7. Supervision by the drug-resistant Tuberculosis team in the province and district on a regular basis	National Province District	2021-2023
2.2.8.	Strengthen the Pharmacovigilance national committee	2.2.8.1. As per work plan of the pharmacovigilance national committee	National	2020-2026
		2.2.8.2. Hold annual Pharmacovigilance national committee coordination meetings	National	2020-2026
2.2.9.	Manage and monitor adverse event of DRTB treatment and mortality audit	2.2.9.1. Carry out regular clinical audits of reports sent via the unwanted event forms or e-forms for management of drug adverse events	National (Sub-directorate Tuberculosis, National Agency of Drug and Food Control)	2020-2026
		2.2.9.2. Coaching the implementation of management of drug adverse events through supervision to the health care providers for drug-resistant Tuberculosis	Districts	2020-2026
		2.2.9.3. Drug adverse events treatment packages (rays, drugs etc.)	District Health care providers	2020-2026
		2.2.9.4. Increase capacity of staff and implementation of mortality audit	National (NTP, BPOM)	2020-2026
		2.2.9.5. To conduct mortality audit for drug resistant tuberculosis patients	Province District	2020-2026
		2.2.9.6. Monitoring and evaluation of the implementation of the adverse event of the DRTB treatment	National Province	2024-2026

Number	Activities	Sub-activities	Level of Implementation	Time
2.2.10.	Development of Information, Education and Communication (IEC) materials for patients, community and health workers, especially on the drug adverse events	2.2.10.1. Updates on IEC materials for patients with drug-resistant Tuberculosis related to drug adverse events	National	Annually 2024
		2.2.10.2. Print IEC material and distribute it to health facilities through the local health department gradually	National Province District	Annually 2024
		2.2.10.3. Training of health workers for drug-resistant Tuberculosis counseling (starting with suspected drug-resistant Tuberculosis, when diagnosed, when to start treatment, and during treatment, including support received by patients)	National Province District	2020-2026
2.2.11.	Strengthen the role of the community and former tuberculosis patients to improve treatment outcomes of drug-resistant Tuberculosis	2.2.11.1. Expansion of the network of members of patient organizations or former drug-resistant Tuberculosis patients	National Province District	2020-2026
		2.2.11.2 Community training to enhance the role in the management of drug-resistant Tuberculosis patients	National Province District	2020-2026
		2.2.11.3. Strengthen the mentoring for drug-resistant Tuberculosis in each step of the diagnosis and treatment cascade, by the community	National Province District	2020-2026
		2.2.11.4. Tracing and accompanying the initial lost-to-follow-up patients to re-start or continue treatment	Health care providers	2024-2026
2.2.12.	Adoption of new technologies in monitoring of Tuberculosis treatment	2.2.12.1. Develop standard operating procedures to use digitally assisted adherence monitoring	National	Once in 2020
		2.2.12.2. Disseminate adherence application, e.g., video call, video recording	National Province District	Annually 2020-2024
		2.2.12.3. Implementation of digitally assisted adherence monitoring	Health care providers	2020-2024
		2.2.12.4. Monitoring evaluation of digitally assisted	Province District	Annually 2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
		adherence monitoring implementation		
2.2.13	Provide and advocate palliative care support for DRTB patients	2.2.13.1. Development of IEC material/guidebook for palliative care for drug-resistant Tuberculosis patients	National Province District	2020-2024
		2.2.13.2. Develop guidelines of palliative care on drugs resistant tuberculosis patients	National	2024
		2.2.13.3. Print IEC materials/manuals on palliative care and distribute them to health facilities through the local health departments gradually	National Province District	2020-2024
		2.2.13.4. Training of health workers for palliative care counseling	National Province District	2020-2024
Intervention 2.3. Optimize procedure for integrated diagnostic testing and treatment of drug-sensitive and drug-resistant Tuberculosis				
2.3.1.	Regular updating of diagnosis algorithm to improve case finding of Tuberculosis and drug-resistant Tuberculosis	2.3.1.1. Conduct a review meeting of the Tuberculosis and drug-resistant Tuberculosis diagnosis algorithm	National (Sub-directorate Tuberculosis)	Three times in 2020; Annually in 2021-2024
		2.3.1.2. Disseminate the results of the review of the Tuberculosis and drug-resistant Tuberculosis diagnosis algorithm	National (Sub-directorate Tuberculosis) Provinces Districts	Annually in 2020-2024
2.3.2.	Improve Rapid Molecular Test access and utilization in all districts in Indonesia and ensure cartridge logistics availability	2.3.2.1. Procurement of Rapid Molecular Test tools to increase access to Rapid Molecular Test utilization in all districts	National (Sub-directorate Tuberculosis) Provinces Districts	On need, 2020-2024
		2.3.2.2. Procurement of Rapid Molecular Test cartridges as needed to achieve the case finding target	National (Sub-directorate Tuberculosis) Provinces Districts	On need, 2020-2024
		2.3.2.3. Conducting workshops and training on the use of Rapid Molecular Test tools for Tuberculosis and drug-	National (Sub-directorate Tuberculosis) Provinces	On need, 2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
		resistant Tuberculosis diagnosis	Districts	
		2.3.2.4. Supervision of integration (Laboratory, M&E, PMDT, Logistics) to selected provinces (according to Rapid Molecular Test utilization analysis)	National (Sub-directorate Tuberculosis) Provinces Districts	Twice per year in 2020-2024
2.3.3	Increase access to bacteriologic culture testing and first- and second-line drugs sensitivity testing, in patients with high-risk for MDR and XDR-Tuberculosis	2.3.3.1. Estimate the needs and burden of Tuberculosis drug-sensitivity testing	National (The Tuberculosis program and the National Referral Laboratory/NRL)	Twice per year 2020-2024
		2.3.3.2. Conduct assessment on potential labs that can provide culture and Tuberculosis drug-sensitivity testing	National (The Tuberculosis program and the National Referral Laboratory/NRL)	2020-2024
		2.3.3.3. Conduct monitoring and evaluation in laboratory culture testing and first- and second-line drugs sensitivity testing	National (The Tuberculosis program and the National Referral Laboratory/NRL)	Twice per year
		2.3.3.4. Procurement of MGIT equipment and other equipment to conduct culture and drug-sensitivity testing	National (The Tuberculosis program)	Annually 2020-2024
		2.3.3.5. Funding for Tuberculosis examination in the laboratory (microscopic, Rapid Molecular Test, culture, sensitivity test, Line Probe Assay/LPA)	National Province	2020-2024
2.3.4.	Improve the specimen transportation system and network for Tuberculosis diagnostic testing, for both drug-resistant and drug-sensitive Tuberculosis	2.3.4.1. Conduct meeting to discuss MoU between health department and expedition	Province health department	Annually in 2020-2024
		2.3.4.2. Conduct monitoring and evaluation on the implementation of Tuberculosis specimen transportation	National (Sub-directorate Tuberculosis)	Annually in 2020-2024
		2.3.4.3. Update the technical manual for specimen transportation	National (Sub-directorate Tuberculosis)	Once in two years between 2020-2024
		2.3.4.4. Hold formation and dissemination meetings about laboratory networks and specimen transportation	National (Sub-directorate Tuberculosis) Provinces	Annually in 2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
			Districts	
		2.3.4.5 Develop a specimen transportation system e.g. supporting the availability of logistics and shipping services	Provinces Districts	2020 - 2024 Twice per year for procurement of logistics at the provincial level Four times per year for specimen transportation financing (packaging and shipping)
		2.3.4.6. Financing of WGS TB specimen preparation	National	2024-2026
		2.3.4.7. Transportation of WGS TB specimen	Province	2024-2026
2.3.5.	Integration of Tuberculosis diagnostic testing quality improvement into the national accreditation system (ISO 15189), SNARS, KALK	2.3.5.1. Conduct coordination meetings to discuss the integration of the quality of Tuberculosis diagnosis with the national accreditation system (SNARS, KALK, KAN) and other stakeholders	National (Sub-directorate Tuberculosis)	Three times per year in 2020-2024
		2.3.5.2. Conduct an integration meeting for strengthening the quality of Tuberculosis diagnosis services with the national accreditation assessment system (SNARS, KALK, KAN) and other stakeholders)	National (Sub-directorate Tuberculosis)	Twice per year in 2020-2024
		2.3.5.3. Carry out dissemination of integrated quality assurance of tuberculosis laboratory with the national accreditation system (SNARS, KALK, KAN and other stakeholders)	National (Sub-directorate Tuberculosis)	Three times per year in 2020-2024
		2.3.5.4. Conduct monitoring and evaluation of integrated quality assurance assessment with the national accreditation	National (Sub-directorate Tuberculosis)	Three times per year in 2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
		systems (SNARS, KALK, KAN and other stakeholders)		
2.3.6.	Multi program coordination to strengthen and stabilize Tuberculosis examination laboratories including quality strengthening	2.3.6.1. Conduct a coordination meeting to discuss the integration of quality stabilization with the Health Service and Public Health	National (Sub-directorate Tuberculosis)	Twice per year in 2020-2024
2.3.7.	Development of laboratory diagnosis, networking, and quality assurance in accordance with the global guidelines that have been adapted to the situation in Indonesia	2.3.7.1. Revise the technical guidelines in Tuberculosis laboratory testing	NRL Tuberculosis, supranational referral laboratory, Tuberculosis laboratory	Twice a year 2020-2024
		2.3.7.2. Conduct a meeting to compile guidelines for strengthening the quality of the Tuberculosis laboratory examination	NRL Tuberculosis	Four times per year 2020-2024
		2.3.7.3. Update and revise the laboratory guidelines for Tuberculosis (laboratory standards, networking, quality assurance)	NRL Tuberculosis	Annually 2020-2024
		2.3.7.4. Conduct meetings and development of strengthening of external quality assurance, Rapid Molecular Test laboratories, and LPA	NRL Tuberculosis, supranational referral laboratory, Tuberculosis laboratory	Twice a year 2020-2024
		2.3.7.5. Training of strengthening of external quality, Rapid Molecular Test laboratories, and LPA	NRL Tuberculosis, supranational referral laboratory, Tuberculosis laboratory	Annually (for culture and drug sensitivity tests); Referral lab to NRL, NRL to drug sensitivity lab 2020-2024
		2.3.7.6. Perform strengthening of external quality for microscopic	National (Sub-directorate Tuberculosis and NRL)	Annually 2020-2024
		2.3.7.7. Print and distribute the Tuberculosis laboratory manual (laboratory standards, inspection technical guidelines, networking, quality stabilization)	National (Sub-directorate Tuberculosis)	Twice per year in 2021 Annually in 2022 - 2024

Number	Activities	Sub-activities	Level of Implementation	Time
		2.3.7.8. Invite SRL consultant to improve the capacity of NRL and lab that can provide Tuberculosis drug-sensitivity testing	Tuberculosis Program and NRL	2022-2024
		2.3.7.9. Cooperate and conduct a visit to SRL (supranational reference laboratory) consultant to strengthen diagnostics, networking, monitoring and development of the Tuberculosis laboratory in Indonesia	National (Sub-directorate Tuberculosis, NRL)	2020-2024 Twice per year
		2.3.7.10. Conduct coordination meetings with Tuberculosis laboratory stakeholders	National (Sub-directorate Tuberculosis, NRL) Regional Laboratory Other stakeholders	2020-2024 Twice per year
		2.3.7.11. Conduct supervision visits to the laboratory during the SRL consultant's visit	National (Sub-directorate Tuberculosis)	2020-2024 Twice per year
		2.3.7.12. Hold a meeting to discuss the development of NRL as a CoE (center of excellent)	National (Sub-directorate Tuberculosis, NRL)	Twice per year in 2020-2021 Annually in 2022-2024
		2.3.7.13. Conduct a visit from SRL (supranational reference laboratory) consultants for the formation of a CoE	National (Sub-directorate Tuberculosis, NRL)	Twice per year in 2020-2021
		2.3.7.14. Conduct an assessment visit to prospective CoE tuberculosis laboratory	National (Sub-directorate Tuberculosis, NRL)	Twice per year in 2020-2021
2.3.8.	Utilization of various diagnostic tools or methods that have	2.3.8.1. Hold a SOP drafting meeting to introduce new tools	National (Sub-directorate Tuberculosis)	Annually 2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
	been recommended by WHO to support the diagnosis and management of drug-sensitive and drug-resistant Tuberculosis	2.3.8.2. Utilize Rapid Molecular Test cartridges such as ultra-cartridges and XDR cartridges, upgrade Rapid Molecular Test, software and other innovative tests, for various specimen according to WHO recommendations for the diagnosis and management of drug-sensitive and drug-resistant Tuberculosis	Province	Twice per year 2020-2024
2.3.9	Improve the function/role of large health laboratory centers/health laboratory centers/regional health laboratories in the development, training, supervision and strengthening the quality of the Tuberculosis laboratory	2.3.9.1. Conduct meetings to monitor and evaluate the implementation of EQA of microscopic test	District	Twice per year 2020-2024
		2.3.9.2. Supervise and provide guidance to the health facilities under its target area	NRL Regional laboratory	Twice a year 2020-2024
		2.3.9.3. Conduct laboratory technical training (Rapid Molecular Test/LPA/culture and sensitivity test)	Regional laboratory	Annually for the development of a new laboratory (LPA/culture and sensitivity test 2020-2024
		2.3.9.4. Conduct a ToT for culture and Tuberculosis sensitivity testing	NRL	Annually 2020-2024
2.3.10.	Strengthen the laboratory infrastructure and equipment including work safety and security in the laboratory through laboratory renovation support and meeting the needs of key equipment which includes microscopic examination, culture, sensitivity and	2.3.10.1. Conduct renovation of culture and drug-sensitivity laboratory according to standard	National (Sub-directorate Tuberculosis and Directorate of Health Services)	Annually 2021-2023
		2.3.10.2. Conduct routine recertification annually for BSL2+ laboratory, which are included in the Tuberculosis laboratory network	National	Annually for each laboratory 2020-2024
		2.3.10.3. Conduct routine maintenance and repairs of broken laboratory equipment before grant process	National	Annually (10% from the total number of tools per lab)

Number	Activities	Sub-activities	Level of Implementation	Time
	molecular testing laboratories			2020-2024
		2.3.10.4. Fulfill the tuberculosis laboratory equipment (main and supporting lab equipment)	National	Annually 2020-2024
		2.3.10.5. Prepare guidelines for BSL2 + laboratory maintenance	National (Sub-directorate Tuberculosis and Directorate of Health Services)	Twice in 2021 Annually in 2022 and 2024
		2.3.10.6. Conduct BSL2 + laboratory maintenance training	National (Sub-directorate Tuberculosis and Directorate of Health Services)	Annually 2020-2024
		2.3.10.7. Conduct a revision of the Tuberculosis laboratory service standard manual (microscopic, Rapid Molecular Test, LPA, culture, sensitivity test).	National (Sub-directorate Tuberculosis)	Twice per year in 2021 Annually in 2022 - 2024
		2.3.10.8. Conduct procurement and distribution of consumable stuffs for microscopic examination, culture, sensitivity, and molecular tests	National (Sub-directorate Tuberculosis) Provinces and districts health department	2020 – 2024 Annually
2.3.11.	Increased human resource capacity for laboratory culture, sensitivity and molecular testing through ToT, refreshment training, on the job training, and workshops.	2.3.11.1. Conduct technical training in culture laboratory and Tuberculosis sensitivity testing	National (Sub-directorate Tuberculosis, NRL)	Twice per year 2020-2024
		2.3.11.2. Conduct technical training in Safe Working Practice (SWP) of culture laboratory and sensitivity testing	National (Sub-directorate Tuberculosis, NRL)	Annually 2020-2024
		2.3.11.3. Conduct technical training for the establishment of an Intermediate Referral Laboratory (IRL Microscopic)	National (Sub-directorate Tuberculosis, NRL)	2020-2024 Three times per year
		2.3.11.4. Conduct refreshment trainings on first line and second line LPA	National (Sub-directorate Tuberculosis, NRL)	Twice per year 2020-2024

Number	Activities	Sub-activities	Level of Implementation	Time
		2.3.11.5. Conduct refreshment trainings on Rapid Molecular Test if there are updates and latest information	National (Sub-directorate Tuberculosis, NRL)	Annually 2020-2024
2.3.12	Increasing the human resources capacity of microscopic laboratory through tiered training which includes ToT, refreshment training (provincial, district and health facilities), and workshops	2.3.12.1. Conduct a ToT (trainer of training) microscopic examination and eTB-12 at the national level	National (Sub-directorate Tuberculosis, microscopic NRL)	Annually for 34 provinces, 2020-2024
		2.3.12.2. Carry out provincial level training about microscopic examination and eTB-12	Province District Provincial referral laboratory	Annually 2020-2024
		2.3.12.3. Conduct trainings on microscopic test, eTB-12, and includes refreshment training as well as the level of health facilities	District Intermediate referral laboratory	Annually 2020-2024
2.3.13.	Capacity building of national and regional reference laboratories	2.3.13.1. Conduct international training/ workshops for NRL/RRL staff	NRL RLL (Regional Referral Laboratory)	Annually 2020-2024
2.3.14.	Accelerate the development of culture laboratories and Tuberculosis sensitivity testing to ensure there is at least one culture laboratory in each province and 24 sensitivity-testing laboratories throughout Indonesia	2.3.14.1. Conduct a visit to assess the candidates for laboratory cultures and sensitivity tests	National (Sub-directorate Tuberculosis) NRL	Four times per year 2020 – 2024
		2.3.14.2. Conduct a follow-up meeting for the results of the assessment of culture and sensitivity tests laboratory candidates	National (Sub-directorate Tuberculosis) NRL National (Sub-	Annually 2020 – 2024 Annually 2020 – 2024
2.3.15.	Implementation and development of Tuberculosis laboratory information systems integrated with Tuberculosis Program recording and	2.3.15.1. Implement Rapid Molecular Test connectivity software integrated with the Tuberculosis Program recording and reporting information system	National (Sub-directorate Tuberculosis) Data and information Center	Annually 2020 – 2024
		2.3.15.2. Implement a Tuberculosis laboratory information management	National (Sub-directorate Tuberculosis)	2020 – 2024

Number	Activities	Sub-activities	Level of Implementation	Time
	reporting information systems	system integrated with the Tuberculosis Program recording and reporting information system		
		2.3.15.3. Workshop on data connectivity of rapid molecular test (Gx Alert)	National	2021 - 2026
		2.3.15.4. Increase number of IT staff for the development of tuberculosis lab information systems	National (Sub-directorate Tuberculosis)	2024
2.3.16.	Strengthen the monitoring and evaluation of Tuberculosis laboratory examinations and their networks through supervision and monitoring and evaluation meetings of the Tuberculosis laboratory	2.3.16.1. Hold meetings and evaluate the use of Rapid Molecular Test tools	National (Sub-directorate Tuberculosis) Rapid Molecular Test NRL Provinces and districts health department	Annually 2020 - 2024
		2.3.16.2. Conduct meetings and evaluations of second-line LPA laboratories, culture, and Tuberculosis sensitivity testing	National (Sub-directorate Tuberculosis) NRL	Annually 2020 - 2024
		2.3.16.3. Conduct Tuberculosis laboratory supervision (microscopic, Rapid Molecular Test, LPA, culture, and sensitivity test)	Microscopic NRL, Molecular NRL (Molecular Rapid Test and LPA), culture and sensitivity lab	2 times per quarter for each NRL (microscopic/Rapid Molecular Test/LPA/Culture and sensitivity test) 2020-2024
2.3.17.	Utilize whole genome sequencing tests for TB program strengthening	2.3.17.1. External technical assistance for the development of roadmap of the utilization of WGS machine for tuberculosis program strengthening	Health facility	2024-2026
		2.3.17.2. Development of roadmap of the utilization of WGS machine for tuberculosis program strengthening	Health facility	2024-2026
		2.3.17.3. Field visits to WGS lab	Health facility	2024-2026
		2.3.17.4. Develop and update of technical guidelines for TB WGS tests		

Number	Activities	Sub-activities	Level of Implementation	Time
		2.3.17.5. Disseminate roadmap and technical guidelines for TB WGS tests	Health facility	2024-2026
		2.3.17.6. Monitoring and evaluation of the utilization of WGS machines for tuberculosis program strengthening	Health facility	2024-2026
		2.3.17.7. Retraining of WGS TB tests for human resources from WGS labs	Health facility	2024-2026
Intervention 2.4. Ensuring TB-HIV coinfected patients are diagnosed and treated with antiretrovirals				
2.4.1.	Support TB screening among PLHIV in all health care facilities	2.4.1.1. Conducting tuberculosis screening among HIV patients in all health care facilities	All DOTS healthcare providers with CST or HIV-testing and Posyandu	2020-2026
		2.4.1.2. Train and provide reward to community cadres to conduct Tuberculosis-HIV screening in 324 districts	Health cadres in district levels (20 cadres)	2020-2026
2.4.2.	Improve the coverage of HIV-testing in all TB care facilities, with integrated TB-HIV diagnosis services	2.4.2.1. Training of KTHIV and HIV rapid diagnostic test for TB services (target of 3 health workers per health facility: physician, nurse/midwives, and laboratory staff)	Province District	2020-2026
		2.4.2.2. Mentoring and technical and clinical guidance for TB-HIV in TB-HIV services	National Province District	2020-2026
		2.4.2.3. Procurement of logistics for HIV testing for TB patients	National Province District	2020-2026
		2.4.2.4. Strengthening of referral laboratory for HIV testing in TB patients	National Province District	2020-2026
		2.4.2.5. Strengthening the TB-HIV treatment network	National Province District	2020-2026
		2.4.2.6 TB and HIV screening among generalized population in Papua	Papua province	2020-2026
2.4.3.	Develop and disseminate guideline for integrated TB-HIV services	2.4.3.1. Update of guidelines/ technical guidelines of TB-HIV management	National Province District	1st quarter of 2020 2024
		2.4.3.2. Revitalize the national working group for TB/HIV	National Province District	2nd quarter of 2020 2024

Number	Activities	Sub-activities	Level of Implementation	Time
		2.4.3.3. Develop pocketbook for TB-HIV patients	National Province District	3rd quarter of 2020 2025-2026
2.4.4	Improve the skills of healthcare workers to conduct HIV test on TB patients	2.4.4.1. Training of community volunteers to conduct HIV testing on TB patients	National Province District	2020-2024
2.4.5.	Improve the competence of health staff to conduct counseling, information and education about ARV-anti tuberculosis drugs and adherence of treatment	2.4.5.1. Updating the guideline of communication strategy including counseling, information, education	National Province District	2020-2024
		2.4.5.2. Training of health workers to use communication, counseling, information, education strategies	National Province District	2020-2026
2.4.6	Improve the ability of health workers to carry out contact tracing of TB-HIV patients in health facilities and their work areas	2.4.6.1. Upgrade of guideline of contact tracing	National Province District	2020-2024
		2.4.6.2. Training of health workers to conduct contact tracing	National Province District	2020-2026
2.4.7.	Improve the psycho-socio economic support for patients with TB-HIV	2.4.7.1. Coordinate with Ministry of Social services, Department of Manpower, National and Local government to provide social security for people diagnosed with TB-HIV, automatically	National Province District	1st-4th quarter 2020-2024
2.4.8.	Strengthen access to ARV among TB-HIV patients with ARV in all districts by implementing integrated TB-HIV treatment service and advocating local governments to provide infrastructure	2.4.8.1. Identify existing PDP services	National Province District Health facility	2020-2026
		2.4.8.2. Provide ARV to TB-HIV patients as needed	National Province District Health facility	2020-2026
		2.4.8.3. Strengthen referral network for TB-HIV treatment	National Province District Health facility	2020-2026

Number	Activities	Sub-activities	Level of Implementation	Time
	for hospitals to be ARV centers	2.4.8.4. Strengthen monitoring mechanism for TB-HIV treatment	National Province District Health facility	2020-2026
		2.4.8.5. Strengthen community collaboration in assisting TB/DR-TB HIV patients	National Province District Health facility	2020-2026
		2.4.8.6 Strengthen referral and coordination between ARV centers and satellite facilities	National Province District Health facility	2020-2026
2.4.9.	Develop TB-HIV task force at the local level	2.4.9.1. Conduct routine coordination among TB and HIV program to review the collaborative activities	National Province District Health facility	2020-2024
2.4.10.	TB-HIV joint planning	2.4.10.1. Conduct joint meeting and planning	National Province	2020-2026
2.4.11.	TB-HIV coordination forum	2.4.11.1. Meetings on TB-HIV coordination forum	National Province	2020-2026
Intervention 2.5. Ensure TB-DM patients diagnosed and treated by anti-tuberculosis				
2.5.1.	Improve the coverage of tuberculosis test in all Diabetes Mellitus services gradually by implementing integrated DM-TB services	2.5.1.1. Improve the capacity of DM service staff on tuberculosis	Health care facility	2021-2026
		2.5.1.2. Bidirectional screening TB-DM	Health care facility	2022-2026
2.5.2.	Develop and disseminate the guideline of integrated DM-TB which is user-friendly to DM-TB patients	2.5.2.1. Development of guideline of integrated DM-TB services	National	2021 2024
		2.5.2.2. Printing and distribution of guideline of integrated DM-TB services	National	2021 2024-2026
		2.5.2.3. Dissemination of guideline of integrated DM-TB services	National	2024
2.5.3.	Improve skills of health staff to conduct tuberculosis test among DM	2.5.3.1. Improve skills of health staff to conduct tuberculosis test among DM patients	National Province District	2020-2026

