



The Republic of Indonesia Joint External Monitoring Mission for Tuberculosis

January 20-31, 2020

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Abbreviations

AIDS	Acquired Immune Deficiency Syndrome	LKNU <i>Lembaga Kesehatan Nahdlatul Ulama</i>	TB Civil Society Organisation
ANC	Antenatal care	LTBI	Latent TB infection
APBN <i>Anggaran Pendapatan dan Belanja Negara</i>	Central Government Budget	MDR-TB	Multidrug-Resistant Tuberculosis
APBN-P <i>Anggaran Pendapatan dan Belanja Negara Perubahan</i>	Revised Central Government Budget	MOH	Ministry of Health
ART	Antiretroviral treatment	MOHA	Ministry of Home Affairs
Bappenas <i>Badan Perencanaan Pembangunan Nasional</i>	National Development Planning Agency	NGO	Nongovernment Organization
BOK <i>Biaya Operasional Kesehatan</i>	Funding stream from central level to districts for service delivery, especially health operation costs	NIHRD	National Institute for Health Research and Development
BPJS <i>Badan Penyelenggara Jaminan Sosial</i>	Social Security Management Agency	NTP	National Tuberculosis Program
CSO	Civil society organization	NTRL	National Tuberculosis Reference Laboratory
DAK Dana Alokasi Khusus	Special allocation funds	OOP	Out-of-pocket
DRS	Drug resistance survey	PKH	Family Hope Program
DST	Drug susceptibility testing	PHO	Provincial Health Office
DHO	District Health Office	PLHIV	People living with HIV
FKRTL <i>Fasilitas Kesehatan Rujukan Tingkat Lanjut</i>	Referral Level Health Facility	PNC	Postnatal care
FKTP <i>Fasilitas Kesehatan Tingkat Pertama</i>	Primary Level Health Facility	Poskesdes <i>Pos Kesehatan Desa</i>	Village Health Post
GDP	Gross Domestic Product	Posyandu <i>Pos Pelayanan Terpadu</i>	Integrated Health Services Post
Gol	Government of Indonesia	PPJK	Center for Financing and Health Insurance
GP	General practitioner	Pusdatin	Centre for Health Data and Information of MoH
HIV	Human Immunodeficiency Virus	Puskesmas <i>Pusat Kesehatan Masyarakat</i>	Public Health Centre
IDR	Indonesian Rupiah	Rifaskes <i>Riset Fasilitas Kesehatan</i>	Health Facility Research
JEMM	Joint external monitoring mission	TB	Tuberculosis
JKN <i>Jaminan Kesehatan Nasional</i>	National Health Insurance	UHC	Universal Health Coverage
KPI	Key performance indicator	UN	United Nations
		USAID	United States Agency for International Development
		Wasor	District/Provincial TB Officer
		WHO	World Health Organization
		YANKES	Directorate General of Health Services

Executive Summary

Introduction

This document summarises the results of the Joint External Monitoring Mission (JEMM) on Tuberculosis (TB) to Indonesia, January 20-30, 2020. The JEMM was co-organized by the National TB Programme and the World Health Organization. The Mission team was made up of Indonesian experts from the Ministry of Health (MOH), its National Tuberculosis Programme (NTP), other Ministries, the non-governmental sector, as well as community representatives and ex-patients. External experts came from Indonesia's partners in the fight against TB.

After briefings from the NTP and other Government of Indonesia counterparts, the Review split into four teams that visited East Kalimantan, Nusa Tenggara, South Sumatra, and West Java, and a fifth team stayed in Jakarta to review the progress of the provinces visited in the 2017 JEMM: DKI Jakarta, Central Java, West Sumatra, South Kalimantan, and South-East Sulawesi. This team also received a briefing on health and TB financing from key Government of Indonesia agencies and partners.

Indonesia participated in the UN General Assembly High Level Meeting (UNHLM) on TB in 2018 and contributed to its Political Declaration. Indonesia is therefore committed to achieving the Sustainable Development Goal target of ending the TB epidemic by 2030, and the associated End TB Strategy targets of a 90% reduction in TB deaths and 80% reduction in the TB incidence rate by 2030, as well as no family burdened with catastrophic costs due to TB by the end of 2020. Furthermore, the Political Declaration set out additional targets on the way to ending the epidemic, namely, to provide TB treatment to 40 million, and preventive treatment to 30 million people, between 2018 and 2022.

However, in spite of significant progress in several areas since 2017, Indonesia is not on track to contribute fully to the 2022 targets or reach the 2030 targets. This review report focuses on the measures that need to be taken to get on track.

Burden

Indonesia has the 3rd highest burden of TB in the world, behind India and almost equal to China. WHO estimated that there were 845,000 cases of TB in 2018, and 93,000 deaths. TB is commonest in men (52% of the total) but also significant in women and children (0-14 years), with 37% and 11% of cases respectively. TB can affect anyone, but most patients are poor. Urban areas are more affected than rural areas. Java and Bali have two-thirds of the TB burden of the country. The malnourished, prisoners, miners, and people with compromised immune systems, including people with HIV and diabetes and older persons, as well as smokers, are particularly vulnerable to TB.

In 2018, only 570,000 of the 845,000 estimated patients were notified to the NTP, meaning that one third of the patients were either diagnosed but not reported to the NTP, or not diagnosed at all – known as the missing cases. Of the new cases diagnosed and started on care, 85% were successfully treated, which is below the 90% WHO target. Among those patients who had been previously treated, only 73% were successfully treated.

The epidemic of HIV also affects TB: an estimated 21,000 new TB patients had HIV infection in 2018, but only 37% of TB patients were tested for HIV, rising to 52% in 2019. Treatment success for HIV-infected TB patients in 2018 was only 69%. Anti-retroviral treatment (ART) coverage for people living with HIV (PLHIV) who also have TB was only 40%, yet without treatment, the remaining 60%

will die from their HIV infection. Only 12% of PLHIV were provided with potentially life-saving TB preventive therapy in 2019.

There were about 24,000 cases of resistance to the main first-line TB drugs in 2019, yet only 9,800 were diagnosed, and only 47% of these were treated. In previous years, only 49% of treated patients with multi-drug resistance had a successful outcome. Very unusual globally, significant numbers of those with HIV and with MDR-TB refuse treatment as a result of access difficulties and stigma, which, as the 2017 JEMM also noted, is insufficiently addressed by health staff.

In Indonesia, survey results will be available in 2020 on the economic burden of TB for affected patients and families. Results from other high TB burden lower-middle income countries suggest that a substantial portion of TB patients, and an even higher proportion of people with drug-resistant TB, could be facing significant economic burden from direct and indirect expenses or income loss.

Achievements

Indonesia has positively responded to most of the recommendations made by the JEMM in 2017. The major achievements in recent years for TB care and prevention in Indonesia include:

- The coverage of National Health Insurance expanded to reach 223 million citizens (84% of the entire population) who now have access to health services (including TB treatment), free-of-charge, at more than 25,000 primary health care sites and 2,400 hospitals.
- A doubling of domestic funding for TB from US\$ 53 M in 2017 to US\$ 109 M in 2019, including increased domestic procurement of TB drugs and GeneXpert cartridges. The domestic funding projection for 2020 is US\$ 155 M.
- Substantial efforts have been made to close the under-reporting gap, resulting in an increase of TB case notifications from 360,000 cases in 2016 to 570,000 in 2018 (an increase of TB treatment coverage from 35% in 2016 to 67% in 2018).
- Scale up of the latest TB diagnostic technology: 916 GeneXpert machines in 478 districts, carried out 917,000 tests in 2019, which contributed 35% of total case notifications.
- 233 PMDT sites (65% of the target) and about 2,300 PMDT satellites have been providing PMDT services across the country.
- The TB inventory study (2017) and the first ever nationwide drug-resistant TB survey (2018) were both completed; these will contribute to a better understanding of the TB situation in the country. The NTP is organizing a TB patient cost survey, which is planned to start in the first quarter of 2020.
- The development of a costed National Strategic Plan 2020-2024 has been initiated; it aims to achieve universal access to good quality diagnosis and treatment, and a massive increase in TB prevention.
- High-level leadership and commitments to end TB, with engagement of influential champions and dialogue across sectors in keeping with the Sustainable Development Goals. Some Governors and Mayors have enacted TB regulations. Most importantly, the President launched a TB Initiative on January 29th 2020, to be followed by a Presidential Decree in March 2020.
- A tuberculosis indicator was included in the package of minimum standards for national monitoring by the Ministry of Home Affairs.
- A significant improvement in HIV testing among TB patients and in household contact investigation in some provinces.

- Reductions in poverty and improvements in socio-economic development have important implications for the TB burden, though the social determinants of TB are still significant.

Challenges

There are several problems that limit the coverage of quality TB treatment:

- Treatment for drug sensitive TB is frequently delayed, or never started, due largely to lack of coordination in referral of patients from primary care facilities to hospitals, and back. The current intermittent **treatment regimen** is inferior to a daily regimen, and the plan to transition to daily dosing is not due to be complete until 2023. Other countries have made transitions far more rapidly, and some years ago.
- Nearly 60% of **MDR/RR-TB** patients remains undetected, and of those that are diagnosed, only half start treatment, and of these, only half have successful outcomes, with high rates of loss-to-follow-up and death. The reasons include a lack of treatment sites, difficulties of access due to a hospital-based rather than patient-centered model (and thus often a choice between taking treatment or continuing to earn a wage), refusing treatment because of fear of side-effects, misinformation about side effects, limited counselling and support from peers and TB survivors, fake therapies on the internet, and stigma and discrimination from family, community, or health staff.
- As noted in the Burden section, failure to provide ARV treatment, and the low provision of treatment for latent TB infection to **TB patients with HIV infection**, serve only to increase mortality.
- The uptake of **TB preventive treatment** is also low in household contacts aged less than 5 years. In 2018, only 10% of these persons received it, representing a huge missed opportunity to protect them from TB and risk of death. Health care workers are reluctant to prescribe it despite robust evidence of its benefits, and those who need it most are not informed about it. Furthermore, WHO has recently recommended that children over 5 years, and adults, known or suspected to have latent TB infection should receive preventive therapy – a major behavioural change for health staff.

Weakness in health systems, and failures to communicate important information from one facility to another, lie at the root of these problems in the quality of care. The Wasors are too few, as they cover large populations, and have multiple roles and responsibilities which prevent them from giving adequate time and effort for supportive supervision of the TB programme. Their turnover is 48% annually in some provinces. Centrally, the NTP does not have the staff strength necessary to support provinces and districts and ensure the TB priorities are addressed.

A major challenge facing the NTP is to **find the estimated 275,000 cases** that are not reported or not detected each year. If they are not being treated at all, they risk transmitting the disease to their families, children and grandchildren. If they are being treated in that part of the private sector that is not collaborating with the NTP, they risk being subjected to non-standard treatment practices, and developing drug-resistant disease.

Over three-quarters of TB patients seek care in the **private healthcare sector**. Although progress has been made in working with some private hospitals, the private primary healthcare providers (GPs, pharmacies, laboratories) remain unengaged. The NTP expects existing health staff and voluntary professional associations to engage private care providers, but activities have been limited in the absence of dedicated human resources and organizational systems strong enough to engage large numbers of private providers and ensure high coverage of quality care.

Active case finding (ACF) is a mechanism for finding missing cases, and moreover can accelerate diagnosis and treatment before transmission has occurred. It can be a useful tool for community mobilization and engagement of local governments, and other parts of the health sector, in the fight against TB. However, ACF activities need to be carefully planned - to prioritize populations at highest risk - and systematically implemented, using the most sensitive screening and diagnostic tools such as chest x-ray and rapid molecular tests.

Funding for TB prevention and treatment remains inadequate. While domestic budget allocations for TB have increased, the program is seriously under-funded relative to its goals and commitments. International assistance remains significant but it is essential to continue to increase domestic budgetary resources, both for long-term sustainability and in order to achieve the targets in the National Strategic Plan. Despite regulations encouraging down-referral, BPJS payment mechanisms encourage hospital-based diagnosis and care of uncomplicated TB cases that are better managed at the primary care level. From 2015 to 2018, the proportion of TB cases notified from hospitals increased from 26% to 46% and BPJS hospital claims for TB increased from IDR 334 billion (US\$ 24m) to IDR 517 billion (US\$ 35m). This rate of increase risks being unsustainable. Furthermore, the proportion of cases that are bacteriologically confirmed is falling, despite the rising availability of better diagnostics, and it is possible that financial incentives may be leading to some over-diagnosis of TB in hospitals.

Increased resources for clinical care via BPJS are not accompanied by **adequate funding or staffing for the public health functions** that are not well performed by facility-based clinicians, such as recording and reporting, supervision and performance monitoring, engaging providers on quality of care issues, tracing patients lost to follow-up and ensuring continuity of care, contact investigation, screening in high-risk groups, preventive therapy, and facilitating social support to patients and their families (which is needed to enable adherence and reduce economic suffering). Due to decentralization, staffing levels and funding priorities are locally determined, and the deployment, training and supervision of adequate numbers of public health staff is not prioritized. This shortfall has consequences for all areas of TB diagnosis and treatment, reducing quality and therefore performance in all of them, with very real consequences for medical outcomes and patients.

Accurate **monitoring and evaluation is seriously hampered by a weak electronic surveillance system (SITT)** that is generating inconsistent data. The “mopping up” approach, while a short-term solution to finding “missing” cases in public and private hospitals, has the potential of significant duplication of notifications.

Opportunities

The Presidential Initiative and Decree are expected to encourage provincial and district-level authorities to prioritize TB control in local budgets and hold local health authorities accountable for TB care and prevention performance. The Initiative can also draw in greater multi-sectoral engagement to address the drivers of the TB epidemic (smoking, undernutrition, diabetes as well as HIV), the social determinants of TB (poverty, isolation, risky environments, poor access to services, etc.) and lead to better diagnosis and care for TB within specific vulnerable populations, so that the financial burden of a case of TB in the family does not turn out to be catastrophic.

The expansion of BPJS established the foundation for sustainable funding of quality TB clinical care in the public and private sectors, and the recent decision by BPJK to test innovative payment mechanisms that encourage TB case management at the primary care level creates the potential to substantially improve program performance at lower cost.

The introduction of SITB, a new electronic case management system, provides opportunities for a more stable data system with clearer performance metrics and greater potential for interoperability with other health data management systems.

Principal Recommendations

The JEMM makes the following major recommendations in the light of the Presidential Initiative launched on 29th January 2020. More detailed technical recommendations follow below in the full report. Recommendations and findings from this review should help refine the early drafts of Indonesia's National Strategic Plan and the funding request to the Global Fund to Fight AIDS, TB and Malaria.

1. The NTP should take full advantage of the **Presidential TB Initiative** to ensure mandatory reporting and improve the quality of care, prevention and treatment delivered to all TB patients. As part of this response, the MOH and MOHA should develop a system for annual, multi-sectoral, political and administrative review of the TB response, using performance dashboards at district, provincial and national levels and involving all partners, including the Stop TB Partnership, Indonesia. Political visibility of this effort will be a key to success. The NTP should disseminate useful lessons learnt by high-performing districts.
2. To **extend quality TB services to more patients**, the NTP should:
 1. **Urgently expand the scope of the PPM initiative**, targeting at least a 10-fold increase in GP engagement and a 2-fold increase in private hospital engagement, especially in the main urban districts. This requires a practical approach that avoids too many committees and deploys sufficient paid staff to support private providers as they notify cases and ensure treatment completion.
 2. Employ cost-effective **active case finding (ACF)** aimed at improving the yield from household contact screening and focusing on other populations with a prevalence known, or suspected to be, about 1% or above. This will likely include prisons and boarding schools, as well as PLHIV. Patients within the health system suffering from comorbidities such as diabetes mellitus, mental health, and who smoke, or those who are simply old, should be considered for ACF. ACF, however, should only be done using the most sensitive technologies (digital chest x-ray and GeneXpert), perhaps through contracting third party agencies.
3. To **improve the quality of care** the NTP should:
 1. **Revise treatment regimens.** The new daily regimen should be phased in without unnecessary delay. The Category II regimen should be phased out immediately and replaced with a regimen suitable for the most prevalent resistant pattern based on susceptibility testing.
 2. **Improve access to modern diagnostic services.** GeneXpert should be used as the front line test for all presumptive TB cases. As well as deploying more GeneXpert machines, the priority is to increase their utilization by establishing or improving sample transportation systems that serve both public and private providers.
 3. **Improve the treatment of MDR/RR-TB.** All those diagnosed as MDR/RR-TB must be started on treatment as rapidly as possible by eliminating diagnostic or administrative hurdles imposed by BPJS, reducing the unnecessarily long duration of pre-treatment baseline assessments, providing clear information and pre-treatment counselling to patients, holding staff accountable for tracking patients from

diagnosis to care (including the piloting of a case manager cadre to trace patients who are lost to follow-up and to connect patients to social support), reducing stigma and fast-tracking the addition of bedaquiline to the e-catalogue. As well as increasing GeneXpert as the front-line test (which serves also rapidly to diagnose RR TB), access to drug susceptibility testing of fluoroquinolone and other second line drugs should be ensured, all-oral regimens should be introduced, and financial support to patients improved (including starting the financial support at diagnosis, rather than waiting until after treatment initiation).

4. **Mitigate the impact of HIV on TB.** All patients with TB should have provider-initiated testing and counselling (PITC) for HIV, and all PLHIV with TB should be offered ART. All PLHIV without TB should receive treatment of latent TB infection. The keys to success will be training of staff and clarifying exact operational responsibilities between different health facilities and cadres.
 5. **Expand the uptake of TB preventive treatment** for all contacts of bacteriologically positive cases and PLHIV. This will require informing all stakeholders of its importance as a lifesaving intervention, creating demand from those who need it, providing the new, shorter regimens without delay, and organising practical approaches to do this in the field.
 6. Fund **patient support** organizations to scale up peer support and counselling, stigma reduction and advocacy to, with, and on behalf of, TB patients. All TB patients should be made eligible for the PKH social protection scheme.
4. The MOH should **recruit sufficient staff** to manage the increasing load of patients and carry out (especially) the public health functions required for TB control. To support the staff to do their work, a major **training initiative** needs to be undertaken by the NTP, working with health workforce authorities, to significantly upskill both the public and private staff delivering TB services to patients. This must include communications skills, ways of addressing stigma against people with TB and HIV, and the importance of effectively passing on life-saving information to patients. Discussions should be held on how to address the high turnover of staff.
 6. The MOH and BPJS-K should aim to **make TB care more cost-efficient** by implementing the proposed pilot initiative to test the performance-based, TB-specific BPJS payment mechanisms at the primary and secondary care levels, adapting it rapidly in the light of lessons learned and deploying the new approach nationwide at the earliest opportunity. The inclusion of MDR-TB case-management into JKN/BPJS coverage is also a critical priority.
 7. The NTP must **improve the reliability and consistency of the data it generates**. The new SITB surveillance system should help achieve this goal. Once rolled out, the priority should be to enable linkage of SITB with the BPJS records of TB cases, as well as improvement of routine surveillance in order to replace the “mopping up” activities, which risk duplication of notified cases, and also provide data too late to drive real-time monitoring and performance management. Investment in training and supervision will also be needed to ensure that systems are implemented effectively and data used to improve programme performance.

1. Background

1.1 Introduction

Tuberculosis (TB) is still a major health problem for Indonesia, and Indonesia has both made serious commitments to address it, and taken significant, practical steps to reduce the burden of TB, particularly since the Joint External Monitoring Mission (JEMM) of 2017. Indonesia participated in the UN General Assembly High Level Meeting (UNHLM) on TB in 2018 and contributed to its Political Declaration. It has committed to achieving the Sustainable Development Goal target of ending the TB epidemic by 2030, and the associated End TB Strategy targets of a 90% reduction in TB deaths and an 80% reduction in the TB incidence rate by 2030, and no family burdened with catastrophic costs due to TB, by the end of 2020. Furthermore, the Political Declaration of the UNHLM set out additional targets on the way to ending the epidemic, namely, to provide TB treatment to 40 million, and preventive treatment to 30 million people, between 2018 and 2022.

This document reports the findings of the JEMM on Tuberculosis (TB) to Indonesia, January 20-30, 2020. The JEMM was co-organized by the National TB Programme and the World Health Organization. The Mission team was made up of Indonesian experts from the Ministry of Health (MOH), its National Tuberculosis Programme (NTP), other Ministries, the non-governmental sector, as well as community representatives and ex-patients. External experts came from Indonesia's international partners in the fight against TB, notably the World Health Organization (WHO), the Global Fund, and the US Agency for International Development (USAID).

However, it is important to state at this point, that, in spite of significant progress in several areas since 2017, Indonesia is not on track to contribute fully to the global End TB 2022 targets, nor to reach the 2030 targets. This review report focuses on the measures that need to be taken to get on track.

1.2 Goals of the Review

Overall objective: Review the progress and the performance of the National TB Programme (NTP) of Indonesia since the last programme review in 2017. Determine the reasons for observed successes or challenges and draw lessons from the data and experience to produce evidence-based findings that allow NTP to make informed strategic decisions about the NTP's path towards TB elimination, in line with the UNHLM commitments and Sustainable Development Goals.

Specific objectives

1. Review progress in implementation of multi sectoral accountability framework (MAF-TB);
2. Review progress in Public-Private mix efforts with special focus on large hospitals;
3. Assess TB diagnostics including laboratory network, diagnostic algorithms, diagnostic tools, screening and quality assurance;
4. Evaluate drug procurement and supply chain management;
5. Assess the financial situation and human resources in light of the programme's performance and demands. Analyze funding needs and utilization, gaps and expected future funding for TB care and prevention, including funds coming from social health insurance system, provincial and district contributions and social protection;
6. Review implementation of TB/HIV collaborative activities and other co-morbidities;
7. Review programmatic management of drug resistant TB in relation to adoption and implementation of updated WHO guidelines and infection control in health facilities and congregate settings;
8. Review community and civil society organizations engagement and empowerment efforts;

9. Assess TB case finding activities including active case finding among high risk groups like, in children, contacts, migrants, prison inmates and persons in other congregate settings;
10. Review implementation of treatment of latent TB infection (LTBI) in line with WHO recent recommendations;
11. Review activities related to TB research and innovations.
12. Identification of any good practices.

The objective: “Review monitoring and evaluation system including data quality, and robustness of observed time trends and apparent program impact, with a focused sub-national analysis and use and programme performance;” was undertaken by the epidemiological review of September 2019, conducted by the WHO Global TB Programme’s (GTB) TB Monitoring and Evaluation team.

The Team Leader was also instructed to review:

1. the establishment, strengthening/maintenance of a national multi-sectoral mechanism tasked with providing oversight, national coordination, and periodic review of the national tuberculosis response;
2. socio-economic determinants of TB and coordination with non-health ministries;
3. engagement of government with civil society, TB-affected communities and patient groups with activities enabled and undertaken by these groups;
4. engagement of government with parliamentarians and activities undertaken by them related to TB;
5. development and enforcement of relevant legislation (eg mandatory notification, anti-discrimination, etc);
6. funding needs for ending TB, availability and absorption for TB program across multiple scenarios (sic);
7. JKN provincial and district funds roles in TB care and prevention;
8. Country readiness for transition to domestic funding – issues, challenges and solutions;
9. Roles of social assistance and social insurance in reducing financial burden faced by TB affected families and NTP collaboration with national social protection agencies
10. Human resources – capacity, gaps and challenges at the national and sub-national levels

While some of these tasks for the team leader overlapped with the objectives, some did not. The additional tasks represented, for the most part, the non-technical issues which every review needs to pay attention to. However, there were about six areas in the team leader’s list which were not covered in the twelve specific objectives. Too many objectives and tasks suggest a lack of focus and prioritisation on the part of the review organisers. Some, limited, discussion between the team leader and WHO took place prior to the review to determine the key strategic issues for Indonesia’s TB Programme in early 2020, and to try and limit the scope of the review. Finally, it was agreed that the review would cover the 13 thematic areas in this report.

Methods used to carry out the Review

- Reviews of programme performance data, policies, guidelines, strategies, standard operating procedures, and reports of review meetings, supervision visits etc.;
- Field visits to a selected variety of health facilities of public, private and other sectors, affected communities;
- Collection of data on the agreed components of the NTP, using structured questions provided by the external experts;

- Interviews key stakeholders, implementers at all levels, community leaders, community volunteers, presumptive TB/DR-TB and TB/DR-TB patients;
- Compilation of key findings and recommendations through presentation and discussion of Powerpoints presented by the thematic leaders and subsequent thematic reports in Word, edited into the final report by the Team Leader.

The first full draft of the report was circulated on 9th March, 2020, for final review with one week's turnaround time. The final report was submitted to WHO and the NTP on 17th March, 2020.

1.3 Organisation of the JEMM

After briefings from the NTP and other Government of Indonesia counterparts on January 20th, the Review split on Tuesday, January 21st into four teams that visited East Kalimantan, Nusa Tenggara, South Sumatra, and West Java, and a fifth team stayed in Jakarta to review the progress of the provinces visited in the 2017 JEMM: DKI Jakarta, Central Java, West Sumatra, South Kalimantan, and South-East Sulawesi; this team also received a briefing on health and TB financing from key Government of Indonesia agencies and partners.

The field missions stayed in the field until Monday, January 27th, when they debriefed with the provincial health offices, and returned to Jakarta. Because of the shortage of time for discussion, the findings of the field missions were not presented but were circulated by Powerpoint presentations. Some teams also circulated their one to two page debriefing summaries that were left with the PHOs. Discussion of the findings took place on Tuesday and Wednesday, 28th-29th of January, and presentation of the recommendations was planned for Thursday 30th January to the stakeholders in the morning, and to the Minister in the afternoon. In the event, the Minister was unable to attend and the debrief was to Dr Anung Sugihantono, Director General, Communicable Disease Control, MOH.

The review team had a number of concerns about the organisation of the Review and its focus, and made some recommendations (Annex 2).

1.4 Indonesian national context

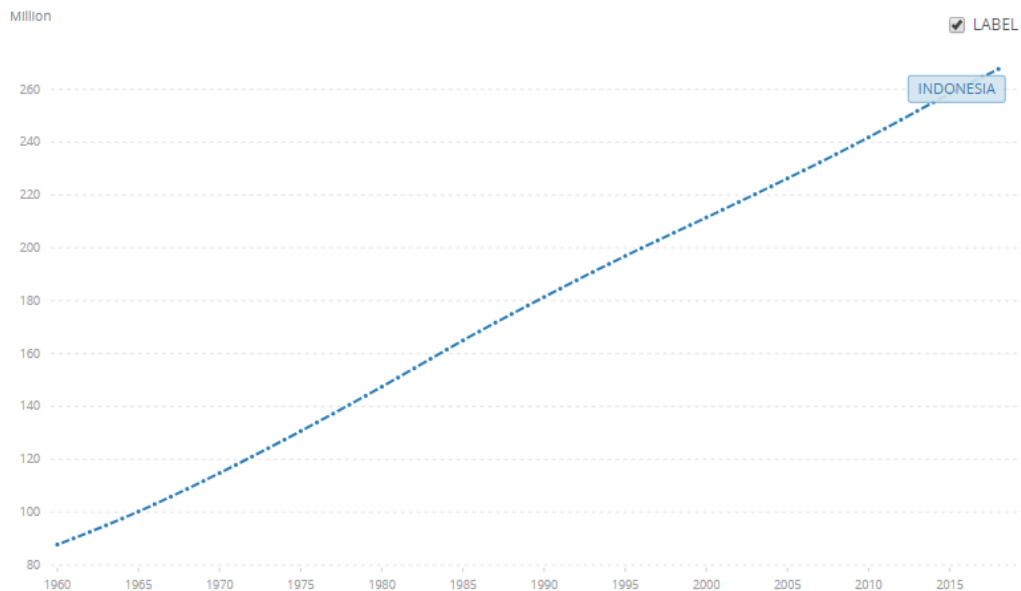
Geography and population¹

Indonesia is the largest archipelago in the world with an estimated total of 17,508 islands of which about 6,000 are inhabited. The country is ranked fourth globally in terms of population, with about 270 million citizens, just behind the United States and ahead of Pakistan. This large population includes numerous ethnic, cultural and linguistic groups, speaking 724 distinct languages and dialects. Indonesia is the world's largest Muslim-majority country with 87% of the population classified as Muslim. The growth rate is over 1% and the population is expected to peak at 340 million around 2067.

One of the characteristics of the Indonesian population is its uneven distribution between islands and provinces. Most of the population lives on the islands of Java (58%) and Sumatra (22%), even though the area of Java is less than 7% of the total. In 2017, approximately 55.2% of the population was living in urban areas while the remainder was living in rural surroundings. The number of people living in cities is projected to rise to 67% by 2025. The country is currently experiencing a demographic "dividend" where the working-age population is increasing relative to the rest of the population.

¹ World Bank. <https://www.worldbank.org/en/country/indonesia/overview> Accessed 14th February.

Figure 1. Population (millions), 1967-2019. Source: World Bank²



Political context

Indonesia is a republic with a constitution, and executive, judicial and legislative branches of government. The country is headed by an elected executive President and has undergone a process of decentralization since 1999, which has seen control of large amounts of public expenditure and service delivery transferred from the central government to provincial and local governments. Sub-district and district leaders and provincial governors win office through direct elections. Voters are also able to select provincial and district-level parliamentarians. Enactment of the law on local autonomy in 1999 marked the beginning of decentralization in Indonesia. Since 2005, heads of local government (governors, regents and mayors) have been directly elected by popular election.

Economy and development³

The largest economy in Southeast Asia, Indonesia has charted impressive economic growth since overcoming the Asian financial crisis of the late 1990s. The country's GDP per capita has steadily risen, from US\$ 823 in the year 2000 to US\$ 3,932 in 2018 (Figure 2). Rising economic performance is partially offset by the more than 1% annual rise in the population.

Today, Indonesia is the world's fourth most populous nation, the world's 10th largest economy in terms of purchasing power parity, and a member of the G-20. An emerging lower middle-income country, Indonesia has made enormous gains in poverty reduction, cutting the poverty rate by more than half since 1999, to 9.4% in 2019.

Despite heightened global uncertainty, Indonesia's economic outlook continues to be positive, with domestic demand being the main driver of growth. Supported by robust investment, stable inflation, and a strong job market, Indonesia's economic growth is forecast to reach 5.0% in 2020, slightly down from 5.1% in 2019, but predicated on the gradual reduction in international trade tensions,

² <https://data.worldbank.org/country/indonesia>

³ World Bank. <https://www.worldbank.org/en/country/indonesia/publication/december-2019-indonesia-economic-quarterly-investing-in-people> Accessed 14th February, 2020.

reduced domestic political uncertainty, lower borrowing costs, and improved business sentiment due to proposed economic reforms.

Indonesia's economic planning follows a 20-year development plan, spanning from 2005 to 2025. It is segmented into 5-year medium-term plans, called the RPJMN (Rencana Pembangunan Jangka Menengah Nasional) each with different development priorities. The current medium-term development plan – the third phase of the long-term plan – runs from 2015 to 2020. It focuses on, among other things, infrastructure development and social assistance programs related to education and healthcare. Such shifts in public spending are enabled by reforms of long-standing energy subsidies, allowing for more investments in programs that directly impact the poor and near-poor.

Considerable challenges remain in achieving Indonesia's goals: about 26 million Indonesians still live below the poverty line. Based on March 2018 data, a further 20% of the entire population remains vulnerable of falling into poverty, as their income hovers marginally above the national poverty line.

Trade has fallen recently, as has expansion of investment, and domestic consumption – long the main driver of growth – is also less buoyant. These developments have slowed the pace of poverty reduction. Downside risks to Indonesia's growth outlook continue to be severe with protracted trade tensions posing additional risks to commodity prices, international trade flows, global business sentiment and investment growth, and China's growth outlook³. Most recently, the coronavirus (Covid-19) epidemic is threatening the global economic outlook, but in ways that are, as yet, unpredictable.

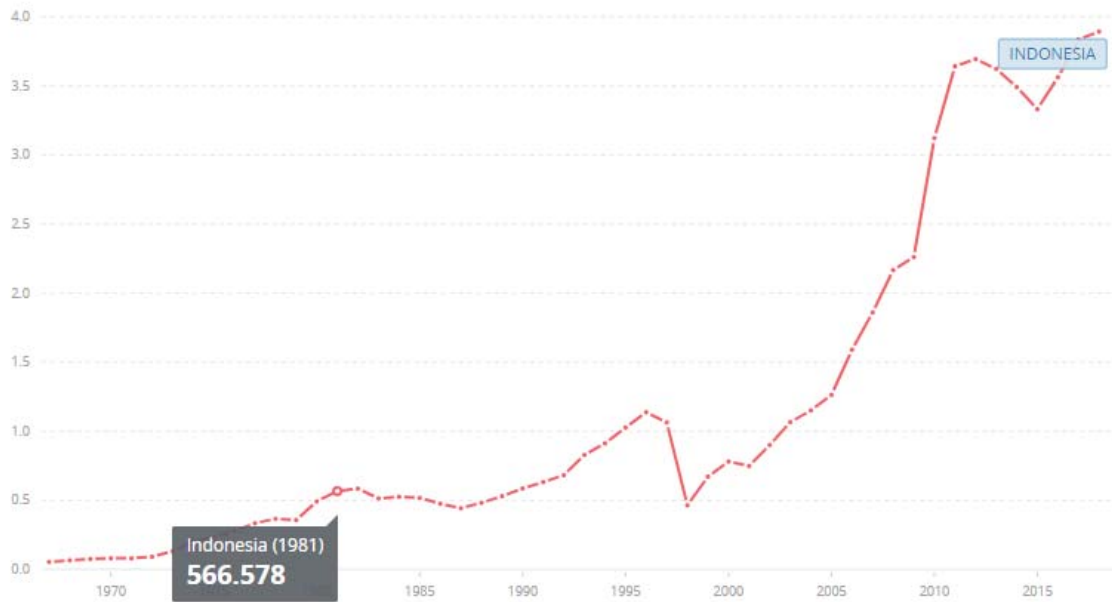
While greater efforts are being made to improve basic public services, the quality of health service delivery and schools is uneven by middle-income standards, contributing to concerning indicators, particularly in health. Approximately 1 in 3 children under the age of 5 suffer from stunting, which impairs brain development and will affect their future opportunities (see Section 1.5 below)

Economically then, in spite of realistic concerns, there are sufficient resources to envisage an increase of support for priority health programmes. The World Bank considers that the current social protection programmes form a solid base on which Indonesia can build a system that addresses the risks and challenges that the future is likely to bring. However, these programmes would need to evolve further to adapt to emerging demographic, technological and environmental trends. An important part of this review will address the adaptations needed in the national health insurance *Jaminan Kesehatan Nasional* (JKN) system in order to achieve the potential contributions from the private sector in case finding, and improvements in the quality of care for people with TB in both public and private sectors.

Figure 2. GDP per capita 1967-2018, in current US\$ (Thousands). Source: World Bank⁴

⁴ World Bank.

<https://data.worldbank.org/indicator/NY.GDP.PCAP.CD?end=2018&locations=ID&start=1967&view=chart>
Accessed 19th January, 2020.



1.5 Financing, governance, structure and performance of the health system

Financing of health

Current (total) health expenditure (CHE) has increased steadily from US\$ 60 per capita in 2005 to US\$ 115 (2.99% of GDP) by 2017⁵ (the latest year data are available). The public sector's contribution has increased from 27% of CHE in 2011 to 48.4% by 2017 - the remainder (51.6% of CHE) being the private sector contribution. This expansion of the government's contribution has been associated with a reduction in out-of-pocket (OOP) expenditure (almost all of which is in the private sector) from 57% of CHE in 2011, down to 36.4% in 2017.

According to WHO⁵, the health share of the total government budget increased significantly from 4.5% in 2011 to 8.7% in 2017, which is still low in comparison to some countries in the region, such as China (9.1%) and Thailand (15%), but has recently exceeded the Philippines (7.1%). The World Bank has warned that "the relatively low quantum of overall health spending in Indonesia is one of the key bottlenecks towards achieving UHC. This is a result of a combination of factors, including relatively low overall government revenue generation, low prioritization for health, high levels of informality - {in the labour sector, which reduces payroll tax incomes to government} and low utilization rates. Global and regional benchmarks indicate that Indonesia's health system remains significantly under resourced⁶." Furthermore, there remain "significant regional disparities in service quality and accessibility, managing resources effectively, containing costs and minimizing fraud, engaging the private sector, and maintaining investment in health promotion and prevention

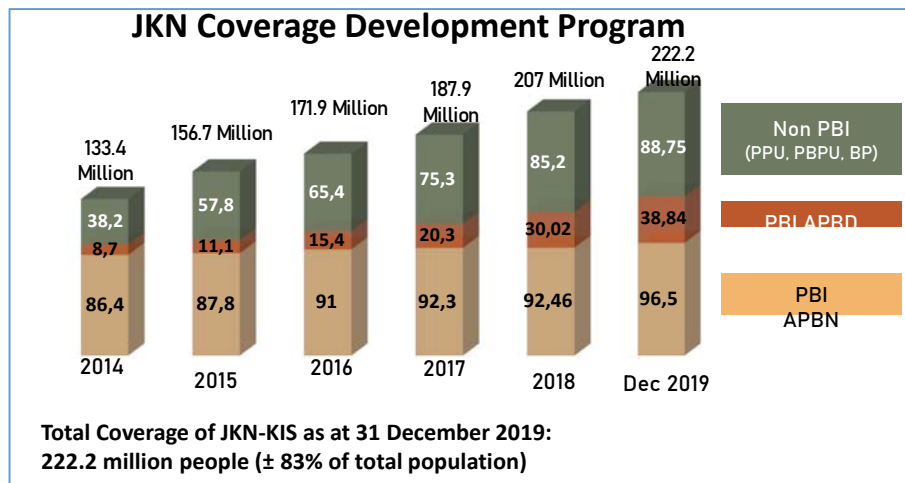
⁵ WHO. Global Health Expenditure Database. http://apps.who.int/nha/database/country_profile/Index/en

⁶ Tandon, Ajay; Pambudi, Eko Setyo; Harimurti, Pandu, et al. 2016. *Indonesia - Health financing system assessment : spend more, right, and better (English)*. Washington, D.C.: World Bank Group. <http://documents.worldbank.org/curated/en/453091479269158106/Indonesia-Health-financing-system-assessment-spend-more-right-and-better> Accessed 23 February, 2020.

programmes”⁷. An estimated 7 million households – 8% of the total - are either impoverished or pushed deeper into poverty as a result of high OOP spending for health.

Indonesia committed to universal health coverage by 2019. The institutional framework for UHC was achieved through the passage of the 2004 *National Social Security System Law* requiring health insurance for the entire population. In 2011, the *Social Security Provider’s Bill Law* established a national social security agency Badan Penyelenggara Jaminan Sosial Kesehatan (BPJS) to undertake implementation of the UHC program Jaminan Kesehatan Nasional (JKN). This scheme has expanded its coverage progressively, reaching 222.2 million (84% of population) as of December 2019 (increased from 187.9 million at the time of the 2017 JEMM) (Figure 3).

Figure 3. Progressive expansion of the JKN population coverage.



Source: Presentation provided for JEMM 2019 by the Centre for Health Financing and Health Insurance

Enrolment will eventually be mandatory for all, with the formal sector (civil servants and salaried employees in the private sector) having already been enrolled by employers based on a premium equivalent to 5% of their salary. Through BPJS, the government has committed to financing social insurance coverage for the poorest 40 percent of the population who are registered as instalment payment beneficiaries. Around 35 percent of the initially targeted “poor” (92 million) have been registered equating to about 70 percent of all current JKN memberships. Collection of contributions from “non-poor informal workers” has been difficult, and under current regulations, this group must contribute in order to enrol in JKN. Thus JKN coverage for this population group has been limited. Those few non-poor informal participants who have enrolled to date, tend to have done so because they were already ill, undermining equity, and threatening the financial sustainability of JKN. Provider payment mechanisms under JKN are not explicitly linked with treatment outcomes. JKN offers comprehensive benefits, that is it will help reimburse most health interventions, but JKN’s current reimbursements do not cover the full cost of care.

More than 65 percent of JKN expenditures were for hospital-based inpatient care (50 percent) and outpatient care (15 percent). About 20 percent of the expenditure was on capitated primary care at puskesmas and empanelled private clinics. A very small amount—less than 1 percent—went towards

⁷ Asia Pacific Observatory on Health Systems and Policies. Republic of Indonesia Health System Review. Health Systems in Transition, vol. 7, 2017. <https://apps.who.int/iris/bitstream/handle/10665/254716/9789290225164-eng.pdf>

preventive and promotive activities. In the absence of explicit rationing in JKN (i.e., which services are covered), there is implicit rationing based on access, and low supply side availability. As a result, the poor and those in remote areas therefore receive far less benefit from JKN than others. There is overlap and no clear division of which financial flows should finance curative care, and which should fund public health functions – though JKN is focused more on curative. JKN coverage still has a “missing middle”: the government and formal employers pay premiums for many of the identified poor and for formal employees, respectively, but significant numbers of the self-employed lower-middle class, or those in casual labour, remain uncovered⁸. The increase in government health spending since 2010, however, does look as if it is mirrored by a reduction in out-of-pocket (OOP) expenditure. In addition to financing through JKN, the government provides other vertical financing systems for health, which are fragmented across multiple levels of government and funding flows, resulting in dis-coordinated governance, and unnecessary management costs (for more details, see section 1.6 below).

Governance and health system structure

The country has 34 provinces, 514 districts/cities, and some 72,000 villages. Public provision is decentralized to the district/city level. As a country with over 6,000 inhabited islands, geography poses a significant obstacle to service delivery.

Health services in Indonesia are delivered through both public and private providers. Private provision has been increasing rapidly in recent years, including for primary care.

The organization of public health services is the responsibility of Ministry of Health officials at district, province and national level. The network of public health services follows the political structure of the country. Following the reforms of 2001, administrative and financial responsibility have been decentralized to province and district level. There are a total of 24,223 health facilities in the country which include 10,158 sub-district public health centres (termed Pusat Kesehatan Masyarakat or *puskesmas*). Only 11,678 (48%) of the total health facilities are actively engaged in TB control, while 9,656 (95%) *puskesmas* are so engaged⁹. There are 2,845 hospitals, both public and private. More peripheral than the sub district level are satellite and mobile health centres with 94% of the population living within 5 kilometres of a facility. There are approximately 90,000 licensed practitioners of medicine and an unknown number of licensed traditional practitioners. Licensing is coordinated by the Indonesian Medical Association and the National Association of Traditional Healers and is granted by government at local level.

Like funding, responsibility for health activities is also fragmented and divided between a number of ministries. Coordination of financing of activities is through the Planning Bureau at each of these levels to which programs submit budgets up to a fixed ceiling. Services for tuberculosis patients are included in the Directorate General of Prevention and Disease Control (PDC) at the Ministry of Health (Figure 4). Training and capacity building are the responsibility of the Board for Development and Empowerment of Health and Human Resources; accreditation, licensing, laboratory services and infection control rest with the Directorate General of Health Services. Responsibility for the health information system resides with the Secretariat General. Management of local services is coordinated by the Ministry of Internal Affairs. The TB Sub-Directorate, under the DG PDC of the MOH, manages daily activities of tuberculosis control in Indonesia. TB services delivered through the public sector component of the health system take place in primary health care centres (PHCs, or *puskesmas*) and hospitals (Figure 5). The *puskesmas* and hospitals are managed under the Directorate General of Health Services (YANKES = Pelayanan Kesehatan). In addition, other

⁸ Centre for Health Financing and Health Insurance: Presentation provided for JEMM 2019, January 2020.

⁹ Presentation of the Director, NTP, 20th January 2020.

government departments such as prisons and military services, as well as non-governmental actors like private providers and companies, provide TB services.

Figure 4. Organogram of Ministry of Health. *Source: MOH*

MINISTRY OF HEALTH OF INDONESIA ORGANIGRAM

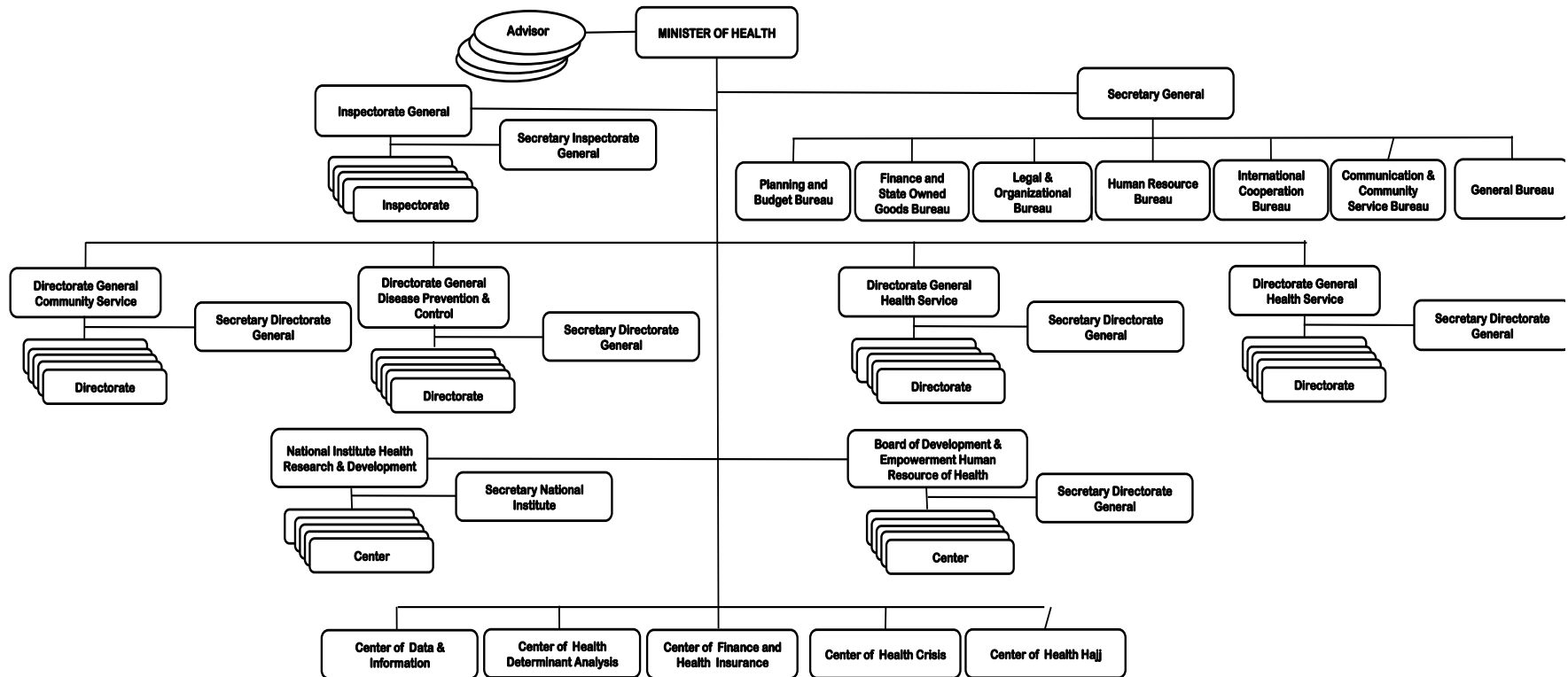
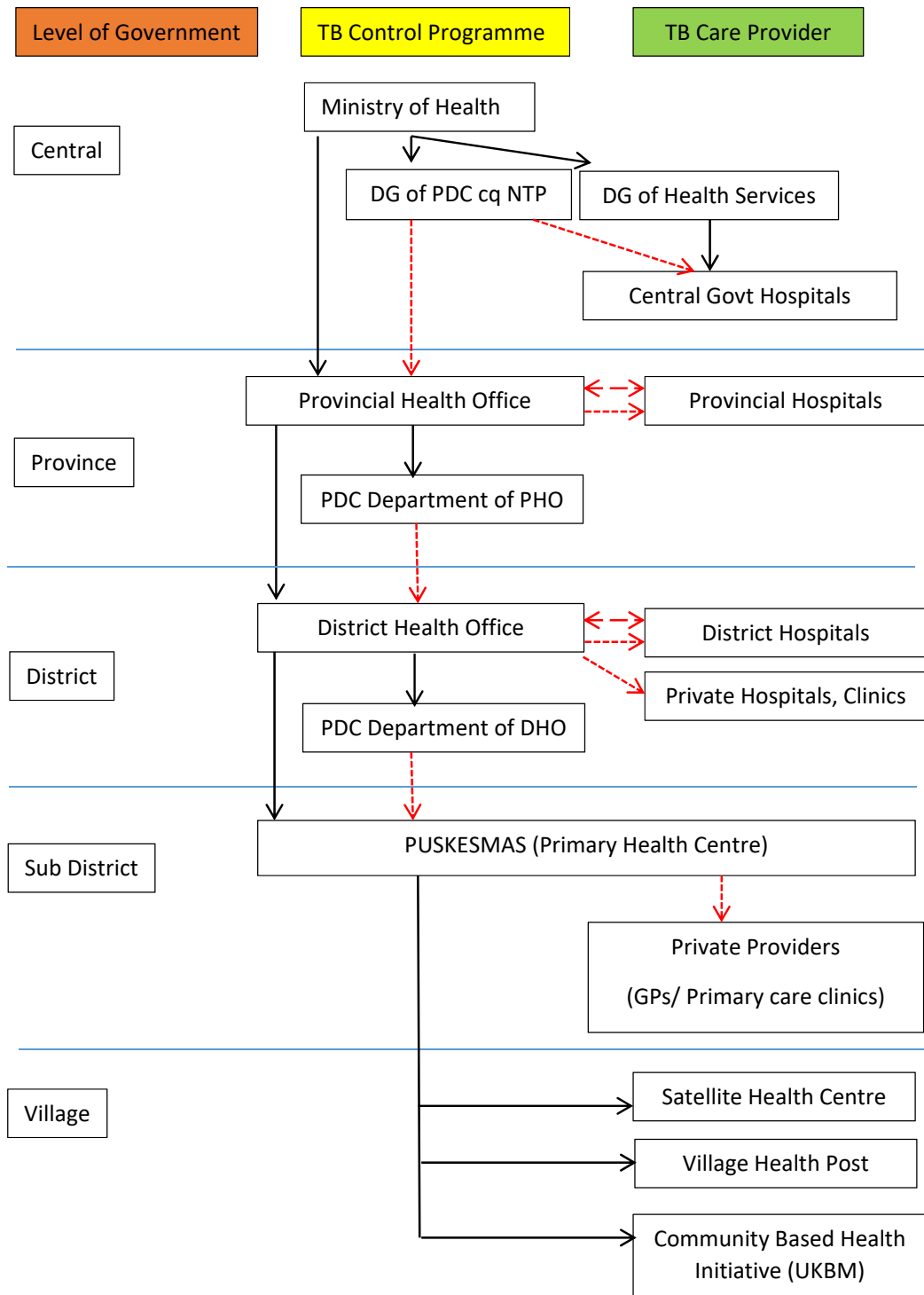


Figure 5. Structure and organization of the delivery of health services. *Source: MOH.*



Note: Puskesmas have dual roles as centres for public health programmes, and health facilities providing some clinical services

Line of Command: —> Line of Coordination: <-> Line of Supervision: - - - ->

Functionally, the overall direction of the MoH is to move from curative and rehabilitative services to a focus on health promotion and disease prevention with emphasis on non-communicable diseases (implemented at province and district levels). The provincial and district authorities are responsible for delivery of clinical services. During this current five-year period, MoH is supposed to focus on issues of access to, and quality of, essential and referral health care services. Based on the targets set in the draft RPJMN III, the national development plan, the MoH has drafted a strategic plan that details its efforts to contribute to overall development in Indonesia—the RENSTRA 2015 – 2019.