Number	Activities	Sub-activities	Level of Implementation	Time
	patients			
2.5.4.	Develop communication strategy on counseling, information and education on DM-TB to DM patients and families	2.5.4.1. Updating guideline of communication strategy on counseling, information and education on DM-TB	National	2020-2024
2.5.5.	Improve capacity of health staff to conduct counseling, information and education on DM-TB to DM patients and families	2.5.5.1. Training of health staff to conduct counseling, information and education on DM-anti tuberculosis drug and treatment adherence	National Province District	2020-2026
2.5.6.	Improve capacity of health staff to conduct contact tracing of DM-TB patients in health care facilities and working areas	2.5.6.1. Updating guideline of contact tracing of DM-TB patients	National	2024
		2.5.6.2. Training of health staff to conduct contact tracing	National Province District	2020-2026
2.5.7.	Strengthen access of DM drugs among DM-TB patients in all districts/cities by advocating local government to provide supports to health care facilities	2.5.7.1. Strengthen access of DM drugs among DM-TB patients in all districts/cities by advocating local government to provide supports to health care facilities	National Province	2020-2026
2.5.8.	Establish tuberculosis working groups on co-infection and co-morbidities of tuberculosis	2.5.8.1. Routine coordination between tuberculosis program and other programs on tuberculosis co-infection and co-morbidities	National Province	2020-2026
2.5.9.	Strengthen monitoring of integrated DM-TB services	2.5.9.1. Strengthen monitoring of integrated DM-TB services	National Province District	2021-2026
		2.5.9.2. On the job training TB-DM Screening	National Province District	2022-2026
Intervention 2.6. Strengthen DPPM activities through expansion of DOTS services within the scope of government-private activities to improve service access				

Number	Activities	Sub-activities	Level of Implementation	Time
2.6.1.	Expand the engagement and strengthen the TB network among public and private healthcare facilities	2.6.1.1. Conduct coordination on the development of referral systems/tools and notification of presumptive tuberculosis case (digital based pharmacy system)	National	2020-2021
		2.6.1.2. Conduct workshop on pilot and implementation of referral systems/tools and notification of presumptive tuberculosis case (digital based pharmacy system)	National Province District	2021
		2.6.1.3. Pilot and implementation of referral systems/tools and notification of presumptive tuberculosis case	District	2021
		2.6.1.4. Evaluation of pilot and implementation of referral systems/tools and notification of presumptive tuberculosis case	National Province	2022
		2.6.1.5. Dissemination and expansion of referral systems/tools and notification of presumptive tuberculosis case	District	2023-2024
		2.6.1.6. Develop SOP of internal network, including network of drug- sensitive and drug-resistant tuberculosis which is integrated with DOTS strategy, as well as conduct routine coordination in health care facilities	Province District Health facility	2021-2024
		2.6.1.7. Assessment of regulation and develop modeling of access to tuberculosis diagnostic tests in	National	2020-2021

Number	Activities	Sub-activities	Level of Implementation	Time
		health care facilities/private labs		
		2.6.1.8. ToT of workshop of PPM implementation in primary health care facilities non Puskesmas and referral health care facilities	National	2020-2024
		2.6.1.9. Workshop on PPM implementation in primary health care facilities non Puskesmas	District	2021-2024
		2.6.1.10. Workshop on PPM implementation in referral health care facilities	District	2021-2024
		2.6.1.11. Conduct meetings on coordination, planning, monitoring and evaluation of PPM implementation in national level	National	2020-2024
		2.6.1.12. Conduct supervision, monitoring and evaluation of PPM implementation including internal and external networks	National Province	2020-2024
		2.6.1.13. Conduct meetings on coordination, planning, monitoring and evaluation of PPM implementation including internal and external networks	District	2020-2024
		2.6.1.14. Recruit coordinators of PPM in district level to conduct monitoring of PPM implementation	District	2021-2024
		2.6.1.15. Conduct review and revision of guideline of PPM implementation, which based on best practices in health care facilities (both for drug-sensitive and drug-resistant tuberculosis)	National	2020-2021

Number	Activities	Sub-activities	Level of Implementation	Time
		2.6.1.16. Printing of guideline of PPM implementation	National	2020-2021
		2.6.1.17. Conduct mapping of health facilities that are active in operational and have contracts with BPJS-K	District	2024-2026
		2.6.1.18. Conduct in house/on the job trainings to increase the engagement and contribution of hospitals in tuberculosis program and tuberculosis service network	District	2024-2026
		2.6.1.19. Conduct in house/on the job trainings to increase engagement and contribution of private clinics/medical practices in tuberculosis program and tuberculosis service network	District	2024-2026
		2.6.1.20. Capacity building of Puskesmas to increase the contribution of private clinics/medical practices in the working areas	District	2024-2026
		2.6.1.21. Routine updates the mapping of private hospitals within big-chain/network of hospitals	District	2024-2026
		2.6.1.22. Establish or update MoU/agreement with the management of the big private chain/network of hospitals	District	2024-2026
		2.6.1.23. Conduct routine advocacy and coordination with big private chain hospitals	District	2024-2026
		2.6.1.24. Capacity building (e.g., trainings, workshop, on the job trainings) for hospitals	District	2024-2026

Number	Activities	Sub-activities	Level of Implementation	Time
		in the big private chain hospitals		
		2.6.1.25. Conduct technical assistance, supervision, monitoring and evaluation for hospitals in the big private chain hospitals	District	2024-2026
		2.6.1.26. Conduct routine mapping of Police/Army hospitals	National	2024-2026
		2.6.1.27. Establish MoU/agreement with Police/Army	National	2024-2026
		2.6.1.28. Routine advocacy and coordination with Police/Army	National	2024-2026
		2.6.1.29. Capacity building for health facilities owned by Police/Army	National	2024-2026
		2.6.1.30. Conduct technical assistance, supervision, monitoring and evaluation for health facilities owned by Police/Army	National	2024-2026
		2.6.1.31. Routine updates the mapping of private labs/pharmacies within big-chain/network of labs/pharmacies	National	2024-2026
		2.6.1.32. Develop model of private labs/pharmacies involvement in tuberculosis control, including its regulation	National	2024-2026
		2.6.1.33. Conduct routine advocacy and coordination with private labs/pharmacies within big-chain/network of labs/pharmacies	National	2024-2026

Number	Activities	Sub-activities	Level of Implementation	Time
		2.6.1.34. Provide TPT logistic package (drugs and tools) for labs/pharmacies involved in tuberculosis control	District	2024-2026
		2.6.1.35. Conduct webinar on the involvement of labs/pharmacies in tuberculosis control	National	2024-2026
		2.6.1.36. Conduct supervision of in house/on the job trainings for labs/pharmacies on tuberculosis control	Health facility	2024-2026
		2.6.1.37. Establish engagement and supervision of private primary care (clinics & standalone GPs) managed by Puskesmas	Health facility	2020-2026
2.6.2.	Improve quality of tuberculosis services in all services providers	2.6.2.1. Disseminate ISTC, national clinical management guideline of tuberculosis, and other issues among all professional organizations	National	2020-2024
		2.6.2.2. Disseminate information that tuberculosis is an element of accreditation assessment in primary and referral health care facilities as well as a prerequisite of operational license for clinics and private independent medical practices	National	2020-2024
		2.6.2.3. Monitoring of pharmacies/drug-stores/traditional healers	District	2021-2024
		2.6.2.4. Develop policy, roadmap and concept of hospitals with specialty of tuberculosis services	National	2024-2026

Number	Activities	Sub-activities	Level of Implementation	Time
		2.6.2.5. Conduct mapping and target of health care facilities	National Province District	2024-2026
		2.6.2.6. Disseminate policy and concept of TB services in TB hospitals	National Province District	2024-2026
		2.6.2.7. Conduct technical assistance, supervision, monitoring and evaluation of the TB service implementation in TB hospitals	National Province District	2024-2026
		2.6.2.8. Develop the concept of coaching in TB program	National	2024-2026
		2.6.2.9. Disseminate the concept of coaching in TB program	National	2024-2026
		2.6.2.10. Pilot the coaching in TB program	National	2024-2026
		2.6.2.11. Expansion of coaching in TB program	National	2024-2026
		2.6.2.12. Monitoring and evaluation of coaching in TB program	National	2024-2026
		2.6.2.13. Revise the Ministry of Health Decree No. 67/2016 relate to tuberculosis services in primary and referral health services	National	2024-2026
2.6.3.	Strengthen the role of cross programs, multi-sectors, PPM-related stakeholders, and communities on the PPM framework, including professional organizations and	2.6.3.1. Coordination with professional organizations and associations in term of services and networks of tuberculosis services	Provinces District	2021-2024
		2.6.3.2. Involve BPJS in monitoring and evaluation of health care facilities	National Province	2020-2021

Number	Activities	Sub-activities	Level of Implementation	Time
	health care associations	2.6.3.3. Advocate professional organizations in: 1) implement standards of tuberculosis management; 2) include tuberculosis as a topic of seminars; 3) include tuberculosis as a component of certification	National	2020-2022
		2.6.3.4. Advocate professional organizations to support their members to implement tuberculosis management standards and establish KOPI-TB in province/district level	Province District	2020-2022
		2.6.3.5. Develop materials, standardized modules for dissemination, advocacy and capacity building for PPM implementation	National	2020-2021
		2.6.3.6. Disseminate knowledge on basic information of tuberculosis through professional organizations	National Province District	2020-2024
		2.6.3.7. Workshop on KOPI TB champions	National	2021 and 2023
		2.6.3.8. Revise guidelines related to referral back mechanism in the Ministry of Health decree No. 28/2014	National	2024-2026
		2.6.3.9. Initiate the rewards of credit points for health staff in TB program	National	2024-2026
		2.6.3.10. Disseminate regulation on rewards of credit points for health staff in TB program	National	2024-2026
		2.6.3.11. Monitoring and evaluation of credit points-	National	2024-2026

Number	Activities	Sub-activities	Level of Implementation	Time
		rewards for health staff in TB program		
		2.6.3.12. Conduct workshop on the role of hospitals in tuberculosis control in national level	National	2020-2021
		2.6.3.13. Conduct workshop the role of hospitals in tuberculosis control in provincial level	Province	2020-2021
2.6.4.	Strengthen tuberculosis mandatory notification implementation	2.6.4.1. Develop regulation on tuberculosis mandatory notification, which is adjusted by local conditions as well as reward/punishment by a regulation that tuberculosis reporting as a prerequisite for DAK/BPJS claim/capitation/IDI credits	National	2020-2024
		2.6.4.2. Disseminate tuberculosis mandatory notification to all professional organization members through online courses (webinar), letters, etc.	National Province	2020-2024
		2.6.4.3. Monitoring and evaluation of mandatory notification	District Health care facility	2020-2024
		2.6.4.4. Conduct coordination to integrate tuberculosis information systems of P-care and P-claim as well as the connection between tuberculosis management and BPJS credential systems and performance-based concept	National	2021-2022
		2.6.4.5. Evaluate the implementation of WIFI TB/information systems used in private health providers and	National Province	2021-2024

Number	Activities	Sub-activities	Level of Implementation	Time
		hospital information systems (SIMRS)		
		2.6.4.6. Develop TB recording and reporting for private health providers and hospital information systems that are integrated in SATU SEHAT	National	2021
		2.6.4.7. Develop certification mechanism as a requirement of credential in private medical practices, public and private clinics	National Province District	2021-2022
		2.6.4.8. Disseminate the SITB code register as a requirement of BPJS-K insurance claim at the primary health facilities	National	2021-2024
		2.6.4.9. Encourage TB service & report as an essential component in the accreditation	National	2022-2023
2.6.5	Strengthen TB diagnostic and treatment access for public and private providers	2.6.5.1 Develop, maintain, monitor & evaluate the diagnostic access within the district and WRD machine utilization	Province District	2020-2026
		2.6.5.2 Develop, maintain, monitor & evaluate of logistics mechanisms and arrangements to access TB program drugs for all HCF, especially private primary HCF	Province District	2020-2026
2.6.6	Linkage between public and private providers with CSO/community initiative for treatment supports, contact tracing, TB-HIV referral and	2.6.6.1. Develop standard operating procedure (SOP) on coordination and network for supporting tuberculosis patients in public and private health facilities	National Province District	2022-2023
		2.6.6.2. Conduct meetings on coordination, planning,	National Province District	2022-2026

Number	Activities	Sub-activities	Level of Implementation	Time
	prevention scheme	monitoring and evaluation of community initiative for treatment support, contact tracing, TB-HIV referral and prevention scheme		
		2.6.6.3. Implementation of community support network for all public and private healthcare facilities	National Province District	2023-2026
Intervention 2.7. Optimize early diagnosis, management and treatment of childhood tuberculosis in health care facilities				
2.7.1.	Overcoming the problem of under-reporting tuberculosis cases in children under 5 years from the private sector by strengthening the role of professional organizations in detection and reporting of tuberculosis in children to the national tuberculosis program	2.7.1.1. Workshop on childhood tuberculosis management for KOPI TB members	National Province	2020-2026
		2.7.1.2. Coordination meeting on childhood tuberculosis champion	National	2021, 2023-2026
2.7.2.	Overcoming problems of under-diagnosis of childhood tuberculosis in primary health care facilities including Puskesmas by improving capacity of health staff in Puskesmas to diagnose childhood tuberculosis	2.7.2.1. Meetings to revise technical guideline of childhood tuberculosis	National	2020 2023
		2.7.2.2. Printing and distribution of technical guideline of childhood tuberculosis	National	2020-2021 2023-2026
		2.7.2.3. Develop modules/materials for workshop of childhood tuberculosis management in primary health care facilities	National	2020, 2022 2023-2024
		2.7.2.4. Workshop on childhood tuberculosis	National District	2021-2026

Number	Activities	Sub-activities	Level of Implementation	Time
		management in primary health care facilities (including skills to conduct sputum induction)		
2.7.3.	Overcoming problems of under-diagnosis of childhood tuberculosis in primary health care facilities including Puskesmas by utilizing accreditation systems; childhood tuberculosis reporting should be added in the evaluation	2.7.3.1. Meeting to develop tools for childhood tuberculosis assessment in the Puskemas accreditation	National	2020 2024
2.7.4.	Overcoming problems of under-diagnosis of childhood tuberculosis in primary health care facilities including Puskesmas by improving childhood tuberculosis finding through collaboration with other services (MTBS, stunting, etc.)	2.7.4.1. Coordination meetings between childhood TB focal points with the directorate of Family Health, Nutrition, etc.	National	2020-2026
		2.7.4.2. Screening of childhood tuberculosis with MTBS services, SDIDTK, Posyandu, and UKS	District Health care facility Posyandu Schools	2020-2026
2.7.5.	Overcoming problems of under-diagnosis of childhood tuberculosis in primary health care facilities including Puskesmas by ensuring the quality of childhood tuberculosis management	2.7.5.1. Supervision of childhood tuberculosis program	Province	2020-2026
		2.7.5.2. Provision of anti-tuberculosis drugs and logistics for childhood tuberculosis	National	2020-2026
		2.7.5.3. Provision of diagnosis supports for childhood tuberculosis	National	2020-2026
2.7.6.	Increase the community's role and public's knowledge about childhood TB by strengthening and	2.7.6.1. Provide non-monetary incentive for childhood TB presumptive cases who come to the health center for screening	District	2020-2026

Number	Activities	Sub-activities	Level of Implementation	Time
	utilizing contact investigation to find more childhood tuberculosis cases as well as integrate TPT as a package of services			
2.7.7.	Increase the community's role and public's knowledge about childhood TB	2.7.7.1. Coordination meetings with Family Health Directorate and Ministry of Education to include information on childhood tuberculosis in children health ambassadors' modules (Dokcil/Little Doctor)	National	2020-2026
		2.7.7.2. Development of tuberculosis champion of children health ambassador (dokter kecil)	District	2022-2026
2.7.8.	Improve the service of drug-resistant tuberculosis in children by provide drug regimens which are user friendly	2.7.8.1. Provision of drugs for childhood drug resistant tuberculosis	National	2021-2026
2.7.9.	Improve the service of drug-resistant tuberculosis in children by improving the capacity of health staff on diagnosis and management of drug-resistant tuberculosis in children	2.7.9.1. Finalize guideline of management of drug- resistant tuberculosis in children	National	2020 2023-2024
		2.7.9.2. Workshop on drug-resistant tuberculosis in children	National	2020 2023-2026
2.7.10.	Improve the service of drug-resistant tuberculosis in children by ensuring the availability of psychosocial support for children with drug- resistant tuberculosis	2.7.10.1. Coordination meetings with Ministry of Education, Ministry of Social Affairs, and other stakeholders on psychosocial supports	National Province	2020-2026
		2.7.10.2. Develop modules/materials for effective communication and psychosocial supports for drug resistant tuberculosis in children	National	2021 2023-2024
		2.7.10.3. Training of counselors to improve capacity in giving supports to drugs	National Province	2021-2026

Number	Activities	Sub-activities	Level of Implementation	Time
		resistant tuberculosis patients (adult and children)		
2.7.11.	Develop task force for pediatric tuberculosis	2.7.11.1. Conduct coordination meeting to review activities related to tuberculosis among children	National Province District	2024-2026
Intervention 2.8 Strengthen information and education on tuberculosis control program among KOPI TB members				
2.8.1.	Strengthen management of pediatric tuberculosis, TB-HIV, TB-DM and TPT	2.8.1.1. Dissemination meetings related to pediatric tuberculosis, TB-HIV, TB-DM and TPT guidelines and policies among KOPI-TB members	District	2024-2026

5.1.3. Operational Plan of Strategy 3. Optimization of promotion and prevention efforts, provision of tuberculosis prevention therapy and infection control

No.	Activities	Sub-Activities	Level of implementation	Time
Intervention 3.1. Optimize the administration of tuberculosis preventive treatment				
3.1.1	Update guidelines, SOP, tools, to manage LTBI and TPT	3.1.1.1 Update guidelines on latent tuberculosis infection management and tuberculosis preventive treatment according to the latest global recommendation	National	2024
		3.1.1.2. Printing and distribution of technical guidelines on latent tuberculosis infection management and tuberculosis preventive treatment	National Province	2024-2025
		3.1.1.3. Dissemination of technical guidelines on latent tuberculosis	National Province District	2024-2026

No.	Activities	Sub-Activities	Level of implementation	Time
		infection management and tuberculosis preventive treatment		
		3.1.1.4. Development of SOP of latent tuberculosis infection management and tuberculosis preventive treatment at health facility	Primary health care facility, Referral health care facility	2025-2026
		3.1.1.5. Provision of LTBI screening tools and methods to populations high risk of LTBI (household contacts, PLHIV, immunocompromised and populations at risk places such as prisons / remand centers, boarding schools, mines, factories)	National (Ministry of Health), Ministry of Social and Welfare, Ministry of Religious Affairs, Ministry of Law and Human Right, Ministry of Manpower, local government	2024-2026
3.1.2.	Increase capacity of human resources (TB programmers, HCWs, community) to conduct the TB infection management and TB preventive treatment	3.1.2.1. Mapping the readiness of human resources, facilities, and infrastructure in government and private health service facilities to manage Latent TB Infection (LTBI)	National Province District	2024-2026
		3.1.2.2. Increase the capacity by training or workshop of health workers, HCWs, community to manage LTBI and provide TPT	National Province District	2024-2026
		3.1.2.3. Recruitment/ designated dedicated human resources (LTBI technical officers) for the implementation of TPT in national and district level	National District	2024-2026

No.	Activities	Sub-Activities	Level of implementation	Time
3.1.3.	Provide TPT according to the latest recommended guidelines to the population at risk of having TB diseases	3.1.3.1. Provide logistics of TPT drugs including short-term regiments (3HR, 3HP or 1HP, 4R)	National Province	2024-2026
		3.1.3.2. Provision of logistics for TPT related diagnostics	National	2024-2026
3.1.4.	Strengthening LTBI services by integrating to household contact investigation and expanding the scope to others population at risk	3.1.4.1. The implementation of integrated Contact Investigation (CI) and LTBI management (including TPT provision)	National Province District Primary and secondary health care facilities	2024-2026
		3.1.4.2. Expand the scope of LTBI services in populations to prisons and healthcare workers	National (Ministry of Health) Ministry of Manpower Ministry of Law and Human Rights Province District Primary and secondary health care facilities	2024-2026
3.1.5.	Improve the effectiveness of the promotion strategies on LTBI management	3.1.5.1. Develop effective strategy of communication on LTBI management.	National Province District	2024-2026
		3.1.5.2. Dissemination of promotional materials on LTBI management and TPT in the community, including mass campaigns	National Province District Primary and secondary health care facilities Partners	2024-2026
		3.1.5.3. Develop IEC materials on LTBI management and TPT for health staffs, community, patients and families	National Province District	2024-2026
		3.1.5.4. Conduct dissemination meeting on communication	National Province District	2024-2026

No.	Activities	Sub-Activities	Level of implementation	Time
		strategy to improve effective LTBI health promotion		
		3.1.5.5. Provide IEC materials of LTBI and TPT for health staff, community, patients and families	National Province District	2024-2026
3.1.5.	Provide support to the people taking the TPT by the community health workers	3.1.5.1. Provide rewards for community health workers that involved in the mobilization, initiation, monitoring of treatment adherence relevant to TPT	National Province District Primary and secondary health care facilities community	2024-2026
		3.1.5.2. Involvement of community in mobilization, initiation, monitoring of treatment adherence up to completion of TPT	National Province District Primary and secondary health care facilities komunitas	2024-2026
		3.1.5.3. Provide reward to individuals who complete the TPT	National Province District Primary and secondary health care facilities	2024-2026
		3.1.5.4. Conduct monitoring and evaluation of TPT in health care facilities involving health staff and communities	District Primary and secondary health care facilities	2024-2026
		3.1.5.5. Conduct coordination meeting with BPJS to discuss LTBI consultation free in coherent with ICD code	National Province BPJS Kesehatan	2024-2026
Intervention 3.2. Preventing and controlling tuberculosis infection				
3.2.1.	Update tuberculosis infection prevention and	3.2.1.1. Update the guideline of tuberculosis	National	2024-2026

No.	Activities	Sub-Activities	Level of implementation	Time
	control according the latest recommendations	infection prevention and control		
		3.2.1.2 Disseminate guidelines on tuberculosis infection prevention and control	National Province District Health service facilities	2024-2026
		3.2.1.3. Coordination meetings with the health provider to carry out monitoring of the TB PPI implementation	National Province District Health Service Facilities (Puskesmas, KOPI TB)	2024-2026
		3.2.1.4. Development of guidelines of tuberculosis infection control and prevention for community	National	2024-2026
		3.2.1.5. Development of guidelines of tuberculosis infection control and prevention in congregate specific settings	National Province District Health service facilities	2024-2026
		3.2.1.6. Disseminate guidelines of tuberculosis infection control and prevention for community and congregate settings	National Province District Health service facilities	2025-2026
		3.2.1.7. Conduct monitoring of tuberculosis infection control and prevention in health care facilities, specific settings and community involving stakeholders in central and local levels	National Province District Health service facilities	2025-2026

No.	Activities	Sub-Activities	Level of implementation	Time
3.2.2.	Strengthen capacity of health care workers on tuberculosis infection control at health care facilities	3.2.2.1. Workshop of health care workers on tuberculosis infection control at health care facilities, congregate settings, and community	National Province District Ministry of Manpower Ministry of Law and Human Rights	2024-2026
3.2.3.	Conduct promotion and prevention of TB through education to community	3.2.3.1. Strengthen the IEC strategy for tuberculosis prevention and infection control in all levels in community using innovative methods	National Province District Multi-sectors	On the same time of a specific national research, e.g., RISKESDAS
3.2.4.	Ensure availability of personal protection in tuberculosis infection and control (IPC)	3.2.4.1. Provide Personal Protection Infection (PPI) and supplies related to tuberculosis infection control and prevention in each health facilities, specific settings and community activities	National Province	2024-2026
3.2.5.	Implementation of tuberculosis infection prevention and control all settings	3.2.5.1. Update SOP and pathway for tuberculosis prevention are available in health facilities, congregate settings, and community are conducted optimally	Primary and secondary health care facilities Ministry of Manpower Ministry of Law and Human Rights Community	2024-2026
		3.2.5.2. Implement TemPO program in all health facilities congregate settings, and community	Primary and secondary health care facilities Ministry of Manpower Ministry of Law and Human Rights Community	2024-2026
3.2.6.	Improve environment control in tuberculosis prevention	3.2.6.1. Ensure the improvement control in tuberculosis prevention (households, prisons, detention areas,	National collaboration with Ministry of Environment and Forestry, Ministry of Public of Works,	2024-2026

No.	Activities	Sub-Activities	Level of implementation	Time
		boarding school, working spaces)	Ministry of Law and Human Right, Ministry of Religious Affair	

5.1.4. Operational plan of strategy 4. Utilizing of research findings and technologies for screening, diagnosis, and management of tuberculosis

No.	Activities	Sub-Activities	Level of Implementation	Time
Intervention 4.1. Utilizing innovative technologies to support the implementation of the national TB control program				
4.1.1.	Simplification and digitalization of TB recording and reporting system.	4.1.1.1. Development of mobile version of SITB	National	2023-2024
Intervention 4.2. Develop a mechanism to direct Tuberculosis research in line with the agenda so it can be useful for the National Tuberculosis Program				
4.2.1.	Establish a working group of TB research and innovation in district level	4.2.1. Dissemination of tuberculosis research agenda	National	2023-2026
		4.2.1.2 Inventory of research about TB that supports the program	National	2023-2026
		4.2.1.3. Conduct focus group discussion on the establishment of working group on tuberculosis research and innovation in district level	Province	2024-2026
		4.2.1.4. Workshop on tuberculosis research agenda in district level	Province District	2024-2026
		4.2.1.5. Facilitate district level on modeling study with district that have similar burden and situation on TB	Province District	2024-2026