One of the target areas within the goal of improving population health status is decreased communicable disease prevalence, and there are specific targets for TB. A national strategic plan (NSP) for TB has been drafted in 2019 for the period 2020-2024.

General performance of the health system

Life expectancy at birth has steadily increased to 71.6 years in 2019¹⁰, up from 63 years in 1990 and only 49 years in 1960. Infant mortality has declined from 32 deaths per 1,000 live births in 2012 to 24 deaths per 1,000 live births in 2017¹¹. Neonatal mortality rates (per 1,000 live births) have also been declining steadily, and were reported at 12.7 in 2018. Reported deaths from malaria fluctuated substantially in recent years. A downward trend between 2000 to 2018, ended at 34 in 2018, although the estimated number of deaths for 2018 was much higher at 1,785 (140-2,930)¹².

While there have been great efforts at improving basic public services, the quality of health clinics and schools is uneven by middle income country standards, contributing to alarming indicators - particularly in health. For example, the maternal mortality rate in Indonesia in 2017 (the latest for which data could be found) was 177 maternal deaths per 100,000 live births¹³ – higher than the Millennium Development Goal of 102 maternal deaths per 100,000 live births. One in 3 children under the age of 5 suffered from stunting (shorter height than normal) in 2013, and stimulated a Vice-Presidential Initiative against Stunting, which in 2019 targeted a 19% stunting rate by 2024¹⁴. Large regional and income-related inequalities in health outcomes remain across the country.

¹⁰ <https://www.macrotrends.net/countries/IDN/indonesia/life-expectancy> Accessed 23 February 2020.

¹¹ Indonesia Demographic Health Survey 2017

¹² WHO. World Malaria Report, 2019. <https://www.who.int/malaria/publications/world-malaria-report-2019/en/> Accessed 16th March 2020.

¹³ WHO. Maternal mortality 2000-2017: Indonesia.

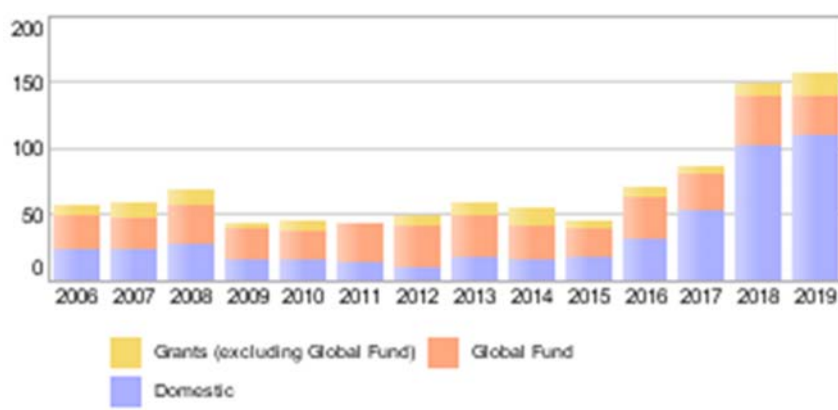
https://www.who.int/gho/maternal_health/countries/idn.pdf: Accessed 16th March 2020.

¹⁴ <https://en.tempo.co/read/1237329/govt-targets-reducing-stunting-prevalence-to-19-percent-in-2024> Accessed 23 February, 2020.

1.6 Financing for TB activities

According to the NTP's 2019 report to WHO, overall TB funding has increased in the last five years (Figure 6). The level of funding was stable at around US\$ 50 million per year between 2006 and 2015 (of which about half were from domestic funds). Funding started to increase in 2016 and had tripled by 2018 (totalling more than US\$ 150 million in 2019). There are considerable uncertainties around these numbers due to incomplete subnational tracking, particularly in previous years, but domestic funding now provides more than two-thirds of overall TB funding. Indeed, this domestic contribution may be underestimated as it does not include health insurance disbursements (claimed under the diagnosis of TB) and likely also still omits some local government funds. This should be compared to all health programmes outside TB, HIV, malaria and immunizations, where external funding is less than 1%⁸.

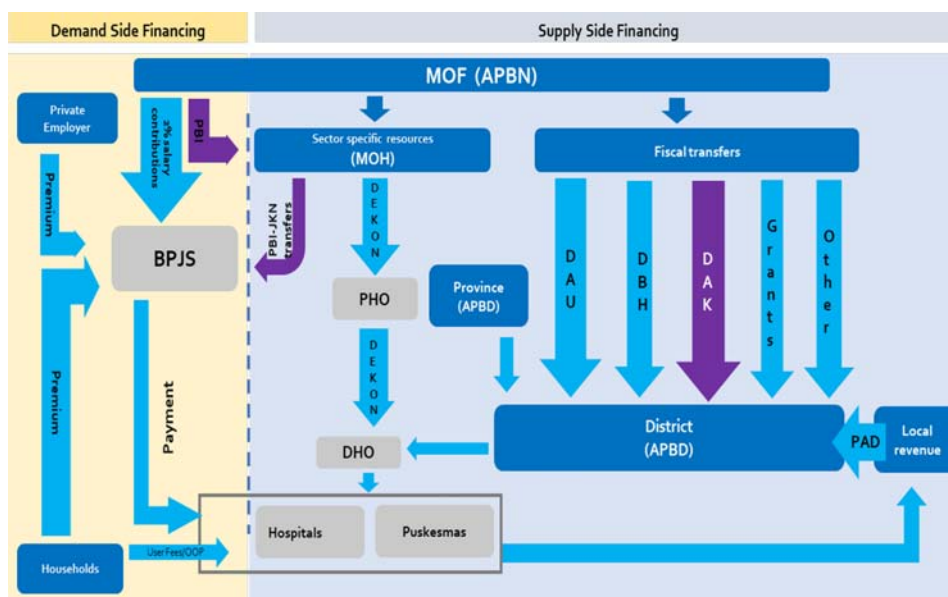
Figure 6. TB funding by source (US\$ millions)



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

General funding flows for health services and public health programmes (Figure 7) are via, a) supply-side TB programme financing through central and local government funds, including external support - as illustrated, there are multiple funding flows that support various levels of structure and activities – and b) demand-side financing through BPJS, the administration agency for JKN, which is the major source of revenue for health service provision (though still only 23% of total health expenditure).

Figure 7. General funding flows for health services and public health programmes



Source: Presentation provided for JEMM 2019 by the Centre for Health Financing and Health Insurance

The central level government expenditures include staff and operational costs for the NTP at the central level, and procurement of key commodities (e.g., TB drugs and GeneXpert cartridges). At the sub-national levels, most of the central transfers are not ear-marked for health (e.g. DAU, DBH) but these are used to support salaries for public health personnel. DAK (a special allocation fund) is specifically allocated for health with further granular earmarking (medicine, commodities, operational expenditures, etc).

Table 1. Summary of funding sources for different TB programme services and functions

	Primary Care	Referral	Lab	Public Program Management	Household/ Patients	CSO
Ambulatory care	Capitation (BPJS)	-INA-CBGs -FFS TB-DR	Gov't budget Visit – BPJS HH OOP	Gov't budget	Out of pocket (OOP) for non JKN members TB DR Enabler – External	
Inpatient	Non-capitation (Negotiated fee claim based) (BPJS)	-INA-CBGs -FFS TB-DR	Gov't budget Visit – BPJS HH OOP	Gov't budget	Out of pocket (OOP) for non JKN members, and for FFF	
Drugs/ Vaccines	Gov't Budget TB DR – Gov't/External	Gov't Budget TB DR – Gov't/External		Gov't budget	Out of pocket (OOP) for non JKN members, and for drugs not in the formulary	
Medical supplies	Gov't Budget/External	Gov't Budget	Gov't budget	Gov't budget	Out of pocket (OOP) for non JKN members and for items not covered	
Equipment	Gov't Budget/External (Public)	Gov't Budget (Public)	Gov't Budget (Public)			
Others – Operational	Outreach, active case detection – Gov't budget Specimen transport – Gov't budget Patient transport/enablers – Gov't budget/External			Salary – Gov't Budget	TB DR Enabler – External	Outreach, Suspect detection, Treatment monitoring, etc: Gov't Budget/ External

PPM →

Source: Presentation provided for JEMM 2019 by the Centre for Health Financing and Health Insurance. (Note that PPM and the TB response in general in Indonesia requires a greatly strengthened public health function, which is very unlikely to be filled by civil society organisations (CSOs) alone).

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

An increasing number of TB patients who are diagnosed at hospitals pose additional challenges in TB treatment initiation. According to JKN regulations, hospitals should initiate TB treatment only for complicated TB cases, and uncomplicated TB patients should be referred back to PHC facilities. However, many patients apparently are not willing to go back to PHC facilities and prefer to stay under hospital care. As a result, the total annual disbursement by BPJS for medical care at higher level facilities (FKRTL) with the diagnostic codes of TB was more than IDR 400 Billion (~US\$ 29 Million) in the last three years. JKN has had cost overruns in general (not specifically for TB) in the past few years, so such levels of secondary-care disbursement for a disease that is meant to be treated primarily under capitation-based primary care – and using primarily program-supported drugs – is a concern for BPJS.

As external funding, which is largely now from the Global Fund, falls, the sustainability of the NTP becomes an issue. However, the Global Fund have just announced an increase in support to Indonesia for 2021-2023, and their support will not decrease until 2024 at the earliest. Nevertheless, the integration of service delivery of externally financed and vertically managed programs, such as the NTP, into JKN in a decentralized setting “has become one of the key policy discussions to ensure the programmes’ {future}” according to a World Bank report⁶, which continues, “Integrating these programmes into the health system, including JKN, will entail more than addressing actuarial matters related to which services should be included. It needs to be discussed within the overall health system context and take into account all the health system pillars. This includes: (i) preparedness to provide included services; (ii) better responsiveness and sensitivity to the needs of specific target population groups; {and especially, in the case of TB,}(iii) provider-payment mechanisms that incentivize providers to reach out to target beneficiaries and retain them in the treatment cascade.” These issues, particularly (iii) will be addressed in more detail below, in 2.1 and 2.7.

1.7 Epidemiology of TB (from the epidemiological analysis)

An Epidemiological Review was carried out in Indonesia from 16 to 27 September 2019 with the assistance of Babis Sismanidis, Cicilia Gita Parwati, and Marek Lalli, of the Global TB Programme, WHO, Geneva¹⁵. A summary of the epidemiological review's results is provided here. All figures and tables are taken from the epidemiological review, unless otherwise stated.

Capacity of the surveillance system

The review consisted of an evaluation of the capacity of the surveillance system to measure directly the number of tuberculosis (TB) cases and deaths (WHO Standards and Benchmarks), and an epidemiological analysis to assess the level and trends of TB burden in the country.

This was Indonesia's third epidemiological review that included a surveillance and benchmark assessment (the first was carried out in 2013 and the second one in 2017). Important gaps still exist, but progress has been made in building the capacity of the surveillance system. Of the WHO standards and benchmarks: 4 have been met, 3 partially met and 5 have not yet been met, which represents an improvement since 2013 (Table 2).

Table 2. Summary of the standards and benchmarks assessment of the TB surveillance system, Indonesia, 2013-2019.

Standard	2013	2017	2019
B1.1 Case definitions adopted	Green		
B1.2 Minimum set of variables	Green		
B1.3 Scheduled submissions are received	Yellow	Red	Yellow
B1.4 Paper (quality)	Red	Grey	
B1.5 Electronic (quality)	Grey	Red	
B1.6 External consistency	Green		
B1.7 Internal consistency	Red	Yellow	Yellow
B1.8 All cases reported	Red		
B1.9 Access to health care (<i>not under NTP</i>)	Red		
B1.10 VR coverage (<i>not under NTP</i>)	Red		
B2.1 DR-TB	Red		Green
B2.2 TB-HIV	Red		
B2.3 Children	Yellow	Green	Red
Summary			
Number met:	2	4	4
Number partially met:	3	1	3
Number not met:	7	7	5

Green: standard met. Yellow: standard partially met. Red: standard not met. Grey: not applicable
 Source: reference 12.

Prior to the review, the NTP provided 5 years of surveillance data (2014-2018) to the team. Those data were taken from SITT (the case based electronic surveillance system for drug-susceptible TB (DS-TB)) and e-TB manager (the case based electronic surveillance system for drug-resistant TB (DR-

¹⁵ Babis Sismanidis, Cicilia Gita Parwati, and Marek Lalli, 2019. Epidemiological Review {of TB} in Indonesia, September 16-27, Mission Report. WHO, Geneva.

TB)). These data were uploaded to the tbhistoric platform (district health information system 2, DHIS2) and enabled national and subnational (province and district) analyses.

Incidence and notifications

TB incidence in Indonesia was previously estimated from the 2013-2014 prevalence survey, and was updated following the results of the inventory study conducted in 2017. The updated incidence estimate was consistent with the previous one, but the best estimates were about 15% lower, with narrower uncertainty intervals. In 2018, Indonesia had an estimated TB incidence of 316 (range, 288-345) per 100 000 population, or a total of 845 000 (770 000-923 000) cases, and a mortality of 37 (34-39) per 100 000 population or 98 000 (91 000-106 000) deaths from TB.

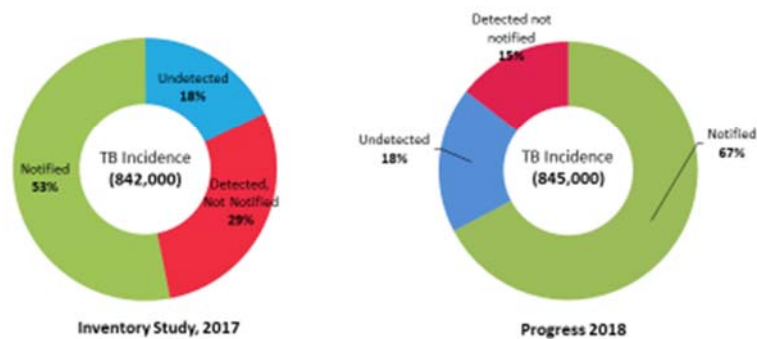
The inventory study was also able to estimate an overall level of under-reporting of detected cases of 41% (95% CI: 36-46%)¹⁶ (Figure 8), ranging from 15% under-reporting by Puskesmas (which are part of the existing NTP network) to 65% by hospitals and 96% by a combined category of general practitioners (GPs), clinics and laboratories. Of the total previously unreported cases found in the study, 37% were found at puskesmas, 45% in hospitals and 18% from the others. Since then, substantial efforts have been made to close the under-reporting gap, resulting in an increase of case notifications from about 360 000 cases in 2016 to 450 000 in 2017 and 570 000 in 2018 - an increase of TB treatment coverage (case detection) from 35% in 2016 to 67% in 2018 (Figure 9). This significant increase in total case notifications is largely driven by an increase in cases reported from “mopping up activities” in hospitals (Table 3).

“Mopping up” is intended as a short term strategy, derived from the findings of the 2016-2017 inventory study¹⁷, to detect and report missing cases in the hospitals, both private and public. Mopping up involves a comparison of the NTP surveillance system database (SITT) with the recording and reporting data of hospitals and clinics (SIMRS). The aim is to remove the duplicate reports, and then to add to the national notifications those cases from the SIMRS that have not been reported in SITT. However, there are a number of technical difficulties: comparing SITT and SIMRS is ideally done using Stata software, and the unique personal ID (NIK) for the matching process, however, in reality, in neither the SITT nor the SIMRS is the NIK data always entered. Most matching has therefore been done by comparing name, age, sex, and address. Significant variation is possible in the transcribing of these data for a single patient. Thus excluding duplicated cases is not always possible. Furthermore, the reports in SIMRS are case-based according to ICD 10 code (A15 to A19), and one patient can be registered to have 2 or 3 cases at once (eg lymphadenitis TB and pulmonary TB). SIMRS also includes patients coming to the hospital for other conditions, say hypertension, but in the history taking he/she is also on anti-TB drugs, so TB is listed as a secondary diagnosis. All of these instances of cases from SIMRS need to be “de-duplicated”, but, again, this is not always possible. Duplication is therefore a significant risk.

Figure 8. Proportions of cases notified (green), detected but not notified (red), and undetected (blue) from the Inventory Study, 2017 (left), and national notifications, 2018 (right).

¹⁶ Authors of the inventory study confirm that 41% is the correct under-reporting figure. It is not clear why this differs from the figure presented during the JEMM and reproduced in Figure 8.

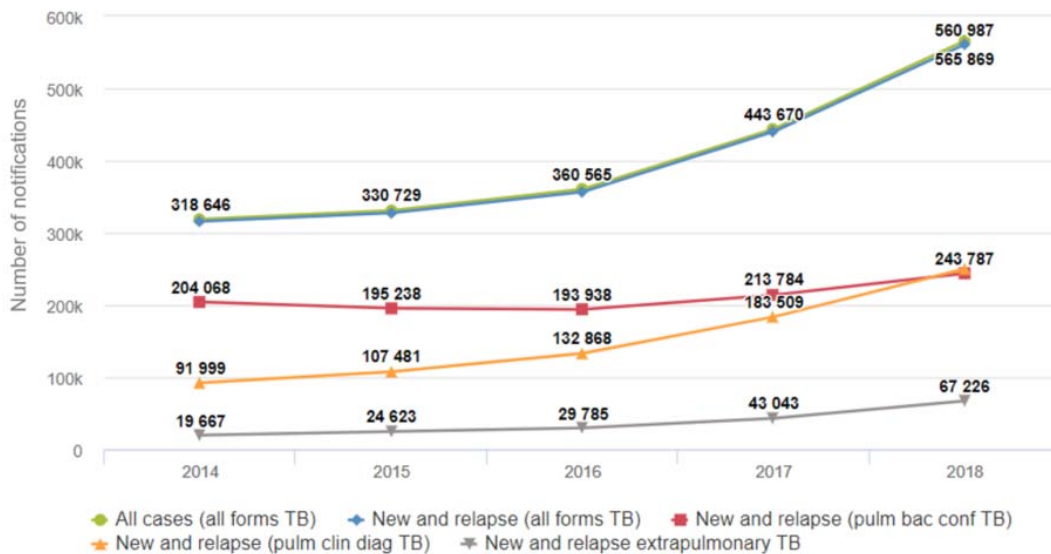
¹⁷ Feri Ahmadi, Dina Bisara Lolong, Oster Suriani Simarmata, et al. Indonesia TB inventory Study, 2016-2017. National Institute Of Health Research and Development and Ministry of Health of the Republic of Indonesia. 2019.



Source: Presentation by the Director, NTP, to the JEMM, 21st January, 2020.

The increase in case notifications is disproportionately due to clinically diagnosed cases (Figure 9). Furthermore, the rise in clinically diagnosed, and extra-pulmonary TB (EPTB), cases is largely due to the notifications derived from the mopping up process: the proportion of clinically diagnosed among cases reported from the mopping up activities was higher (49% in 2017 and 55% in 2018) compared to those coming from regular reporting and recording activities (41% in 2017 and 42% in 2018), and similarly for EPTB. There was therefore a decreasing trend in the proportion of bacteriologically confirmed cases among new cases, and particularly among previously treated cases (Figure 10), including relapses, who, together, are a risk group for drug resistance. This warrants attention as it may affect rifampicin-resistant/multidrug-resistant tuberculosis (RR/MDR-TB) case detection, among those at higher risk.

Figure 9. TB case notifications, 2014-2018, by type of TB.

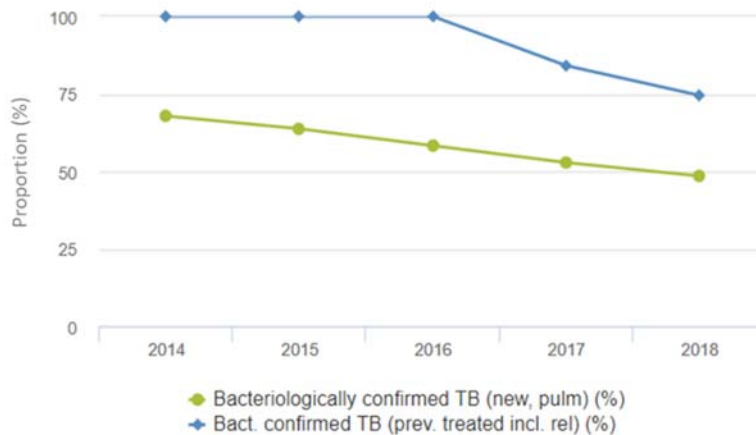


Source: reference 12.

Table 3. Additional TB cases notified from mopping up activities, and the number of health facilities from which they were notified, in 2018.

Type of Health Center	TB Cases Notification		Number of health facility reported	
	n	%	n	%
Private (hospital+GP/clinic)	30,654	32%	257	49%
Public (hospital+lung center)	66,604	68%	264	51%
Total	97,258	100%	521	100%

Figure 10. Proportions of bacteriological confirmation among new pulmonary cases (green) and previously treated, pulmonary cases (blue).



Source: reference 12.

At province level, in 2018, five provinces contributed to 57% of total new and relapse notifications, i.e. Jawa Barat (105 794 cases), Jawa Timur (71 791), Jawa Tengah (65 014), DKI Jakarta (41 441) and Sumatera Utara (35 035) (Fig 11). Apart from DKI Jakarta, this corresponds to five highly populated provinces in Indonesia (Jawa Barat, Jawa Timur, Jawa Tengah, Sumatera Utara and Banten).

There is an unusual contrast in Indonesia between those provinces with high numbers of cases (which mostly represent high populations) and those provinces with significantly higher rates of TB, such as Papua and West Papua (Figure 12 a) and b)), where the population is far smaller. During the field missions, the team observed higher notification rates in cities (kota) compared to the surrounding districts, which may partly be due to the combination of higher TB burden (indicated in the prevalence survey), but which also seemed very likely to be due to health seeking behaviour and access to care as cities usually have better diagnostic equipment and care.

Figure 11. Number of TB notifications (all forms, new and relapse) by provinces, 2018 *Source: reference 12.*

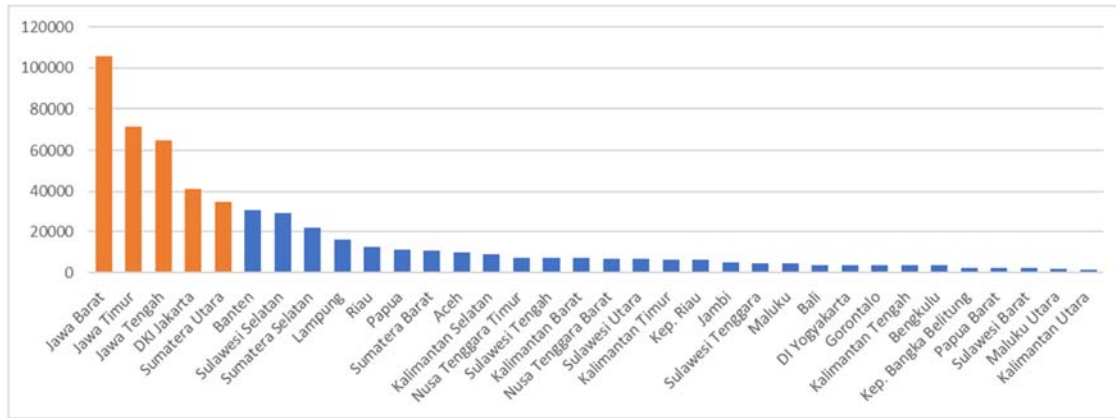


Figure 12. TB notifications, new and relapse cases, at provincial level, a) by rate (per 100,000), and b) by absolute (number). *Source: Presentation by the Director, NTP, to the JEMM, 21st January, 2020.*



Figure 12. b)



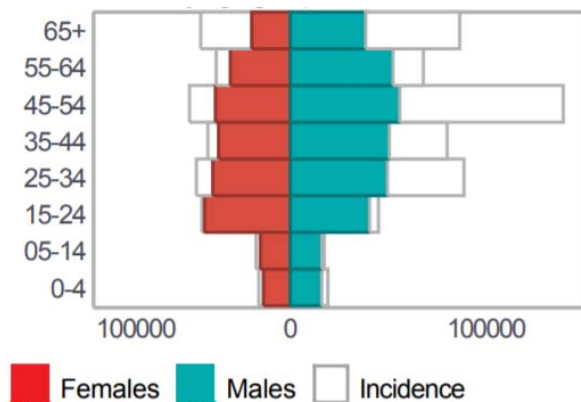
Keterangan:
 Estimasi Kasus TB 2019 (absolut)
 2768 - 27796
 27796 - 52823
 52823 - 77851
 77851 - 102878
 102878 - 127906

At district level the epidemiological review advised a focus on districts with trends of falling proportion of bacteriologically confirmed cases.

Both the number and rates of EPTB are increasing steadily (7.8 per 100 000 in 2014 to 25.4 per 100 000 in 2018 or 6.4% among new TB cases in 2014 to 9.9% in 2018). The high proportion of EPTB in Papua may be explained by the high HIV prevalence and high proportion of childhood TB (both favouring EPTB). At the other end of the scale, there is a consistently low proportion of EPTB among new TB cases in Sulawesi and other, smaller, islands. Further investigation is required to understand the reasons behind these differences.

In 2018, TB notifications were consistently higher in men from the age group of 25 and above, which follows the estimated incidence disaggregation by age group and gender (Figure 13). The male to female notification ratio was 1.3 in 2018, while the ratio among estimated incident cases was 1.8, suggesting males are disproportionately unlikely to be notified. Almost half of new and relapse cases in 2017 and 2018 were found in the economically productive age groups of 15 to 44 years old (Figure 14).

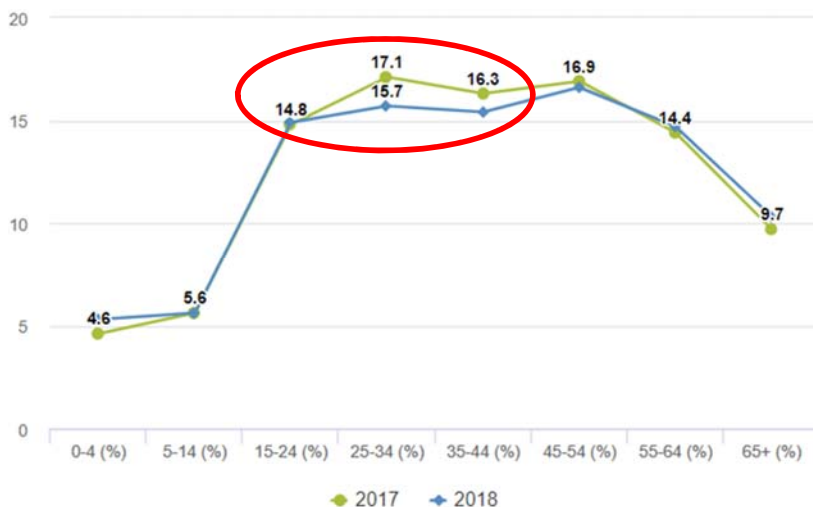
Figure 13. Notified cases (new and relapse) by age group and gender compared to estimated incidence, 2018



Source: Global TB Database, WHO.

For childhood TB, the overall proportion of childhood TB is within the expected range of 5-15%, however, the ratio of notifications among children 0-4:5-14 years is consistently below 1.5, indicating under-diagnosis or under-reporting of young childhood TB cases (below 5 years) or over-diagnosis of older childhood TB cases (5-14 years). The inventory study also found that under-reporting is more likely in children than in adults. There seems to be an association between EPTB and childhood TB, as reported from other countries, eg Cambodia.

Figure 14. Proportion of notifications (new and relapse) by age group, 2017-2018



RR/MDR-TB and TB/HIV

Indonesia is one of the 30 high drug-resistant tuberculosis (DR-TB) and TB/HIV countries with estimates of 24 000 and 44 000 cases in 2018, respectively. With the expansion of GeneXpert machines throughout the country, the number of presumptive DR-TB cases has risen sharply (from 8,886 cases in 2014 to 382,086 cases in 2018¹⁸), resulting in a significant increase in diagnosed DR-TB cases (3 160 cases in 2017 and 4 476 cases in 2018). However, enrolment of DR-TB patients into second line drug regimens has not kept up: in fact the trend of enrolment of DR-TB patients is downwards - 83% in 2015, down to 49% in 2018. The biggest gap was in DKI Jakarta in 2018, where only 749 out of 1395 (53%) DR-TB cases started on DR-TB treatment. This requires urgent attention – and is addressed further in Section 2.8.

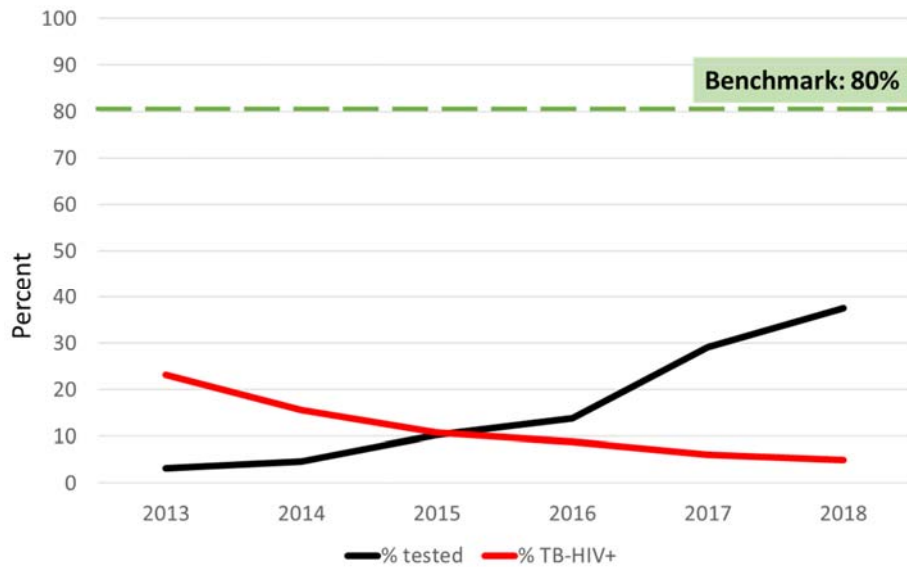
Similarly, the number of TB patients tested for HIV almost doubled in 2018 compared to 2017 (Figure 15), resulting in a higher proportion of people with known HIV status and in an increased number of TB/HIV notifications. However, this is very far from the desired level of 100%. Furthermore there are some districts with unacceptably low rates of HIV testing in areas where there is a generalised HIV epidemic. This is inexcusable.

Furthermore, only 40% of HIV-associated TB cases were started on ART, a life-saving intervention, in 2018. Put differently, more than 6 000 TB/HIV cases did not start on ART in 2018. Of those, 60% were from DKI Jakarta, Jawa Timur, Jawa Barat, Papua and Jawa Tengah. The biggest gap was in Jawa Barat where only 252 out of 1211 (21%) HIV-associated TB cases were started on ART in 2018.

¹⁸ NSP 2020-2024.

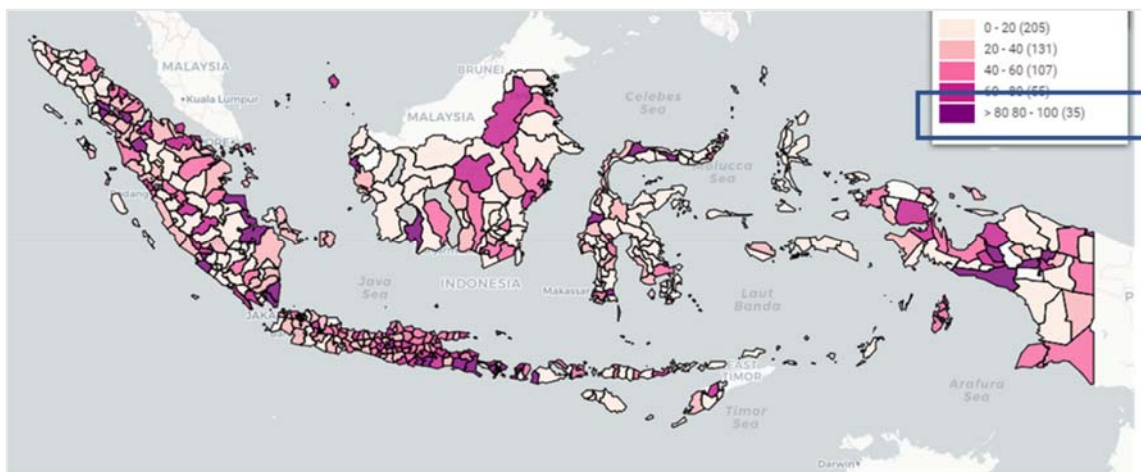
Again, this is unacceptable, and hints at major systemic obstacles, which are further addressed in Section 2.9.

Figure 15. Proportion of TB patients tested for HIV and proportion of HIV positive result



Source: reference 12.

Figure 16. Proportion of TB cases with known HIV status (%), by district, 2018.



Source: reference 12.

Additional drivers of the TB epidemic

Smoking, undernourishment and diabetes are the strongest risk factors for TB in Indonesia. More than 300 000 of TB cases annually (around 1/3 of the estimated incident cases) can be attributed to smoking. Both undernourishment and diabetes each attributed an estimate of more than 100 000 TB cases. Addressing these risk factors is likely to be essential for reaching the ambitious goal of ending

TB in 2030. However, interventions effective enough to address these risk factors would require multi-sectoral collaboration.

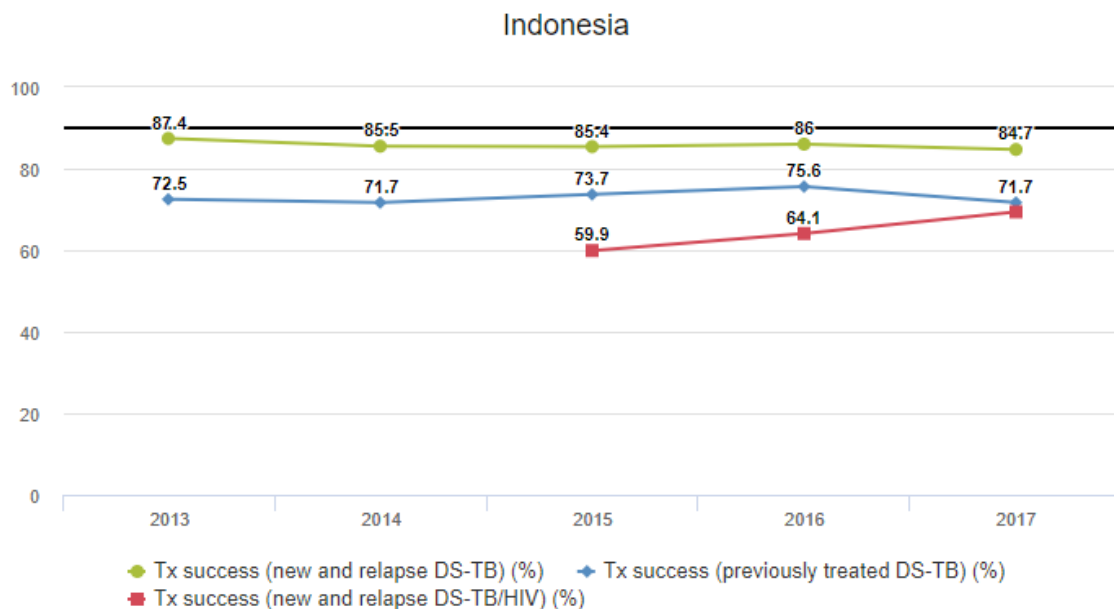
Treatment outcomes

The treatment outcome of new and relapsed drug-susceptible TB in recent years has been consistently below the global target of 90% treatment success (87% in 2013 cohort and 85% in 2017 cohort) (Figure 17). In addition, when checked, the total 2017 cohort for evaluation was significantly smaller than the cohort notified (Figure 18). Assuming that this gap consists of patients without an outcome, their number should be added to the not-evaluated group, which would further decrease the treatment success rate. The NTP is currently obtaining treatment outcomes of the additional notifications from the hospital and clinics where mopping up activities were conducted. However, this is rather challenging as some of those hospitals and clinics are not DOTS facilities, and therefore treatment outcomes are not routinely recorded.

Among cases of HIV-associated TB, however, treatment success was improving (60% in 2015 to 72% in 2017).

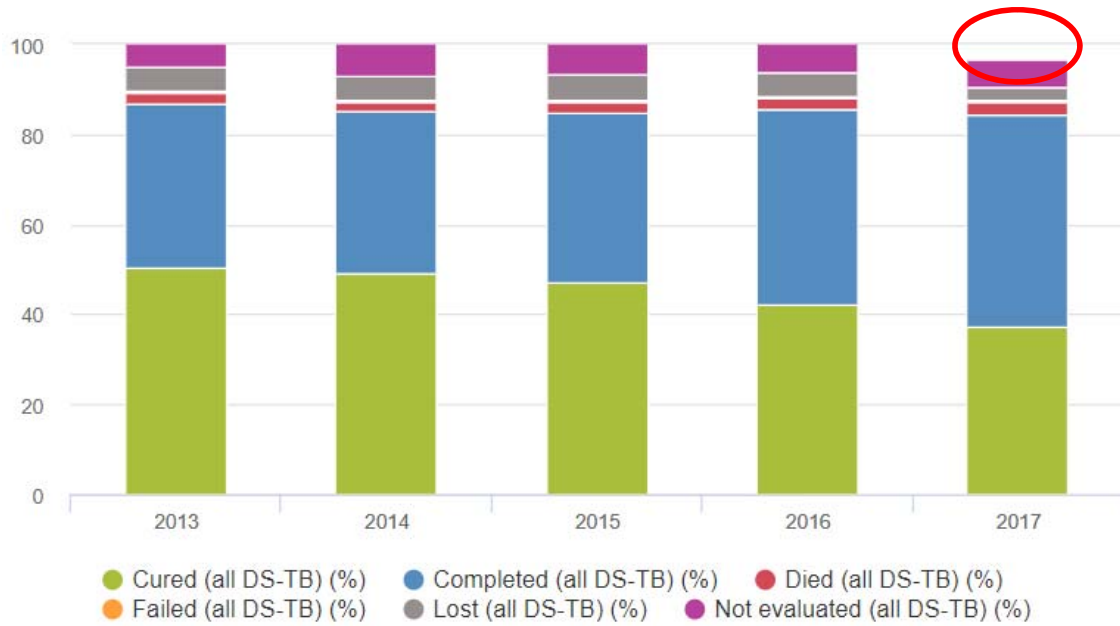
Treatment success rates among DR-TB patients were very low, 48% in the 2016 cohort (with a decreasing trend from 2010) (Figure 19). Efforts to improve treatment success rates in this group appear essential. Treatment outcomes need to be monitored closely, particularly in the current context of increased notifications from mopping up activities. Obtaining and monitoring treatment outcomes from mopping-up notifications data will help ensure quality of care, especially in the non-NTP sector.

Figure 17. Treatment success rate for DS-TB (%), by year, for the cohorts recruited in 2013 through to 2017.



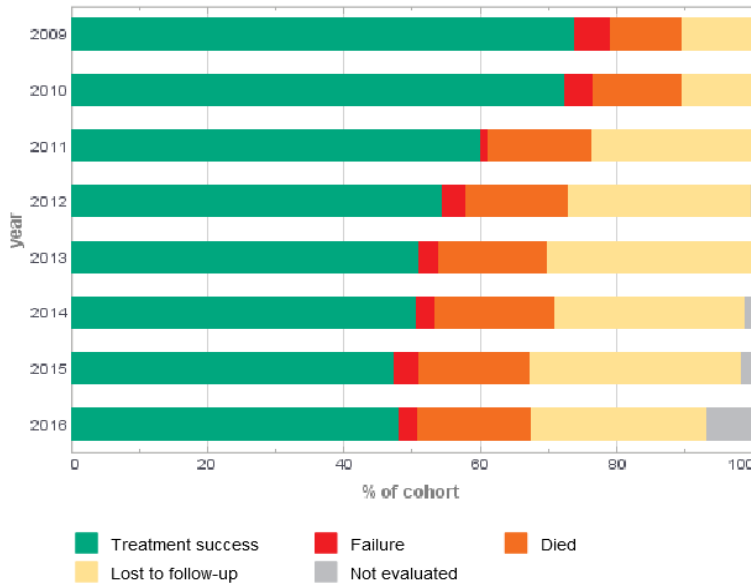
Source: reference 12.

Figure 18. Treatment outcome of new and relapse DS-TB, 2013-2017



Source: Global TB database

Figure 19. Treatment outcomes for DR-TB (%) for cohorts recruited 2009 through to 2016.



Data source: Global TB database

Conclusions

Overall, the NTP has made significant progress since 2017: the case notification rate (both for DS-TB and DR-TB) has significantly increased – to achieve this was one of the major recommendations of the 2017 JEMM. In addition, there has been improvement in TB/HIV collaborative activities, but

from a very low level, which means there is still much to do, especially in ensuring that all patients with HIV-associated TB are enrolled on ART.

Many other challenges still exist, particularly in DR-TB enrolment, the falling proportion of bacteriological confirmation, reaching global treatment success rate targets for both DS, and especially, DR-TB patients.

The upcoming implementation of SITB - a case-based electronic recording and reporting system that merges SITT and eTB Manager for a comprehensive system capturing data for both drug sensitive and drug resistant TB cases - is to be welcomed in the light of the JEMM's field observations that SITT is unreliable and unstable, which, with the guarded standards and benchmarks assessment of the surveillance system, continues to cast doubt on the reliability of TB data for Indonesia. However, the performance of SITB will need to be monitored closely, and a smooth transition from SITT and eTB manager to SITB needs to be managed. Access to SITB needs to be widened to include notifications from the private sector, and those public hospitals still not reporting routinely to the NTP. Linkages with the BPJS/JKN data are essential to capture patients treated under these insurance systems. These measures should obviate the necessity of further "mopping-up" operations, which are inherently liable to duplicate cases, and should cease.

The epidemiological review makes little mention of presumptive cases, largely because the data were so limited. However, the number of presumptive cases identified, and the number that are then screened for TB, are two indicators that are crucial for understanding the performance of a TB control programme, especially in the context of 33% missing cases. These indicators are also very helpful at district level when faced with a falling notification rate, because they can help distinguish between a programme that is failing (not investigating enough cases), and one that is working hard in the context of a falling burden of TB. And most of Indonesia's districts should soon find themselves in the latter situation, if they are not there already.

Despite these challenges, the programme has demonstrated a high level of political commitment and motivation, and has a strong track record of conducting key recommended surveys, including the national prevalence survey, the inventory study, drug resistance surveys and the upcoming patient cost survey.

The Epidemiological Review¹² concluded with a set of recommendations to which the reader is referred, rather than repeat them here. However, the JEMM did carry out its own analysis of monitoring and supervision within the NTP, which follows.

Field observations on monitoring and supervision, January 2020

Findings

District level is responsible for programme management, including planning, implementation and monitoring, and recording and reporting. The Provinces are responsible for supporting training and monitoring programmes at the district level and resourcing of the programme.

The recording and reporting system in Indonesia has adopted the WHO-recommended framework and continues to capture the minimum set of recommended variables. The system functions electronically with different approaches to capturing data in the electronic system, which at times relies on paper tools.

However, paper based tools for recording and reporting are not being used in a consistent and systematic way across various levels. Data completeness in these paper-based tools was found to be variable. Records are generally well maintained where staff is committed and trained. Information was incomplete in some columns in TB forms # 1, 2, 4 and 6, eg address, HHC and “other”.

Many districts and provinces and health facilities locally reproduce forms and formats many of which are older versions of the respective forms. It was observed that the TB06 presumptive register is being used as a treatment register due mainly to its current design with 46 cells per entry row. TB01 and TB03 is not always being well maintained.

Data entry is done at the Puskesmas level by the Wasor from the paper-based treatment card into the on-line SITT. In health facilities without access to laptops or poor connectivity, off-line reporting on SITT is supported by the district-level Wasor leading to delays and inconsistencies in online reporting. A separate system -eTB Manager is used for DR-TB reporting. WIFI TB is used for reporting from private health facilities. SITT is one of about 7 online data systems maintained by PKM staff for different programmes.

We observed significant discrepancies between case finding data recorded in SITT and those reported by facilities, and provinces. These could be due to delays in data entry, time taken to clean data and to avoid duplication, but the most concerning appeared to be the entry of “mopping-up” data into SITT at central level without informing provincial staff. If the district level faces issues with internet connectivity it prevents uploading the zip file onto online SITT, then the file is sent to the provincial level for upload. A systematic way at the district level for monitoring if the zip has been successfully uploaded by provincial level is not in place. Currently, there is no automated monitoring of the completeness of reporting. This currently relies on manual exporting of data from SITT, which is difficult, tedious and time-consuming. As per the Epi-analysis the number of reporting units is not stable over time: facilities close, change names and acquire a duplicate account, cannot login and acquire a new account. The main consequence of this is an inflation of the denominator and a false reduction in completeness. In 2018, completeness was in ~65%.

NTP is about to roll-out the new SITB by April 2020, in a phased manner.

TB patients treated with non-programme drugs are mostly not notified in the system.

There is a lack of available guidance or supervisory support at the service delivery level for reference when needed (both in terms of guidelines for recording and reporting as well as technical support for the use of the electronic system). A strong IT team is available at the national level; however, IT

support is not available close to users of the electronic system. Without references for support or troubleshooting, the user is not sure what to do in the event that something malfunctions in the system.

Regular programmatic review meetings are expected to be held at the district level on a monthly basis and at provincial level and national level on quarterly basis. However, these review meetings are not regularly held.