No.	Activities	Sub-Activities	Level of Implementation	Time
4.2.2.	Hold a TB researcher network meeting at least once a year	4.2.2.1. Organize national and international seminars at least 1x / year	National	Annually
4.2.3.	Facilitate networking activities among TB researchers	4.2.3.1. Conduct routine meeting on tuberculosis research network/working group	National	2020-2026
		4.2.3.2. Create a TB research repository	National	2023-2026
4.2.4.	Develop TB research agendas with network members and policy makers	4.2.4.1. Hold a TB research agenda draft meeting annually, every 5 years, per 10 years	National	Once a year
4.2.5.	Promoting openness in data program usage and research in accordance with applicable regulations	4.2.5.1. Develop guidelines of the utilization of program data as per regulation	National	2023
		4.2.5.2. Develop guidelines of permission for the utilization of research and SITB data	National	2023-2024
		4.2.5.3. Conduct dissemination of guidelines related to program data utilization to research institutions	National	Thrice a year
Intervention 4.3 Advocating or mobilizing funding for research and innovation on Tuberculosis from various institution from local and international funding				
4.3.1.	Disseminate TB research agenda to research network and donor/funders	4.3.1.1. Conduct a TB research socialization meeting of research network and donors / funders	National Province	2023-2024
Intervention 4.4 Supporting research, development and innovation for TB management and control				
4.4.1.	Facilitate the process of reviewing TB research that is appropriate for use as advocacy material for improving TB elimination programs	4.4.1.1. Conduct a review meeting of feasible research proposals to advocate for program improvement	National	Twice a year

No.	Activities	Sub-Activities	Level of Implementation	Time
4.4.2.	Facilitate researcher and policy makers in research-based TB program policy making	4.4.2.1. Conduct program evaluation/implementation research	National	Twice a year
		4.4.2.2. Piloting innovations from various research findings	National	Every national scale survey
		4.4.2.3. Develop policy briefs	National	Annually
		4.4.2.4. Advocacy of policy briefs to Provincial/District health offices, ministries and relevant institutions	National	Annually
4.4.3.	Increasing the use of research results in evaluating and improving program performance	4.4.3.1 Discussions through expert committee forums regarding the use of new evidence for program improvement	National	2023-2026 (3x meetings in a year)
4.4.4.	Encouraging the publication of TB research results in scientific activities, in national and international reputable journals	4.4.4.1. Facilitating the process of preparing national and international publications, such as capacity building and funding	National	2023-2026
		4.4.4.2. Facilitating training activities for making proposals, processing qualitative and quantitative research data, writing policy briefs/policy papers	National Province District	Annually
4.4.5	Develop a mechanism to adopt new TB diagnosis tools, vaccine, and new drugs/regimens	4.4.5.1 Conduct trial research related to the use of new diagnostic tools, new vaccines and new drugs/regimens that will be used by the program	National	Twice a year
		4.4.5.2. Conduct operational research to analyze the effectiveness of new initiatives in	National	Twice a year

No.	Activities	Sub-Activities	Level of Implementation	Time
		tuberculosis drugs resistant cases		
		4.4.5.3. Conduct operational research as per national priority research agenda	National Province	Twice a year
4.4.6.	Facilitate national research activities that support TB program	4.4.6.1. Conduct evaluation of knowledge, attitude and practices related tuberculosis among patients, community and health care workers	National	2025
		4.4.6.2. Implementation of national tuberculosis prevalence survey	National	2024-2026
		4.4.6.3. Implementation of tuberculosis resistant survey	National	2025
		4.4.6.4. Conduct operational research on the implementation of TPT for sensitive and resistant tuberculosis all age	National	2026
		4.4.6.5. Conduct operational research on the implementation of TPT for sensitive and resistant tuberculosis within 0-18 years of age	National	2026
		4.4.6.6 Facilitate research and innovative intervention in preventive treatment	National	2025
		4.4.6.7 Facilitate Research that improves community engagement on Tuberculosis Program	National	2025
		4.4.6.8. Analysis of the role of community in	National	Annually

No.	Activities	Sub-Activities	Level of Implementation	Time
		early detection and education on tuberculosis		
		4.4.6.9. Analysis of interventions related to local based early detection and treatment adherence of tuberculosis patients	National	Annually
		4.4.6.10. Implement early detection algorithm for all patients performing CXR in health facilities	National	2024
		4.4.6.11. Evaluate and validate WHO algorithm to detect tuberculosis among children	National	2026
		4.4.6.12. Evaluate and validate diagnosis algorithm to detect tuberculosis	National	2026
		4.4.6.13. Research and evaluation on the implementation of screening or active case finding for high-risk groups in congregate settings	National	2024-2025
		4.4.6.14. Research on gender and human right barriers/interventions in tuberculosis	National	2024-2026
		4.4.6.15. Research on tuberculosis service barriers related to BPJS and workplace	National	2024-2026
		4.4.6.16. Develop the analysis situation/research related to key population in accessing TB services, as well as stigma and discrimination experienced	National	2024-2026

No.	Activities	Sub-Activities	Level of Implementation	Time
		4.4.6.17. Develop the analysis situation/research related to key population for mapping	National	2024-2026
		4.4.6.18 Research related to funding and opportunity that accessible from community society organization and community	National	2024-2026
		4.4.6.19 Research that Improving quality of human resource on Tuberculosis Program	National	2024-2026
4.4.7	Utilization of PCR based and Nucleic Acid Amplification Tests for tuberculosis diagnosis	4.4.7.1. External technical assistance for conducting operational research to utilize PCR-based and Nucleic Acid Amplification Tests for tuberculosis diagnosis	National	2023-2026 Every Semester

5.1.5. Operational Plan of Strategy 5. Increasing communities, partners, and multisectoral participation in tuberculosis elimination efforts

No	Activities	Sub Activities	Level of Implementation	Time
Intervention 5.1 Increasing community empowerment efforts through intensification of information, education and communication to the community, especially for the prevention of tuberculosis				
5.1.1	Strengthen information, education and communication strategy	5.1.1.1. Develop TB promotional materials/tools/concept strategies including DR-TB, TB-HIV, childhood TB, TPT TB for patients and their families based on human right and gender	National	2020-2026
		5.1.1.2. Produce and distribute TB new IEC materials/tools	National Province District	2020-2026

No	Activities	Sub Activities	Level of Implementation	Time
		including DR-TB, TB-HIV, childhood TB, TPT		
		5.1.1.3. Conducting campaign through social activities, media (television, radio, social media) and health apps based on human right and gender perspective	National Province District	2020-2026
		5.1.1.4. Improving capacity of cadre, public institution, TB survivors, public figure, religious figure, community, social worker, former patient to provide tuberculosis IEC including human right and gender perspective	District	2020-2026
		5.1.1.5. Integration of tuberculosis IEC to multi-program education in Ministry of Health and ministries/institutional related	National Province District	2020-2026
		5.1.1.6. Community mobilization related to commemoration events (World TB Day, World AIDS day, Children Day, dll) during World Tuberculosis Day and National Health Day celebration	National Province District	2020-2026
		5.1.1.7. World Tuberculosis Day and National Health Day commemoration	National Province District	2020-2026
5.1.2	Engagement and empowerment community to involved actively in Tuberculosis prevention and control	5.1.2.1. Develop and dissemination technical guidelines of TB Task force in sub districts/village	National Province District	2020-2026
		5.1.2.2. Establish and or strengthening multi-sectoral forum in subdistrict /village level	National Province District	2020-2026

No	Activities	Sub Activities	Level of Implementation	Time
		including public figures, religious leaders, community leader, cadre, youth leaders, and other stakeholder related to involve with TB program including to reduce stigma and discrimination among TB patient		
		5.1.2.3. Improving capacity of TB survivors as patient supporters	District	2020-2026
		5.1.2.4. Establish form and strengthening the capacity of the TB community care group (Kelompok masyarakat Peduli TB dan HIV)	District	2020-2026
		5.1.2.5. Conducting the coordination of health care facilities, sub-district government, district health office, and community (including cadres) for dissemination of tuberculosis case finding strategy	District	2020-2026
		5.1.2.6. Provide education to patient's family as treatment observers by CSOs/OPs	District	2020-2026
		5.1.2.7. Improving capacity and mentoring to TB care organizations and TB care community groups to engaged and empowerment the community	District	2020-2026
Intervention 5.2 Coordinate with relevant ministries, relevant institutions, local governments (provincial and district), stakeholders and communities for the implementation of existing regulations and/or policies				
5.2.1.	Coordination at the Ministry level (Ministry of Social Services, Ministry of Religious Affairs, Ministry	5.2.1.1. Coordination with relevant ministries for Tuberculosis control in special places	National District	2020 - 2026

No	Activities	Sub Activities	Level of Implementation	Time
	of Villages, Disadvantages Regions and Transmigration, Ministry of Law and Human Right, Ministry of Education and Culture, Ministry of Manpower, BPJS)	(dormitories, boarding schools, social institutions, immigrant shelters etc.)		
		5.2.1.2. Collaboration and coordination with Ministry of Social Services on public/ Tuberculosis patient enabler for Tuberculosis access (transportation, shelter, nutrition, etc.)	National District	2020 - 2026
		5.2.1.3. Coordination with Ministry of Law and Human Right on Tuberculosis services for inmates, prisoners, and children, and to establish mandatory treatment regulation for people who have been diagnosed with TB-RO (included in the national level agenda)	National District	2020 – 2026
		5.2.1.4. Collaboration with Ministry for Human development and cultural affairs to establish multisectoral coordinating team as a derivative of WKPTB at province and districts level.	National District	2020 – 2026
		5.2.1.5. Collaboration and coordination Ministry of Religious Affairs and Ministry of Health for the period of TB examination on Haj Pilgrimage is conducted 3 months before departure	National District	2020 – 2026
		5.2.1.6. Collaboration and coordination with Ministry of Manpower on prevention and control of Tuberculosis in	National District	2020 – 2026

No	Activities	Sub Activities	Level of Implementation	Time
		Indonesian and foreign workers		
		5.2.1.7. Coordination with other Ministries/Institutions on tuberculosis control package in workplaces	National Province District	2020-2026
5.2.2	Encourage the involvement of BAZNAS, philanthropic institutions, Corporate CSR, and other potential partners to increase resources for tuberculosis control	5.2.2.1. Agreements drafting with philanthropic institutions, BAZNAZ, and corporate CSR for tuberculosis prevention and control.	National Province District	2020-2026
5.2.3	Strengthen multi program and multi sector commitments in Tuberculosis prevention and control	5.2.3.1 Develop work plans for multi-sectoral and multi-ministerial / institutional engagement in the prevention and control of Tuberculosis at all levels.	National Province District	2020-2024
		5.2.3.2. Dissemination on multi-sectoral and multi-ministerial/ institutional involvement in efforts to prevent and control Tuberculosis at all levels.	National Province District	2020
		5.2.3.3. Involve inter-sector and inter-ministries / institutions to monitor and evaluate Tuberculosis prevention and control efforts at all levels.	Province District	2020-2024
		5.2.3.4. Plenary meetings of tuberculosis expert committee	National	Twice a year
		5.2.3.5. Group meetings of tuberculosis expert committee divisions	National	Three times a year
Intervention 5.3. Improve the public feedback mechanism on the tuberculosis services quality at the health facilities				
5.3.1	Support the national tuberculosis program in identifying and overcoming service quality challenges by providing public	5.3.1.1 Training of assessment of TB quality service to TB survivor's organization and other TB community groups.	27 districts 193 districts	2020-2026

No	Activities	Sub Activities	Level of Implementation	Time
	feedback on the quality of tuberculosis services at health facilities			
		5.3.1.2 Develop technical guideline of Community led monitoring (CLM) including the instruments	National	3x in 2020-2024
		5.3.1.3. Introducing the CLM mechanisms at all levels	National Province District	1x in 34 province 2020-2024
		5.3.1.4. Evaluation of CLM implementation by TB survivor's organization	National 16 provinces	1x/ province 2020-2024
		5.3.1.5. CLM coordination meetings at district level (working groups, communities, health service providers) to share the findings and get the feedback from TB programmers/Stakeholder related.	23 districts	Quarterly meeting months in 2020- 2024
5.3.2.	Provide data on obstacles to access tuberculosis services that will be used by national, provincial and district stakeholders as evidence to identify alternative solutions	5.3.2.1. Development and strengthening of LAPOR TB instrument.	National, districts	2020-2024
		5.3.2.2. Establish and running the system including the reporting	National, districts	2020-2024
		5.3.2.3. Meetings of LAPOR TB utilization and effectiveness review meeting every semester	Districts	Every 3 months in 2020- 2024 every semester in 2024-2026
5.3.3	Provide the operational human resource and CLM response team	5.3.3.1. Training the TB survivors organization for operational and strengthening the CLM response team	National, province, district	2024-2026
		5.3.3.2. Develop the standard operational procedure (SOP) of CLM respondents	National	2024-2026
		5.3.3.3. Recruitment of human resource for	District	2024-2026

No	Activities	Sub Activities	Level of Implementation	Time
		operational and as CLM response team		
Intervention 5.4. Ensure that the feedback of the people affected by tuberculosis will be optimize to address ineffective mechanisms				
5.4.1.	Strengthen responses from health facilities services to community-related to eliminate stigma and discrimination at all levels	5.4.1.1. Coordination meetings with Puskesmas, hospitals, district health offices, provincial health offices, community social organizations and local communities in response to the feedback from community/TB patient	District	2020-2024
		5.4.1.2. Periodical assessment of tuberculosis quality services using assessment survey conducted by CSOs/OPs.	23 districts	Every 3 months in 2020- 2024
5.4.2.	Create a friendly environment for patients to achieve treatment success	5.4.2.1. Develop minimum requirements for a user-friendly environment in Health Facilities	National	2020-2024
		5.4.2.2. Development of IEC material for Patients' Rights and Obligations (PHKP/ Patients' Rights and Responsibilities)	District	2020-2024
		5.4.2.3. Empowerment the TB patients to know their rights and obligations through focus group discussion at the community level	District	2020-2024
Intervention 5.5 Reduction of stigma and discrimination in high-risk and vulnerable populations				
5.5.1.	Campaign / education for the community to increase knowledge about	5.5.1.1. Training of health staff and community on gender,	Province, District	2020-2024

No	Activities	Sub Activities	Level of Implementation	Time
	tuberculosis, especially in schools and workplaces to remove human rights and gender barriers	human rights and medical ethics		
		5.5.1.2. Legal literacy ('know your rights') about legal services related to tuberculosis	National Province, District	2020-2024
		5.5.1.3. Sensitization of policy makers and community empowerment agents about human rights and gender	National Province, District	2020-2024
5.5.2.	Strengthen tuberculosis community and working groups in creating environment free from stigma and discrimination for patients and family	5.5.2.1. Mapping and review of policy in national, provincial and district level	National Province, District	2020-2024
		5.5.2.2. Development of modules on human right, gender, basic and advance paralegal	National Province, District	2020-2024
		5.5.2.3. Training paralegal for community and/or CSO	Community/partners in 20 districts	2024-2026
		5.5.2.4. Placement of legal/paralegal	Community/partners in ~~20~~ districts	2024-2026
		5.5.2.5. Development of tuberculosis and health policy modules for legal aid organization and working group	Community/partners in ~~20~~ districts	2024
		5.5.2.6. Workshop on tuberculosis and health policy for legal aid organization	Community/partners in ~~20~~ districts	2025
Intervention 5.6. Establish, strengthen, and ensure sustainability of civil society organization, especially those led by key population, women, TB patients, community network or association.				
5.6.1	Establish civil society organization and organization based on community in District that have not yet exist	5.6.1.1. Form the legality of organization.	District	2024-2026
		5.6.1.2. Develop the work plan of organization	District	2024-2026
5.6.2.	Strengthening the civil society organization and	5.6.2.1. Establish the linkage of civil society organization with multi-	Province/District	2024-2026

No	Activities	Sub Activities	Level of Implementation	Time
	organization based on community	sectoral related for getting the funding/ support.		
		5.6.2.2. Establish the mechanism of mentoring system for civil society organization and organization based on community (mentor-mentee)	Province/District	2024-2026
		5.6.2.3. Technical Training and management for organization	Province/District	2024-2026
Intervention 5.7. Mobilize marginalized communities, underserved key vulnerable populations to overcome barriers to access to TB services and social security				
5.7.1	Mapping of marginalized communities, key vulnerable populations that are underserved in TB programs	5.7.1.1 Mapping existing marginalized populations and undeserved key vulnerable population in TB program.	National	2024-2026
5.7.2.	Involving the marginal and undeserved key vulnerable population in TB program	5.7.2.1. Develop mechanisms for strengthening the access for health services and social security for underserved marginal and key vulnerable population.	National	2024-2026
		5.7.2.2. Monitoring the acceptance of health and social security services for marginalized communities, underserved key vulnerable populations	District	2024-2026
Intervention 5.8. Strengthening the policy of human resource, planning and management of community health worker				
5.8.1	Mapping of human resource needed (community health worker and community health volunteer) in health services	5.8.1.1. Analysis of human resources (community health worker and community health volunteer) in health services.	National Province District	2024-2026

No	Activities	Sub Activities	Level of Implementation	Time
		5.8.1.2. Develop Human resource (HR) plan for community health worker	National	2024-2026
		5.8.1.3. Develop the management of human resource of community in health system (qualification, identification of competency, measurement of level of work)	National	2024-2026
		5.8.1.4. Develop budgeting and planning of human resources in health system	National	2024-2026
5.8.2	Development of technical regulation of human resource of community health worker in TB program	5.8.2.1. Coordination meeting cross-sectoral and program to develop the policy of human resources of community health workers in TB program.	National	2024-2026
		5.8.2.2. Dissemination the human resource policy of community health worker in TB program	National, Provincial, District	2024-2026
5.8.3.	Management of community health worker in TB program	5.8.3.1. Recruitment of community health worker in health facilities who	District	2024-2026
		5.8.3.2. Integration of community health worker for TB program	District	2024-2026
		5.8.3.3. Improving capacity building of community health worker in TB active case finding and treatment supporter	District	2024-2026
		5.8.3.4. Quarterly meeting of data validation between community and health facilities for TB program	District	2024-2026

No	Activities	Sub Activities	Level of Implementation	Time
		5.8.3.5. Supervision of community health worker	District	2024-2026
Intervention 5.9. Advocacy-led by community civil society and community, particularly representative key population, vulnerable to mobilized local human resources				
5.9.1	Advocacy by civil society organizations and communities for stakeholders related to mobilization of local resources.	5.9.1.1. Advocacy using of research and funding opportunity for civil society organizations and community (policy brief, workshop, etc)	National	
		5.9.1.2. Formulation of material advocacy by community service organization and community with target of advocacy	National Province District	2024-2026
		5.9.1.3. Meetings of civil society organization and community with target of advocacy	Province District	2024-2026
		5.9.1.4. Engagement of mass media for advocacy, mobilization local resources for TB control.	National Province District	2024-2026
Intervention 5.10. Evaluation of implementation strategy to improve the role of community, partners and other multi sector in TB elimination				
5.10.1.	Evaluate the implementation of community empowerment activities relevant to tuberculosis prevention	5.10.1.1 Evaluation intervention of 5.1. Increasing community empowerment efforts through intensification of communication, information, and education to the community, especially for the prevention of tuberculosis	National Province District	2020-2024 2025-2026
		5.10.1.2. Evaluation intervention of 5.3 and 5.4 related to community-led monitoring	National Province District	2024-2026
		5.10.1.3. Evaluation intervention of 5.5.	National Province	2024-2026

No	Activities	Sub Activities	Level of Implementation	Time
		related to decreasing the stigma and discrimination among high-risk population of tuberculosis and vulnerable people	District	
		5.10.1.4. Evaluation of intervention 5.6. Establish, strengthen and sustainability of civil community organization, particularly lead by community, key population, female, TB patient and community linkage and association.	Province District	2024-2026
		5.10.1.5. Evaluation of intervention 5.7. Mobilize marginalized communities, underserved key vulnerable populations in response to overcome barriers to access to TB services which include health services and social security	National Province District	2024-2026
		5.10.1.6. Evaluation of intervention	National Province District	2024-2026
		5.10.1.7 Evaluation of intervention 5.9. Advocacy-led by community civil society and community, particularly representative key population, vulnerable to mobilized local human resources	National Province District	2024-2026

5.1.6. Operational Plan of Strategy 6. Strengthening program management through health systems strengthening

No.	Activities	Sub-activities	Level of Implementation	Time
Intervention 6.1. Improving health worker skills on tuberculosis case and program management				
6.1.1.	Conduct in-service training on tuberculosis case and program management at national, provinces, districts level	6.1.1.1. Training module revision	National	2020-2026
		6.1.1.2. Organize training documents	National	2020-2026
		6.1.1.3. Making agreement with accredited training institution	National Province	2020-2026
		6.1.1.4. Conduct Training in Collaboration with Accredited training institution	National	2020-2026
		6.1.1.5. Conduct evaluation of training implementation	National	2020-2026
6.1.2.	Conduct training on tuberculosis case and program management in health facilities, including: a. Laboratory b. Primary (including Posyandu Prima) and referral health facility c. Health worker who does PTIC d. Health worker who does drug resistant tuberculosis counselling	6.1.2.1. Training module revision	National	2020-2026
		6.1.2.2. Organize training documents	National Province	2020-2026
		6.1.2.3. Making agreement with accredited training institution	National	2020-2026
		6.1.2.4. Conduct Training in Collaboration with Accredited training institution	National	2020-2026
		6.1.2.5. Conduct evaluation of training implementation	National Province	2020-2026
6.1.3.	Conduct e-course/ training of Tuberculosis care and prevention by long-distance training program for private physicians	6.1.3.1. Training module revision	National	2020-2026
		6.1.3.2. Organize training documents	National	2020-2026
		6.1.3.3. Making agreement with accredited training institution	National	2023 - 2026

No.	Activities	Sub-activities	Level of Implementation	Time
		6.1.3.4. Conduct Training in Collaboration with Accredited training institution	National	2023 - 2026
		6.1.3.5. evaluation of training implementation	National	2023 - 2026
		6.1.3.6 Maintenance and development system for e-learning	National	2024- 2026
6.1.4	Conduct post training evaluation	6.1.4.1. Post training supervision (6 months)	National Province	2020-2026
		6.1.4.2. Post training workshop	National	2020-2026
6.1.5.	Conduct pre-service training management training on tuberculosis	6.1.5.1. Revision of tuberculosis module for health professional education (Pre-Service)	National	2024
		6.1.5.2 Monitoring Pre-Service Modul Implementation	National	2024-2026
		6.1.5.3. Pre-service training for health workers (e.g., through Nusantara Sehat program)	National	2024-2026
6.1.6	Conduct trainings of tuberculosis management programs	6.1.6.1 Conduct tuberculosis program trainings	National	2024 - 2026
		6.1.6.2 Conduct trainings for new and existing tuberculosis program human resources	National	2024 - 2026
6.1.7.	Conduct trainings on tuberculosis program for community	6.1.7.1. PIS-PK training focusing in tuberculosis	Province/ District	2020-2026
		6.1.7.2. Psychosocial Training for Health Workers in Healthcare facility	National Province	2020-2026
		6.1.7.3. Training of health cadres	Province/District	2024- 2026

No.	Activities	Sub-activities	Level of Implementation	Time
		6.1.7.4. Development system of online training for cadres	National	2025- 2026
		6.1.7.5. Revise TB Modul for PKH and develop pocket book for PKH cadres	National	2025 - 2026
		6.1.7.6. Conduct Training for Hotline Responder	National	2025 - 2026
		6.1.7.7. Developed Training Modul for Infection prevention and control in congregate setting	National	2025 - 2026
		6.1.7.8. Early initiation for "Sekolah Peduli Tuberkulosis" program within implementation of "Kurikulum Merdeka" (Merdeka Curricula)	Province/District	2024 - 2026
		6.1.7.9. Integrated meeting with organization (e.g., PKK, Persit, Bhayangkari, PIA Ardhya Garini, IWAPI) for tuberculosis control and prevention	Province/District	2020 - 2026
6.1.8.	Conduct capacity building of human resources for health by utilizing information technology (e.g., webinar)	6.1.8.1. Define materials and resource persons	National Province	2020-2026
		6.1.8.2. Conducting webinar	National Province	2020-2026
		6.1.8.3. Post webinar evaluation	National Province	2020-2026
6.1.9.	Training of trainers on tuberculosis care and prevention in primary and referral health facilities, laboratories, PITC and training for tuberculosis program management for staff at	6.1.9.1. Training module revision	National	2020-2026
		6.1.9.2. Organize training documents	National	2020-2026
		6.1.9.3. Making agreement with accredited training institution	National	2020-2026

No.	Activities	Sub-activities	Level of Implementation	Time
	national, provincial, and district level as well as for cadres	6.1.9.4. Conduct Training in Collaboration with Accredited training institution	National	2020-2026
		6.1.9.5. evaluation of training implementation	National	2020-2026
6.1.10.	Training of integrated logistics management	6.1.10.1. Training of integrated logistics management in all levels	Province District	Annually 2020-2026
		6.1.10.2. Training on integrated logistics management for TB program officer and pharmacy unit officer in all levels (and on the job training in health facility level)	Province District	2020-2026
6.1.11.	Support monitoring of performance of health staff through online assessment	6.1.11.1. Development of online assessment system	National Province	2020-2024
		6.1.11.2. Implementation of online assessment	National Province	2020-2026
		6.1.11.3. Evaluation of online assessment	National Province	2020-2026
6.1.12.	Provide incentives/salary for tuberculosis program staff	6.1.12.1. Incentives/salary for human resources of tuberculosis control program at national, province, and district level	National Province District	2024-2026
Intervention 6.2. Strengthening of tuberculosis surveillance through utilization of information and communication strategy				
6.2.1	Develop tuberculosis information system to record notification and treatment of tuberculosis cases, which can be linked with other information systems in public and	6.2.1.1. Develop and maintain cellular apps Wajib Notifikasi Tuberkulosis (WIFI TB) for private medical practices/clinics which is linked with TB information system	National	2024-2026

No.	Activities	Sub-activities	Level of Implementation	Time
	private health care facilities or other existing health information systems	6.2.1.2. Develop and maintain supporting information system for tuberculosis program (i.e., integration with laboratory cross-test reporting)	National	2024-2026
		6.2.1.3. MoU with Ministry of home affairs to access data of NIK to be used as unique code/barcode scanner for single entry in health care facilities	National	2021
		6.2.1.4. Collaboration with private hospital chains to connect data of notification and treatment of tuberculosis in hospital information system to TB information system	National	2020-2021 2024-2026
		6.2.1.5 Collaborating with BPOM for the integration of tuberculosis ESO data on TB information system and e-meso.pom.go.id applications.	National	2020-2026
		6.2.1.6. Expansion of integration between TB information system and other apps	National	2021-2026
		6.2.1.7. Develop and update Technical Guidelines for Recording, Reporting and Data Analysis, including dissemination	National Province Districts	2023-2026
		6.2.1.8. Develop and update SOP for Recording, Reporting and Data Analysis,	National Province District	2023-2026

No.	Activities	Sub-activities	Level of Implementation	Time
		including dissemination		
		6.2.1.9. Maintain and develop a Tuberculosis Information System (TB information system) according to program needs	National	2024–2026
		6.2.1.10. Develop a tuberculosis information system (TB information system) for recording of active case findings	National	2024–2026
		6.2.1.11. Simplify and integrate existing information systems (WIFI TB, NAR TB) into TB information system	National	2024–2026
		6.2.1.12. TB information system integration with SATU SEHAT in the context of digital health transformation	National	2024
		6.2.1.13. TB information system Master Plan document updating	National	2023
		6.2.1.14 Development of an integrated TB information system module with applications for the community.	National	2020
		6.2.1.15 Development of an integrated TB information system module with Information system in local government (provincial and district)	National	2024-2026
6.2.2.	Investment on facilities and human resources	6.2.2.1. Develop MoU with Pusdatin and Ministry of	National	2020-2021 2024-2026

No.	Activities	Sub-activities	Level of Implementation	Time
	related to tuberculosis surveillance	Communication and Information on procurement of IT infrastructure and human resources		
		6.2.2.2. Training of health care workers to operate TB information system and other supporting information systems through workshops or on the job training	National Province District	2020-2024 2025-2026
		6.2.2.3. Establish division of information technology in the National Tuberculosis Program to maintain TB information system including its operator or call center	National	2020, 2024
		6.2.2.4. Providing physical servers for Tuberculosis information system	National	2021-2022 2024-2026
		6.2.2.5. Procure scanner of electronic national ID cards	National	2021-2022
		6.2.2.6 Maintenance of physical servers for the Tuberculosis Information System	National	2020-2026
		6.2.2.7 Increase capacity of IT personnel who develop and maintain tuberculosis information systems	National	2023-2026
		6.2.2.8. Increase capacity of recording, reporting and data analysis's personnel	National Province Districts	2024-2026
		6.2.2.9. Providing laptops and external storage media	National Province Districts	2021 2024

No.	Activities	Sub-activities	Level of Implementation	Time
		6.2.2.10. Purchase the updated digital maps of 37 provinces, data processing and analysis software	National	2024
		6.2.2.11. Maintenance of laptops, external storage media and other IT equipment	National Province Districts	2020-2024 2025-2026
		6.2.2.12. Purchase of survey data sets to support the tuberculosis control program	National	2023 2026
6.2.3.	Assessment of data quality related to tuberculosis control	6.2.3.1. Supportive supervision specific to data collection, data quality assurance and reporting in all level	National Province Districts	Annually 2020-2026
		6.2.3.2. Routine data quality audits/reviews, assessments and validations for data in SITB	National Province Districts	Three times per year 2020-2024
		6.2.3.3. Monitoring of tuberculosis notification and treatment through tuberculosis information system	National Province District	2020-2026
		6.2.3.4. Training on data analysis, mentoring and supervision to tuberculosis program managers, DO, and TO in all levels (National, Province, Districts)	National Province District	2020 -2026
		6.2.3.5. Conducting routine program review	National	2020, 2022, 2025
		6.2.3.6. Conducting Tuberculosis epidemiology review for Indonesia	National	2022, 2025

No.	Activities	Sub-activities	Level of Implementation	Time
		6.2.3.7. Supporting the implementation of TB surveillance activities in all level	National	2020-2026
		6.2.3.8 Perform record linkage activities between tuberculosis information system data and other data sources that have not been integrated in the One Health Information System	National	2024-2026
		6.2.3.9. Develop and update data quality tools or instruments	National	2023-2024
		6.2.3.10. Annually monitoring and evaluation meeting for implementation of Tuberculosis Program	National Province Districts	2020-2026
6.2.4.	Dissemination of tuberculosis program performance data which can be accessed by public	6.2.4.1. Development of dashboard application to visualize tuberculosis data	National	2021-2026
		6.2.4.2. Make an agreement with Pusdatin on data/information needed for Health Data Apps (ASDK/DHIS2)	National	2020 2024-2026
		6.2.4.3. Development and dissemination the annual profile/report of National Tuberculosis Program	National	Annually 2020-2026
		6.2.4.4. Develop Standard Operating Procedure for publication of periodic tuberculosis report in all levels through media/website	National	2021 2023-2026

No.	Activities	Sub-activities	Level of Implementation	Time
		6.2.4.5. Develop TB burden estimation with modelling approach	National	2023-2026
		6.2.4.6. Workshop on preparation and determination of TB indicators for provincial and districts	National	2023-2024
Intervention 6.3. Strengthening financial management of Tuberculosis care, treatment and prevention				
6.3.1.	Conduct mapping and estimation of potential financing from national and district level	6.3.1.1. Assessment of potential financing from national and district level	National	2020-2026
		6.3.1.2. Coordination meeting on tuberculosis financing in national, provincial and district level	National Province District	2020-2026
6.3.2.	Strengthening tuberculosis financing in national, provincial and district level	6.3.2.1. Develop budget codes for tuberculosis program procurement in all levels	National	2020-2026
		6.3.2.2. Develop technical guideline related to type 3 autonomy as per Health Ministerial decree No 27/2022 on guideline of partnership between government and private non-health sectors	National	2020-2026
		6.3.2.3. Launch and dissemination of letter related to the utilization of cigarette tax for health program budget as per Finance Ministerial decree No 215/2021	District	2020-2026
6.3.3.	Strengthening of tuberculosis financing	6.3.3.1. Coordination meeting with BPJS	National Provincial/District	Four times in 2020;

No.	Activities	Sub-activities	Level of Implementation	Time
	system through national health insurance	Kesehatan on financing of drug sensitive tuberculosis management with new algorithm		Annually in 2021-2026
		6.3.3.2. Coordination meeting with BPJS Kesehatan on financing of MDR TB	National Provincial/District	Four times in 2020; Annually in 2021-2026
		6.3.3.3. Review on annual financing and expenditure of tuberculosis control program	National	2021-2026
		6.3.3.4. Develop policy regarding DR tuberculosis services, X-ray at primary level, TB preventive therapy as JKN benefit package	National	2021-2026
6.3.4	Strengthen Health financing scheme for DPPM	6.3.4.1. Evaluate implementation of current tuberculosis funding mechanism (related to PMK No. 3/2023)	National	2023-2024
		6.3.4.2. Develop evidence-based (rapid analysis) of strategic health purchasing of tuberculosis services	National	2023
		6.3.4.3. High-level advocacy and finalization of strategic health purchasing of tuberculosis services roadmap	National	2023
		6.3.4.4. Develop policy brief on strategic health purchasing of tuberculosis service in national level	National	2024
		6.3.4.5 Coordination meeting of revision of the strategic health	National	2023

No.	Activities	Sub-activities	Level of Implementation	Time
		purchasing of tuberculosis services		
		6.3.4.6. Revise the related regulation for the implementation of strategic health purchasing of tuberculosis services	National	2024
		6.3.4.7 Develop MoU with BPJS-K and MoH in term of strategic health purchasing of tuberculosis services	National	2024-2026
		6.3.4.8. Disseminate implementation of strategic health purchasing of tuberculosis services	National Province District/municipality	2024-2026
		6.3.4.9. Implementation of health purchasing of tuberculosis services	District/municipality	2024-2026
		6.3.4.10. Conduct routine coordination meetings on strategic health purchasing of tuberculosis services in national level	National	2024-2026
		6.3.4.11. Conduct evaluation meetings on strategic health purchasing of tuberculosis services in national level	National	2024-2026
		6.3.4.12. Develop regulation related tuberculosis as credentials of health facilities in cooperation with BPJS-K	National	2024-2026
		6.3.4.13. Disseminate regulation related tuberculosis as credentials of health	National	2024-2026

No.	Activities	Sub-activities	Level of Implementation	Time
		facilities in cooperation with BPJS-K		
		6.3.4.14. Implementation of regulation related tuberculosis as credentials of health facilities in cooperation with BPJS-K	National	2024-2026
		6.3.4.15. Ensure the tuberculosis related indicator as one of service performance-based capitation indicators (Kapitasi Berbasis Kinerja Pelayanan/KBKP)	National	2024-2026
Intervention 6.4. Strengthen logistic management system for Tuberculosis				
6.4.1.	Plan integrated TB logistics necessities in all level with bottom-up approach	6.4.1.1. Establish logistic planning team at district	District	2020-2026
		6.4.1.2. Meeting of multi program and pharmacy division at district health office for planning of logistics	District	2020-2026
		6.4.1.3. National TB logistic workshop planning by involving all province health office	National	2020-2026
		6.4.1.4. Plan logistics necessities at province level by involving all district health office in the area	Province	2020-2026
6.4.2.	Mapping of tuberculosis logistic in all level	6.4.2.1. Mapping information on type, amount, financing, and time of procurement from all stakeholders starting from the district level to the National level	National Province District	2020-2026

No.	Activities	Sub-activities	Level of Implementation	Time
6.4.3.	Managing logistic by 'one gate policy' approach by pharmacy unit	6.4.3.1. Development of SOP on pharmacy and health care supplies in district health office	Province District	2020-2026
		6.4.3.2. Conduct collaborative stocks count/stock opname every quarterly	Pharmacy unit	2020-2026
		6.4.3.3. Conduct integrated supervision in stages to ensure the management of one gate policy has been carried out properly every semester	National Province District	2020-2026
		6.4.3.4. Rent the warehouses for keeping anti DR TB drugs and cartridge of rapid molecular test	National	2020-2026
6.4.4.	Distributing logistics in FEFO by taking into account the aspects of sustainable availability, quality, as well as maintained benefits.	6.4.4.1. Distribution and custom clearance tuberculosis logistic every quarterly	National Province District	2020-2026
		6.4.4.2. Analyze availability of logistic and re-distribution to prevent stock out and over stock quarterly	National Province District	2020-2026
		6.4.4.3. Warehousing TB logistic in conditions that comply with the provisions listed on the product label and storage	National Province District	2020-2026
6.4.5.	Coordinate with pharmacies in each level to ensure the availability of TB logistic (drugs and non-drugs) for both public and private health facilities	6.4.5.1. Conduct routine coordination meeting in all level to ensure the availability of TB logistics quarterly	National Province District	2020-2026
		6.4.5.2. Conduct routine quarterly meeting involving hospital pharmacy, DR	Province District	2020-2026

No.	Activities	Sub-activities	Level of Implementation	Time
		TB officer and PMDT technical officer		
6.4.6.	Improve the quality of tuberculosis logistic management in all level	6.4.6.1. Updating guideline for tuberculosis logistic management and standard operating procedures for each TB logistics management activity	National	2024
		6.4.6.2. Printing of guideline of tuberculosis logistic management	National	2024
		6.4.6.3. Training on procurement and quantification TB-Quant TB and SITB software for NTP officer, follows the Presidential Regulation	National Province District	2020-2026
6.4.7.	Implementation of recording and reporting of tuberculosis logistic using online TB information system	6.4.7.1. Training on recording and reporting of tuberculosis logistic using SITB	Province District	2020-2026
		6.4.7.2. Conduct adherence assessment on recording and reporting of tuberculosis logistic using TB information system	Province District	2020-2026
		6.4.7.3. On the job training using logistic module of TB information system in all level	Province District	2020-2026
		6.4.7.4. Conduct recording and reporting of remaining stocks in health care facilities	Health care facility	2020-2026
6.4.8.	Monitoring and evaluation with follow	6.4.8.1. Conduct monitoring and	National Province	2020-2026

No.	Activities	Sub-activities	Level of Implementation	Time
	up including report, feedback and improvement efforts according to applicable regulations related to logistic management.	evaluation based on SITB software at all levels, starting from reporting recording feedback, distribution and logistics availability	District	
		6.4.8.2. Conduct monitoring and evaluation which are followed by feedback and improvement	National Province District	2020-2026
		6.4.8.3. Strengthen QC of anti-tuberculosis drugs in collaboration with BPOM quarterly	National Province District	2020-2024
		6.4.8.4. Management of expired logistics and drugs	Province District	Every three month, 2020-2024
6.4.9.	Conduct logistic forum involving stakeholders	6.4.9.1. To conduct logistic forum involving stakeholders (Farmalkes, NTP, BUMN/manufactures, BPOM, Ministry of Trade) for improving resilience in domestic health product	National	2024-2026
Intervention 6.5. Ensure the available human resources for tuberculosis program				
6.5.1	Develop database of human resources in health relevant to tuberculosis program	6.5.1.1. Assess the the availability of staff for tuberculosis program management	National	2023-2026
6.5.2.	Assessment of human resources for tuberculosis program	6.5.2.1. Assess the need of human resources for tuberculosis program management	National	2023-2026
		6.5.2.2. Assess the need of human resources for health care facilities	National	2023-2026
		6.5.2.3. Develop task analysis	National	2023-2026
		6.5.2.4. Planning of the quantity of human	National	2023-2026

No.	Activities	Sub-activities	Level of Implementation	Time
		resources in health relevant to tuberculosis program		
		6.5.2.5. Planning of the quality of human resources in health relevant to tuberculosis program	National	2023-2026
		6.5.2.6. Planning of training needs	National	2023-2026
		6.5.2.7. Develop trainings materials	National	2023-2026
		6.5.2.8 Fulfilling and equalizing the number of trained and adequate human resources for tuberculosis management	National Province District	2020-2026
6.5.3.	Improve the quantity of human resources relevant to active case finding	6.5.3.1. Conduct recruitment of additional technical officers for active case finding all high-risk population	National	2024 - 2026

5.2. Operationalization of thematic interventions of tuberculosis control in Indonesia 2020-2026

5.2.1. PMDT

The interventions to tackle DR-TB burden for 2020-2026 are based on the principles and guidance from PMDT National Action Plan 2016-2020 which are translated into tangible, time bound, workable, and result oriented plans. The intervention focuses on program improvement to provide integrated and good quality DR-TB services and acceleration towards DR-TB universal access. DR-TB services in Indonesia should be accessible to all DR-TB patients regardless of economic status, demographic characteristic, geographic and clinical conditions.

Objective:

The general objective of DR-TB intervention in Indonesia is to increase the DR-TB case notification coverage from 33% in 2021 to 85% in 2026. In 2026, among those diagnosed, 95% of cases should be enrolled in the treatment, and 80% of those treated should have a successful outcome.

Strategies:

The key strategies of a plan to address challenges are:

1. Provide universal access to high quality DR-TB diagnostic and treatment services to prevent transmission in the community.
2. Ensure all confirmed DR-TB cases receive treatment as soon as they are diagnosed.
3. Provide patient-centered services to all DR-TB patients, for example the one-stop service for DR-TB care and psycho-social support to ensure adherence and continuation of treatment.
4. Improve quality of clinical care and programmatic management of DR-TB in health facilities and district levels, supported by systematic clinical mentoring from province and national levels, clinical audit, and active drug-safety management and monitoring mechanism.
5. Introduction of new DR-TB regimens which have shorter treatment duration and a smaller number of drugs to improve treatment quality and outcome.
6. Strengthen ownerships and leaderships of DR-TB program at all levels, including health facility through advocacy and partnerships with stakeholders and community partners.
7. Enhance community involvement and networking at the pre-enrolment stage and during treatment.
8. Improve program management, monitoring, and evaluation.

Geographic prioritization:

To maximize the impact, a decision was taken to concentrate efforts on selected priority districts. The districts prioritized for DR-TB activities in 2020-2026 are districts with high TB burden which are also priority districts for PPM activities. Those districts also have significant DR-TB enrolment gaps and high loss-to-follow up.

A total of 240 districts in 31 provinces were selected as the PMDT priority districts, which account for 80% of DR-TB estimated cases nationally. Analysis of available data

demonstrated that 84% of cases not enrolled to treatment in Indonesia (2022) are from these 240 districts which also correlated with 93% of LFU. While the priority districts receive full intervention package aiming to improve DR-TB notification, treatment enrolment and successful outcome, the non-priority districts' main intervention will be to reduce notification gaps. Characteristic of the district's prioritization can be seen in Table 2 below.

Table 2. Characteristic of priority and non-priority districts

Districts	No. of districts	Estimated # of DR-TB 2022	Missed cases 2022	Not enrolled 2022	No. of LFU 2022
Priority	240	19770	8643	4362	806
Non Priority	274	4896	3235	811	65
Total	**514**	**24666**	**11878**	**5173**	**871**

Targets:

It is expected that 20,664 DR-TB cases (or 85% of estimation) will be diagnosed and around 19,631 (95% of those diagnosed) will be on treatment by the end of 2026. Table below demonstrates the expected number of DR-TB cases diagnosed and enrolled to second line TB treatment in priority and non-priority districts.

Districts	No. districts	Estimated # of DR-TB 2022	Expected # of diagnosed DR-TB Casess (75%), 2022	Expected DR-TB enrollment (93%), 2022	Estimated # of DR-TB 2026	Expected # of diagnosed DR-TB cases (85%), 2026	Expected DR-TB enrollment (95%), 2026
Priority	240	19770	14828	13790	19485	16563	15735
Non Priority	274	4896	3672	3415	4826	4102	3897
Total	514	24666	18500	17205	24311	20664	19631

Interventions:

A. To increase DR-TB case notification to 85% in 2026, the NTP will:

1. Increase capacity and network of TB rapid molecular testing to achieve universal DST among all new and retreatment TB cases
2. Rapid scale up on phenotypic and genotypic susceptibility testing with robust sputum transport mechanism
3. Strengthen contact investigation among DR-TB patients' household and close contacts.
4. Engage private sectors to increase DR-TB case finding
5. Strengthen data validation and recording and reporting system e.g. timely DR-TB patient data entry to SITB, provision of data officer by health facilities

The efforts to establish and expand sputum transportation mechanisms to all districts will be continued and strengthened further. NTP will strengthen the implementation of contact investigation among DR-TB patients' household and close contacts. Private sectors, including private hospitals, clinics, and general physicians will also be engaged as an effort to improve DR-TB case notifications.

B. To ensure 95% diagnosed DR-TB cases are enrolled to treatment by 2026, NTP will:

    1. Expedite expansion of DR-TB treatment centers and ensure high quality of DR-TB services, with the engagement of accompaniment program to ensure each 514 districts have at least 1 DR-TB treatment center in 2026
    2. Improve primary health centers' (Puskesmas) capacity to become DR-TB treatment initiation sites
    3. Improve health care workers capacity, especially in motivation and counselling
    4. Identify and address patients' barriers to access treatment: in-depth analysis of national DR-TB data, implementation of MICA in all district routinely, continue coordination with other ministries and government bodies to support DR-TB patients
    5. Provision of psychosocial and economic support for all RR-TB confirmed patients, including the provision of month-0 enablers
    6. Strengthen community involvement at pre-enrolment stage: case managers/ patient supporters appointed to RR-TB confirmed patients, facilitate patients to reach treatment centers

NTP aimed to establish at least 1 DR-TB treatment site per district by end of 2026 to bring service of treatment initiation closer to patients; 189 additional treatment sites are needed. For treatment initiation in primary health centers (PHC), NTP targeted 165 PHCs per year to be able to start treatment of DR-TB patients so that by 2026 there will be 495 PHCs for DR-TB treatment initiation. Community health workers or former TB patients' groups will be involved in providing psycho-social support since patients' RR-TB diagnosis is confirmed and facilitating patients to reach DR-TB treatment centers.

Table 3. Description of DR-TB services currently available and the expansion plan

Districts	# of districts	# of DR-TB treatment sites 2022	# of districts with DR-TB Sites 2022	Expected # of districts with DR-TB sites 2026	# of additional districts with DR-TB treatment site 2023-2026
Priority	240	244	175	240	65
Non Priority	274	157	150	274	124
Total	514	401	325	514	189

C. To increase the DR-TB treatment success rate to 80% in 2026, NTP will:
    1. Ensure provision of good quality DR-TB care and implement quality improvement activities in health facilities, e.g., clinical audit and monthly mini-cohort review
    2. Provision of DR-TB treatment regimens which have shorter duration and less number of drugs
    3. Strengthen capacity of DR-TB team in clinical management: routine clinical update workshop/training and clinical mentoring
    4. Strengthen the implementation of Active Drug-safety Management and Monitoring (aDSM) mechanism for all DR-TB patients
    5. Introduction of new TB drugs/regimens under operational research
    6. Implement the Patient-Centered Approach (PCA), including community-based DOT and distance DOT using technology
    7. Provision of psycho-social and economic support until completion of treatment: enablers, patients' focus group discussion
    8. Strengthen community engagement during treatment: role of case managers/ patient's supporter/cadres in supporting DR-TB patients until completion of treatment
    9. Improve management of programs at all levels

Treatment success of DR-TB patients in Indonesia is still below the target, which is only 47% in cohort 2019. The low treatment success was mainly due to high proportion of patient who died (17%) and lost-to-follow up (21%). To ameliorate the outcome, NTP will focus on improving the quality of DR-TB clinical care and providing more patient-friendly DR-TB services to ensure patients adherence to treatment. The provision of new regimen with shorter duration and a smaller number of drugs, such as BPaL and BPaLM regimen, is also expected to improve the treatment efficacy.

5.2.2. Public-private mix

Indonesia is the largest archipelago in the world with an estimated 273.8 million people living in the 514 districts and 38 provinces, spread out over 17.508 islands.[1] With all the various backgrounds and behavior of people living in Indonesia, getting access to high-quality TB diagnosis and treatment remains a challenge. In 2022, Puskesmas is the most existing healthcare facility (HCF) in the country (10.321 sites). Based on the patient pathway study in 2017, initial people care-seeking behavior experiencing TB symptoms (cough, hemoptysis, fever, weight loss, and night sweats) is largely or 74% in the private

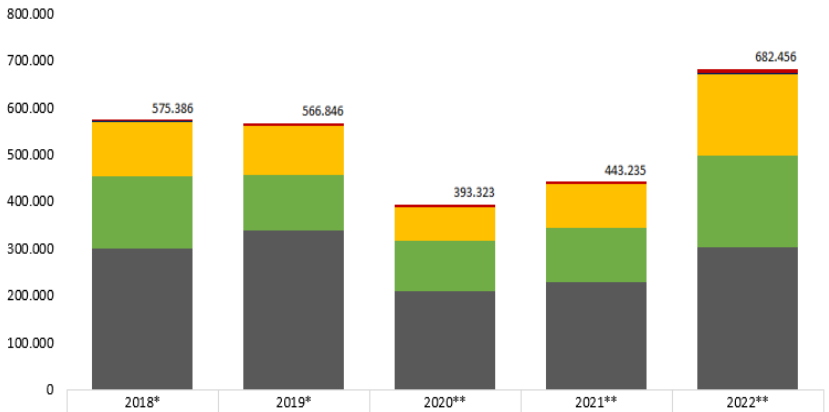
[1] Statistik, B. P. (2022). *Analisis Profil Penduduk Indonesia Mendeskripsikan Peran Penduduk dalam Pembangunan*.

sector, only 24% of patients come to the public sector. However, the availability of TB molecular WHO-recommended Rapid Diagnostic (mWRD) tests is mostly in the public sector.[2] Despite the high seeking of care to the private sector, only 8% of private hospitals and 1% GPs reported TB cases.[3] Failure to engage with these providers can result in long delays in diagnosis and treatment, resulting in further TB transmission, and low quality of TB care, and finally leading to the development of drug-resistant TB (DR TB). To increase the quality of TB care and TB case notification in all healthcare facilities, a comprehensive approach to TB care among all relevant healthcare providers in TB control is needed.

Public-private mix (PPM) is a comprehensive and collaborative approach for the systematic involvement of all relevant stakeholders and healthcare providers (public and private) in TB control to promote the use of International Standards for TB Care (ISTC) and achieve targets to end TB. The implementation of the PPM approach in Indonesia is focused at the district level, led by the district health office, which is referred to as the District-based Public-Private Mix (DPPM). The DPPM team, consisting of the district health office and all related stakeholders and health facilities, manages diverse collaborations between public-private (between NTP and private sector), public-public (between NTP and other public-sector providers such as public hospitals, primary care in prisons, and police-military institutions), and private-private (between private health facilities and other private providers, CSOs, and NGOs). The DPPM aims to identify people with TB symptoms as soon as possible, establish mechanisms for efficient and high-quality diagnosis and treatment, and report all presumptive TB and TB cases to the national information system. DPPM concept, structure and strategies for 2020-2026 are revised based on the result of the external DPPM evaluation and JEMM 2022.