Challenges

- Data interpretation, analysis and use still varies across levels and across provinces given experience levels of NTP teams, their size and commitment;
- Data sharing between the TB and HIV programme at districts and provincial level leads to information gaps - SITT is case based whereas the SIHA only has aggregated data;
- Supervisory visits to provinces do not follow any fixed regularity: monitoring and supervision are relatively weak, unable to detect and address several programmatic challenges;
- Given that most Wasors particularly at district level have multiple tasks, it is unclear if substantive supervision of services is possible; or if provincial leads can periodically supervise even priority districts;
- Reporting of TB was incomplete, especially in the private sector; a substantial number of TB cases were not detected during mopping up activities;
- Low availability of functional computers, low band width and lack of training are some of the barriers in using SITT at low level;
- It appears that training/refreshers training in monitoring and supervision has not been given adequate priority;
- We observed lack of communication and coordination between staff at poly-clinics, laboratory and pharmacy with regards to recording and reporting of TB cases;
- Supervision of Puskesmas level labs by the Provincial Health Laboratory staff is almost entirely lacking, mainly due to lack of administrative and logistics support.
- We noted difficulties in tracing treatment outcomes for patients referred to other health facilities.

Recommendations

a) Monitoring

1. Urgently use existing or improved data dashboards based on the SITT/SITB at district and province level for programme monitoring. This will assist the Programme Managers and administrators to keep a keen eye on programme performance including timely reporting, case notification and outcomes and other key performance indicators. All diagnosed TB patients should be immediately or within 2 days notified on the SITB/SITT.
2. Roll out of SITB should be hastened across the country at the earliest. Private health facilities engaged in the TB programme should have access to SITB for completeness of notification and outcome data.
3. The network of Wasors at provincial and district level needs to be strengthened including recruiting more Wasors in the next 6 months. The Central level should assist provinces in needs assessment, provide staffing and recruitment norms, funds and technical support for recruitment. The Wasors' capacity for interpretation, use of data, and, importantly, in supportive supervision, needs to be built. This would help to improve programme quality and scope.
4. The NTP should update and disseminate M&E guidelines, including clear SOPs for recording and reporting. Supervision of each level, role and responsibilities of staff should be clearly delineated in the Guidelines. This needs to be completed in the next three months.

5. PHO and DHO should ensure that data entry is done at health facilities. All staff should be trained in the use of SITT/SITB and standard TB registration forms.
6. Continue to strengthen mandatory reporting of TB, through linkage with BPJS and SITB.
7. Ensure functioning computers for TB recording and reporting and develop SOPs for backing up data.
8. Functional communication networks between referring and recipient health facilities need to be ensure for better tracking of treatment outcomes of transferred out cases

b) Supervision

1. Supportive supervision must be improved in terms of timeliness, regularity, quality of feedback and problem-resolution actions. Undertake periodic internal evaluation of provincial and district levels using clear defined checklists and evaluation tools;
2. Adequate budget must be made available for monitoring and supervision activities at provincial and districts level following similar fund flow mechanism as currently used for the Global Fund grants;
3. Staff involved in supervision need to be trained and re-trained to upgrade knowledge and better communications skills to conduct quality supportive supervision;
4. Hold regular Programme review meetings at national, provincial and district level at specified regularity. Use Video Conferencing and other ICT enabled mechanisms for thematic reviews and technical capacity building;
5. Hold routine data validation meetings between TB Programme Managers, laboratory personnel and pharmacy staff at the health facility level;
6. Ensure on-site supervision of TB laboratories involving National and Regional Reference labs and Provincial Health laboratories;
7. Recruit Supervisory staff at Provincial or Regional level based on number of health facilities to be covered.

1.7 Major recommendations of the 2017 JEMM

The major recommendations of the 2017 JEMM are summarised below (Table 4) with the 2020 JEMM’s assessment of progress since 2017. There was limited time for specific discussion of this topic.

Table 4. Summary assessment of progress made against the 2017 JEMM’s recommendations.

No.	Recommendation	Status	Remarks
1.	<p>1.1 The MoH to drive massive engagement of private providers, shift treatment from hospitals to the primary care level, by adjusting payment mechanisms in JKN. Specifically, the MoH and NTP should:</p> <p>a. Add a payment for TB case notification to the non-capitation element of primary care payment (alongside delivery, ANC/PNC and family planning);</p> <p>b. Encourage high TB case notification, and reward TB training, using the capitation performance-adjustment formulae;</p>	Met partially	<p>Not fully addressed, and still needed (see Section 2.7)</p> <p>Proposed by the TB SHP TWG as part of the pilot, but not yet implemented.</p>

	<p>c. Revise hospital tariffs to encourage down-referral and facilitate better monitoring of hospital behaviour.</p> <p>d. Rather than moving capitation during the diagnostic process, compensate puskesmas and hospitals for providing specific TB diagnostic services (smear microscopy, Xpert, and chest Xray (CXR)) ordered by puskesmas (CXR) and private PHC providers (smear, Xpert and CXR).</p> <p>1.2 Make optimal use of mandatory notification, accreditation and continuous medical education for professionals to ensure the quality of TB care funded by health insurance.</p> <p>1.3 Ensure access to health insurance for the very poor and near poor and people with inadequate documentation.</p>		<p>TB is one of the mandatory diseases reported under Indonesian Law no. 4 of 1984 concerning disease outbreaks.</p> <p>TB service is one aspect of the assessment for accreditation of health services. Dissemination to health workers regarding funding for TB</p> <p>The Indonesian National Health Insurance (BPJS Health) for PBI participants (very poor and near poor people) is funded by the APBN, but not for residents whose documents are incomplete.</p> <p>SITT partially connected with P Care (BPJS)</p>
2.	<p>The JEMM strongly advises the MoH to greatly increase the public sector focus on engaging all care providers and civil society, including:</p> <p>a) Strengthen district and sub-district PPM networks - launch urban TB initiatives with strong public-private-community partnerships, developing and testing models and systems that can be sustained</p> <p>b) Set up a multi-stakeholder mechanism to design, implement and monitor (with clear targets and milestones) a phased scale up of</p>	Met partially	

	<p>effective, (sub) district-based, private provider engagement for delivery of quality TB care.</p> <p>c) Set an ambitious target for the number of cases notified by private primary care providers, eg 60/100,000 population.</p> <p>d) Improve understanding of how private primary TB care providers operate by a range of focused studies in collaboration with partners, including the World Bank;</p>		
3.	<p>The JEMM urges the MoH and NTP to double current funding and mobilize the human resources necessary for full implementation of the NSP, 2016-2020, ensuring high quality of service provision. The NTP has to reach out to other agencies, directorates and entities within and outside the MoH to implement the NSP, by:</p> <p>3.1 Increasing staff working on TB at the Central Unit, Provincial Units and Puskesmas, and improving their quality to address supervision, the effects of stigma, daily treatment throughout is implemented, and specific staff can engage with private providers;</p> <p>3.2 Increasing funding for TB control by expediting guidance to the development of district action plans for TB control ;</p> <p>3.3 Making detailed agreements with related ministries on their collaboration in TB control, with clear responsibilities, deliverables, targets and timelines;</p> <p>3.4 Scaling up prevention, diagnosis and treatment services for TB-HIV co-infected patients, focusing initially on the 141 high HIV burden districts, and address other key populations such as children, prisoners, diabetics etc.</p> <p>3.5 Revising the existing laboratory network with clear roles and responsibilities and sufficient trained staff at all levels to ensure universal access to high quality TB diagnoses.</p> <p>3.6 Expanding the response to MDR-TB modern molecular diagnostics, decentralized treatment, new shorter MDR regimens, new anti-TB drugs, and a robust system of management, supervision and monitoring.</p>	Partially achieved	<p>Funding increase achieved.</p> <p>Mostly not done.</p> <p>Partially done</p> <p>Lab network expansion has occurred especially with GeneXpert machines</p> <p>All addressed</p>

4.	To improve the reporting of diagnosed cases, the JEMM urges the NTP to invest in swiftly and significantly improving the SITT and expediting mechanisms to capture all TB cases, in both public and private sectors, including prisons. A TB module should be integrated with the future eHealth environment in Indonesia (SIP).		SITB due for implementation May 2020
5.	The JEMM urges the country to explore a Presidential Initiative on TB in order to enable and accelerate the multi-sectoral response to this preventable and treatable epidemic and ensure, in advance of the 2018 UN High Level Meeting on TB, that Indonesia is making the necessary investments to end TB	Done	Presidential Initiative now underway, albeit post-2018.

1.8 National Strategic Plan 2020-2024

A national strategic plan (NSP) 2020-2024 has already been drafted. It takes into account Indonesia's global level commitments such as those to the Political Declaration of the UNHLM, and the END TB Strategy, and positions the NSP within the policies and directives of the MOH. The national context of Indonesia is presented in which it is implied that awareness of TB among the different levels of government is low, that laws and regulations concerning TB are rarely enforced and that national policies and guidelines are not always followed. The epidemiological situation for TB is presented, and concludes that three of the major drivers of TB in Indonesia are smoking, undernourishment and diabetes, in that order, followed by HIV and alcohol. The Plan is based on an interesting analysis of the problems experienced by patients going down the continuum of care, and on a dissection of the root causes of those problems. It goes on to break the plan into six strategies:

1. Strengthening leadership of district and municipality government in implementing tuberculosis control program
2. Increasing access to quality and patient-side services for TB
3. Infection control and optimization of giving TB prevention treatment
4. Utilization of the results of research and screening technology, diagnosis and treatment of TB
5. Increased participation of other communities, partners and multisector in eliminating TB
6. Strengthening program management through strengthening the health system

These six strategies consist of 3 functional strategies, namely those technical strategies which target the intervention areas: case finding, treatment, and prevention, and 3 enabling strategies. These enabling strategies target "contextual factors that can lever, or contribute to, the achievement of functional strategies". The functional strategies are nos. 2, 3 and 5; while nos. 1, 4 and 6 are the enabling strategies.

The analyses tend to conclude with detailed, long lists of things that must or should be done, but "how" they will be done is vaguer, and seems to be left to the Operational Plan component of the

document, but this simply lists activities and sub-activities. Not all the activity lists will convincingly achieve the objective of the intervention.

With respect to the drivers of the TB epidemic, smoking is not mentioned in the operational component. The multi-sectoral element of the Plan therefore misses the possible synergy of collaboration with smoking cessation programmes to take advantage of the techniques available now to assist smoking TB patients to stop their habit. More importantly there is no component that collaborates with wider efforts of smoking cessation to reduce tobacco smoking in the general population, and cut down on the 300,000 or so cases of TB each year that are thought to be caused by tobacco smoke. Similarly, the issue of malnutrition is touched on as a driver of the TB epidemic, but the interventions addressing nutrition focus on nutrition for TB patients, rather than the more strategic issue of TB prevention by collaboration with nutrition programmes to improve the level of nutrition of the Indonesian population so that they do not catch TB in the first place.

In general, the interventions and activities in the functional strategies are more clearly defined than those in the enabler strategies – which is not surprising for a TB Programme - but suggests that further work needs to be done on the enabling interventions to make them specific enough to be properly implemented and have impact.

Strategy 5 addresses increasing “participation of other communities, partners and multisector in eliminating Tuberculosis”, and focuses on the expectations the NTP has for additional activities that will support TB control, yet without some discussion of what these other entities will get from such collaboration, it is difficult to see how they will be willing to do what the NTP needs. Successful multi-sectoral collaboration will depend on a “win-win” for the bodies concerned, but it is not clear what the incentives are for other MOH directorates, other ministries, NGOs, corporations etc to collaborate with TB control.

Similarly, Chapter 7 provides an interesting vision of how the TB programme will interact with the various other components of the GOI, especially in health and the MOH, but it is almost entirely focused on what the many other and various bodies will do for TB, and there is hardly anything on what the NTP can do for them. For some bodies such as the National Agency of Drug and Food Control Republic of Indonesia, this may be inevitable, but for others, such as the Directorate of Reproductive and Child Health, as well as screening for TB among child patients in clinics throughout the country, the NTP should be looking out for cases of acute respiratory infection, stunting, failure to thrive etc. that can be referred back to the MCH services.

Overall, there is a lack of prioritisation: the interventions and activities occupy 54 pages, but which of them is essential to be carried out, and which are less urgent is not discussed.

1.9 The President’s Initiative on TB

The President’s Initiative was launched on January 29th at Cimahi, West Java by the President himself¹⁹. TB elimination is viewed as important for the development of a highly productive labour force by 2045, and therefore TB is not just a health matter, but integral to rural and urban development. The Government of Indonesia (GoI) views Public Health as not solely a matter for the Ministry of Health, but also for related institutions such as the Ministry of Home and Infrastructure, which have to join up with TB elimination, to address the needs of TB prevention, such as healthy housing and neighbourhoods. The principles of the NTP from 2016, “TOSS” – Find, Treat, Get Healed” have been taken up by the Initiative.

¹⁹ The official website of the President’s Office. <https://www.presidentri.go.id/transkrip/pencanangan-gerakan-maju-bersama-menuju-eliminasi-tuberkulosis-tbc/> Accessed 03 March with use of Google Translate.

The Initiative is described in a Presidential Regulation²⁰ in which Article 3 spells out the aims:

1. Protect all citizens from TB transmission;
2. Guarantee the rights of citizens to obtain health services and support related to the prevention of TB towards a TBC-free Indonesia in 2030;
3. Regulating the obligations of Ministries, Institutions, Communities and people affected by TB in ensuring the success of TB control programs;
4. Ensuring cross-program and cross-sector coordination for the effectiveness and efficiency of TB control programs at all levels; and
5. Ensuring the achievement of Indonesia's human resource development targets by reducing social, cultural and economic impacts due to tuberculosis on individuals, families and communities.

Under the President's Initiative, the Governors and mayors will have to prioritise and take the lead on TB elimination in their jurisdictions.

The follow up process is key: so far, the MoH proposed a Presidential Decree, which has been already reviewed by the Presidential Office, with a positive outcome. The NTP will continue the process of the Presidential Decree by setting meetings to refine the draft and hold a TB Summit in April 2020 with the aim of collecting the action plans of 119 priority districts, and all 34 provinces, and discussing with them strategic plans for districts, provinces, and the central level, for TB elimination.

The Ministry of Health has sent an official letter to the Minister of Home Affairs and Infrastructure asking for the renovation of 1,250 houses of poor TB patients, especially DR TB patients.

2. Thematic reports

2.1 Funding, human resources and social protection

Summary

The capacity for clinical care payments in Indonesia has vastly expanded via JKN/BPJS – and made the health sector more independent of direct MoH programmatic oversight. However, the structures and channels to provide supportive public health functions – so vital for quality TB care – have not kept up. This raises a risk for the quality of TB diagnosis and care across both public and private providers, and affects all major TB subtopics addressed in this report. The corrective interventions will need to grapple with the decentralization of health and overall governance in Indonesia, and to combine politically visible target setting, performance measurement and evaluation, and increased funding and human resource allocations, particularly at the district level.

Findings

The JEMM team had an extensive discussion with local stakeholders on TB and health financing. Indonesia has robust flows of both supply-side and demand-side financing for health. The supply-side financing features complex flows from national to provincial and district levels, with low levels of earmarking, and different restrictions depending on the particular channel. Districts have considerable latitude over how these funds are used. Demand-side financing is through BPJS-K's

²⁰ Regulation of The President of the Republic of Indonesia, Number Year 2019. About Tuberculosis Management Strategy towards Elimination in 2030.

administration of the JKN national health insurance. This is a more unified system, although provincial and district variations in JKN payment arrangements are also considerable. Up to now, the major payment mechanisms have been capitation at the primary care level and case-based groups (CBGs) at secondary and tertiary institutions; some payment reforms in JKN (e.g., with the piloting of global budgets for hospitals²¹) are currently underway.

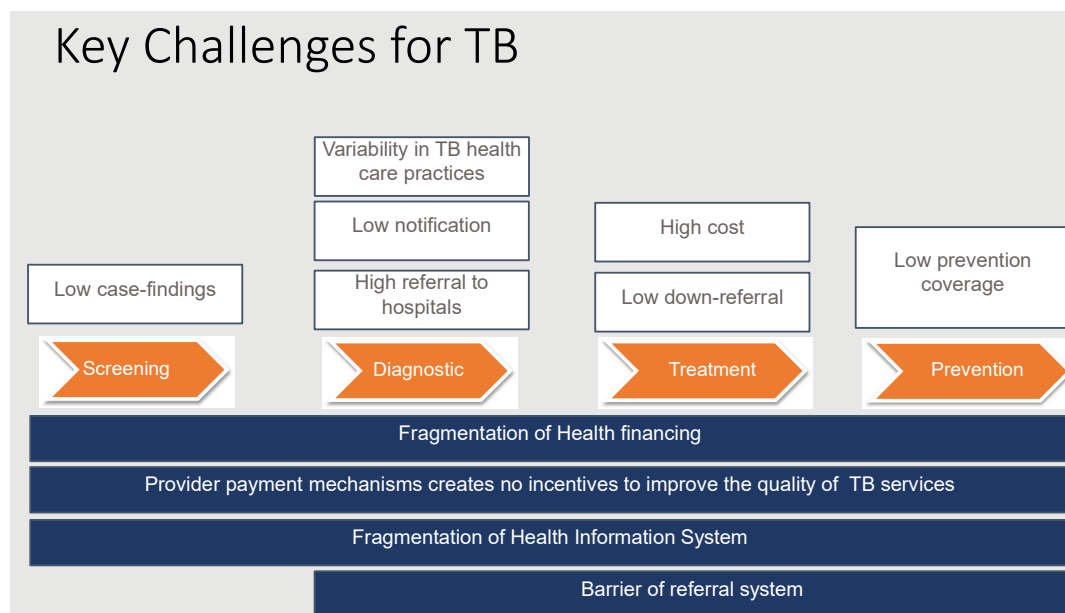
Some of the recent increase in TB programme funding may have come from better subnational financial reporting, but it also includes significantly increased domestic procurement of TB drugs and GeneXpert cartridges. The domestic funding projection for 2020 is US\$ 155 M.

At the same time, JKN’s coverage has expanded to reach 84% of the entire population who now have access to health services (including TB treatment), free-of-charge, at more than 25,000 primary health care sites and 2,400 hospitals. As a result, payment for clinical care is falling more and more under BPJS, and the modes of payment under BPJS have increasing influence over provider behaviour.

The Strategic Health Purchasing Technical Working Group (SHP TWG)

The Government of Indonesia (GoI) and NTP recognized the changes in TB provider incentives due to the expansion of BPJS-K and formed a Technical Working Group (TWG) on TB and Health Financing to inform future TB financing policies that are better aligned with TB programme objectives. This multi-stakeholder TB Strategic Health Purchasing Technical Working Group (SHP TWG) has been convened by the Center for Financing and Health Insurance (PPJK) of the Ministry of Health with the core members including MoH (PPJK, YANKES, NTP), BPJS-K, and development partners. The TWG supported analysis, formulation and validation of options, and developed recommendations for achieving better TB outcomes using more strategic health purchasing (Figure 20).

Figure 20. Summary of key challenges for TB identified by SHP TWG



²¹ A global budget provides a facility with a specific amount of funding for a defined period of time (typically one year) for a specified population, rather than individual rates for individual services or patients. This is essentially a one-line budget and increases management flexibility for facilities.

Source: Presentation provided for JEMM 2019 by the Centre for Health Financing and Health Insurance.

Through extensive discussions among partners of SHP TWG, the following policy recommendations have been formulated:

- Test new types of BPJS-K contracting arrangements, with a view to improving access to services;
- Strengthen the enabling environment for strategic health purchasing: simplify and increase interoperability of health information systems between BPJS-K and Ministry of Health, contract case managers, address variation in supply side readiness;
- Use improved payment mechanisms for primary care TB services, including a fee-for-service payment for TB diagnosis and an episode-based payment for TB treatment with clear links to TB case notification.
- Use a single account for all health funds. with relaxed accounting regulations to reduce fragmentation and improve use of funds by public providers

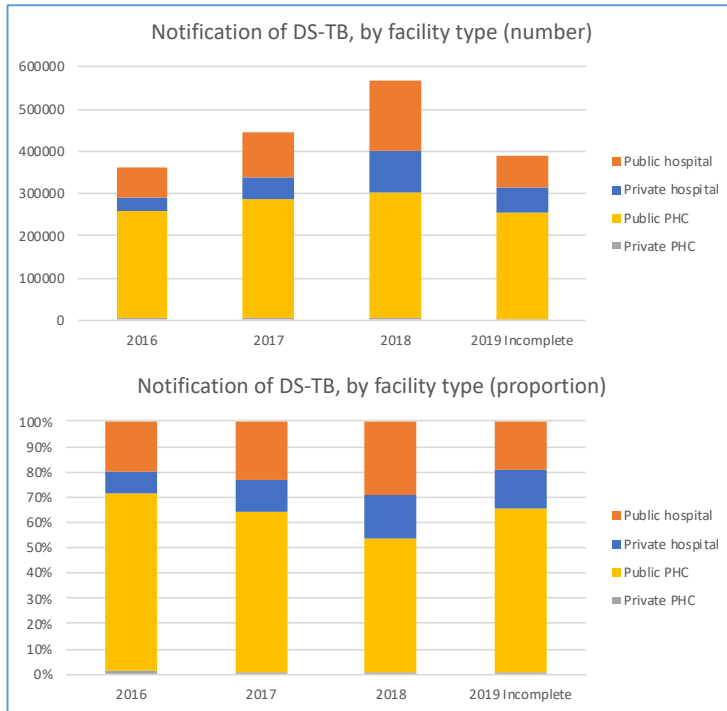
Under the SHP TWG, piloting of these policy options is being planned in two districts in 2020.

Challenges

Demand-side financing

Many other countries have also been facing various challenges associated with TB services provided under emerging and expanding national health insurance schemes (e.g. China, Republic of Korea, Viet Nam, Philippines, etc) [Wells et al, 2018]. The 2017 JEMM report discussed in some detail how BPJS payments for TB clinical care favour up-referral rather than down-referral. In brief, capitation (and the lack of access to diagnostics, and particularly a lack of diagnostic confidence among private GPs) motivates primary care providers to up-refer their presumptive TB cases. Meanwhile, hospitals are motivated to retain TB patients because of the case-based payments available, the inability to enforce non-payment for uncomplicated TB at secondary care, and the absence of a specific payment for GeneXpert testing. Combined with patient preference, this has led to a predictable increase in hospital-based TB care, which was confirmed during the current JEMM (Figure 21). This is unfortunate since greater use of primary care for TB 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. Due to the shifting of TB diagnosis to higher level facilities, there was also an increasing need for coordination between hospitals, primary care health facilities and public health staff; yet this coordination function is grossly underfunded. As noted above, there is some promise that the SHP pilots, if implemented, will alter incentives and drive more TB care to the primary care level.

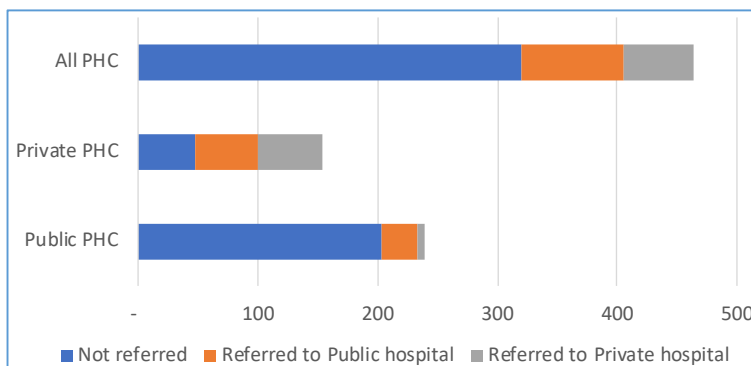
Figure 21. Notification of drug-susceptible TB cases by facility type.



Source: Based on notification data from NTP

Figure 22 presents referral behaviour of the primary health care (PHC) providers based on an analysis of a sample of BJPS data. The private PHC providers (GPs) referred the majority of patients for TB diagnosis to public or private hospitals, while public PHC providers (Puskesmas (PKMs)) tend to retain patients for their TB testing. This was also confirmed during the field observations in Bogor district, West Java. Health care providers at PKM reported their preference to sending specimens for GeneXpert testing (using sputum transportation system) rather than referring patients to higher level facilities.

Figure 22. Referral preference of PHC facilities for TB diagnosis



Source: Presentation provided for JEMM 2019 by SHP TWG

The JEMM uncovered two major barriers to MDR-TB care related to BJPS-K. First, patients seeking a GeneXpert test often needed to go to a hospital (since most machines are at secondary level). However, as per standard guidance across all health areas, such hospitals required a referral letter. This barrier should be overcome via the fee-for-service payment for GeneXpert recommended as part of the SHP reforms noted above. Second, a number of hospitals were found to delay MDR-TB

treatment initiation because they were concerned that the NTP 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 BPJS-K payment scheme.