[2] Surya, A., et al. (2017). Quality Tuberculosis Care in Indonesia: Using Patient Pathway Analysis to Optimize Public-Private Collaboration. *Journal of Infectious Diseases*, *216*(Suppl 7), S724–S732. https://doi.org/10.1093/infdis/jix379

[3] Boston Consulting Group (BCG), United States Agency for International Development (USAID), and National TB Program (NTP) Indonesia; 2018.*Strengthening private provider engagement to improve TB outcomes in Indonesia: An institutional review*. Jakarta, Indonesia.



	2018*	2019*	2020**	2021**	2022**
Private GP/Clinics	3.624	4.303	3.152	3.685	8.919
Public Clinics	797	892	1.051	1.232	2.272
Private Hospitals	116.497	102.735	72.890	94.624	173.363
Public Hospitals	152.724	119.730	104.570	113.774	193.579
Puskesmas & Lung Centers	301.744	339.186	211.660	229.920	304.323

*based on treatment **based on diagnosed

Figure 49. TB Case Notification from All type of Healthcare Facility, 2018-2022

Source data: 2018-2021: Final Global TB Report; 2022: SITB & WIFI TB data as of February 2nd 2023

Since 2021-2023, the Global Fund supports the implementation of PPM at the national and sub-national levels with additional PPM human resources and interventions. USAID also supports high-end technical assistance for the PPM interventions in national and six priority districts which cover capacity buildings, the development of PPM digital and e-learning platforms, big-chain hospital and pharmacy engagement, and the implementation of a strategic health purchasing for TB program. According to the DPPM evaluation by external reviewers in 2022, the DPPM model has proven to contribute to the engagement of private healthcare facilities, TB notification, access to molecular diagnostics, and free treatment among patients visiting private healthcare facilities. The province and district health office (PHO, DHO), Puskesmas, and professional and community organizations have played critical and pivotal roles in the engagement process, capacity building, and monitoring of TB linkage among healthcare facilities.[4] Despite this achievement, private primary care engagement is progressing slowly and not adequately. As well as the TB notification from secondary private healthcare facilities is far below the target. Thus, rapid consolidated hospital engagement and expansion of primary care providers are urgently needed. The evaluation also suggests

[4] The Global Fund and National TB Program (NTP) Indonesia. (2022). *Report of the External Assessment of District Based Public-Private Mix for TB Control in Indonesia*.

expanding TB preventive treatment through TPT-oriented advocacy and communication in the public and private sector.

The 2022 Indonesia TB Joint External Monitoring Mission (JEMM) was carried out from December 5 to 14, 2022. The main objective of the JEMM was to review the progress and performance of the National TB Program (NTP) of Indonesia to understand what had been achieved or not since the 2020 JEMM. As the DPPM external evaluation has been carried out prior to JEMM 2022, a decision was made not to include PPM among the thematic areas of the JEMM. Key JEMM recommendations for the PPM area include expanding access to mWRD for people seeking care in the private sector, increasing the capacity of public and private specialty hospitals to screen people with TB symptoms and report presumptive TB and confirmed TB in SITB, developing and disseminating a policy to include TPT among DPPM components, developing a policy to optimize remuneration of externally supported DPPM HR, and increasing the capacity of PHOs/DHOs. According to the DPPM external review 2022 and JEMM 2022, the DPPM approach has been proven to increase TB programmatic achievement and quality of care in private and public healthcare facilities. However, there are still high gaps in ensuring all healthcare providers in the private and public sectors provide standardized TB care, connect TB patients to the Puskesmas and community for treatment support, and report all TB cases to SITB.

Objective:
The main objective of PPM is to increase TB case notification from private healthcare facility (HCF) from 120.121 cases in 2018 to 355.751 cases in 2026, through the HCF notified TB cases from 1.959 private hospitals (100%) and 5.933 private GPs/clinics (43%) in Indonesia. DPPM intervention aims to engage 100% public HCF, consisting of 10.321 Puskesmas, and 18 lung centers, 1.182 public clinics, 1.162 public hospitals, and improve the treatment success rate from 39% in 2018 to 90% in 2026. In order to achieve those targets, 514 districts are expected to have a well-functioning DPPM team and a well-implemented PPM intervention by the end of 2026.

***Geographic prioritization*:**
As part of the DPPM approach, PPM interventions are implemented at the national and sub-national levels. DPPM intervention will be implemented with a different level of effort in each district, based on the district's disease burden, program performance, urban/rural classification, and health facility settings.
The first priority is for 80 districts with an estimated TB incidence of over 1.000 cases per year (ranging from 1.000 to 18.000 TB cases). These 80 districts contribute to 45% of the TB burden and cover ±33% of public hospitals, ±64% of private hospitals, and

±60% of clinics/GPs in the country. These districts will be targeted to have a comprehensive DPPM intervention and are expected to notify at least 80% of TB cases in Indonesia.

Essentially, all districts have to implement the basic package of DPPM interventions. 359 out of 514 districts in 34 provinces will be priority areas for the TB program. 161 out of 359 districts (including 80 DPPM priority districts) have been identified as potential PPM expansion districts, which contribute up to 63% of the TB burden in Indonesia. From 2024 to 2026, a medium-to-comprehensive DPPM intervention for the remaining districts among the 161-359 districts will be implemented The DPPM approach will be monitored and evaluated on an annual basis to ensure continuous improvement.

Indicators and Targets:

To achieve the main objective of PPM, there are several indicators and targets that need to be achieved by the end of 2026:

No	Indicators	Baseline in 2022*	Targets			
			2023	2024	2025	2026
1	Proportion of districts establishing District-based Public Private Mix (PPM) team	44%	50%	70%	90%	100%
		228	257	334	462	514
2	Number of provinces engaging local professional organization by establishing KOPI TB	30	34	34	34	34
		88%	100%	100%	100%	100%
3	Proportion of public hospitals notified TB cases	80%	90%	92%	95%	100%
		931	1.046	1.069	1.104	1.162
4	Proportion of private hospitals notified TB cases	76%	90%	95%	97%	100%
		1.493	1.763	1.861	1.900	1.959
5	Proportion of clinics (both public and private) notified TB cases	10%	15%	30%	40%	50%
		1.043	1.619	3.238	4.318	5.397
6	Proportion of private general practitioner (GP) notified TB cases	2%	8%	10%	20%	30%
		105	394	492	984	1.477
7	Number of notified TB cases contributed by public hospitals	188.846	205.915	206.078	199.738	193.746
8	Number of notified TB cases contributed by private hospitals	166.995	253.335	303.700	279.880	243.616
9	Number of notified TB cases contributed by clinics (both public and private)	9.799	13.680	17.528	16.261	14.619

No	Indicators	Baseline in 2022*	Targets			
			2023	2024	2025	2026
10	Number of notified TB cases contributed by private GP	886	1.867	2.238	2.062	1.795
11	Percentage of treatment success rate in private HCF	78%	85%	85%	85%	90%

*TB surveillance system (SITB & WIFI TB) data as of February 2nd, 2023

***Interventions*:**

According to the Presidential Decree Number 67 for 2021 on Tuberculosis Control, the Public-Private Mix belongs to the second TB elimination strategy, which is "Increase access to high-quality and patient-centered tuberculosis diagnosis and treatment services". The strategy is translated into several PPM key interventions and activities, which included:

1. Expand the engagement and strengthen the TB network among public and private healthcare facilities
    a. Develop and expand the referral systems/tools and notification of presumptive TB;
    b. Conduct a mapping regarding existing HCF in Indonesia, including standalone private laboratories and pharmacies, through members of professional organizations, BPJS (Indonesian National Health Insurance/NHI), and Health Service Directorate MoH;
    c. Conduct meetings on coordination, planning, monitoring and evaluation of PPM implementation regarding internal and external networks which involving PPM-related stakeholders & all health care facilities;
    d. Expand the engagement with big chain hospitals both private chain and public chain (HCF under military/police chain);
    e. Rapidly consolidate hospital engagement and expand engagement of private primary HCF through advocacy meeting and in-house training/on-the-job training;
    f. Encourage the engagement level of all HCF at least up to level-2 which is HCF has the capacity to diagnose TB or involved-access in lab network;
    g. Develop the model of private laboratories & pharmacies engagement in the DPPM setting with related stakeholders and big chain laboratories/pharmacies;

h. Provide capacity building and technical assistance/on the job training regarding internal & external TB network for all HCF, especially private HCF;
i. Revise and disseminate the PPM-related guideline such as TB management at the hospitals;
j. Deploy sufficient paid technical staffs who are attached to DHO & PHO, to establish and facilitate linkage, mentoring, supervise, provide support to private providers as they notify cases and ensure treatment completion.

2. Improve the quality of TB service
    a. Provide capacity building and technical assistance/on the job training regarding updated policy of TB management and treatment completion for all HCF, especially private HCF;
    b. Conduct capacity building and monitoring of the public and private specialty hospitals (such as maternity hospitals) to screen patients for TB symptoms and report presumptive TB in TB information system;
    c. Routine supervision and technical assistance to the hospitals and clinics along with the evaluation of internal & external TB network;
    d. Conduct intensive mentoring/coaching for hospitals & clinics to improve the capacity of health workers;
    e. Initiate the hospital supervisory initiative to strengthen the capacity of hospitals to provide standardized TB care based on their level
    f. Delegate a TB coordinator within HCF to move around at least once a month and coordinate with units/departments for intensified case finding and real-time reporting;
    g. Develop the concept and network to expand the provision of TB preventive treatment for all HCF, including private HCF;
    h. Dissemination regarding TPT provision for all HCF, including private HCF;
    i. Policy on engaging private hospitals for DRTB care;
    j. Establish the engagement of private primary care (clinics & standalone GPs) provided by Puskesmas through MoU;
    k. Conduct capacity building of hospital staff to directly transfer patient data to Puskesmas and directly linking the patients with community cadres for treatment adherence support;
    l. Conduct capacity building for Puskesmas as the supervisor for the primary HCF in their working area.

3. Strengthen the role of cross programs, multi-sectors, PPM-related stakeholders, and communities on the PPM framework, including professional organizations and health care associations
    a. Strengthen linkage of TB preventive therapy provision through periodic meeting with professional organizations at each level
    b. Massively disseminate CME/credits provided by IDI/medical association as a reward mechanism
    c. Initiate discussion with the other professional organizations for the new reward mechanism
    d. Strengthen the role of Professional organization as a coach to provide mentoring
    e. Develop the capacity of PHO/DHO and local stakeholders for advocacy with local governments for enhanced leadership, funding, and monitoring for end-TB activities including DPPM
4. Strengthen tuberculosis mandatory notification implementation
    a. Disseminate tuberculosis mandatory notification to all PPM-related stakeholders dan health care facilities
    b. Involve BPJS in TB monitoring & evaluation activity;
    c. Develop & disseminate the policy of TB report as a requirement for JKN claim;
    d. A dedicated person/team to do data analysis and validation on TB data to address the data sharing barrier;
    e. Encourage TB service & report as an essential component in the accreditation.
5. Strengthen TB diagnostic and treatment access for public and private providers
    a. Conduct regular monitoring to evaluate the diagnostic access within the district and WRD machine utilization
    b. Develop logistics mechanisms and arrangements to access TB program drugs for all HCF, especially private primary HCF
    c. Piloting for the involvement of all HCF in private lab linkage
    d. Expand the involvement of all HCF in private lab linkage
    e. Identify the potential procurement of GeneXpert by local government
    f. Establish specimen transport mechanism (contract for sputum transport courier service)
    g. Develop & piloting for the referral tools for pharmacies

6. Strengthen TB linkage among HCFs and civil society organization/community initiatives for treatment support, contact tracing, TB-HIV referral, and prevention scheme
    a. Develop community-oriented and provider oriented (including private provider) communication strategies to rapidly scale up implementation of TB Preventive Treatment
    b. Engaging community cadres for routine treatment adherence support of patients seeking care from the private sector
    c. CSO operations should include treatment adherence support to patients notified/treated by private providers, contact investigation, and TPT initiation of their household contacts.
7. Strengthen PPM collaboration through a health financing scheme
    a. Develop and disseminate the performance-based for JKN payment
    b. Develop the linkage between the performance of TB program and credentialing system of BPJS
    c. Develop policy regarding DR TB services, X-ray at primary level, TB preventive therapy as JKN benefit package

***PPM Structure, Coordination, and roles of key actors*:**
PPM intervention requires appropriate arrangement at each level in accordance with their roles and function. At the national level, NTP has several responsibilities to ensure and encourage PPM implementation at the provincial and district levels, including: 1) develop enabling policies, guidelines, tools, and other materials related to PPM; 2) Identify and establishing the coordination mechanism with PPM-related stakeholders and partners; and 3) facilitate, encourage, supervise, monitor and evaluate the establishment of PPM structure and PPM implementation at each level.

At the provincial level, Provincial Health Office (PHO) has several responsibilities to ensure and encourage PPM implementation at the provincial and district levels, including: 1) Identifying and establishing the coordination mechanism with PPM-related stakeholders and partners; 2) Facilitating, encouraging, supervising, monitoring and evaluating the establishment of PPM structure and PPM implementation at provincial and district level; 3) Establishing and strengthen the cross-border network among districts; 4) Ensure the availability of local policies and funding for PPM interventions.

At the district level, the public-private mix approach is known as District-bases Public-Private Mix (DPPM). The District Health Office (DHO) has several responsibilities to ensure, encourage, and maintain PPM implementation at the district level, including: 1)

Identifying and establishing the coordination mechanism with potential stakeholders and partners; 2) Facilitating, encouraging, supervising, monitoring, and evaluate the establishment of the DPPM structure and interventions; 3) Identify, establish, supervise, monitor and evaluate the PPM network among all health care facilities (external network); 4) Ensure the establishment of TB internal network involving all units at the health facility level; 5) Establish and strengthen the cross-border network among sub-districts; 6) Ensure the availability of local policies and funding for PPM interventions.

DPPM implementation requires a well-function network and coordination mechanism. DPPM is expected to organizing TB services at district to ensure integrated, people-centered care at district level requires substantial coordination efforts.

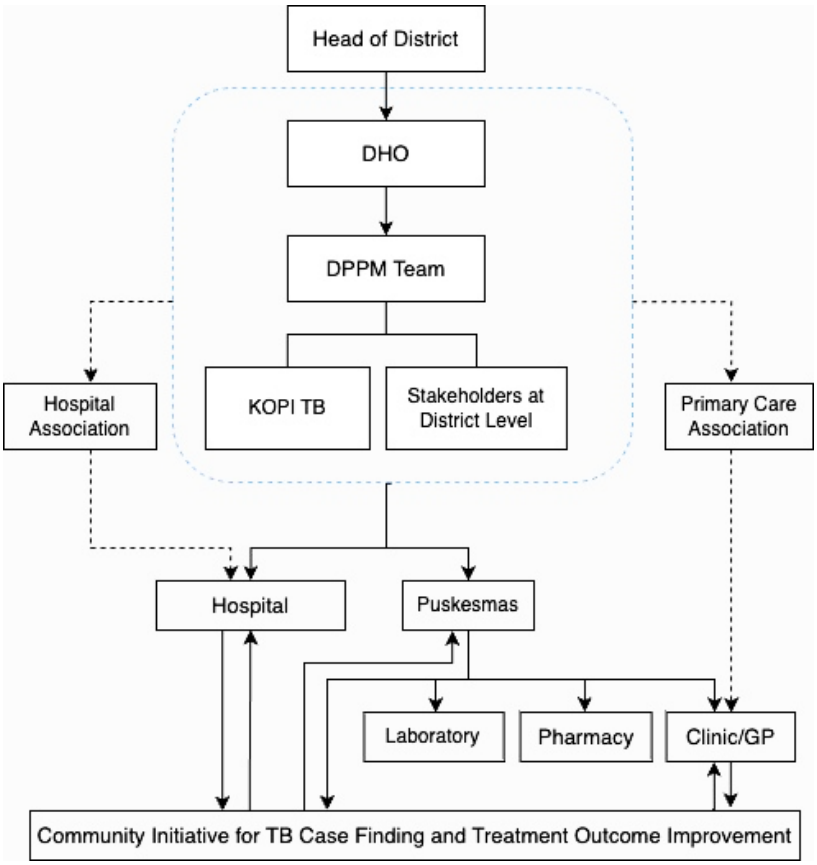


Figure 50. DPPM Structure and Coordination Mechanism

Since 2021, NTP has deployed additional PPM Technical Officers as part of the PPM team in national, 19 provinces, and 80 priority districts to strengthen DPPM intervention. The DPPM Technical officer, who is attached to the DHO, is part of the DPPM team and is in charge of:

1. Facilitate coordination between the DHO, DPPM team, KOPI TB, and PPM-related stakeholders
2. Liaise the coordination between the secondary facility and the public health system (primary health centers, district health office, and the central NTP)
3. Coordinate capacity building activities such as workshops, technical assistance, and on the job training for healthcare workers, involving district KOPI TB and PPM-related stakeholders
4. Facilitate external the TB network among HCF at district level, including treatment referral networks from secondary to primary healthcare providers
5. Monitor and evaluate the gap analysis, DPPM progress, and performance
6. Connect hospitals and clinics with the contact investigation and prevention efforts conducted by the community/CSO and the primary care providers.

The DPPM team will be supported by the coalition of professional organizations (KOPI TB) and stakeholders at the district level to support DPPM-related policies, strategies, activities, and TB care linkage (internal and external linkage). TB internal and external linkages are expected to be established at the district level.

a. TB Internal linkage is a TB-related care network among all units within a health facility. It aims to manage the mechanisms of TB screening, TB case finding, TB diagnosis referral, as well as TB recording and reporting. It aims to increase TB care and collaboration with other units/programs, reduce the occurrence of delayed-diagnostic TB and under-reporting TB cases, and ensure all TB cases are reported to the information system.
b. TB External linkage is a TB-related care network among all health facilities within a district. It aims to manage access to TB diagnostics, TB treatment referrals, tracking systems, and TB logistics (including TB drugs) for all healthcare facilities in a district. There are 2 (two) approaches to TB external linkage.
    i. At the primary level, Puskesmas has the responsibility and authority to manage all TB patients, as well as to coordinate and monitor the primary healthcare facility and community within their area. TB external linkage at the primary level consists of GPs, Clinics, laboratories, pharmacies and the community (CSOs/community organizations) under coordination and supervision by Puskesmas.

ii. At the secondary level, public and private hospitals serve as referral services for TB patients with complications and/or comorbidities from primary healthcare. The coalition of professional organizations (KOPI TB) plays an important role in increasing the capacity of healthcare providers at primary and secondary levels. TB external linkage at the secondary level consists of public and private hospitals under coordination and supervision by DHO.

In regard to the updates on TB Program at the national level, there are several additional and adjusted roles of KOPI TB at all levels, which are to:

TB Champion:

a. Conduct advocacy meetings with related stakeholders at the central, provincial or district levels to enable an environment supporting the TB elimination program
b. Along with DHO, ensure all healthcare facilities can get access of TB diagnostic tests (mWRD test), TB drugs, and patient support for TB treatment
c. Ensure the implementation of mandatory notification TB for health practitioners and healthcare facilities, especially in private providers
d. Support the provision of CMEs/SKP credit rewards and other forms of rewards, such as scientific seminars, workshops, and acknowledgement, to health workers related to the tuberculosis program
e. Assist DHO to establish a PMDT hospital in each district and monitor the quality of its services.

Clinical Resource Person:

a. Provide technical assistance and capacity building for practitioners in health facilities related to the quality of TB care, especially diagnostics of TB in children
b. Become trainers and champions in Latent Tuberculosis Infection management and Tuberculosis Preventive Therapy (TPT) programs for all members of professional organizations and co-workers in the healthcare facility
c. Become a TB Coach conducting coaching TB to increase the quality of TB care in health facilities
d. Become a resource person to provide TB-related consultations through online and offline platform at district and health facility level

Detailed information, step-by-step PPM implementation and the role of each stakeholder will be explained comprehensively in national PPM guidelines.

5.2.3. Laboratory capacity improvement

In accordance with the circular letter of the Director General of CDC of Indonesia MoH, number 936 of 2021, mWRD low/moderate complexity NAAT is the main diagnostic tool for TB, all Presumptive TB must be examined by mWRD low/moderate complexity NAAT test to determine their rifampicin resistance status. Until 2023, the mWRD low/moderate complexity NAAT machines used by the NTP will be the GeneXpert machines. Indonesia's average Gx utilization increases annually, from 37% in 2018 to 60% in 2022. The average Gx utilization per province in 2022 ranges from 13% in Bengkulu Province to 99% in Banten Province.

Access to laboratory services is geographically constrained in Indonesia. Even though there has been a recent successful expansion of diagnostics services, the NTP needs to sustain and continue the efforts to meet targets of NSP 2020-2026. Based on Gx machines distribution data as of January 31 2023, currently there are 2,202 Gx machines distributed to 1,944 Gx health facilities in 500 districts, 34 provinces. Only 16.9% of Gx health facilities are operational among 11,483 microscopic health facilities, so proper network arrangements are needed so that all TB presumptive/ TB patients can access mWRD low/moderate complexity NAAT examinations. There is an increasing proportion of new and re-treated TB patients receiving DST for rifampicin, namely 38% in 2020 to 66% in 2022, but this has still not reached the target of 70% in 2022. Specimen transport and referral systems are operational in 498 (96.8%) of 514 districts covering approximately 12,107 of the country's 16,689 health facilities (peripheral, public and private hospitals, clinics, and prisons), linking sputum microscopy laboratories to mWRD low/moderate complexity NAAT laboratories, regional, and national reference laboratories. The laboratory's upgrade plan focuses on efforts to expand mWRD low/moderate complexity NAAT labs use as a front-line test for all TB presumptive. Optimal utilization of laboratory capacity is a prerequisite for this purpose.

In early 2023, the initial implementation of the Xpert MTB/XDR cartridge was carried out at 15 DR-TB facilities in 2 provinces in Indonesia. The use of the XDR cartridge is used as a baseline diagnostic test for second-line TB drug testing using a 10colour Gx machine, preferably for patients with confirmed Rifampicin-resistant and presumptive monoresistant H TB (confirmed Rifampicin-Sensitive TB patients with a history of previous treatment). Extensive implementation is planned to be carried out in the 2nd quarter of 2023 for all DR-TB facilities that have Gx machines, in Indonesia.

In 2022 there will be 17 NGS (Next Genome Sequencing) laboratories used for Covid-19 examinations. The NGS laboratory will be developed to examine TB resistance both for surveillance activities or for baseline diagnosis of TB patients.

Objectives:

The NTP laboratory strengthening plan intends to expand current mWRD low/moderate complexity NAAT laboratories (2021 – 2026) from 1,658 to 2,588 health facilities to increase universal DST target from 52% in 2021 to 80% by 2026. The TB culture laboratories will be expanded from 22 to 42 laboratories and the TB DST laboratories from 12 to 24 laboratories by 2026. These efforts aim to support the implementation of the national DR-TB expansion plan and to ensure 100% coverage of SL-DST among enrolled cases. NTP plans to cover all provinces with the sputum transportation system, including to open wider access for the private sectors. EQA for sputum microscopy will be expanded to all districts and provinces from 28% to 100% by 2026. During 2020-2026, NTP will exercise the opportunity for rapid adaptation of newly approved rapid diagnostic tools through systematic small-scale implementation and Health Technology Assessment (HTA) procedures.

Geographic prioritization

The placement of TB diagnostic tools considers three main conditions: load of TB burden, desirable utilization rates and balanced geographic placement. The priority of mWRD low/moderate complexity NAAT machines placement in 2021-2026 is at the Puskesmas level, where 80% of TB patients are expected to be detected in 2026. Only 1,150 mWRD low complexity NAAT machines are placed at peripheral level up to January 2023. NTP plans to set up 376 machines in peripheral health facilities at 324 high burden TB districts (>1000 TB incidence per year) which have 90% load of TB cases in Indonesia as priority one.

The DST laboratories will be expanded from 12 to 24 to achieve better distribution of DST coverage and reducing complexity of sample transportation mechanisms, especially to high burden provinces without direct DST access. The number of culture laboratories will be increased from 22 to 42 laboratories to anticipate the increased burden of culture laboratories for DR-TB treatment follow up.

To increase access to second-line resistance tests with shorter TAT (turnaround time) TB laboratory tests, NTP is currently prioritizing the placement of Gx 10C machines and XDR cartridges in DR-TB facilities. The number of DR-TB facilities equipped with Gx XDR modules (H, FQ, SL) is targeted to increase from 147 health facilities in 2020 to 585 health facilities in 2026.

Targets:

To achieve maximum coverage of TB preventive treatment, there are several indicators and targets by the end of 2026:

No	Indicators	Baseline 2021	Target				
			2022	2023	2024	2025	2026
1	Percentage of healthcare facilities with microscopic laboratories that are involved in external quality assurance (EQA)	28%	80%	85%	90%	95%	100%
2	Number of referral laboratories for TB culture	22	38	42	42	42	42
3	Number of laboratories for TB Drug Susceptibility Testing (DST)	12	22	24	24	24	24
4	Number of health facilities equipped with mWRD low/moderate complexity NAAT machines as initial diagnostic testing	1,658	2,212	2,588	2,588	2,588	2,588
5	Number of DR-TB facilities equipped with mWRD low complexity NAAT technology for XDR-TB detection	147	277	360	549	585	585
6	Number of districts with sputum transportation in place	154	420	514	514	514	514
7	Universal access coverage for rifampicin susceptibility testing	49%	70%	70%	75%	75%	80%
8	Universal access coverage for fluoroquinolone susceptibility testing	49%	70%	70%	75%	75%	80%

Interventions:

NTP will increase laboratory capacity and improve laboratory management by implementing below strategies and activities:

(1) Increase utilization of mWRD low/moderate complexity NAAT systems by optimizing and expanding specimen transport and referral system at all districts and provinces by:

a. Update specimen transport system plan based on a “hub-and-spoke” model and install a mechanism (e.g., web-based dashboards) for monitoring data, and key performance indicators, at multiple levels of service delivery.

b. Development of a specimen transport system with adequate budget, covering all districts for both the public and private laboratories.
c. Establish agreements with local courier service providers based on area coverage, effectiveness and reliability.

(2) Address access barriers to mWRD low/moderate complexity NAAT testing by:
a. Remove bureaucratic and financial barriers such as referral hierarchy at hospitals, BPJS registration policies and regulations for sample transportation.
b. Enhance collaboration with private hospitals to increase specimen referrals.
c. Establish linkages between diagnosis and treatment by expanding real-time connectivity solutions for mWRD low/moderate complexity NAAT systems (e.g., GxAlert). Such systems help in integrated Patient-centered diagnosis and care, in addition to reducing treatment delays.
d. Establish additional mWRD low/moderate complexity NAAT sites at Puskesmas level with an effective specimen referral network.

(3) Expand EQA for sputum microscopy to all districts and provinces:
a. Provide administrative and financial support to the National Reference Laboratory and Intermediate Reference Laboratory to carry out all of its designated functions including on-site supervisory, staff operational cost capacity building.
b. Simplify the EQA protocol and integrate it with a prompt mechanism to implement corrective actions for any high false positive or negative errors.

(4) Expansion of TB C/DST laboratory network, ensuring its quality management systems and enhanced support by national reference laboratories, include for DST of new drugs.
a. Standardized testing procedures for implementing Phenotypic DST for new drugs.
b. Built in-country capacity for whole genome sequencing (WGS) of routine drug resistant isolates from culture and DST labs.
c. Review and update current national proficiency testing and lab certification guidelines for culture and DST to improve access to quality services.
d. Ensure all RR-TB patients get baseline first and second line molecular DST. This will require enhancing laboratory capabilities to increase efficiency and multiple levels of coordination including access to timely specimen transport.

e. Develop a uniform TB-module for Laboratory information management systems (LIMS) for culture and DST laboratories to facilitate easy monitoring of Key Performance Indicators (KPI).
f. Enhance capacity of laboratory work-force, especially for culture and DST laboratories

(5) Establishment of one WHO GLI center-of-excellence for TB to support network expansion and streamline quality leadership for the country.
(6) Sustain uninterrupted laboratory services through timely procurement and supply chain management to support the expanded national diagnostic network.
(7) Implementation of XDR cartridges in DR-TB facilities to increase access to TB resistance test, especially second-line drugs.
(8) Development of the NGS (*Next Generation Sequencing*) laboratory to examine TB resistance, both for surveillance activities and later for baseline diagnosis

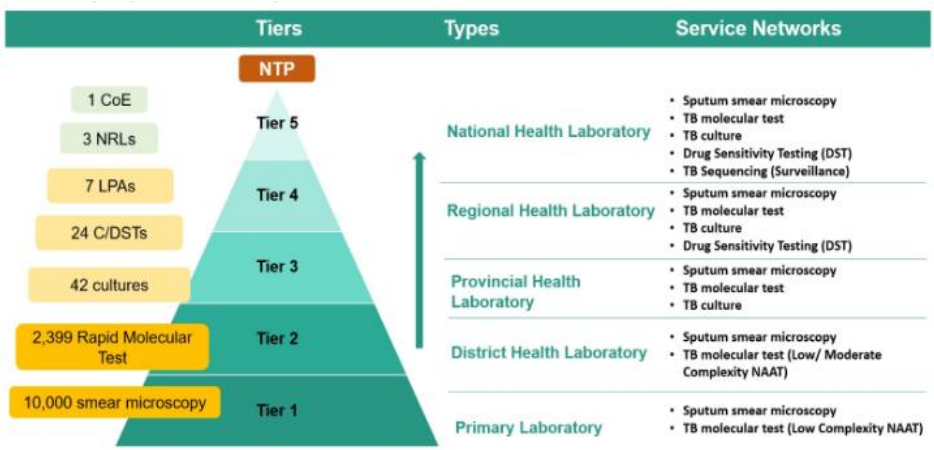


Figure 51. Laboratory Expansion 2026 Map

5.2.4. Tuberculosis Preventive Therapy

The Revised NSP for 2020-2024 and interim plan 2025-2026 recognizes scale-up of TB preventive treatment as one of the essential strategies to reduce the national TB incidence. In 2020, updated WHO guidelines on the programmatic management of LTBI recommended expansion of target groups for TB preventive treatment, which includes household contacts aged 5 years and older as well as PLHIV and high risk of TB. NTP will expand preventive treatment to all household contacts of people with bacteriologically confirmed TB, PLHIV and as well as other risk groups, i.e., diabetic, immunocompromised, inmates etc., taking into account the local context and system.

The recommendation of JEMM 2022 stated that TPT should be integrated into active case finding activity once TB has been ruled out.

Objective:

The implementation of TPT in Indonesia quite challenging, the coverage in 2021 is 1%. NTP aimed to reduce the huge missed opportunity to protect contacts, PLHIV and other high-risk groups from TB and death. Current implementation of TB preventive treatment has been running in PLHIV and child household contacts aged all ages and will be expanded to other high-risk groups by 2026. In 2021, the program has introduced the short-term regimen of TPT for household contact and PLHIV but limited stock to cover the demand. The uptake of people living with HIV will increase from 13% in 2021 to 95% by 2026. The TPT coverage among household contacts will be increased to 80% to expedite declining TB incidence.

Geographic prioritization:

Enhanced TPT provision will be prioritized to ~~292~~ TB high burden districts and 42 low TB burdens but high HIV burden districts. In these 324 districts NTP will integrate LTBI management with scale up of TB screening among high-risk population such as household contacts (under 5 years, 5-14 years, adolescence, adults), PLHIV and other risk groups (DM, Immunocompromised, inmates, workplace, boarding schools and military barracks). The quality of LTBI management among >5 years household contacts will be strengthened with systematic TB infection test (Tuberculin Skin Test) and Chest X-ray to rule out active TB. People living with HIV and child household contacts aged less than 5 years will receive symptomatic screening to rule out TB disease and decision for TPT provision should be made accordingly for those without TB symptoms. In 180 low TB burden districts, NTP will implement an essential LTBI management which is aimed at people living with HIV and child household contacts aged less than 5 years. The program will support the stock of TPT drugs using the short-term regiment.

Targets:

	Indicator	Baseline 2021	2022	2023	2024	2025	2026
3.1	Coverage of household contacts of tuberculosis patients who are on preventive therapy	0,3%	48%	58%	68%	72%	80%
3.2	Coverage of TPT on children < 5 years old contact with TB patients	1,9%	65%	80%	90%	90%	90%
3.3	Coverage of TPT on children 5-14 years old contact with TB patients	0,2%	30%	40%	50%	50%	50%

3.4	Coverage of TPT on individuals aged ≥15 years old contact with TB patients	0,1%	50%	60%	70%	75%	85%
3.5	Percentage of PLHIV currently enrolled on ART who started TPT during the reporting period	13%	45%	50%	55%	60%	65%
3.6	Coverage of TPT on other risk groups	0,2%	20%	30%	40%	40%	40%
3.7	Coverage of health services that have implemented integrated tuberculosis infection control*	NA	40%	50%	60%	80%	100%

Interventions:

NTP plans to expand the uptake of TB preventive treatment (TPT) for all household contacts of bacteriologically positive cases and PLHIV. This expansion will require a strategic engagement of all stakeholders, comprehensive communication strategy of TPT importance as a lifesaving intervention, creating demand from those who need it, provision of the new effective shorter regimens and integration with TB intensified case finding strategy without delay. In 2020-2026 NTP will implement strategies and activities:

1. Inclusion of TB preventive treatment as one of the key indicators along with other TB indicators at all levels. Set targets to ensure TPT implementation is closely monitored and actions are taken.
2. Scale-up TB preventive treatment integrated into systematic TB screening among risk groups as a package. NTP will leverage existing home visit activities by cadres and midwives to disseminate information on TB preventive treatment.
3. Strengthening LTBI management and Tuberculosis Preventive Therapy provision
    a. Continuous advocacy and dissemination to health staff to provide Tuberculosis Preventive Therapy.
    b. Simplify screening criteria used by sub-national levels in accordance with recommendations by WHO and implement a pilot to initiate TPT at home so that contacts do not need to travel to health care facilities.
    c. Development and dissemination of technical guidelines for LTBI management and TPT provision.
    d. Development of SOP for LTBI management and TPT provision at health facilities.
    e. Initiate DR-TB prevention therapy in selected areas, including provision of Levofloxacin -Ethionamide regimen, outreach, and monitoring evaluation.

4. Increase capacity of Tuberculosis Prevention Therapy
    a. Mapping the readiness of human resources, facilities, and infrastructure in government and private health service facilities that can provide LTBI management and TPT provision.
    b. Develop the capacity of health care workers to offer TB preventive treatment, including counseling and proper management of adverse events. Increase the capacity of health workers to deliver sufficient IEC, conduct proper planning and logistics management.
    c. Provision of LTBI screening tools and methods to all target populations of LTBI treatment which include CXR and TST.
    d. Provision of TPT drugs either standard regiment (6H) and shorter drugs regimen (3HR, 3HP or 1HP, 4R)
5. Scale-up TB preventive treatment integrated into systematic TB screening among risk groups other than household contacts and PLHIV as a package: Diabetic, Immunocompromised patients, inmates in prisons/ detention centers, Workplaces, Boarding schools and other high-risk settings.
    a. The implementation of integrated Contact Investigation (CI) with LTBI management in adjustment with the expansion of the target population.
    b. Integrated screening procedures with LTBI management for inmates in prison/ detention centers, following MoLHR standards procedures.
    c. Integrated screening and LTBI management in the workplace population, boarding schools, and Military/ Police barracks.
    d. LTBI management and TPT systematic provision to diabetic and immunocompromised patients (poor nutrition, TNF-alpha, long-term KS, chemotherapy)
6. Develop a strategic communication plan to inform all stakeholders of the importance of TB preventive treatment as a lifesaving intervention.
    a. Development of comprehensive communication strategy and plans related to LTBI management and TPT provision in every level of society using the latest communication methods/ technology.
    b. Engagement of professional society, local and religious leaders and school to disseminate information.
    c. Develop comprehensive IEC materials to improve effective prevention and promotion strategies for LTBI. Those materials will address some common concerns such as drug resistance, adverse events and durability of the protection in a clear manner.
    d. IEC materials provision for both patients, health care workers and community. IEC publication through print media, electronic media, and social media
    e. LTBI and TPT dissemination in the community, including mass campaigns, broader community and CSO engagement, involvement of

the youth movement.

6. Capitalize on roll-out of SITB, develop a clear dashboard, and enable cascade analysis of contact investigation and TB preventive therapy.

Tuberculosis Preventive Therapy standard algorithm:

	PLHIV	Child under 5 years contact with TB	Household > 5 years contacts with TB	Other clinical risk groups
Symptom-based screening	Absence of any TB clinical symptoms: cough, fever, weight loss or night sweat	Absence of any TB clinical symptoms for child: poor weight gain, fever or cough.	Absence of any TB symptoms: any duration of cough, hemoptysis, fever, night sweat, weight loss, chest pain, fatigue and shortness of breath.	
Frequency of screening	At every visit to health centers or contact with a HCWs			
Test for TB diagnosis if symptoms are present	Rapid diagnostics (GeneXpert) or Urine LAM (for seriously ill PLHIV)	National TB Scoring system for children, bacteriology confirmation test if possible	Rapid diagnostic (GeneXpert) or Smear Microscopy	
Test for TB Infection	Not required		Consider when access to test, resources available and health infrastructure permits	
Chest radiology	Not mandatory, maybe considered among PLHIV on ART, contacts >5 years and clinical risk groups access to tests, resources available and health infrastructure permits.			
Evaluation to assess eligibility of TPT	Absence of active hepatitis (acute or chronic), heavy alcoholism and symptom of peripheral neuropathy. Assessment between benefits vs harm of TPT			
Information, Education and Counseling	Disclosure of TB status to family and importance of contact screening, need of TPT, benefits from TPT completion, adverse events and support received.			

5.2.5. Active Case Findings

In 2022, WHO re-estimated the TB burden affected by the COVID-10 pandemic in Indonesia. In 2021, TB incidence was estimated to be 969,000. Only 443,235 cases were notified in that year. In 2022, the MoH improved the reporting system, issuing circular letters for the private health providers to increase reporting and obliging TB registration

numbers for TB patients treated in hospitals. This resulted in increased notification up to 717,941 cases.

Objective:

To accelerate the decrease of incidence, we need to significantly increase case detection, to close the gaps between the estimated incidence and the notified cases. The case detection will increase with the intervention of:

1. Improve the capacity of private health providers in diagnosing, treating, and reporting TB cases.
2. Improve diagnostic quality in the routine TB service.
3. Upstream case finding (symptomatic only)
4. Detecting subclinical TB

The detected TB diseases, including sub-clinical TB will be treated according to the latest TB treatment recommendation.

The improvement of capacity of private providers in diagnosis, treating and reporting TB cases is addressed under the public private mix chapter.

Geographic prioritization:

Selection of high burden district

In selected high burden districts, targeted screening out of the health facilities will be conducted in regular basis to cover all high-risk population in those districts. The ACF mobile team can cover also several districts around, according to the estimated high-risk population. To select high burden districts, the criteria that will be used:

1. Estimated TB incidence (absolute numbers and rate)

2. High estimated number of high-risk populations

3. The District Health Office expresses the interest to manage the team, equipment, and activities.

We plan to conduct CXR screening in 8 provinces (193 districts) that engage in TB elimination acceleration process.

Targets:

TB diagnosis quality in the routing TB service will target key-vulnerable populations, including patients with immunocompromised TB, PLHIV. TB detection will be done in the steps: (1). Asking TB symptom questions to people with Diabetes Mellitus (DM), PLHIV, and patients with immunocompromised disease; (2) If they present any of TB symptoms, sputum specimens will be requested for TB bacteriological confirmation; (3) If they do not present any symptoms, CXR screening will be proposed in an interval of

6 months. CXR can be done in the health facilities if available or in an external health facility.

Upstream case finding aims to detect symptomatic TB patients who have not accessed health facilities. The upstream case finding includes: (1) Household and closed contact investigation based on symptom screening by CHW; and (2) Entry TB screening and cough observer program in prisons.

Detecting subclinical TB can be done through targeted CXR screening in people with a high risk of TB disease. TB screening out of the health facilities should be planned regularly in the population with possible high yield of TB detection. It will also be conducted to improve access to TB diagnostics among populations with difficult access to care. Therefore, targeted CXR screening will be planned for: (1) Household and closed contacts; (2) People with immunocompromised diseases including PLHIV; (3) People with DM; (4) Prison inmates; (5) People living in crowded and/or poor area, such as slum; (6) People living in congregated settings such as dormitories, orphanages; (7) People working in mines and other TB high risk professions; and (8) Health workers.

Interventions:

Chest x-ray service for TB screening will be made available in selected high burden primary health facilities to facilitate upstream case finding. Mobile ACF teams equipped with either portable chest X-ray or outsourced mobile x-ray services will be formed in high burden districts.

In all districts, upstream case finding will be implemented with at least symptom screening. In the districts with access to CXR screening, CXR will be done to the population of upstream case finding who do not present symptoms (algorithm 1).

Implementation of targeted screening out of health facilities

Tuberculosis screening in primary health care facilities with portable CXR was carried out in 8 provinces of the acceleration area. The intervention considers caseloads in 8 provinces (193 districts), which has a burden of cases amounting to 62% of the total burden of cases in all of Indonesia. The implementation of the activity was carried out at puskesmas which had 719 mWrd in 175 provinces or cities where the X-ray machines needed were 719 pieces. There are things to consider, including:

1. Puskesmas has facilities and infrastructure that support placing portable X-rays.
2. Puskesmas has a minimum of 1 radiographer.
3. Puskesmas has a network with other health facilities as a reference for reading minimum radiology results at intermediate clinics.
4. Puskesmas has a sufficient/stable electricity supply.
5. Puskesmas has tuberculosis community support.

6. Puskesmas has a minimum of 1 medical doctor (if artificial intelligence is not used).
7. Puskesmas has a minimum of 2 nurses for registration and symptom screening.
8. Puskesmas has a minimum of 1 driver that can help with logistics and registration

The District Health Office will manage the ACF activities in a daily basis in collaboration with puskesmas and health facilities. In general, the mobile ACF team will consists of:

- 1 radiographer (if x-ray service is not subcontracted)
- 1 medical doctor (if artificial intelligence is not used)
- 2 nurses for registration and symptom screening
- 1 driver that can help with logistic and registration

Specimen collection will be done by a puskesmas nurse, and presumptive TB patients' data will be entered directly to SITB. Then the sputum will be transported to the nearest geneXpert center.

Puskesmas doctors will review the symptoms, risk factors, CXR image, and the Xpert MTB/Rif result of presumptive TB patients to decide the final TB diagnosis and start the treatment.

KOPI TB will assign a pulmonologist or internist, a radiologist, and a pediatrician to receive clinical consultations on a daily basis if the puskesmas doctors have difficulties to decide the diagnosis and treatment.

Clinical case discussion can be organized on a weekly or monthly basis at the district level, led by the doctors from KOPI TB to decide diagnosis and treatment of difficult cases.

Screening Algorithms

There are two options of screening algorithms, serial or parallel symptoms and CXR screening.

Serial symptoms and CXR screening: This algorithm can be applied in combination with the regular symptom screening (upstream case finding and screening in health facilities). If the symptom screening does not detect any symptom, then CXR screening can be proposed.

Parallel symptoms and CXR screening: The parallel screening algorithm will be applied in a targeted screening that the participants have not passed a symptom screening before.

Chapter 6. Monitoring and Evaluation

Monitoring is one of the management functions that aims to assess the successful implementation of the tuberculosis program. The implementation of tuberculosis as a national strategy must be regularly monitored and systematically evaluated. As an initial step, a national strategy monitoring system was developed, followed by monitoring conducted every year as part of a routine national evaluation monitoring meeting. The aims of the National Tuberculosis Control Strategy monitoring are to: (1) monitor the process and progress of national strategies implementation regularly and continuously, (2) identify problems and gaps in implementation time, (3) resolve identified problems and anticipate the impact of these problems. Monitoring can be done by assessment of routine and non-routine reports, and field visits. The monitoring and evaluation are the responsibility of the program implementers in each level of implementation, including health facilities, districts, provinces to the center.

Therefore, participation of stakeholders in this annual monitoring needs to be expanded, beyond engaging the TB program managers. National strategy evaluation aims to analyze the relevance, efficiency, effectiveness, impact and sustainability of national strategies to provide long-term policy direction. The principles of accountability, organizational learning, continuous improvement and ownership of the tuberculosis prevention program can be applied to the evaluation of this national strategy.

Various data sources can be utilized for national strategy monitoring and evaluation. Data sources can come from routine tuberculosis surveillance (SITB) in tuberculosis control programs, findings from studies by the Tuberculosis operational research groups and other research groups, including NGOs, and evaluations conducted by international organizations (such as the Joint External Monitoring Mission - which is held bi-annually and other external evaluations that are specific to the components of the tuberculosis control program). National Indicators of the impact of tuberculosis control will be evaluated through prevalence surveys and analysis of tuberculosis mortality data. The following are indicators and targets of the national tuberculosis program for the revised 2020-2024 period and the interim plan for 2025-2026:

6.1. Impact indicators and targets

Revised NSP 2020-2024 and interim plan 2025-2026

Indicators	Baseline 2021	Target				
		2022	2023	2024	2025	2026
Tuberculosis incidence per 100,000 population	354	394	453	406	348	300
Tuberculosis mortality rate per 100,000 population	52	62	60	38	31	26

6.2. Main indicators and targets

Revised NSP 2020-2024 and interim plan 2025-2026

Indicators		Target					
		Baseline 2021	2022	2023	2024	2025	2026
1.	Tuberculosis case notification coverage	46%	90%	90%	90%	90%	90%
2.	Number of notified tuberculosis cases	443,235	981,284	1,138,775	1,031,239	892,759	777,084
3.	Enrolment rate of drug-sensitive tuberculosis	85%	95%	95%	95%	95%	95%
4.	Treatment success rates	86%	90%	90%	90%	90%	90%
5.	Drug-resistant tuberculosis case notification coverage	33%	75%	80%	85%	85%	85%
6.	Enrolment rate of drug-resistant tuberculosis	61%	93%	94%	95%	95%	95%
7.	Treatment success rates of drug-resistant tuberculosis	46%	80%	80%	80%	80%	80%
8.	Childhood and early adolescent tuberculosis	55%	90%	90%	90%	90%	90%

	notification coverage						
9.	Percentage of registered tuberculosis patients with documented HIV status	53%	70%	75%	80%	85%	90%
10.	Percentage of PLHIV newly initiated on ART who were screened for tuberculosis	80%	95%	95%	95%	95%	95%
11.	Coverage of household contacts of tuberculosis patients who are on preventive therapy	0,3%	48%	58%	68%	72%	80%

6.3. Indicators and targets per strategy

The following is a list of indicators and targets per strategy. A more detailed description of each indicator can be found in Appendix.

Strategy 1. Strengthening commitment and leadership of central, provincial, and district government to support the acceleration towards tuberculosis elimination 2030

Revised NSP 2020-2024 and interim plan 2025-2026

	Indicators	Baseline 2021	2022	2023	2024	2025	2026
1.1	Percentage of districts that included Tuberculosis in the Regional Medium-term Development Plan (RPJMD) indicator and the Strategic Plan for Tuberculosis Control	60%	70%	80%	90%	100%	100%
1.2	Percentage of districts with 80% Achievement of TB Related SPM	9%	40%	50%	60%	70%	80%
1.3	Percentage of provinces that have a Decree (SK) for the acceleration of tuberculosis control teams assigned by the Regional Head.	NA	14%	38%	62%	86%	100%
1.4	Percentage of districts that have a Decree (SK) for the acceleration of tuberculosis control teams assigned by the Regional Head.	NA	3%	27%	52%	80%	100%

Strategy 2: Increasing access to high-quality and patient-centered tuberculosis diagnosis and treatment services

Revised NSP 2020-2024 and interim plan 2025-2026

	Indicator	Baseline 2021	2022	2023	2024	2025	2026
Tuberculosis Diagnosis							
2.1	Percentage of presumptive TB cases that received standard TB care (Minimum service standard target)	46%	100%	100%	100%	100%	100%
2.2	Percentage of TB patients tested using recommended rapid tests at the time of diagnosis (universal DST)	39%	70%	70%	75%	75%	80%
Drug-Resistant Tuberculosis							
2.3	Coverage of INH mono-resistant TB case notification	N/A	0%	5%	10%	15%	20%
2.4	Percentage of INH mono-resistant TB cases that started treatment	N/A	56%	60%	70%	80%	80%
2.5.	Number of districts having referral health facilities for drug-resistant TB	283	400	460	514	514	514
TB-HIV							
2.6	Percentage of HIV-positive patients on ART during TB treatment	40%	95%	95%	95%	95%	95%
TB-DM							
2.7	Number of DM patients who were screened for tuberculosis	5,186	214,105	285,474	837,536	1,046,920	1,256,304
Tuberculosis in correctional institutions/detention							
2.8	Percentage of tuberculosis cases (all forms) notified among inmates	45%	80%	85%	90%	90%	90%
2.9	Percentage of tuberculosis cases (all forms) among inmates treated in prisons	98%	98%	98%	98%	98%	98%
Contact Investigation							

	Indicator	Baseline 2021	2022	2023	2024	2025	2026
2.10	Percentage of index cases (bacteriologically confirmed tuberculosis cases) which followed by contact investigation	33%	90%	90%	90%	90%	90%
2.11	Percentage of index cases (clinically diagnosed tuberculosis cases) which followed by contact investigation	N/A	15%	20%	30%	40%	50%
2.12	Percentage of tuberculosis cases found from contact investigation	1,5%	9%	10%	10%	10%	10%
The improvement of laboratory capacity in TB diagnostic testing							
2.13	Percentage of healthcare facilities with microscopic laboratories that are involved in external quality assurance (EQA)	28%	80%	85%	90%	95%	100%
2.14	Number of referral laboratories for TB culture	22	38	42	42	42	42
2.15	Number of laboratories for TB Drug Susceptibility Testing (DST)	14	22	24	24	24	24
2.16	Number of health facilities equipped with mWRD low/moderate complexity NAAT technology as initial diagnostic testing	1,658	2,212	2,588	2,588	2,588	2,588
2.17	Number of DR-TB facilities equipped with mWRD low complexity NAAT technology for XDR-TB detection	147	134	360	549	585	585
2.18	Number of districts with sputum transportation in place	154	420	514	514	514	514
2.19	Universal access coverage for rifampicin susceptibility testing	49%	70%	70%	75%	75%	80%
2.20	Universal access coverage for fluoroquinolone susceptibility testing	49%	70%	70%	75%	75%	80%
Public-Private Mix for TB control							
2.21	Number of TB case notifications from government hospitals and clinics	115,006	196,257	208,129	209,859	203,330	197,338
2.22	Number of TB cases notification from private health facilities	98,309	250,772	266,669	319,684	294,610	256,438

	Indicator	Baseline 2021	2022	2023	2024	2025	2026
2.23	Proportion of private health facilities that report TB cases among all private health facilities (Hospital, clinics, private medical practice)	15%	19%	23%	34%	43%	53%
2.24	Percentage of treatment success rate in private health facilities	79%	85%	85%	85%	85%	90%

Strategy 3: Optimizing the promotion, preventive, administration of TB preventive therapy (TPT) and infection control

Revised NSP 2020-2024 and interim plan 2025-2026

	Indicator	Baseline 2021	2022	2023	2024	2025	2026
3.1	Coverage of TPT on children < 5 years old contact with TB patients	1,9%	65%	80%	90%	90%	90%
3.2	Coverage of TPT on children 5-14 years old contact with TB patients	0,2%	30%	40%	50%	50%	50%
3.3	Coverage of TPT on individuals aged ≥15 years old contact with TB patients	0,1%	50%	60%	70%	75%	85%
3.4	Percentage of PLHIV currently enrolled on ART who started TPT during the reporting period	5%	45%	50%	55%	60%	65%
3.5	Coverage of TPT on other risk groups	0,2%	20%	30%	40%	40%	40%
3.6	Coverage of health services that have implemented integrated tuberculosis infection control	N/A	40%	50%	60%	80%	100%

Strategy 4: Utilization of research findings and technologies for screening, diagnosis, and management of Tuberculosis

Revised NSP 2020-2024 and interim plan 2025-2026

	Indicator	Baseline 2021	2022	2023	2024	2025	2026
4.1	Number of Policy Brief generated from TB research findings	10	15	10	10	10	15
4.2	Number of new innovations implemented (new drugs, new diagnostic efforts, screening, new tuberculosis diagnosis pathways, etc.)	1	1	1	1	1	1

4.3	Number of provinces conducting tuberculosis operational research	11	15	15	15	15	15

Strategy 5: Increasing communities, partners, and multisectoral participation in TB elimination efforts

Revised NSP 2020-2024 and interim plan 2025-2026

	Indicator	Baseline 2021	2022	2023	2024	2025	2026
5.1	Number of provinces that have ex-TB patient network	16	16	21	26	33	37
5.2	Number of districts that have partnerships with NGOs (Non-Profit Organization)/CSOs (Civil Society Organization) related to TB	190	190	271	352	488	514
5.3	Percentage of notified TB cases (all forms) contributed by community referrals	10%	18%	25%	32%	40%	40%

Strategy 6: Strengthening the program management through health system strengthening

Revised NSP 2020-2024 and interim plan for 2022-2026

	Indicator	Baseline 2021	2022	2023	2024	2025	2026
6.1	Percentage of health facilities that report TB cases to information systems	55%	70%	70%	70%	75%	80%
6.2	Percentage of districts with undisrupted TB drugs stocks during reporting periods.	91%	90%	95%	97%	97%	97%

Chapter 7. Budget and Financing

7.1. Budgeting

The budget for the National Strategic Plan for TB Care and Prevention 2020-2024 and the adjustment for 2025 and 2026 are based on the estimated activities that will be conducted, using the standard government budgeting from the Ministry of Finance. The unit costs include accommodation, transportation, meetings, workshops, office equipment procurement, etc. In addition, the budgeting is in line with the National budget, as well as the National Mid-term Development Plan from relevant ministries/agencies.