During the JEMM 2020, most of the visited hospitals did not have an effective mechanism to ensure that all uncomplicated, diagnosed TB patients were referred back to Puskesmas, and hence initiated their treatment (apart from the infrequent use of a 'feedback' form in response to the referral form). Also it was not very clear whether TB patients should be registered by a diagnosing facility (hospital), or if a treating facility should register a patient only after successful referral (it seems to be the latter case primarily, but can be a mixture of practices). The lack of clarity poses a substantial risk for initial loss to follow up (patients who are diagnosed but never start treatment).

There is a large volume of TB-related data entry into BPJS systems, which is an opportunity, but such data were not yet being used by the NTP due to a lack of interoperability between NTP and BPJS-K data systems. MoH, certainly at lower administrative levels, did not have access to BPJS TB data. According to BPJS-K's 2019 national data (from the use of individual BPJS card numbers), there were 663,370 TB patients entered into the P-Care data system for primary care, and 158,380 TB patients (covering 430,417 claims) entered into the V-claim system for secondary care claims. (Primary health care providers, though paid by capitation, do enter ICD-10 codes into the P-CARE system.) The level of overlap between these two systems, and between these systems and NTP notification through SITT, was not known. BPJS-K reimbursement for TB was not currently linked to TB notification.

Supply side financing

Supply-side financing for health in Indonesia features complex financial flows (Figure 7, section 1.6). There are few options for earmarking specific funds for health for TB or for specific TB activities, although the 2020 JEMM observed one example in a district where DAK "non-physic" (BOK, one specific financing flow that is earmarked for activities) was used to enhance contact investigation by mobilizing community midwives, leading to a substantial increase in childhood TB diagnosis. Otherwise, the level of district funding for TB, and the distribution of those funds between different TB sub-topics, is dependent on decision-making within the 514 districts in Indonesia. Historically, and consistent with the JEMM's observations, this has made it very difficult to drive uptake of new initiatives and best practices, and to ensure a minimum level of quality across the various areas of TB care.

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

Financing and human resources

Prior to the BPJS-K expansion, there was only supply-side funding for human resources (HR). Increasingly, BPJS-K payments cover the costs of HR for clinical care. The JEMM found that HR for public health functions is supposed to be covered by supply-side financing, but no clear earmarks for this were in place. The allocation of these supply-side funds for staffing was also determined locally, so it was difficult for the NTP to ensure that districts are consistently funding and staffing the real need – higher and consistent staffing of the public health functions in TB.

The PKM were originally designed (and enshrined in law) as public health units. But clinical care has become more dominant and BPJS payments increasingly drive priorities towards clinical care.

Without sufficient public health staffing, quality was found to have suffered across the board due to insufficient supervision, engagement, training, and performance management. This was exacerbated by turnover of up to 50% per year for Wasors and TB nurses, as found by the JEMM review teams. Furthermore, TB Wasor numbers were originally determined based on the number of public sector facilities. This staffing has not kept up with population growth, the increasing complexity of TB management (e.g., the addition of PMDT, contact investigations, IPT, TB/HIV, etc), the expectation of engaging both public and private providers, the greatly increased number of hospitals (especially private ones), and the increased independence of both public and private hospitals from MoH programs.

Social protection

Social protection was explored in more depth in the 2017 TB JEMM. A social protection package for MDR-TB patients was still available through Global Fund support, but payments were often delayed, not tied to facility reimbursement, and the funding by GF raised concerns about the post-GF transition. There were some additional district-based initiatives but these were small.

Recommendations

Demand-side financing

1. The first priority for demand-side financing and TB in Indonesia is for all involved stakeholders to support the TB SHP TWG process. The reforms and interventions already selected by the TWG should, as soon as possible, be piloted, adapted based on lessons learned during the pilots, and expanded. Such reforms should address a number of the challenges listed above: payment reform will address the overuse of hospitals for TB diagnosis and care; and work on interoperability will address the current underuse of existing BPJS TB data.
2. PPJK should drive decision making on the necessary tariffs and coding for MDR-TB clinical care (minus the cost of program-supplied drugs) for inclusion in JKN. This will help to integrate PMDT into national systems and reduce treatment delays.
3. As the purchasing reforms are introduced, NTP should explore the use of digital systems and tools to drive and track efficient down-referral of TB patients to primary care. NTP should also assign specific cadres to monitor that journey and the continuity of care (from the request for anGeneXpert test, through provision of the result and initiation of treatment, and finally to cure).
4. To integrate social protection into national systems, NTP should explore the potential for TB patients to be automatically enrolled in PKH (the Family Hope Program) for cash transfers. This has been explored for HIV but not yet for TB.

Supply-side financing

5. Bappenas should include GeneXpert expansion needs in their supply-side budget estimates to improve planning for supply-side financing for TB, since this is already a major cost category and will only become more prominent as the diagnostic expansion continues. Improvements in tracking of TB program expenditures by Bappenas are also needed.
6. The NTP and partners should address regulatory barriers to the provision of publicly-procured commodities such as GeneXpert machines and cartridges to private providers, and provide corresponding guidance to districts. The World Bank has recently provided a just-in-

time assessment to NTP about available options and mechanisms to allow the use of public assets such as GeneXpert with non-state entities, which will assist in this process.

Financing and human resources

The SHP reforms are unlikely to be successful unless there is an accompanying strengthening of the public health function. This strengthening requires two elements. First, it will require greatly increased numbers of staff assigned specifically to the non-clinical TB tasks, such as recording and reporting, supervision and performance monitoring, engaging providers on quality of care issues, tracing patients lost to follow-up and ensuring continuity of care, contact investigation, screening of high-risk groups, preventive therapy, and facilitating social support to patients and their families. Second, recognition and accountability around these public health tasks (and TB outcomes in general) will need to be greatly increased.

There are a number of possible ways to approach the first issue of staffing numbers. One possibility is the formation of a national cadre of case managers under the Presidential Initiative. Since staffing is a local concern, it is very unlikely that the NTP could mandate subnational staffing levels for TB. Current regulations also prohibit the use of national funds to second technical staff to subnational levels.

Therefore, the JEMM recommends that the NTP initiate two complementary steps immediately:

7. Include greater sub-national staffing for public health functions in the upcoming GF application, particularly at the district level.
8. Initiate the process of drafting and approving a new regulation that will allow for future secondment of TB staff to subnational levels, using domestic national-level funding, so that the country will be ready for the transition away from GF support.

Such efforts are anticipated to increase staffing primarily at district level. Additional staffing opportunities exist at two levels below this:

9. To increase community-based staff strength, the NTP should review and strengthen outsourcing and contracting practices that would allow more NGOs and CSOs to be engaged via domestic financing.
10. To increase facility-based staffing of the TB public health functions, **NTP should work with BPJS-K to mandate specific facility-based staffing**: facilities that receive more than a specified number of TB reimbursements from BPJS-K must employ a facility-based TB case manager, or their TB claims will be denied. TB reimbursement rates may need to be adjusted to account for this cost to the facility. Of note, such an arrangement has been successful in other countries in the region, and the case manager concept is already suggested as part of the SHP TWG reforms.

The second element – increasing recognition and accountability around TB targets – would reinforce the initiatives listed above on HR increases, and could even motivate local stakeholders to increase HR and financing for TB themselves, so that they can reach their local targets. Currently, MoH targets have little impact at district level. Instead, district performance is monitored by MoHA, since it can (at least potentially) impose administrative sanctions. There is a single TB indicator as part of the SPM (Minimum Service Standards) monitored under MOHA. But SPM monitoring covers all sectors (so TB is easily lost), and the single TB indicator is the number of presumptive cases, which

suffers from poor quality data collection and does not, of itself, address the more important quality of care issues identified during the JEMM.

The Presidential Initiative provides the opportunity for a stronger process for setting, evaluating and enforcing process targets, thus creating pressure for districts to provide the necessary funds and staff to achieve the targets.

The JEMM therefore recommends that:

11. MoH and partners, including Stop TB Partnership Indonesia, **develop a collection of TB process indicators to give a composite score that is politically visible under the Presidential Initiative.** This effort should be facilitated via strengthened data interoperability, the use of dashboards and simple communication formats, and the sharing and active dissemination of best practices

between districts and provinces. Overall, in the decentralized context of Indonesia, such a process will need to be highly politically visible in order to create impact.

Box

Coordination for TB care: the example of Korea

Organizing TB services to ensure integrated, people-centred care requires substantial coordination efforts. This has been recognized for a long time in all kinds of TB programme settings. Each country has to explore a suitable modality to realize TB coordination functions and secure the necessary human resources and funding in a sustainable manner.

The Republic of Korea presents an early example of integrating TB services under the National Health Insurance, which resulted in a progressive shift of TB care venue from public health centers to hospitals, substantial under-reporting (up to 70% of non-reporting of cases to NTP), and substandard quality of care particularly in hospitals and the private sector. Amongst various policy measures and activities to improve the situation, the country established the "PPM nurse" system that substantively improved the notification and quality of care in hospitals.

Under this system, the National TB Programme (situated in the Korean Center for Disease Control and Prevention) secures annual central government funding to hire PPM nurses and deploys them to hospitals where TB diagnosis and treatment take place. The hospital management provides the working environment for the PPM nurse such as dedicated space (room), IT equipment, and communication channels throughout the hospital.

The main functions of PPM nurses include:

- Internal coordination:
 - o Coordination of all matters related to TB within the assigned hospital
 - o Case verification of all patients diagnosed with TB
 - o Case registration in the electronic registration system
 - o Case management including intra-departmental referrals
 - o Contact investigation within the facility (in coordination with local public health office and NTP as needed) (Contact investigation outside the facility is the responsibility of the local public health centre for households, supported by the NTP in the case of schools and workplaces)
- External coordination:
 - o Communication bridge between the hospital and the public health system (local public health centers, local health office, central NTP)
 - o Referral management for both outpatients and inpatients
 - o Reporting to local health office and NTP as per guidelines and regulation
 - o Connecting and coordinating with social resources in coordination with pa (e.g. social support, social welfare schemes)

In short, PPM nurses carry out coordination for both the clinical and the public health aspects, within and outside of the hospital. These functions were conventionally managed by public health centres under the local government budget. However, a rapid shift of TB service venue along with the expansion of national health insurance worked negatively on TB programme objectives especially in the areas of TB notification, the lack of proper patient follow-up and support, and quality of care. To address these emerging issues, the NTP needed to establish a new way of coordinating functions especially in the hospitals. Together with other policy measures (such as abolishing the user co-payment for TB patients, enhanced social support, and cross-checking with health insurance information system), the Republic of Korea successfully recovered the vast majority of cases, and case notification has been close to complete to date.

It is also important to note that the establishment of the facility-based coordination function does not replace public health coordination functions, usually established under the responsibility of the government (local health offices and public health centres).

2.2 Active TB Case Finding

Active case finding (ACF) is looking systematically for cases of active tuberculosis in groups known, or thought to be, at higher risk of tuberculosis, rather than waiting for people to develop symptoms/signs of active disease and present themselves for medical attention (passive case finding)²². ACF is a necessary strategy for finding the 30% of cases that are “missed” each year, worldwide. WHO endorses two major and complementary strategies for early and improved TB case detection: community based active case finding (ACF) – when the population prevalence is at least about 1% - and systematic screening of household contacts^{23,24}(and PLHIV which will be addressed in section 2.9). In a large community wide screening study in Vietnam, integrated in the NTP, with chest-X-ray and rapid molecular tests, ACF was found to be very effective in rapidly decreasing prevalence²⁵. The same study not only increased TB case detection, and reduced all-cause mortality, but showed that the intervention was cost effective²⁶ in one Vietnamese Province. Similar studies are needed elsewhere, but it’s worth noting national prevalence in Vietnam is lower than that of Indonesia, suggesting that such an approach may have even greater benefits in Indonesia. Community based active TB case finding is also an opportunity to build community and local government stewardship in the larger fight against tuberculosis.

Achievements

- NTP, Indonesia has implemented ACF activities specifically to increase early TB case detection through three different approaches:
 - (a) Community TB screening of household contacts of bacteriologically positive index cases, and adding screening of 5-6 neighbourhood households, with referral of presumptive cases to the nearest puskesmas for sputum smear microscopy;
 - (b) Community outreach to boarding schools, activities for health awareness sessions, screening symptomatic contacts, and sputum testing with smear microscopy;
 - (c) Active screening in prisons for symptomatic prisoners.
- There was documented improvement in contact-tracing, through linkage with GF-financed NGOs/CSOs in outreach efforts.
 - (a) LKNU (Lembaga Kesehatan Nahdlatul Ulama), a TB CSO, provides incentives to volunteer cadres for household contact investigation and case finding: data from some of these activities in districts gave promising results. eg: 6,780 contacts of 291 index cases were screened and referred 643 for testing, of whom 315 were tested and 139 (2%) additional cases were notified in 6 months of activities in 2019
 - (b) One local government programme screened 8,369 people in 9 districts, found 873 presumptive cases, and 41 (0.5%) cases were bacteriologically confirmed. No further details were given.

²² Tuberculosis: Prevention, Diagnosis, Management and Service Organisation. NICE Guideline, No. 33. Internal Clinical Guidelines Team (UK). London: National Institute for Health and Care Excellence (UK); 2016 Jan

²³ WHO. Systematic screening for active tuberculosis: principles and recommendations. Geneva: World Health Organization, 2013.

²⁴ WHO. Recommendations for investigating contacts of persons with infectious tuberculosis in low- and middle-income countries. Geneva: World Health Organization, 2012.

²⁵ Guy B. Marks et al Community-wide Screening for Tuberculosis in a High-Prevalence Setting *N Engl J Med* 2019;381:1347-57. DOI: 10.1056/NEJMoa1902129

²⁶ Lung T¹, Marks GB², Nhung NV³, Anh NT⁴, Hoa NLP⁴, Anh LTN⁴, Hoa NB⁵, Britton WJ⁶, Bestrashniy J⁴, Jan S⁷, Fox GJ⁸. Household contact investigation for the detection of tuberculosis in Vietnam: economic evaluation of a cluster-randomised trial. *Lancet Glob Health*. 2019 Mar;7(3):e376-e384. doi: 10.1016/S2214-109X(18)30520-5.

(c) These were data taken from the W Java website, without further details, so verification of the data was impossible: in prisons: 58 presumptives, 5 cases; from boarding schools: 1,210 pupils screened, 47 (3.8%) cases; from military hospitals 5 cases etc.

- There were ongoing efforts of screening for TB among PLHIV;
- There were adequate staff and volunteers available in the health system for ACF.

Challenges

- House-to-house contact screening is planned once a year, but the yield of cases was limited. The screening and testing strategy consisted of only symptom screening (no CXR) and referral for sputum smear microscopy (no GeneXpert). Drop out in the screening cascade and testing was substantial;
- No systematic mapping and planning to prioritize risk populations, or geographically defined groups, was observed; there were no systematic efforts for screening and ACF in the community, workplace and health care facilities.
- No active community engagement for ACF was observed.
- Low numbers of presumptive TB cases were examined in several health care facilities.
- There was no system for health worker surveillance for TB .
- The data flows were fragmented, summary analysis of TB screening among PLHIV was inadequate, and active TB screening and testing for TB in HIV care facilities were suboptimal.
- There was no earmarked budget for ACF activities except for the GF supported projects.

Recommendations

1. Provinces and districts need to map all ACF activities, identify their relative benefits and deficiencies, and define priorities for moving forward. Proper microplanning for ACF at community level with risk group identification and prioritization (socially, geographically vulnerable populations) is needed;
2. The NTP should prepare an ACF policy advising institutionalization of ACF in health care facilities with systematic screening using CXR for all clinically high risk groups and molecular diagnostics rather than sputum smear microscopy – “No ACF/ICF without GeneXpert”;
3. Community engagement with active leadership of local government is critical²⁷, employing the right mix of community mobilization and use of an appropriate algorithm, i.e. community level screening for symptoms of the at risk population, screening by chest X-Ray, and confirmation by rapid molecular test in addition to actively engaging village heads and commune representatives for community mobilization and creation of social support groups for people with TB;
4. Mobile TB screening and testing using vans fitted with digital CXR with computer-assisted diagnosis (CAD) using artificial intelligence to read chest X-rays, and rapid molecular tests may be useful tools and should be evaluated in the Indonesian context. Likewise incorporation into ACF activities of hand-held digital devices (tablets, smart phones) to implement group mapping using GIS applications could be useful.
5. The NTP should proactively engage with other programmes and sectors for ACF such as MCH and Immunization programmes, prison health services (Ministry of Home Affairs), and school health services (Ministry of Education) for boarding schools, etc.
6. Districts should include ACF in local urban or island TB strategies as a specific work area, with clear, costed action plans and link ACF activities in financing discussions for ending TB as an important public health function.

²⁷ Stop TB Field Guide 3. Finding Missing People with TB in Communities. https://stoptb-strategicinitiative.org/elearning/wp-content/uploads/2019/04/STBFG_03.pdf
Accessed 20th March 2020.

7. Implement health care worker surveillance for TB.

2.3 Diagnostic and Laboratory services

Findings

Tuberculosis laboratory services are integrated across the decentralized public health structure of the Ministry of Health, at various levels of service delivery. GeneXpert *MTB/RIF* is the initial test for diagnosis of tuberculosis and rifampicin resistant tuberculosis (RR-TB) at all laboratories where the *GeneXpert* systems are installed. Microscopy remains an initial diagnostic test in laboratories where *GeneXpert* systems are not installed. Where microscopy is an initial test, specimens of patients at high risk for drug resistant TB are referred to *GeneXpert* testing facilities for diagnosis of RR-TB (as per NTP diagnosis and treatment algorithm).

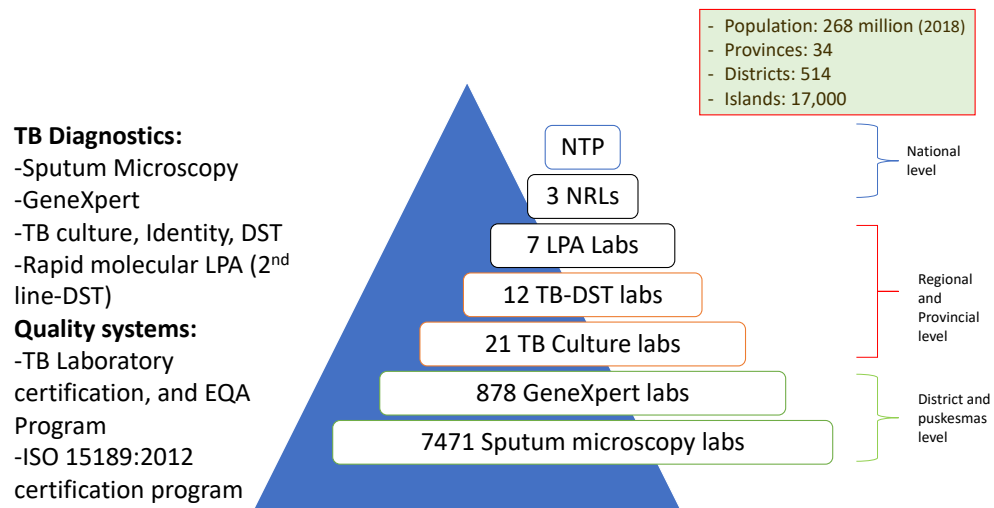
The TB laboratory network operates at four main levels (national, regional, provincial and district levels) according to the complexity of the services provided (Figure 23). Three designated reference laboratories ((1) BBLK Surabaya for TB culture and Drug Sensitivity Testing (DST), (2) Department of microbiology, University of Indonesia, Jakarta for molecular tests, and (3) BLK Bandung (Jawa Barat) for sputum smear microscopy networking) oversee the laboratory network in coordination with the NTP laboratory team. There are 21 TB culture labs of which 12 perform TB drug susceptibility testing (DST). Seven laboratories perform rapid molecular line probe assay (LPA) testing for second line DST for the programme. At the peripheral (Puskesmas) level, 7,471 microscopy laboratories provide diagnosis for TB, and 878 *GeneXpert* laboratories provide diagnosis for TB and RR- TB. Specimen transport and referral system only operate in 203 (about 40%) of 514 districts covering about 4,432 health facilities in 16 out of 34 provinces, connecting sputum microscopy labs with *GeneXpert* sites, as well as regional and national reference laboratories.

The NTP laboratory expansion plans intends to expand (a) *GeneXpert* sites from 878 to 1,584 health facilities; (b) TB culture laboratories from 21 to 46; and (c) TB DST laboratories from 12 to 24, all by 2024 as part of the national strategic plan.

A central laboratory team, at NTP, coordinates laboratory equipment installation, supplies and logistics, across the country. The team monitors workloads at the laboratories and key quality performance indicators on a quarterly and an annual basis. Several referral laboratories in the network, at various levels, are certified for quality management systems such as: ISO 15189:2012, and ISO 17025:2017 by KAN (Komite Akreditasi Nasional), and KALK (Komite Akreditasi Laboratorium Kesehatan) at Ministry of Health. From early 2019, all TB DST laboratories are providing phenotypic DST (Mycobacteria Growth Indicator Tube (*MGIT*)) for five TB drugs in six critical concentrations as a standard package (isoniazid (two critical concentrations), kanamycin, capreomycin, ofloxacin, moxifloxacin (two critical concentrations) as per WHO recommendations²⁸.

²⁸ WHO. Technical report on critical concentrations for TB drug susceptibility testing of medicine used in the treatment of drug-resistant TB. World Health Organization, Geneva. 2018.

Figure 23. TB Laboratory network



* Some labs, at national and provincial level, perform all the spectrum of WHO endorsed TB Diagnostic tests

Our main observations were:

- Up-to-date policies, guidelines, testing manuals, and standard operating procedures were available at various levels of the laboratory network.
- Access to diagnostics services increased as a result of a rapid expansion of *GeneXpert* over the past 3 year which led to 878 health facilities providing *GeneXpert MTB/RIF* test in 478 of 514 (93%) districts across all 34 provinces in the country. About 95% (3,479) of *GeneXpert* modules were functional.
- A total of 917,458 *GeneXpert* MTB/RIF tests were performed in 2019. Of which, 189,269 tests were positive for TB, and 12,524 tests were positive for rifampicin resistant TB, according to the NTP monthly laboratory monitoring data provided to the JEMM team. This resulted in diagnosis of 144,552 individuals with TB (20% of all tested), and 9,664 individuals with rifampicin resistant TB (6.6% of all tested), including new and retreatment TB categories. Instrument and testing error rates were low at 2.3%. The overall number of cases diagnosed by *GeneXpert* under programmatic conditions is low compared to the installed capacity. Only 35% of NTP TB case notifications, in 2019, were based on *GeneXpert* testing. Access to *GeneXpert* testing services remains the key limitation.
- Linkage to treatment for diagnosed cases is problematic. *GeneXperts* were predominantly located at the hospitals while preference for treatment is nearer the patient's home. Of the total 916 *GeneXpert* machines, 619 were placed at district and provincial hospitals, 16 in referral labs, and only 243 in Puskesmas labs.
- The placement of *GeneXpert* systems predominantly in hospitals (many of them are also programmatic management of drug resistant TB (PMDT) sites) has improved diagnosis of drug resistant TB (DR-TB). However, only 54% of RR/MDR-TB patients diagnosed by *GeneXpert* systems were enrolled for DR-TB treatment –addressed in detail in Section 2.8
- The MOH has demonstrated a high commitment to expand and maintain the *GeneXpert* systems, and test cartridges. Substantial funding for these came from the MOH budget, in recent years. Out of 916 *GeneXpert* systems installed in the country by 2019, 23% (215) were procured through government funds (200 from APBN and 15 from APBD), 72% (659) were procured through Global Fund support, and the remaining 42 were procured through

the support of the partners (TBCARE I /KNCV and TB REACH). In 2018, about 89% (1,149,164) of total GeneXpert MTB/RIF test cartridges were procured through the government funds (APBN). In 2019, all of 100% (948,600) test cartridges were procured through APBN, and for 2020, the NTP is again planning to procure 100% (1,639,066) cartridges using APBN.