The estimated total budget needed for TB control from 2020-2024 is **47,3 trillion rupiah**, or equal to **3,34 billion USD**. Based on Table 10 budget calculation, the largest proportion of the budget (81%) aims to fulfill needs for Strategy 2 with a total amount of 38,7 trillion rupiah. About 68% of Strategy 2 (23,8 trillion rupiah) budgets will be allocated for 1) procuring equipment, consumables, and services for diagnostic laboratories and 2) medical devices and consumables, drugs, and medical services costs. Other major budget allocations are needed for human resource capacity building (9,8 trillion rupiah), incentives for health care workers and program administration (6,2 trillion rupiah), operational costs, transport and accommodation (4,48 trillion rupiah) and direct program expenditure (2,8 trillion rupiah) mainly for health *service delivery–based on intervention modeling*.

Continuing into 2025 and 2026, the budget requirements also increase. This is in line with the increase in cases, especially due to the impact of the COVID-19 pandemic from 2020 to 2022. It is estimated that the budget requirement for the TB control program will reach 51 trillion rupiah.

7.2. Financing

7.2.1. Financing calculation

Based on the activities carried out for every intervention's purpose and budget estimation, which is in accordance with the National Budgeting Standard 2019 published by the Ministry of Finance, and economic modeling using evidence-based economic value approach, the estimated financing is obtained and presented in Table 4:

Table 4. Estimated financing in the National Strategy for Tuberculosis Plan 2020-2024 and Interim Plan 2025-2026

STRATEGY	Current NSP					Interim Plan	
	2020	2021	2022	2023	2024	2025	2026
Strategy 1. Strengthening commitment and leadership of central, provincial, and district government to support the acceleration towards tuberculosis elimination 2030	92.841	165.736	176.796	178.902	174.603	178.025	208.289
Strategy 2. Increasing access to high-quality and patient-centered tuberculosis diagnosis and treatment services	5.438.013	6.568.104	8.005.047	9.095.193	9.618.464	15.779.942	18.462.533
Strategy 3. Optimization of promotion and prevention efforts, provision of tuberculosis prevention therapy and infection control	200.126	482.722	838.725	941.622	1.103.208	1.292.757	1.512.526
Strategy 4. Utilization of research findings and technologies for screening, diagnosis, and management of Tuberculosis	43.690	63.579	71.528	68.965	51.358	41.743	48.840
Strategy 5. Increasing communities, partners, and multisectoral participation in TB elimination efforts	92.222	217.690	244.752	270.114	285.801	311.871	364.889
Strategy 6: Strengthening program management through strengthening health system	484.972	578.883	576.749	575.838	601.642	631.772	739.174
TOTAL REQUIREMENTS	**6.351.865**	**8.076.713**	**9.913.598**	**11.130.634**	**11.835.076**	**18.236.111**	**21.336.250**

** Note: values are stated in million rupiah.*

National, provincial, district to village government, together with private/ society and donor agencies, allocate funding for the development of an integrated system to support the Tuberculosis control program in Indonesia during the strategic financing plan for 2020-2024 plus extended years 2025-2026

Government funding is prioritized for services, infrastructure, surveillance systems, and implementation of the Tuberculosis prevention program. Private and donor funding is

prioritized to provide innovation support and other partnership technical assistance. Funding from donors is expected to decrease proportionally over the next five years. It will be replaced by regional funding, which includes: the provincial government budget, district government budget, and Village funds and sub-district funding from the private sector, which must be increased to close the gap in funding needs.

7.2.2. Financing Projection

Based on the activities carried out for every intervention's purpose and budget estimation, which is in accordance with the National Budgeting Standard 2019 published by the Ministry of Finance, and economic modeling using an evidence-based economic value approach, the estimated financing is obtained and presented in Table 5 below.

Table 5. Budget of Tuberculosis service 2020-2024

Service	2020	2021	2022	2023	2024
Diagnosis and examination of Presumptive TB	818,273	935,941	991,621	988,451	959,831
TB-drug sensitive care services (beyond medicine)	138,838	138,613	133,711	126,618	119,632
TB-drug resistant care services (beyond medicine)	441,824	475,811	509,797	543,784	453,776
Procurement of first line drug	103,932	103,764	100,094	94,784	89,554
Procurement of second line drug	366,277	394,452	422,627	450,802	376,185
Procurement of Tuberculosis drug for children	1,876	1,990	2,030	1,920	1,812
Procurement of conventional drug	763	959	950	810	763
IPT beyond labor costs	1,179,430	1,794,357	2,248,783	2,418,206	2,349,922

* *Note: values are stated in million rupiah*

Using cost calculation and economic modeling, it is known that the highest need for TB control and treatment in Indonesia is for IPT services and laboratory testing services (diagnostics). The challenge in the midterm 5 years plus 2 extended years is how the government complements the needs of its health system and provides funds for high-quality treatment for TB patients in Indonesia.

Besides the use of economic modeling for an acceleration of TB elimination in Indonesia, cost estimation for TB intervention and programs in the revised plan for 2020-2024 and the interim plan for 2025-2026 was also conducted. Cost estimation for TB intervention and programs is presented in Table 6 below.

Table 6. Revised estimated cost for TB program 2020-2024 with the interim plan for 2025-2026

Intervention	2020	2021	2022	2023	2024	2025	2026
TB prevention and diagnosis	3.264.393	4.150.838	5.094.862	5.720.329	6.082.361	9.372.024	10.965.268
TB treatment and care	2.000.087	2.543.210	3.121.612	3.504.834	3.726.650	5.742.220	6.718.397
Multisectoral collaboration	26.415	33.588	41.227	46.288	49.217	75.836	88.728
Activities at the community	74.571	94.820	116.385	130.673	138.943	214.091	250.486
Health system strengthening	378.066	480.730	590.063	662.501	704.430	1.085.423	1.269.945
Capacity building & human resources	608.334	773.527	949.450	1.066.008	1.133.474	1.746.517	2.043.425
TOTAL	**6.351.865**	**8.076.713**	**9.913.598**	**11.130.634**	**11.835.076**	**18.236.110**	**21.336.248**

**Note: values are stated in million rupiah.*

The highest need for TB intervention and program in this midterm 5 years plus extended 2 years in Indonesia is for TB prevention and diagnosis. The second highest is for TB treatment and care (Table 6).

7.2.3. Funding Sources

Based on the estimated financing for the national strategy for TB control and the budget allocated by the relevant ministries/agencies, there still needs to be a relatively high funding gap. TB control has become a national priority in Indonesia, as stated in the National Medium-term Development Plan. The use of the National *Health Account* and *District Health Account* concept can facilitate the identification, flow, and utilization of funds for the health sector, including TB control in Indonesia. NHA/DHA is expected to support data on the financial flow from the s*ource of finance and financial intermediaries*, use of funds/ budget (*Health provider and function*), and the beneficiaries of the allocated funds. Integrated NHA/DHA helps the government in monitoring the effectiveness and efficiency of funds utilization in the health sector, including TB control. Valid financial reports balanced with budgeting modeling can facilitate the government in identifying and analyzing financial gaps. The financial gap indicates the gap between budget needs in a certain period and available funds (allocated by the government/donor). The results showed that there are still financial gaps, particularly in aggregate funding and specific interventions.

Funding sources can be classified as follow:

1. Domestic: National budget, Province/district budget, Village budget, and National Health Insurance (JKN-BPJS Kesehatan);
2. Private sector: Community Service Responsibility (CSR), and
3. Donors

The funding needs throughout 2024 showed increased government contribution (national and local) (Table 13). The National Health Insurance scheme is expected to be the financial model that can reduce the burden of TB patients, particularly since there was a large proportion of out-of-pocket medication in TB care in the next five years. Donor/grant contributions can support government funding, particularly in improving the capacity of health workers and introducing innovation in TB services in Indonesia. The identification between budgetary needs and available funds can provide a description of financial gaps for the next five years as described in Table 7 below:

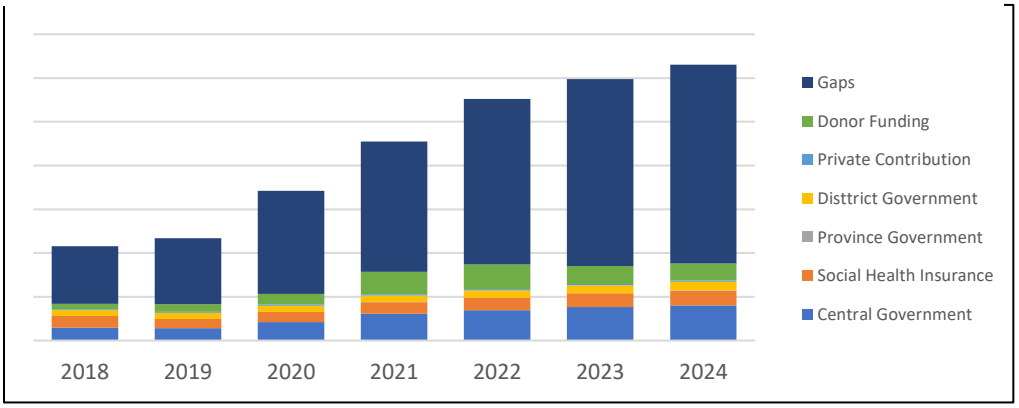
Table 7. Funding needs and the gap based on funding source 2018-2024

Funding source	2018	2019	2020	2021	2022	2023	2024
1. Domestic funding	**1,383,238**	**1,261,650**	**1,589,583**	**2,058,480**	**2,291,573**	**2,527,264**	**2,684,797**
• Central government (APBN)	601,551	573,233	838,134	1,231,475	1,382,340	1,527,605	1,603,985
• Special Allocation Funds: Decentralization and regular	-	-	349,271	534,347	641,216	769,459	807,932
• MoH: Operational and Research	5,353	9,356	8,959	10,884	11,972	13,170	13,828
• De-concentration funds: province	7,038	10,925	8,482	12,679	13,313	13,978	14,677
• De-concentration Funds: Port Health Authority	2,852	3,905	3,430	2,232	2,344	2,461	2,584
• De-concentration: Regional Public Health Lab	776	1,161	900	333	349	367	385
• ATD Procurement (APBN)	308,225	321,019	353,121	563,686	595,100	598,319	628,235
• Lab equipment and consumables (APBN)	277,306	226,868	113,972	107,315	118,046	129,851	136,344
• National Health Insurance (BPSJK)	516,889	414,044	471,152	518,267	570,094	627,103	671,001
• Province Government (APBD I)	3,454	8,992	8,229	9,464	9,937	10,434	11,477
• District (APBD II)	261,344	265,380	272,068	299,274	329,202	362,122	398,334
2. Private sectors	**49,585**	**51,852**	**54,445**	**57,167**	**60,026**	**63,027**	**66,178**
3. Donor: funds/grants	**243,637**	**342,876**	**489,183**	**1,027,058**	**1,133,445**	**814,567**	**773,839**
TOTAL (1+2+3)	1,676,460	1,656,378	2,133,211	3,142,706	3,485,043	3,404,858	3,524,814
Gap	2,398,970	2,673,425	4,218,655	4,934,007	6,428,555	7,725,776	8,310,262
Total Needs for TB NSP	**4,075,430**	**4,329,803**	**6,351,865**	**8,076,713**	**9,913,598**	**11,130,634**	**11,835,076**

** Note: values are stated in million rupiah*

However, the need to increase TB control program coverage and intervention area, rapid adoption of innovation and new tools for diagnostic and treatment and to achieve a more ambitious target towards TB elimination have very tremendous impacts and consequences for TB program budget needs. It is estimated that the funding needs will significantly increase from 2021 onwards which affects the increasing financial gaps while domestic funding availability is relatively constant (Figure 52). This is a challenge for the TB program in the period of 2020-2024.

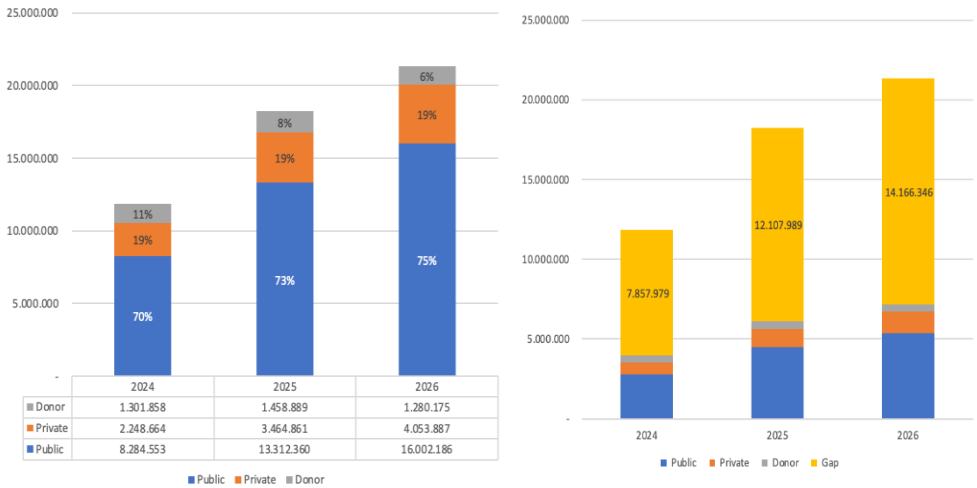
Figure 52. Funding gap as per fund sources in 2020-2024



Note: values are stated in million rupiah

For the interim plan of the tuberculosis control program in Indonesia during 2025-2026, the estimation of funding need by sources and gap 2024 -2026 is presented as following:

Figure 53. Estimation funding need by sources and gap 2024-2026



The estimated cost of the TB program (based on NSP data, including gaps) is actually lower than the realization based on NHA data, except in 2021. The contribution from the private sector and the community is quite significant compared to the estimate in NSP, which has the potential for future years in increasing the role of the private sector in TB program management (PPM).

To cover the funding gaps, the national TB program will conduct strategies as follow:

a. Advocacy to House of Representative for additional funding commitment earmarked for TB (i.e., diagnostic tools, drugs and prevention tools).
b. Reducing the total funding needed with effort to optimize efficiency by identifying cross cutting activities such as domestic procurement for health products from local manufactures.
c. Remove regulation barrier related health product procurement with Presidential decree for TB Control.
d. Decentralization of services to primary care level rather than expensive secondary care.
e. Implementation of the results of the health financing assessment in the form of the implementation of tuberculosis strategic health purchasing (BKS tuberculosis) tariffs with the main stakeholder BPJS Kesehatan. The result will provide fiscal space for first-level health providers to provide basic prevention and treatment services for tuberculosis patients.
f. Expand the coverage of national health insurance through the JKN BPJS Kesehatan scheme, for the prevention and treatment of tuberculosis patients, both drug-sensitive and drug-resistant tuberculosis. This coverage is extended from primary health services to secondary and tertiary referral health services.
g. Increase funding allocation from district government to fulfill funding need under minimum services standard (SPM).
h. Mobilize funding from CSR, philanthropy and social funds to provide support and enabler to TB patient.
i. Integrated psychosocial support for TB patients in the social protection scheme of GOI.
j. Mobilize external donor other than GF to fund the uncovered activities.

7.2.4. Financial responsibilities and authority

The distribution of roles and authorities in TB control between national and local government is needed, in order to:

1. Increase the program commitments and sense of belonging between national and local government
2. Improve coordination, integration, synchronized planning, implementation, monitoring and evaluation of the program.
3. Efficacy, effectiveness, and prioritization of programs as needed.
4. Increase the financial contribution from national and local governments for adequate funding.
5. Reduce funding gaps for TB programs through targeted, systematic, integrated and sustainable funding contributions.

The distribution of roles and responsibilities between central ministries, provinces, districts, and village governments in TB control in Indonesia is in-line with the Law number 23/2014 about local government, in which there is distribution of roles and responsibilities between national, provinces, and district governments. In addition, the Law number 6/2014 about village government and Health Ministerial Decree Number 67/2016 about TB control. The roles and responsibilities of all stakeholders are presented in Table 8 below:

Table 8. Financial sources and authorities in TB control 2020-2024 and interim plan for 2025-2026

Financial Source	Authorities
National budget	a. Establish national policy and strategy for TB control program b. Conduct multi-program/ multi-sector coordination and networking to improve TB control activities among relevant national institutions c. Ensure adequate availability of first- and second-line anti-TB drugs d. Ensure adequate provision of laboratory equipment, reagent and other laboratory support for TB diagnostic testing as an activity buffer. e. Quality assurance of TB medication and laboratories f. Monitoring, evaluation, and technical guidance of TB control g. Funding for TB control activities, related to the main roles and responsibilities h. Funding for capacity building in TB control, related to the main roles and responsibilities
Province budget	a. Implement the national policy and strategy for the TB control program. b. Ensure adequate provision of laboratory equipment, reagent and other laboratory support for TB diagnostic testing as an activity buffer. c. Conduct multi-program/ multi-sector coordination and networking to improve TB control activities among relevant provincial-level institutions d. Facilitate the availability of health workers and their capacity building in TB control e. Monitoring and quality assurance for laboratory examination as a supporting TB diagnosis.

	f. Monitoring, evaluation, and technical guidance of TB control, improvement of TB surveillance in districts level g. Funding for TB control activities, related to the main roles and responsibilities h. Funding for capacity building for TB control, related to the main roles and responsibilities
District's budget	a. Implement the national policy and strategy for TB control program b. Ensure adequate provision of laboratory equipment and supporting diagnosis material. c. Provide funding needed for the TB control program. d. Conduct multi-program/ multi-sector coordination and networking to improve TB control activities among relevant district-level institutions e. Funding for capacity building for TB control, related to the main roles and responsibilities f. Provide education materials for Tuberculosis control
Village budget	a. Conduct healthy-lifestyle campaign and promotion (PHBS), balanced diet, as well as prevention and control of communicable disease, including HIV/AIDS and TB b. Procurement, development, expansion, and maintenance of health infrastructure in the village, which can be used as a place for TB prevention, promotion, and screening, e.g., village clinics, Posyandu, Poskesdes/Polindes
National Health Insurance	a. Advanced diagnostic testing and secondary/tertiary referral b. Advanced inpatient care/referred TB care, and secondary referral for drug-resistant and drug-sensitive TB
Private sector and Donors	a. Development of new interventions innovation on TB control b. Technical support and capacity building support c. Financial support beyond government funded programs

Chapter 8. The Role of Stakeholders

The role of stakeholders in the implementation of the national strategy for overcoming Tuberculosis is very important, considering that the strategy requires the optimal involvement of different sectors. In this chapter the role of stakeholders in the Ministry of Health and multi-sector in the implementation of interventions and TB prevention strategies in 2020-2024 and the interim plan for 2025-2026 is explained.

8.1. The role of multi-sectors and multi-program

The role of multi-sectors and multi-program in TB control has been discussed in several meetings, including the National Consensus Meeting on the Development of National Strategy of Tuberculosis Care and Prevention in Indonesia 2020-2024 on 15-18th of October 2019, The Follow-up meeting on 12-15th of November 2019 and a Workshop on multi-sector harmonization in tuberculosis elimination on 11th of December 2019. There are adjustments for the role of ministries/institutions based on Presidential Decree No. 67 of 2021. The adjustment was also discussed in the multi-sector meeting on 16-17the of March 2023. The role of multi-sectors and multi-program in TB control is described in this table:

8.1.1. The role of Indonesia ministries/institution

According to Presidential Decree No. 67 of 2021, the Tuberculosis Acceleration Task Force was formed to coordinate, synchronize, and evaluate the active, comprehensive, and integrated implementation of Tuberculosis Elimination acceleration. The Tuberculosis Acceleration Task Force consists of Ministries and Institutions divided into directors and executors with the following tasks:

Table 9. The role of ministries/institutions in TB control in Indonesia

Ministry/Institution	Roles
Directors: **Chairperson: Coordinating Ministry for Human Development and Culture** **Members:** **1. Coordinating Ministry for Political, Legal, and Security Affairs** **2. Coordinating Ministry for Economic Affairs**	a. Provide guidance related to the policy of accelerating Tuberculosis Elimination; b. Provide considerations, advice, and recommendations for solving obstacles and challenges in the acceleration of Tuberculosis Elimination; c. Report on the implementation of Tuberculosis Elimination acceleration to the President once a year and/or as needed

Ministry/Institution	Roles
Executors: **Chairperson: Ministry of Health** **Members:** 1. **Ministry of Internal Affairs** 2. **Ministry of Religious Affairs** 3. **Ministry of Law and Human Rights** 4. **Ministry of Finance** 5. **Ministry of Education, Culture, Research and Technology** 6. **Ministry of Social Affairs** 7. **Ministry of Manpower** 8. **Ministry of Village, disadvantaged regions and transmigration** 9. **Ministry of National Development Planning/Bappenas** 10. **Ministry of State-owned enterprises** 11. **Cabinet Secretary** 12. **National Research and Inovation Agency** 13. **National Agency of Drug and Food Control**	a. Develop an annual work plan to achieve the Tuberculosis Elimination target; b. Provide and optimizing resources in order to accelerate Tuberculosis Elimination; c. Coordinate and control the implementation of Tuberculosis Elimination acceleration; d. Monitor and evaluate the implementation of Tuberculosis Elimination acceleration; e. Report on the implementation of Tuberculosis Elimination acceleration to the Director once a year and/or as needed
Local Government (Province and District level)	Coordinate, synchronize, and evaluate the effective, comprehensive, and integrated implementation of Tuberculosis Elimination acceleration by involving cross-sectoral participation in the region

In addition to the Tuberculosis Acceleration Task Force mentioned above, other ministries and institutions are also responsible for and support the business process, activities, and outcomes in the six national strategies for Tuberculosis elimination as stated in Presidential Decree 67 of 2021.