- TB sputum microscopy was extensively used at peripheral (puskesmas) level as an initial test for TB. In 2019, 140,530 individuals with TB were diagnosed by sputum microscopy out of 1,305,026 microscopy tests (slide positivity of 10.7%) performed on sputum samples in the country.
- A broad laboratory network for TB culture and drug sensitivity testing (DST) was in place. All three National Reference Laboratories (NRLs) have implemented Quality Management Systems (QMS). Two NRLs then were accredited to ISO 15189:2012 standard which ensures quality services. The infrastructure of TB containment facilities and biosafety procedures for TB culture and DST labs were in accordance with WHO guidance²⁹. A monitoring system for quarterly assessment of Key Performance Indicator (KPIs) for culture, and DST laboratories was in place.
- An external quality assessment (EQA) process was in place for sputum microscopy. There were 140 active intermediate reference labs (IRLs) supporting implementation of microscopy EQA which was done mainly through random rechecking of routine microscopy slides at 150 district microscopy laboratories in 20 provinces. However, this network covered only half of microscopy sites in the country, and there were also challenges in national level oversight, completeness of data, and implementing corrective measures for any slide errors (high false results).
- The current specimen transportation system supports 4,432 Health facilities, 203 districts in 16 provinces. Therefore, more than half of the districts (about 311 out of 514) were without a specific specimen transport system for *GeneXpert* testing. The system uses national post office couriers and a mobile based application, SITRUS, to track samples. However, performance of this transport system³⁰ (in terms of proportion of samples referred from each facility, proportion of samples received within suggested time frame at testing sites, laboratory turn-around-times, proportion of samples rejected from testing etc.,) cannot be routinely assessed by NTP, mainly due to a lack of any pre-defined performance indicators and database design limitations.
- Efforts were made to engage private hospitals in urban settings in DR-TB diagnosis, resulting in an additional 33 *GeneXpert*-sites. However, this remains a small fraction (4%) of the total sites.
- No major stock-out was reported for *GeneXpert* cartridges or other laboratory reagents and supplies for culture, DST and microscopy testing in 2019. However, in West Java stock-outs of second line LPA reagents in the laboratory were reported.
- The NTP and partners had addressed several of the 2017 JEMM report recommendations for diagnosis and lab management in their national level planning, enhancing access to GeneXpert systems, expanding culture and DST laboratory networks and quality management systems, and increasing access to specimen transport systems. Further challenges and recommendations are listed below.

Challenges

- Access to laboratory services is severely constrained in Indonesia because the country is dispersed over 6,000 inhabited islands. Even though there has been a recent successful

²⁹ WHO Tuberculosis laboratory biosafety manual, 2012. WHO, Geneva

³⁰ GLI Guide to TB specimen Referral systems and integrated networks, 2018.

http://www.stoptb.org/wg/gli/assets/documents/GLI_Guide_specimens_web_ready.pdf (accessed on

expansion of diagnostic services, the NTP needs to sustain and continue efforts to meet the targets of the strategic plan (2020-24). Optimal utilization of laboratory capacity is a prerequisite for this purpose. Limitations in access to *GeneXpert* testing and universal DST for rifampicin were observed during the JEMM. Over 7,417 microscopy sites were functional compared to 878 *GeneXpert* sites, resulting in many presumptive TB cases receiving a sputum microscopy test instead of a molecular test³¹. Only 13% of new and relapse TB patients received DST for rifampicin, which is too low and impedes quality of care for managing rifampicin resistant TB.

- Coverage of specimen transport and referral system for *GeneXpert* testing remained limited to 39% of districts (203 districts of total 514 in the country). The rest of the provinces and districts either use ad-hoc arrangements for sputum transport or do not transport sputum to referral labs at all.
- Over the previous five years, utilization of *GeneXpert* for diagnosis of TB and RR-TB had increased. However, the national average utilization³² rate was only 49%, in 2019. Utilization rates varied among provinces. Higher utilization rates were observed in the highly populated provinces (DKI Jakarta, and all provinces of island of Java) that benefit from a functional specimen transport and referral system.
- On average, about 47% of RR-TB patients had phenotypic DST results among all RR-TB patients diagnosed by the programme. Similarly, only 35% of patients enrolled in PMDT services had rapid second line LPA results. The lack of access to reliable specimen transport system is one of the key reasons for these low rates of testing for drug resistance.
- A few barriers to access were observed in some *GeneXpert* sites: (a) specimen referral system either not established or **sub-optimal**; (b) hierarchy of patient referrals, especially in hospitals, and strict adherence to insurance (BPJS) and other administrative referral policies poses barrier issues; (c) Lack of implementation of real-time monitoring and connectivity solutions for *GeneXpert* systems (e.g., *GxAlert*, *DataToCare* etc.) for prompt treatment initiation. Real time monitoring is needed for *GeneXpert* utilization, together with corrective measures, and importantly, a link to treatment. Recognizing this issue NTP has planned for *GxAlert* piloting in the first quarter of 2020 at 200 *GeneXpert* sites.
- Challenges were noted in implementing the NTP diagnostic algorithm at some sites, due to lack of training of staff, and insistence on a chest X-ray by the treating clinicians.
- Sputum microscopy contributed about 65% of the bacteriologically positive individuals notified by the program in 2019. About 49% of laboratories participated in EQA for sputum microscopy, in Q1, 2019. The NRL for sputum microscopy (BLK Bandung, West Java) played a limited role and conducted only panel testing of the provincial labs. Although there are about 140 designated IRLs for EQA, there are no dedicated focal points and staff lacked sufficient motivation.
- Effective laboratory supervision, especially at district and provincial level, had deficiencies. Some of the culture and DST laboratories failed proficiency testing for new drugs in 2019. Weak specimen transport systems from PMDT sites resulted in low work-loads at several TB culture and DST laboratories, reducing the performance of laboratory staff. Higher contamination rates in liquid cultures and slow turn-around-times for results were reported by some laboratories. Balance between access to services and work-load is necessary in maintaining proficiency levels of the laboratory technicians. There is a need for continuous monitoring of key performance indicators and corrective actions (if needed) for TB culture and DST, at all national and provincial level laboratories.

³¹ WHO. Rapid Communication: Molecular assays as initial tests for the diagnosis of tuberculosis and rifampicin resistance. <https://www.who.int/tb/publications/2020/rapid-communications-molecular-assays/en/> Accessed 10th Feb 2020.

³² 50 *GeneXpert* MTB/RIF tests per month, per *GeneXpert* module is defined as the practical limit of utilization capacity as per NTP guidelines

Recommendations

The NTP/MOH is encouraged to continue expansion of access to quality assured diagnostic services strongly linked with treatment services, at all levels of service delivery, by implementing the following recommendations:

1. Institute measures to increase utilization of *GeneXpert* systems by:
 - Optimizing and expanding specimen transport and referral system, at all districts and provinces
 - NTP/MOH along with NRLs should assess the current SITRUS system with regard to criteria such as the type of courier, work-loads, turn-around-times, and current *GeneXpert* utilization rates. This helps to identify critical barriers and appropriate corrective measures;
 - NTP/MOH should update the specimen transport system plan based on a “hub-and-spoke” model and install a mechanism (e.g., web-based dash boards) for monitoring data and key performance indicators at multiple levels of service delivery;
 - NTP/MOH should develop an adequately budgeted specimen transport system expansion plan (along with indicators and targets) covering all districts for both the public and private laboratories. Consider administrative changes in the regulations and policies to support private sector test referrals for increasing *GeneXpert* utilization.
 - NTP/MOH along with NRLs should orient district, provincial and courier service providers on the specimen transport system and associated indicators and targets.
 - DHO/PHOs should develop agreements with courier service providers based on extent of their area coverage, effectiveness and reliability; and work to ensure biosafety regulations are adhered to during specimen transportation and there are adequate supplies of biosafe shipping materials.
 - NRLs to institute EQA testing (panel) rounds for all *GeneXpert* systems at least twice a year. Enlist external support, if needed.
2. Address access barriers to *GeneXpert* testing:
 - DHO/PHOs should develop agreements between puskesmas and hospitals for specimen transport instead of referring patients to testing sites.
 - NTP/MOH as well as DHO/PHOs should work out on how to avoid the bureaucratic and financial barriers- such as referral hierarchy at hospitals, BPJS registration policies and regulations for samples transported to class B hospitals from puskesmas).
 - DHO/PHOs should increase collaboration with private hospitals to increase specimen referrals.
 - NTP to establish linkages between diagnosis and treatment sites by expanding the connectivity solutions for *GeneXpert* systems (e.g., GxAlert, DataToCare) following the proposed pilot in 2020.
 - The NTP/MOH should establish additional *GeneXpert* sites at puskesmas level along with an effective specimen referral network.
3. Expand EQA for sputum microscopy to all districts and provinces from the current 49% to at least 90% by 2024
 - NTP/MOH should review and provide administrative and financial support to the NRL, BLK Bandung, to carry out all of its designated functions including on-site supervision, hiring additional staff, and engagement of additional implementation partner. Consider strengthening all regional laboratories to support NRL BLK Bandung.

- NTP/NRL should review and assess national level EQA results for sputum microscopy at district and province level then simplify the random cross checking protocol (e.g., uniform number of slides at each province level), along with a prompt mechanism to correct for high false positive or negative errors. A coordination meeting could be convened at NRL for simplification of EQA, if needed.
4. MOH/NTP should continue to expand the TB culture and DST laboratory network while ensuring quality management systems and urgently developing capacity at the national reference laboratories for DST of new TB drugs:
 - Standardize testing procedures for implementing phenotypic DST for new drugs, bedaquiline, linezolid, clofazimine, delamanid, according to WHO technical guidance³³. Currently only labs in the WHO-GLI-SRL global network have proficiency in testing for these new drugs. Develop a memorandum of understanding with SRL Adelaide for DST of new drugs. Include support from SRL for in-country capacity development for whole genomic sequencing (WGS) of routine drug resistant isolates from culture and DST labs.
 - Review and update current national proficiency testing and lab certification guidelines for culture and DST to improve access to quality services.
 - NRLs and NTP/MOH should ensure that **all** RR-TB patients get baseline first and second line molecular DST. This will require enhancing laboratory capacities to increase efficiency and multiple levels of coordination including access to timely specimen transport.
 - A focal person at each PMDT site should be identified for culture and DST lab related referrals to ensure timely specimen transport and prompt results.
 - Develop and implement a uniform TB-module for laboratory information management systems (LIMS) at all TB culture and DST labs, to facilitate easy monitoring for KPIs. Establish linkages between LIMS and SITB, at national level.
 - Enhance capacity of the laboratory work-force in culture and DST laboratories by multiple means including collaboration for quality on-line trainings, additional recruitments for key laboratory positions, and exploring options for career advancement to improve retention;
 - Increase utilisation of existing LPA capacity and rapidly assess the capacity to see if further expansion is required in light of requirements for 2nd line drug susceptibility testing, particularly for fluoroquinolones, prior to treatment with bedaquiline.
 5. Consider developing one of the NRL into a WHO GLI center-of-excellence for TB. This is a logical progression of the expanded network to streamline quality leadership for the country.
 - Enroll with GLI-SRL NETWORK³⁴ for panel testing rounds administered by SRL, Antwerp. This will help strengthen certification of multiple phenotypic DST labs (12 labs) developed in the country
 - Make a plan to develop capacity for fulfilling criteria for GLI-Centre of excellence requirements
 - Request support from WHO-Indonesia and WHO-SEARO
 6. MOH should continue to ensure efficient procurement and supply chain management to support and sustain expanded national diagnostic network.

³³ WHO Technical manual for drug susceptibility testing of medicine used in the treatment of tuberculosis, 2018.

³⁴ WHO-SRL network. <https://www.who.int/tb/areas-of-work/laboratory/srl-network/en/> accessed on 10Feb20

7. In the draft NSP TB 2020-2024 document, NTP and partners should consider emphasis on (a) physical expansion of specimen transport system to all districts, (b) reducing access barriers for GeneXpert test referral, (c) expansion of EQA for sputum microscopy to all districts, and (d) developing one of the NRLs in Indonesia into an international level Centre- of-excellence. This can be done by expanding the sub-activities in the operational plan along with budget and appropriate targets.

2.4 Treatment

Findings

The programme has an ambitious target of over 90% treatment success rate for new patients placed on first line treatment and the success rate has been near to the target, although it has dipped in recent years mainly due to the increased proportion of non-evaluated patients (Figure 18). Though the treatment success rate is generally high, some districts have an unusually high proportion that are not evaluated. The NTP's policy for first line treatment is 4 drug-FDCs daily for the 2 month intensive phase, followed by an intermittent regimen with two drug-FDCs in the continuation phase.

For previously treated patients, the regimen was the old WHO Category II treatment with injections of streptomycin plus 4-drug FDCs for the first 2 months, then 4 drug-FDCs only, daily for 3 months, and 3 drugs for 5 months with intermittent dosage.

Drugs were available in puskesmas and hospitals. The treatment delivery service varied in different sites visited, from weekly collection of drugs to monthly collection. No drug shortage was reported, except for streptomycin in some districts.

Challenges

- The last JEMM had strongly recommended for rapid transition of the regimen to daily dosing. Though the programme had decided to change the regimen from intermittent to daily, procurement regulations in the country hindered speedy transition to daily regimen. There were issues with the design of the bioavailability study required to get local approval for the local State owned manufacturer's daily FDC. However, the bioavailability study will now get underway and a staggered transition plan over 3 years has been planned by the programme. In the meantime, the NTP has planned to procure 20% of the country's FLD needs in the form of daily FDCs from GDF to start daily FDC even before the domestic drugs are available.
- Treatment delays, due largely to lack of communication and coordination for referral of patient from puskesmas to hospital and vice versa were observed.
- Treatment support and adherence monitoring is suboptimal.

Recommendations

In order to ensure that all people with TB get the best treatment at the earliest opportunity:

1. It is critical that drug resistance is detected early and patients are treated with drugs and regimens that are effective to cure them. Treating every patient empirically considering all are drug sensitive is no longer acceptable. The JEMM recommends that the programme implement the policy of universal DST for all diagnosed TB patients, starting with testing for rifampicin resistance using rapid molecular tests and if sensitive, and where the facilities exist, then test for INH resistance. The diagnostic algorithm needs modifying accordingly.

2. It is unacceptable to continue the intermittent continuation phase with first line drugs. It has been proven substandard for people with TB, with high relapse and potential emergence of multi drug resistant TB. JEMM strongly recommends the Programme to rapidly transition to a daily regimen throughout the treatment, at the earliest possible time, for all drug sensitive TB (latest by end of 2020). The NTP should take up this issue at the highest levels if local manufacturers are not able to supply, use available alternative sources, including GDF.
3. The Cat II regimen is no longer recommended for treatment of previously treated patients³⁵. JEMM recommends that the NTP stops the Cat II regimen immediately and ensures every previously treated patient undergoes DST for first line drugs and receives an appropriate regimen. The NTP should revise its treatment guidelines urgently taking into account WHO recommendations and national drug resistance surveillance data.
4. In order to ensure that patients and family receive all required support for a successful treatment outcome, patient support mechanisms, including patient and family education and counselling; support by peer group, community treatment supporters, and cadre staff for regular interaction with patients; and digital adherence monitoring, all need to be incorporated in the Programme. The NTP should facilitate linkages with other social support mechanisms (see Section 2.1, Recommendations on demand-side financing).
5. The NTP should strengthen decentralized monitoring using digital platforms available now for real time tracking to ensure diagnosed patients are placed on treatment and treatment outcomes are reported on time.
6. Clinical and bacteriological follow-up of patients who have completed treatment, for at least one year after treatment completion, is recommended for prompt identification of relapses.

2.5 Childhood TB

Findings

WHO estimates that 8.3% of all tuberculosis cases in Indonesia were in children (defined as those under 15 years of age) in 2018, or approximately 87,000 new cases annually³⁶. Ministry of Health data, however, show there were 56,446 children with TB notified in 2019, or about 65% of the estimated incidence of TB in children. However, the 2019 data are not yet complete. Nevertheless, notified TB cases in children show a steady increase from 2016 to 2018 in absolute numbers (Figure 24) and as a proportion of the total notified.

The proportion of total TB notifications of new and relapse cases that occurred in children, nationwide, in 2018 was 11%. However, this conceals great variation between provinces, from 21.8% in Papua to

³⁵ WHO. Guidelines for treatment of drug-susceptible tuberculosis and patient care. Rapid Update. 2017. World Health Organization, Geneva.

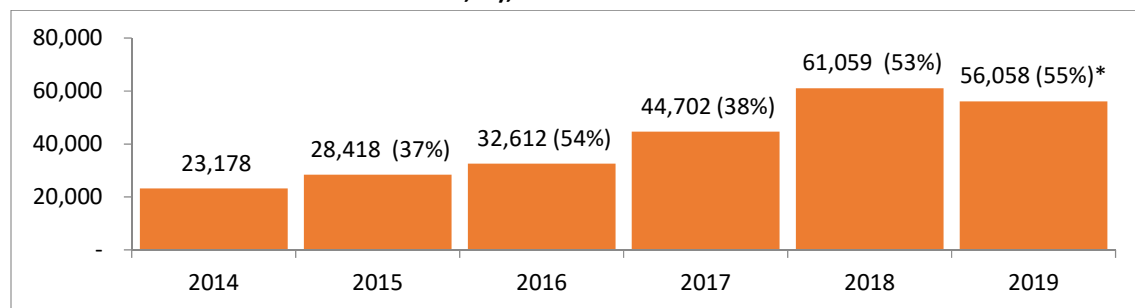
³⁶ WHO. Global Tuberculosis Report, 2019. World Health Organization, Geneva.
https://extranet.who.int/sree/Reports?op=Replet&name=%2FWHO_HQ_Reports%2FG2%2FPROD%2FEXT%2FTBCountryProfile&ISO2=ID&LAN=EN&outtype=html Accessed 23 February, 2020.

2.3% in Gorontalo Province, which suggests very uneven knowledge of childhood TB management across Indonesia.

Data from the 2017 inventory study suggest that under-reporting in children was 54%, and therefore higher than in adults (39%). There was also a significant difference in the ratio of children under 5 to those 5 to 14 years old, in the public and private sectors: in the public sector the ratio was 1: 1.1, while in the private sector it was 1: 0.7. This suggests that parents of children under 5 with TB are more likely to seek care for them in the private sector than they are for their older brethren.

There are an increasing number of DR TB cases in children, with low enrolment rates (just as in adults, see Section 2.8): in 2019, 89 children were notified with DR TB, but only 29 (33%) started on treatment. Even fewer of the notified children are receiving treatment for their DR-TB, compared to adults, with likely fatal consequences for those who are untreated.

Figure 24. Numbers of cases of TB in children notified and enrolled in treatment (proportions of total estimated notifications in children, %), 2014-2019. *Source: NTP.*



*Data incomplete

Achievements:

- The Child TB National Guidelines have been revised recently and include updated algorithms for diagnosis, including the use of an updated symptom-based scoring chart to diagnose child TB when CXR and/or tuberculin skin tests (TST) are not available, algorithms for MDR-TB and perinatal TB.
- National level trainings of trainers have been conducted recently for 2 paediatricians and a programme manager from each province. However these have not been continued.
- TB symptom screening has recently been integrated into IMCI modules and in MCH clinics although there were no data on how many child TB referral cases were found from IMCI. Primary care clinicians have not been trained on childhood TB so they tend to refer suspected (and diagnosed) child TB cases to hospital, but it is unclear if they are all reaching hospital. There is no mechanism to track children suspected of, or diagnosed with TB, who are referred to primary level (This is the same for adults, in fact. The TB 06 Presumptive Case Register was shown not be used properly in the epidemiological review¹².)
- Children are usually diagnosed at the hospital or secondary health care levels, are often hospitalized and labelled as “complicated cases” to qualify for health insurance reimbursement (as simple TB management is not supported by JKN at the hospital level) and maybe more likely to be lost to follow up (based on field visit observation).

- Clinicians were reportedly not confident in conducting sputum induction or aspirate procedures.
- Community knowledge is still low and health seeking behaviour is also low.
- Low yield of contact tracing: e.g., in DKI: for 6,137 index cases, 129,409 contacts investigated in 2019; 9,067 were referred for diagnosis and 253 confirmed cases (0.2% of investigated contacts) and low entry into treatment. However, this is a very high ratio of contacts:index cases, which probably represents the policy of screening 5-6 households around the index household, and this may explain the low yield – as well as bringing the policy of screening the children in surrounding households of an index case into question, because the yield may be very low.
- Diagnosis of childhood TB was weak: over-diagnosis of childhood TB in some districts and under diagnosis in others:
 - Ongoing difficulties in the use of the diagnostic scorecard were reported;
 - TB diagnosis in children relies on a scoring system. TST availability might contribute to over-diagnosis, if a positive TST is scored too highly.
 - Active case finding in children is not being performed under the IMCI, at schools, in day-care, or in children with malnutrition.
 - Patients need to pay for Sputum induction, it is not provided by the government nor supported under BPJS scheme
- A joint programme has been initiated with the Ministry of Religion and Ministry of Education to conduct TB screening in Islamic boarding schools for children aged 9 to 18 years old.
- Child-friendly FDC stock-outs were observed in several districts.
- There were no child friendly medications for DR TB.
- Not all puskesmas were able, or allowed, to do TST testing, therefore children are often referred to Hospital to do TST and chest X-ray examination.

Challenges

In conclusion there are 5 major challenges for TB in children in Indonesia as follows:

- a. Under diagnosis in primary health care in line with the lack of confidence of primary health clinicians to diagnose TB in children. The TB scoring system which was originally designed for primary health clinicians was difficult, and impractical to follow.
- b. Over diagnosis in the private sector: Many children, especially those aged below 5 years seek treatment from private clinicians, where they tend to over-diagnosis using chest X-ray only. Some of the clinicians are not well-informed on the new algorithm and updated guidelines.
- c. Under-reporting in the private sector. This is in line with findings in adult cases.
- d. Increasing numbers of DR-TB in children, with low enrolment rates. Also in line with adults.
- e. Lack of awareness of TB in the community: parents are sometimes in denial that their children could have TB, or are afraid that their children will be unfairly treated, or stigmatized, at school, if their TB status is known. Schools are generally not very supportive of children or families with TB.
- f. Limited engagement of community organizations, although contact investigations have been carried out by some CSOs, they have not yet focused on childhood TB case finding or adherence.

Recommendations

1. The NTP and the Indonesia Pediatric Association (GRID) should review the current diagnostic algorithm, especially the child TB scoring chart, and update the guideline accordingly;
2. The NTP should develop a plan to conduct comprehensive training on childhood TB for primary health care clinicians including GPs, nurses, and midwives; and an online course on child TB management for clinicians in the private sector;
3. The NTP should engage more with pediatricians in order to improve performance on TB in the hospital system, and in their private practices; and assist in capacity building to puskesmas and GPs on management of TB in children under 5, including sputum induction, and childhood EPTB without complications, and excluding active TB for those being considered for preventive treatment;
4. The NTP, together with the communication bureau, MoH, should develop a communication strategy and education material for childhood TB;
5. The NTP, through communications campaigns, CSOs and trained cadres, should aim to improve community awareness of TB symptoms in children and adolescents and the need to prevent disease in children in contact with TB at home, through evaluation and preventive treatment;
6. The NTP should provide child friendly formula medications for DR TB and preventive therapy;
7. The NTP, together with the BPJS, should ensure the fees for sputum induction are covered by insurance;
8. The NTP should make full use of the 360 DR TB hospital to provide DR TB in children services. One designated room for DR-TB in children might be needed in these hospitals. A workshop on management of DR-TB in children for the clinical expert team needs to be provided;
9. The NTP should ensure that TB CSOs, such as Aisyiyah and LKNU, also play a role in finding and accompanying child TB patients and their families;
10. The NTP should facilitate dialogue with the Ministry of Education to provide TB education material in school and set mechanisms to protect children with TB from stigma, but at the same time, limit TB transmission in school;
11. The NTP should engage a psychologist to develop counselling tools for children with DR TB and ensure that there are counselling modules available as part of the training materials;
12. The NTP should, together with the PHO and DHOs, have more focused supervision and mentoring on TB in children;
13. The NTP should improve WIFI TB to ensure that notification for children with TB from the private sector can be reported.