8.1.2. The Roles of multi-programs within the Indonesia MoH

Table 10. The roles of multi-programs within the Indonesia MoH

Unit/Program	Roles and Support Resources
Directorate of Communicable Disease Prevention and Control	a. Develop policy and standards in the screening of tuberculosis among HIV patients (Sub Directorate HIV) b. Provide tools and supplies for HIV screening and diagnosis among tuberculosis patients c. Support the expansion of TB-HIV services at Primary Health Centers d. Facilitate the implementation of prophylactic treatment among people with HIV who are not infected by tuberculosis through training, socialization and technical assistance
Directorate of Non-Communicable Disease Prevention and Control	a. Develop policy and standards for tuberculosis screening among diabetes mellitus patients, smokers and patients with obstructive lung diseases b. Facilitate integrated screening of tuberculosis and mobilize the implementation in the NCD's POSBINDU through integrated training and technical assistance
Directorate General of Public Health	a. Formulating policies and SOP for screening prospective brides, pregnant women, children (toddlers with MTBS approach, school-age and adolescents, with health screening), productive age population (workers) and the elderly to detect tuberculosis. b. Formulate policies and drive the implementation of prophylactic administration to children who meet the requirements c. Develop regulation on the DR TB treatment initiation in Puskesmas d. Activating implementation so that tuberculosis notification mandatory policies are implemented in all health service facilities and workplace e. Strengthen the mechanism between Puskesmas and its linkage and network f. Strengthen the community lab for tuberculosis diagnosis
Directorate of Health Promotion and Community Empowerment	a. Develop communication strategy, information and education to promote tuberculosis b. Empower the community to conduct early detection based on symptoms, promote tuberculosis control and prevention at the household level and surroundings and/or take the role as treatment observers

Unit/Program	Roles and Support Resources
	c. Include financial support of tuberculosis care and prevention in the guideline of the collaboration private sectors, enterprises and Ministry of Health through *corporate social responsibility* (CSR)
Directorate General of Health Service	a. Ensuring tuberculosis indicators become one of the main indicators in the accreditation of hospitals and health centers b. Ensuring tuberculosis services become an indicator of the quality of health services in primary and referral health care facilities c. Activating implementation so that tuberculosis notification mandatory policies are implemented in all health service facilities d. Ensuring Standard Operating Procedures (SOP) about Tuberculosis Infectious Disease Prevention are applied in all health care facilities e. Ensuring the quality of tuberculosis services at accredited Primary Health Care and Hospitals is carried out on an ongoing basis f. Expanding drug-resistant tuberculosis services according to standards in the Hospital/Health Center so that each district can carry out it. g. Maintain the quality of all Tuberculosis laboratory services in all health facilities. h. Conduct cross-examination results of tuberculosis microscopic examination in examiner's health facilities with the results of referral health facilities i. Inserting cross-examination results of tuberculosis microscopic examination in the examiner's health facilities with the results of referral health facilities is one indicator of accreditation of primary health care facilities and referrals j. Increase the number of referral tuberculosis laboratories so that they are available in each province k. Increase the number of reference laboratories for drug sensitivity testing l. Add hospitals that integrate hospital information systems with tuberculosis information systems m. Strengthen mechanism between Puskesmas and its linkage and network
Directorate General of Pharmaceutical and Medical Devices	a. Carry out procurement of OAT (first-line OAT and second-line OAT including short regimens) to be available on time in sufficient quantities in all health facilities

Unit/Program	Roles and Support Resources
	b. Carry out the procurement of non-OAT logistics so that it is available on time in sufficient quantities throughout all health facilities c. Develop and implement regulation/technical guideline to involve pharmacists for tuberculosis control (screening, education, case finding)
Center for Data and Information Technology	a. Providing facilities and platforms to support the integration of the Tuberculosis information system with other information systems so that they can be used beneficially and sustainably at the Ministry of Health Headquarters b. Maintain dan provide assistance in all levels, including health facilities c. Carry out the development of the Tuberculosis information system with other information systems if it has been integrated so that it can be used beneficially and sustainably by all healthcare facilities
Directorate General of health workforce	a. Establish standardization of training and TOT about Tuberculosis for all types of health human resources b. Ensure that each type of tuberculosis training is accredited c. Conduct routine quantity and quality assessment of healthcare worker's needs (capacity building needs based on duties and functions). d. Ensure the availability of a healthcare workers database related to the analysis of healthcare worker's needs in the Tuberculosis program at healthcare facilities. e. Conduct workload analysis of healthcare workers, especially related to tuberculosis programs. f. Develop a user-friendly training platform and online training mechanism that can be accessed by healthcare workers and health cadres. g. Ensure that tuberculosis management materials are included in the educational curriculum of healthcare workers.
Beureu of Legal Affairs	a. Facilitating the preparation of regulations related to tuberculosis prevention and control
Bureau of Planning and Budgeting	a. Facilitating budget allocations in multi-program levels to carry out tuberculosis prevention and control following their respective duties and functions related to Tuberculosis so can achieve tuberculosis control targets in the Strategic Plan and RPJMN

Unit/Program	Roles and Support Resources
Bureau of Communications and public services	a. Carry out efforts to involve the mainstream and online mass media and non-governmental organizations/the private sector/business world so that they will play a role/support in the socialization and advocacy on tuberculosis prevention and control
Health Policy Agency	a. Preparation of technical policies to strengthen the tuberculosis strategic health purchasing b. Implementation of analysis and formulation of recommendations for the tuberculosis the tuberculosis strategic health purchasing
RSUP Persahabatan	a. Coordinate and facilitate the strengthening of services, education, and translational research, including partnerships with third parties. b. Conduct studies and provide recommendations to the Ministry of Health. c. Develop standard operating procedures for respiratory and tuberculosis care support, which will be referred to by network hospitals for respiratory and tuberculosis care support adjusted to their service strata. d. Conduct regular monitoring and evaluation of the implementation of network support according to the set targets through an integrated support system. e. Provide feedback and recommendations to supported hospitals regarding the progress of respiratory and tuberculosis care support.

8.1.2 The Roles of multi-programs outside The Indonesia MoH

Table 11. The roles of multi-programs outside the Indonesia MoH

Unit/Program	Roles and Support Resources
Tuberculosis Expert Committee (KOMLI TB)	a. Providing considerations for policy development, strategic decision-making, and related studies related to tuberculosis control programs; b. Conducting studies related to operational and strategic policies; c. Delivering materials and discussion results of studies to management and technical aspects related to tuberculosis control programs; d. Providing recommendations for tuberculosis control in accordance with study findings and developments in science and technology; e. Providing input related to coordination, advocacy, and dissemination of information with stakeholders;

Unit/Program	Roles and Support Resources
	f. Coordinating with related units within the Ministry of Health and related professional organizations.
Tuberculosis Research Network (JETSET TB)	a. Building an actual and up-to-date TB research database; b. Developing professional TB researchers' capacity; c. Establishing effective communication among researchers and policy-makers; d. Building strategic partnerships with the National TB Program.

8.2. Role of the Central, Provincial and District Government

8.2.1. The role of the central government

a. Establish TB policy and strategy programs (NSPK)
b. Coordinate multi-program/multi-sector partnerships for TB control activities with related institutions at the national level.
c. Provide the needs of line 1 and line 2 anti-TB drugs (TB-RO).
d. Provide the needs of health supplies, reagents, and other laboratory support for diagnosing TB as an activity buffer or buffer.
e. Supervise and guarantee the quality of drugs and the Tuberculosis laboratory. Monitoring, evaluation, and technical guidance of TB control activities.
f. Funding for TB control operational activities related to their main tasks and functions.
g. Funding for TB HIV improvement activities related to main tasks and functions.
h. Provide funding for human resource improvement activities related to the main tasks and functions of the TB Prevention program

8.2.2. The role of the provincial government

a. Ensure the Tuberculosis Program is included in the RPJMD indicators and the Strategic Plan for Tuberculosis Control.
b. Ensure the implementation of Tuberculosis prevention activities by districts through monitoring and technical guidance.
c. Carry out the stipulations of policies and strategies for TB control programs according to their duties and functions.
d. Provide the needs of health supplies, reagents and other laboratory support for the diagnosis of TB as an activity buffer.

e. Coordinate multi-program/multi-sectoral and partnerships for TB control activities with related institutions at the provincial level.
f. Encourage the availability and improvement of the capability of TB control health workers.
g. Monitoring and strengthening the quality or quality assurance for laboratory tests to support TB diagnosis.
h. Carry out monitoring, evaluation and technical guidance of TB control activities, strengthening TB epidemiological surveillance at the district level.
i. Provide funds for TB control operational activities related to main tasks and functions.
j. Provide funds for activities to increase TB human resources related to the main tasks and functions.

8.2.3. Role of District Level.

a. Ensure the Tuberculosis Program is included in the RPJMD indicators and the Strategic Plan for Tuberculosis Control.
b. Carry out the policy and strategy for TB prevention (NSPK) that has been issued by the Ministry.
c. Ensure the implementation of Tuberculosis prevention.
d. Provide medical supplies and diagnostic support materials.
e. Provide funding needs for Tuberculosis Prevention program operations.
f. Coordinate across programs and sectors as well as partnership networks for TB control activities with related institutions at the district level.
g. Provide funding needs for TB prevention activities in the region.
h. Provide material for the promotion of TB.

8.3. Civil Society and Community

The roles of civil society and community are described as per the relevance to the six national TB control strategy, as follows:

a. Ensure rights-based and gender-sensitive TB promotion efforts ranging from communication strategy, IEC development and distribution for TB, DR-TB, TB-HIV, TB-DM, childhood TB, and TPT.
b. Participate in TB campaigns at national, provincial, and district levels especially but not limited to World TB Day and National Health Day.
c. Strengthen TB care and prevention efforts through community-based services ranging from contact investigation, referral, and treatment adherence support.
d. Strengthen the involvement of the community in DPPM implementation.

e. Strengthen TB program management, including programmatic, financial, and recording/reporting domains at national, provincial, and district levels.
f. Engagement in TB prevention and control efforts in community settings through IPC
g. Actively promoting access, initiation, and completion of TB preventive therapy for household contacts and high-risk groups.
h. Advocacy to ministries, provincial and district governments to enhance TB control program planning, implementation, monitoring and evaluation as well sustainable funding to achieve minimum standard services indicator and development target(s).
i. Strengthen multi-sectoral engagement from philanthropies, corporations, faith-based organizations, and other potential partners to mobilize resources for TB control interventions.
j. Support the efforts of the national tuberculosis program in identifying and overcoming service quality challenges by providing public feedback on the quality of tuberculosis services at health facilities through community-led monitoring.
k. Provide data on obstacles to accessing tuberculosis services that will be used by national, provincial, and district stakeholders as evidence to identify alternative solutions based on community-led monitoring.
l. Ensure provision of complementary interventions to address social determinants of tuberculosis with rights-based and gender-sensitive approaches.
m. Implement community-led research and advocacy to address structural barriers (e.g., stigma, human rights- and gender-related barriers, SEAH) in TB programs.
n. Establish and improve access to legal services needed by people affected by TB through paralegal networks.

References

Alisjahbana, B., Parwati, C. G., Putri, F. A., Meyanti, F., Post, E., Probandari, A., Nadjib, M., Farid, M. N., Wicaksono, D. B., Nurjannah, Pambudi, I., & Tiemersma, E. W. (2019). *Skrining aktif TBC dengan kombinasi gejala, faktor risiko, pemeriksaan ronsen dan Tes Cepat Molekuler (GeneXpert MTB/RIF) untuk menemukan kasus TBC lebih banyak (Policy Brief)* (No. 1; Oktober).

Apriani, L., Alisjahbana, B., Ruslami, R., McAllister, S., Sharples, K., Hill, P., & Menzies, D. (2019a). *Pejuang TB yang terabaikan: apa yang bisa dilakukan untuk mereka? (Policy Brief)* (No. 1; Oktober 2019). https://doi.org/10.6092/unibo/amsacta/6247

Apriani, L., Alisjahbana, B., Ruslami, R., McAllister, S., Sharples, K., Hill, P., & Menzies, D. (2019b). *Program Pencegahan dan Pengendalian Infeksi TB: Bagaimana Implementasinya di Fasilitas Pelayanan Kesehatan?* (No. 1; Oktober).

Badan Penelitian dan Pengembangan Kesehatan dan Direktorat Jenderal Pencegahan dan Pengendalian Penyakit, K. K. R. (2018). *Survei Resistansi Obat Anti Tuberkulosis (SROAT) 2017-2018*.

Boston Consulting Group (BCG), United States Agency for International Development (USAID), and National TB Program (NTP) Indonesia; 2018.Strengthening private provider engagement to improve TB outcomes in Indonesia: An institutional review. Jakarta, Indonesia.

Dewi, C., Barclay, L., Passey, M., & Wilson, S. (2016). Improving knowledge and behaviours related to the cause, transmission and prevention of Tuberculosis and early case detection: a descriptive study of community led Tuberculosis program in Flores, Indonesia. *BMC Public Health*, *16*(740), 1–12. https://doi.org/10.1186/s12889-016-3448-4

Fitriangga, A., Siswani, Nasip, M., Riono, P., & Simon, S. (2019). *Pelibatan Mantan Orang dengan TBC dalam Penemuan Terduga Kasus TBC* (No. 1; Oktober).

Fuady, A., Houweling, T. A. J., Mansyur, M., Burhan, E., & Richardus, J. H. (2019). Effect of financial support on reducing the incidence of catastrophic costs among tuberculosis-affected households in Indonesia: Eight simulated scenarios. *Infectious Diseases of Poverty*, *8*(1). https://doi.org/10.1186/s40249-019-0519-7

Fuady, A., Houweling, T. A. J., Mansyur, M., & Richardus, J. H. (2018). Catastrophic total costs in tuberculosis-affected households and their determinants since Indonesia's implementation of universal health coverage. *Infectious Diseases of Poverty*, *7*(3), 14. https://doi.org/10.1186/s40249-017-0382-3

Gani, A., & Budiharsana, M. P. (2018). *The Consolidated Report on Indonesia Health Sector Review 2018*.

Herawanto. (2019). *Temukan HIV Melalui Inisiasi Petugas TBC* (Issue 1). https://doi.org/10.1371/journal.pone.0095459

IO PPM. (2019). *Hasil Evaluasi Data Penyisiran Kasus Tuberkulosis 2018*.

Karyadi, E., West, C. E., Nelwan, R. H. H., Dolmans, W. M. V., Schultink, J. W., & Van Der Meer, J.

W. M. (2002). Social aspects of patients with pulmonary tuberculosis in Indonesia. *Southeast Asian Journal of Tropical Medicine and Public Health*, *33*(2), 338–345.

Kementerian Kesehatan RI. (2015). *Survei Prevalensi Tuberkulosis Indonesia 2013-2014* (D. A. Musadad, P. Riono, & I. Onozaki (eds.)). Badan Penelitian dan Pengembangan Kesehatan dan Direktorat Jenderal Pengendalian Penyakit dan Penyehatan Lingkungan.

Kementerian Kesehatan RI. (2016). *Rencana Aksi Nasional Penanggulangan Tuberkulosis Indonesia 2016-2020*. Direktorat Jenderal Pencegahan dan Pengendalian Penyakit (P2P) Kementerian Kesehatan RI.

Kementerian Kesehatan RI. (2018). *Data dan Informasi - Profile Kesehatan Indonesia 2018*. https://www.depkes.go.id/resources/download/pusdatin/profil-kesehatan-indonesia/Data-dan-Informasi_Profil-Kesehatan-Indonesia-2018.pdf

Kementerian Kesehatan RI. (2020). *Rancangan Awal Rencana Strategis Kementerian Kesehatan Republik Indonesia tahun 2020-2024*. Kementerian Kesehatan Republik Indonesia.

Kementerian PPN/Bappenas Republik Indonesia. (2020). *Rancangan teknokratik: Rencana Pembangunan Jangka Menengah Nasional 2020-2024*. https://doi.org/10.1017/CBO9781107415324.004

Kurniawati, A., Padmawati, R. S., & Mahendradhata, Y. (2019). Acceptability of mandatory tuberculosis notification among private practitioners in Yogyakarta, Indonesia. *BMC Research Notes*, *12*(543), 1–7. https://doi.org/10.1186/s13104-019-4581-9

Mahendradhata, Y., Trisnantoro, L., Listyadewi, S., Soewondo, P., Marthias, T., Harimurti, P., & Prawira, J. (2017). The Republic of Indonesia Health System Review. In K. Hort & W. Patcharanarumol (Eds.), *Health Systems in Transition* (Vol. 7, Issue 1). World Health Organization, Regional Office for South-East Asia. https://apps.who.int/iris/handle/10665/254716

Marguari, D., Basri, C., Indrasari, W., & Sebayang, M. (2019). *Social Barriers to Accessing Quality TB Service: Key population, Legal Environment and Gender Assessment*.

Mashuri Y.A., Boettiger, D., Wulandari, L.P., Negara S.N., Wahyuningtias, Subronto, Y. W., Ahmad, R.A., Liverani, M., Wiseman, V., Probandari, A.. Impact of the COVID-19 pandemic on TB care in two cities in Indonesia (DOMINO STUDY). Conference paper. The 4th INA-TIME (Indonesia Tuberculosis International Meeting 2022)

Meijerink, H., Wisaksana, R., Lestari, M., Meilana, I., Chaidir, L., Van Der Ven, A. J. A. M., Alisjahbana, B., & Van Crevel, R. (2015). Active and latent tuberculosis among HIV-positive injecting drug users in Indonesia. *Journal of the International AIDS Society*, *18*(1), 1–8. https://doi.org/10.7448/IAS.18.1.19317

Ministry of Health Republic of Indonesia, N. T. P. (2019). *Acceleration Plan for Programmatic Management of Drug-resistant Tuberculosis (PMDT) Indonesia 2020* (Issue December). Ministry of Health Republic of Indonesia.

Morita Saktiawati, A. I., Subronto, Y. W., Stienstra, Y., Supit, F., & van der Werf, T. S. (2019). Sensitivity and specificity of routine diagnostic work-up for tuberculosis in lung clinics in Yogyakarta, Indonesia: a cohort study. *BMC Public Health*, *19*(363).

https://doi.org/10.1186/s12889-019-6658-8

Natalius, J. (2019). *TB Laten di Lapas Rutan Suatu Keniscayaan (Policy Brief)* (No. 1; Oktober2019).

Pambudi, I. (2019). *Evaluasi Program Penanggulangan Tuberkulosis 2018-2019 (Q1-Q3)*. Direktorat Jenderal Pencegahan dan Pengendalian Penyakit (P2P) Kementerian Kesehatan RI.

Penabulu foundation. (2020). Tuberculosis Treatment in Gender and Human Rights-related health perspective. Jakarta. Revised, p.9

Prasetyowati, I., Wati, D. M., Ariyanto, Y., Jati, S. K., Sulthony, M., Wahyuni, C. U., & Artawan, I. G. (2019). *Peraturan Desa untuk Mendukung Kepatuhan Berobat TB RO (Policy Brief)* (No. 1; Oktober, Issue 1).

Probandari, A., Sanjoto, H., Mahanani, M. R., Azizatunnisa, L., & Widayati, S. (2019). Being safe, feeling safe, and stigmatizing attitude among primary health care staff in providing multidrug-resistant tuberculosis care in Bantul District, Yogyakarta Province, Indonesia. *Human Resources for Health*, *17*(1), 10. https://doi.org/10.1186/s12960-019-0354-8

Probandari, A., Widjanarko, B., Mahendradhata, Y., Sanjoto, H., Cerisha, A., Nungky, S., Riono, P., Simon, S., Farid, M. N., Giriputra, S., Putra, A. E., Burhan, E., Wahyuni, C. U., Mustikawati, D., Widianingrum, C., Tiemersma, E. W., & Alisjahbana, B. (2016). The path to impact of operational research on tuberculosis control policies and practices in Indonesia the path to impact of operational research on tuberculosis control policies and practices in Indonesia. *Global Health Action*, *9*, 29866. https://doi.org/10.3402/gha.v9.29866

Rodriguez-Fernandez, R., Ng, N., Susilo, D., Prawira, J., Bangs, M. J., & Amiya, R. M. (2016). *The double burden of disease among mining workers in Papua, Indonesia: at the crossroads between Old and New health paradigms*. https://doi.org/10.1186/s12889-016-3630-8

Roslina, S. (2019). *Sukses Pengobatan TBC dengan Puzzle Patuh TB* (No. 1; Oktober).

Saktiawati, A. M. I., & Subronto, Y. W. (2018). Influence of Diabetes Mellitus on the Development of Multi Drug Resistant-Tuberculosis in Yogyakarta. *Acta Medica Indonesiana*, *50*(1), 11–17.

Spiritia foundation. 2020. Social Barriers to Accessing Quality TB Service, TB Key Population, Legal Environment. Jakarta

Statistik, B. P. (2022). Analisis Profil Penduduk Indonesia Mendeskripsikan Peran Penduduk dalam Pembangunan.

Surya, A., Setyaningsih, B., Nasution, H. S., Parwati, C. G., Yuzwar, Y. E., Osberg, M., Hanson, C. L., Hymoff, A., Mingkwan, P., Makayova, J., Gebhard, A., & Waworuntu, W. (2017). Quality Tuberculosis Care in Indonesia: Using Patient Pathway Analysis to Optimize Public-Private Collaboration. *The Journal of Infectious Diseases*, *724*(7), 216. https://doi.org/10.1093/infdis/jix379

Surya, A., Setyaningsih, B., Suryani Nasution, H., Gita Parwati, C., Yuzwar, Y. E., Osberg, M., Hanson, C. L., Hymoff, A., Mingkwan, P., Makayova, J., Gebhard, A., & Waworuntu, W.

(2017). Quality Tuberculosis Care in Indonesia: Using Patient Pathway Analysis to Optimize Public-Private Collaboration. *Journal of Infectious Diseases*, *216*, S724–S732. https://doi.org/10.1093/infdis/jix379

Syahrul, F., Yuliandari, R. D., Artanti, K. D., Sulistyowati, M., & Mirasa, Y. A. (2019). *Pelibatan Dokter Praktik Mandiri (DPM) dalam Upaya Penemuan Kasus TBC Anak* (No. 1; Oktober).

The Global Fund and National TB Program (NTP) Indonesia. (2022). Report of the External Assessment of District Based Public-Private Mix for TB Control in Indonesia.

The Global Fund. (2019). *Baseline Assessment - Indonesia. Scaling up Programs to Reduce Human Rights Related Barriers to HIV and TB Services* (Issue September). https://www.theglobalfund.org/media/8721/crg_humanrightsbaselineassessmentindonesia_report_en.pdf?u=637066568250000000

The Global Fund. (2014). Community Systems Strengthening Framework. (Revised edition).

The World Bank. (2018). *Improving Indonesia's Health Outcomes*. http://siteresources.worldbank.org/INTEAPREGTOPHEANUT/Resources/health.pdf

Triasih, R., Robertson, C., Duke, T., & Graham, S. M. (2015). Risk of infection and disease with Mycobacterium tuberculosis among children identified through prospective community-based contact screening in Indonesia. *Tropical Medicine and International Health*, *20*(6), 737–743. https://doi.org/10.1111/tmi.12484

UNAIDS. (2019). *UNAIDS DATA 2019*. https://www.unaids.org/sites/default/files/media_asset/2019-UNAIDS-data_en.pdf

USAID. (2019). *Challenge TB - INDONESIA Final Report*.

Uyainah ZN, A., Herikurniawan, & Mas'ud, I. (2019). *Kemampuan jemaah haji dengan infeksi tuberkulosis dalam melaksanakan ibadah haji (Policy Brief)* (No. 1; Oktober, Issue 1).

van den Hof, S., Collins, D., Hafidz, F., Beyene, D., Tursynbayeva, A., & Tiemersma, E. (2016). The socioeconomic impact of multidrug resistant tuberculosis on patients: results from Ethiopia, Indonesia and Kazakhstan. *BMC Infectious Diseases*, *16*(1), 470. https://doi.org/10.1186/s12879-016-1802-x

Waworuntu, W. (2019). *Update Situasi Penanggulangan Tuberkulosis di Indonesia* (Issue November). Direktorat Jenderal Pencegahan dan Pengendalian Penyakit (P2P) Kementerian Kesehatan RI.

WHO. (2003). *Guide to producing national health accounts, with special applications for low-income and middle-income countries*. World Health Organization. https://www.who.int/health-accounts/documentation/English_PG.pdf?ua=1

WHO. (2015). *Toolkit to develop a national strategic plan for TB prevention, care and control: methodology on how to develop a national strategic plan*. WHO in collaboration with the WHO Collaborating Centre for TB and Lung Diseases, Fondazione S.Maugeri, Care & Research Institute, Tradate, Italy. https://apps.who.int/iris/bitstream/handle/10665/153811/9789241507974_eng.pdf;jsessionid=221448AE0E31D9F86E354D4855EA6B4F?sequence=1

WHO. (2017). *Tuberculosis patient cost surveys: a handbook*. World Health Organization.

WHO. (2018). *Global tuberculosis report 2018*. World. https://doi.org/ISBN 978-92-4-156564-6

WHO. (2019a). *Global tuberculosis report 2019*. World Health Organization.

WHO. (2019b). *Indonesia Tuberculosis epidemiological review 2019*.

WHO. (2019b). *Indonesia Tuberculosis epidemiological review 2022*.

WHO. (2019c). *Multisectoral Accountability Framework: to accelerate progress to End TB (MAF-TB) by 2030*. https://www.who.int/tb/publications/TB-factsheet_4.pdf?ua=1

WHO. (2019d). *People-centred framework for tuberculosis programme planning and prioritization - User guide*. World Health Organization. http://apps.who.int/iris

WHO. (2019e). *The END TB STRATEGY. Global strategy and targets for tuberculosis prevention, care and control after 2015*. https://www.who.int/tb/strategy/end-tb/en/

WHO. (2019f). *WHO Global Ministerial Conference. New global commitment to end tuberculosis*. WHO; World Health Organization. https://www.who.int/conferences/tb-global-ministerial-conference/en/

WHO. (2020). *Report of Indonesia Joint External Monitoring Mission (JEMM) for Tuberculosis (Final Report as per March 24,2020)*.

WHO. (2022). *Report of Indonesia Joint External Monitoring Mission (JEMM) for Tuberculosis*

Wiseman, V., Thabrany, H., Asante, A., Haemmerli, M., Kosen, S., Gilson, L., Mills, A., Hayen, A., Tangcharoensathien, V., & Patcharanarumol, W. (2018). An evaluation of health systems equity in Indonesia: study protocol. *International Journal for Equity in Health*, *17*(1), 138. https://doi.org/10.1186/s12939-018-0822-0