2.6 TB preventive treatment and infection control

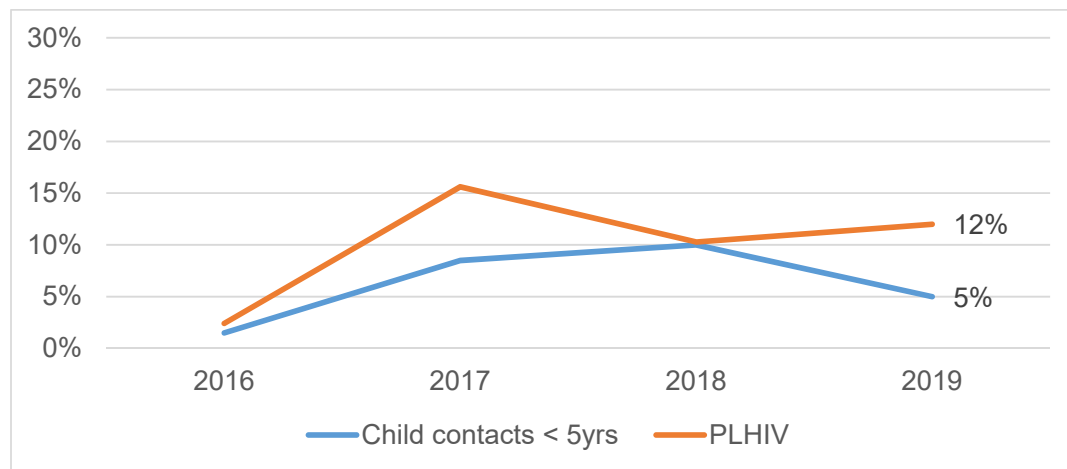
Findings

The NTP currently recommends TB preventive treatment in people living with HIV (PLHIV) and child household contacts aged less than 5 years. However, its uptake remains low although a slight increase has been observed since 2016 (Figure 25). In 2019, only 12% of PLHIV and 5% of child household contacts aged less than 5 years who were eligible for TB preventive treatment received it. This represents a huge missed opportunity to protect them from TB and death. The draft NSP for 2020-2024 recognizes scale-up of TB preventive treatment as one of the essential strategies to reduce the national TB incidence. In 2018, 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 older³⁷. In line with this, the NTP plans to expand their targets to household contacts older than 5 years, and other risk groups.

Some recommendations from the 2017 JEMM have been or being addressed. National targets for preventive treatment were set for PLHIV and child contacts. An operational project introducing a 3-month weekly rifapentine plus isoniazid is planned to start soon with support from KNCV. However, challenges remain such as awareness of community and health care workers and unavailability of commodities.

Figure 25. Proportions of PLHIV and child household contacts aged less than 5 years started on TB preventive treatment, 2016-2019. Source: WHO Global TB Report and NTP presentations for JEMM.



Household contact investigation is not systematically implemented nationwide. Yet, the JEMM observed good examples of contact investigation by mobilizing health cadres and midwives in some districts. LKNU and Aisiyah, with support from the Global Fund, implemented contact investigation by cadres in 191 cities and districts. Health cadres screened household members of index cases and their neighbours and those with TB presumptive symptoms were referred to Puskesmas. Similarly, in Bogor district, program managers at the Puskesmas coordinated with village midwives and health cadres and carried out contact investigations, whose operational costs were covered under BOK.

Infection prevention and control (IPC) is another important program for TB prevention. Updated WHO IPC guidelines published in 2019 called for integrated, well-coordinated, multi-sectoral action towards TB infection control rather than a parallel program exclusively dedicated to TB IPC. The National Action Plan on Antimicrobial resistance (AMR) 2017-2019³⁸ included the establishment of a national infection prevention and control program through full implementation and compliance with the IPC guidelines as one of the strategic objectives. Following the action plan, the MOH published

³⁷ WHO. Latent TB Infection: Updated and consolidated guidelines for programmatic management. 2018. <http://apps.who.int/iris/bitstream/10665/260233/1/9789241550239-eng.pdf?ua=1>

³⁸ Ministry of Health Indonesia. National Action Plan on Antimicrobial resistance (AMR) Indonesia 2017-2019. 2017. http://apps.who.int/datacol/answer_upload.asp?survey_id=666&view_id=722&question_id=13163&answer_id=19958&respondent_id=27949

the IPC guidelines³⁹ in 2017, which also addresses TB IPC. However, this is not yet fully implemented and the TB notification rate among health care workers, an indirect measure of the impact of TB infection control activities implemented in health care facilities⁴⁰, was not available.

Challenges

The JEMM found that the coverage of household contact investigation was still small. The contact investigation implemented by LKNU and Aisiyah reached households of 57,059 index cases from January to June 2019 (Table 5). However, this represents a small proportion of index cases in the country given that 450,619 people with TB were notified in 2019 (from January to September). Furthermore, only 21% (13,133/63,277) of child contacts aged less than 5 years were referred to Puskesmas and 5.9% of them received isoniazid prophylaxis. Also, since the number included neighbourhood contacts, actual coverage among household contacts was not known. Furthermore, the national data on contact investigation is not available.

Table 5. Results of contact investigation conducted by LKNU and Aisiyah from January to June in 2019

Cascade of Contact investigation	LKNU	AISIYAH	Total
Number of index cases targeted	19351	37708	57059
Number of contacts < 5 years old identified	26323	36954	63277
Number of contacts < 5 years old referred by cadre	7294	5839	13133
Number of contacts < 5 years old started on TB isoniazid prophylaxis	87	692	770

The JEMM found that the uptake of preventive treatment was infrequently monitored at the district level because it was not included in the Minimum Service Standards. Priority for monitoring and supervision was given to case finding and the implementation of preventive treatment was not given enough attention. Isoniazid single formulation was not available at facilities visited by the JEMM although they were generally available at the district level or higher.

The JEMM observed that health care workers were reluctant to prescribe TB preventive treatment. There was concern about creating drug resistance (which is not supported by available evidence), durability of protection, and adverse events despite proven benefits that clearly outweigh potential harms. Health care workers, patients and community were not fully informed of the benefits of preventive treatment. There was also a perception that six months of treatment is too long. TST was not available and not all health care workers were trained to perform it. Availability of IGRA was limited.

The JEMM found that there were no infection control plans at districts and Puskesmas that we visited and there was no designated person in charge of IPC. Health care workers were not regularly screened for TB, and TB notification among them was not recorded or monitored. Implementation of the focused TB transmission control strategy, known as FAST (Find persons with TB Actively, Separate safely and Treat effectively), is essential to reduce transmissions to health workers and

³⁹ Ministry of Health Indonesia. PEDOMAN PENCEGAHAN DAN PENGENDALIAN INFEKSI DI FASILITAS PELAYANAN KESEHATAN. 2017. <http://ditjenpp.kemenumham.go.id/arsip/bn/2017/bn857-2017.pdf>

⁴⁰ WHO. A guide to monitoring and evaluation for collaborative TB/HIV activities - 2015 revision.2015. https://apps.who.int/iris/bitstream/handle/10665/150627/9789241508278_eng.pdf

among patients⁴¹. However, triage of patients with TB signs and symptoms was not systematically implemented. Some facilities visited had insufficient supplies of N95 masks and inadequate natural ventilation.

Recommendations

1. The MOH and MOHA should include the uptake of TB preventive treatment as one of the key indicators, along with other TB indicators, at all levels and set targets to ensure its implementation is closely monitored and actions are taken.
2. The NTP and NAP should develop a strategic communication plan to inform all stakeholders of the importance of TB preventive treatment as a lifesaving intervention. This will include engagement of professional societies, local and religious leaders and schools, to disseminate information. Informative material should be provided for both patients and health care workers, which should address their common concerns such as drug resistance, adverse events and durability of the protection in a clear manner. Health care workers should be aware that withholding TB preventive treatment is unethical.
3. The NTP and NAP should develop the capacity of health care workers to offer TB preventive treatment, including counselling and proper management of adverse events, to PLHIV.
4. The NTP and NAP should scale-up TB preventive treatment integrated into systematic TB screening among risk groups as a package.
5. The NTP should leverage existing home visit activities by cadres and midwives to disseminate information on TB preventive treatment. Furthermore, they could initiate TB preventive treatment at home so that contacts do not need to travel to health care facilities.
6. The NTP and NAP should review screening criteria used by sub-national levels and simplify it as necessary in accordance with recommendations by WHO.
7. The MOH should expedite introduction of shorter regimens such as 3-months of weekly rifampentine plus isoniazid, or 3-months of daily rifampicin and isoniazid. If the former, health care workers need to be trained to manage side effects such as flu-like systemic reactions.
8. The NTP should capitalize on roll-out of SITB, develop a clear dashboard, and enable cascade analysis of contact investigation and TB preventive treatment. The NTP should consider adding coverage of TB investigation among contacts, one of the priority indicators in the End TB Strategy, to the indicators in the 2020-24 NSP to facilitate analysis of cascade.
9. The NTP and NAP should strengthen collaboration with partners (e.g. PEPFAR⁴², IMPAACT4 TB⁴³, Zero TB Initiative⁴⁴, ACT4TB⁴⁵). The JEMM is concerned with the current delay in the initiation of IMPAACT4TB project in Indonesia. The project is key to rolling out rifampentine and the MOH should facilitate its implementation.
10. The NTP should expand preventive treatment to all household contacts of people with bacteriologically confirmed TB and as well as other risk groups, taking into account the local context. Provision of TB preventive treatment to prisoners and health care workers should be coupled with implementation of appropriate IPC so as not to jeopardize the durability of protection and ensure that the benefits of preventive treatment outweigh the harms.

⁴¹ Barerra et al. F-A-S-T: A Refocused, Intensified, Administrative Tuberculosis Transmission Control Strategy. *Int J Tuberc Lung Dis*, 19 (4), 381-4

⁴² The President's Emergency Plan For AIDS Relief

⁴³ A project funded by Unitaid for scaling up access to 3-month weekly preventive treatment implemented in multiple countries including Indonesia <https://www.impaact4tb.org/>

⁴⁴ A global initiative aiming to create islands of TB elimination through a comprehensive Search-Treat-Prevent approach. <https://www.zerotbinitiative.org/>

⁴⁵ A pragmatic cluster randomized trial in five countries including Indonesia, which introduces a standardized public health evaluation and analysis to identify barriers to TB preventive treatment among contacts.

Recommendations on infection prevention and control

1. The MOH and MOHA should ensure that an IPC program is in place in all health care facilities in line with the national AMR action plan and the national guidelines on IPC.
2. The PHOs and DHOs and health care facilities should designate a person in charge of implementation, monitoring, and evaluation of IPC.
3. The MOH, in collaboration with MOHA, and health facility management leadership should implement active TB surveillance among health care workers to monitor performance of IPC practice.
4. The MOH in collaboration with MOHA and health facility management leadership should implement triage of people with TB signs and symptoms at all health care facilities. This should be promoted as an effective case finding strategy not only as a preventive measure to capitalize on the current momentum for finding missing TB cases.

2.7 Public-Private Mix

Findings

In Indonesia, more than 70% of TB patients initially seek care in the private healthcare sector.⁴⁶

There are more than 2,600 private hospitals, more than 50,000 private GPs⁴⁷ and 25,000 pharmacies. Patients initially seek care with the pharmacies and GPs, but an increasing proportion end up being treated in private (and public) hospitals. Most private hospitals and around 24% of GPs are contracted by BPJS, and GPs are increasingly forming Group Practices (Table 6).

Table 6. Role of private healthcare facilities in TB and BPJS

Description	Total number	Share of TB:				TB Under-reporting		Private TB Cases Notified			Facilities Notifying TB Cases				Contracted BPJS	
		First care-seeking	Diagnosis	Treatment	Notification	% Under-reported	% of unreported	2016	2017	2018	2016	2017	2018	% Notify 2018	Number	% of total
Hospitals	2,629	2%	11%	21%	17%	62%	21%	32,971	54,692	98,358	491	642	843	32%	1,542	59%
GP						96%	11%								5,284	
GP Clinic						96%	12%								6,682	
Subtotal GPs	50,000	19%	19%	12%	1%	96%	23%	4,570	3,941	3,481	91	116	109	0%	11,966	24%
Pharmacies	25,000	52%	n/a	4%		n/a	n/a								2,456	10%
Laboratories	n/a					96%	7%									
Total private		73%	30%	37%	18%	78%	51%	37,541	58,633	101,839	582	758	952		31,002	
National total (public and private)								360,565	443,674	565,876	10,313	10,376	10,025			
Private % of total								10%	13%	18%	6%	7%	9%			

Sources: Surya et al (2017) patient pathway analysis; National TB Inventory Study (2016-17); NTP data from SITT; BPJS website

The 2017 JEMM highlighted the importance of the private healthcare sector for TB care and prevention in Indonesia and noted the very low levels of engagement at that time, a result of sporadic efforts that had never received sufficient priority. It focused on the role of BPJS, which had already contracted over 1,000 private hospitals and 10,000 GP practices but with payment systems that encouraged case holding at hospitals and discouraged case management by primary care

⁴⁶ Surya A et al (2017) Quality Tuberculosis Care in Indonesia: Using Patient Pathway Analysis to Optimize Public-Private Collaboration, *Journal of Infectious Diseases*, Volume 216, Issue suppl_7, 1 October 2017, Pages S724-S732

⁴⁷ This is a conservative estimate derived from 2011 data cited by Mahendradhata, Y., Lestari, T., Probandari, A. et al. How do private general practitioners manage tuberculosis cases? A survey in eight cities in Indonesia. *BMC Res Notes* 8, 564 (2015). <https://doi.org/10.1186/s13104-015-1560-7>.

providers. The JEMM recommended reform of BPJS payment mechanisms and increased attention and resources to engagement of all private providers.

The main achievements in PPM since the 2017 review are as follows:

- Private TB notifications have increased considerably, from 31,002 (9% of the total) in 2015 to 101,839 (18% of the total) in 2018.
- Approval of the pilot initiative to test new payment mechanisms designed to encourage diagnosis and management of uncomplicated DS TB at the primary care level has the potential to substantially increase GPs' contribution to program targets while reducing costs to both patients and BPJS. (See Finance section 1.6, and 2.1)
- The WIFI TB android application was introduced in 2017 to facilitate notification by private providers. It requires just 13 variables, as compared with 54 in the SITT.
- The 2016 Mandatory Notification decree was followed by PPM Guidelines and Operational Plan in 2017.
- District/City PPM Teams have increased to 93 (18% of total anticipated) in 2019
- A Coalition of Indonesian Professional Organizations against TB (Koalisi Organisasi Profesi Indonesia Untuk Penanggulangan Tuberkulosis, KOPI TB) was established in 22 Provinces and 55 Districts. KOPI TB includes six professional organizations.
- The Global Fund awarded approximately US\$6.8m to Yayasan KNCV Indonesia (YKI) to work with the Indonesian Respirology Society (Perhimpunan Dokter Paru Indonesia, PDPI) in support of the District PPM approach and implementation of WIFI TB in 37 districts.
- USAID awarded the TB Private Sector (TBPS) project, worth \$19m over 5 years, to a consortium led by FHI360, which will work in 9 districts initially. Building on a USAID-funded study⁴⁸, they will work with GOI to pilot the new payment mechanisms, address data system interoperability, increase private access to GeneXpert, and promote an app⁴⁹ to encourage referral of TB symptomatics from pharmacies.

Challenges

There has been no progress in engaging GPs. All of the increase in private TB notifications is from hospitals (Table 6). The 2017 Inventory Survey found that GPs failed to report 96% of their TB patients (the highest rate of all categories) and that GPs may be responsible for 23% of the cases that are diagnosed but not reported⁵⁰, while the patient pathway analysis found that they are initial point of care for as many TB patients as Puskesmas (19%)⁵¹.

Most (71%) of the large increase in private notifications from 2017 to 2018 came from “mopping up”: documenting completed TB episodes that had already been managed by engaged hospitals but not reported.

The increase in private TB notifications has not been accompanied by an increase in the ability of the NTP or its partners to extend program services to their patients (Table 7).

Table 7: Outcomes for Private Notifications 2017-18

Indicator	2017		2018	
	Number	Percent	Number	Percent
Private notifications	58,633	100%	101,839	100%
Treatment outcome reported	46,564	79%	40,600	40%
Treatment success reported	45,207	77%	39,377	39%

⁴⁸ BCG, USAID, NTP Indonesia; 2018. Strengthening private provider engagement to improve TB outcomes in Indonesia: An institutional review. Jakarta, Indonesia. https://pdf.usaid.gov/pdf_docs/PA00TFZV.pdf

⁴⁹ SwipeRx, from mClinica

⁵⁰ JEMM analysis of 2017 Inventory Study data

⁵¹ Surya et al (2017) op cit

The treatment success rate amongst privately notified patients fell from 77% in the 2017 cohort to 39% in the 2018 cohort, while the proportion lost to follow-up or not evaluated increased from 21% to 59%. The number of private patients known to have successfully completed treatment actually fell from 45,207 in the 2017 cohort to 39,377 in the 2018 cohort. While these data may not indicate a real change in actual patient adherence to treatment, they do demonstrate that the NTP and its partners reduced their ability to support and monitor private patients.

WIFI TB does not seem to have been very successful to-date (Table 7). An analysis presented at the June 2019 PPM Working Group suggested that its introduction did not increase the number of private notifications in the 16 Districts supported by Challenge TB.⁵²

Table 7: Use of WIFI TB, 2018 and 2019

Indicator	2018	2019
Districts	23	32
GPs/clinics	95	142
Notifications	333	586
Undefined outcomes	68%	88%

District PPM teams and branches of KOPI have so far mainly existed on paper. In the District PPM Approach, engagement of private hospitals is the responsibility of existing district staff and engagement of GPs is the responsibility of existing *puskesmas* staff. As emphasized throughout this review, current staff are already over-stretched. They are supposed to be helped by volunteers from local branches of the various professional associations, but this voluntary arrangement lacks the professionalization and organized staffing structure of successful PPM efforts in other countries. In addition, beyond the districts supported by the Global Fund, there are no resources for these associations to deploy.

For PPM, BPJS continues to be at best a missed opportunity, if not a major barrier. In addition to the inappropriate financial incentives (see Finance section and 2017 JEMM) and unnecessary barriers in access to diagnostics (see Laboratory section), the lack of interoperability between SITB and BPJS data systems (p-care and v-claim) makes it difficult to manage private provider engagement for TB. BPJS has considerable influence over 5,284 independent GPs, 6,682 GP Group Practices and more than 2,600 hospitals, but it has not been effectively leveraged for TB.

There has been no effective engagement of the approximately 25,000 pharmacies, even though they are the first point of care for 52% of TB patients. IQVIA Indonesia has struggled to repeat their earlier analysis of private TB drug sales and their data offering is not considered sufficiently robust to allow for reliable estimates.

Investment in GeneXpert has been biased towards public sector facilities and patients. Because of regulatory constraints to the placing of public assets in private facilities, only 33 of the 878 facilities with GeneXpert are private hospitals, and the 4,432 facilities with access to the SITRUS software for sample referral are reportedly all public. In other countries, GeneXpert utilization in private facilities tends to be higher than in public facilities because of greater ability to appoint laboratory technicians in shifts and operate extended hours.

The NSP 2016-2020 had one poorly-defined indicator for private provider engagement⁵³. In the draft NSP 2020-24, none of the 8 Main Indicators⁵⁴ addresses PPM, but there are three suggested indicators in the M&E section (p. 137). The proportion of districts that have a PPM Team is to increase from 15% to 100%, but this says nothing about whether the teams will be active, and not all districts need PPM teams. The proportion of private health facilities that report TB cases is to

⁵² Bey Sonata, "WIFI TB: scaling up private sector notification in Indonesia through DPPM", presentation at 14th Global PPM Working Group Meeting, Jakarta, 14th July 2019

⁵³ "% of districts/municipalities with at least 80% of health services involved in PPM" (number 2.1)

⁵⁴ Draft NSP 2020-2040, p. 134

increase from 14% to 60%, but it is not useful to combine the 2,629 hospitals with tens of thousands of GP clinics in a single indicator. The proportion of notified cases from private facilities is to increase from 8% to 38%, which is unambitious given the role of the private sector in Indonesia.

Recommendations

1. The NTP and its partners should **urgently expand the scope of the PPM initiative**, targeting at least a 10-fold increase in GP engagement and a 2-fold increase in private hospital engagement, especially in the main urban districts. This requires a practical approach that avoids too many committees and deploys sufficient paid staff to support private providers as they notify cases and ensure treatment completion.
2. PPJK, BPJS and the NTP should dedicate resources to **implement the proposed pilot BPJS reforms** as planned in 2020, adapting them promptly in light of rapid feedback and results, and take the revised system to national scale as soon as possible.
3. The MoH, BPJS and their partners should develop systems to **ensure seamless interoperability of all relevant data systems**.
4. The NTP should fund and support **free and easy access of private patients to GeneXpert**. Specific suggestions include: deploy efficient sample transport systems that include private providers; encourage private providers to use the SITRUS application to request sample transportation; work with the Ministry of Health to either reform the regulation that prohibits placing GeneXpert machines in private facilities or design a leasing solution to overcome it; deploy publicly-funded GeneXpert machines and cartridges in high volume private facilities and promptly pay facilities a negotiated fee for conducting the tests (on condition that referred patients are not charged).
5. The NTP should **strengthen PPM indicators in the draft 2020-24 NSP**. Specific suggestions to be considered are: add an ambitious target for the number of privately-notified patients who are successfully treated as one of the Main Indicators; delete the indicator about District PPM Teams; set separate targets for the number of GPs and hospitals notifying at least one case; set provider coverage targets as absolute numbers, in the absence of reliable information on the number of GP practices; increase the target for the percent of notifications contributed by private providers.

2.8 Programmatic management of drug-resistant tuberculosis (PMDT)

Findings

From the drug resistance survey, the most recent estimated proportion of rifampicin resistant TB was 2.5% among new TB cases, and 17.8% among previously treated TB cases⁵⁵. The estimated number of MDR/RR-TB cases was 24,000 (17,000 – 32,000) in 2018. A total of 878 GeneXpert sites and 233 MDR/RR-TB treatment centers have been established. About 2,300 treatment sites have been involved in the treatment of MDR/RR-TB.

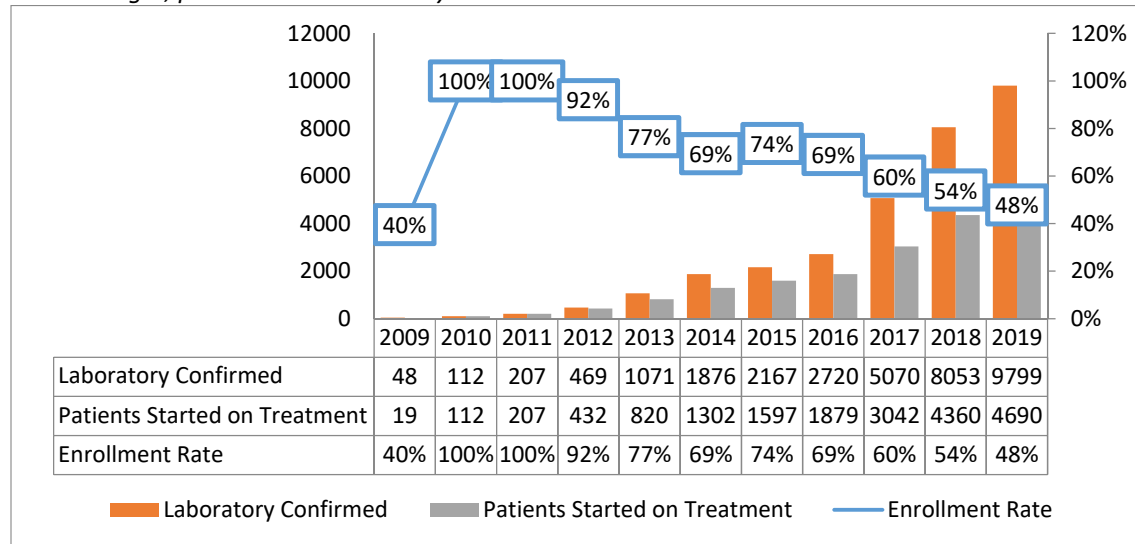
Indonesia NTP prioritized GeneXpert tests among individuals with a high risk of drug-resistant TB and recently also presumptive TB cases. Sputum transportation has been established in 203 districts in 16 provinces. The average utilization rate of estimated GeneXpert capacity ranged from 7% in Papbar to 88% in Jabar.

The number of patients with rifampicin resistant TB detected increased from 2,720 in 2016, 5,070 in 2017, 8,053 in 2018, to 9,799 in 2019. The number of MDR/RR-TB cases enrolled on treatment was

⁵⁵ NTP, MOH, Indonesia. Drug resistance survey: Tables in English. Submitted to JEMM 2020.

1879 (69%) in 2016, 3042 (60%) in 2017, 4360 (54%) in 2018, and 4690 (48%) in 2019. In 2019, a total of 2,048 second line LPA was performed, of which 1,698 (83%) were *M tuberculosis* positive. Of the latter, 124 (8%) were resistant to fluoroquinolone and 62 (4%) were resistant to second line injectables (including 13 that were resistant to both fluoroquinolone and second line injectables).

Figure 26. Notifications and enrolments on treatment of RR/MDR-TB cases, 2009-2019. Source: NTP Manager, presentation 21 January 2020.



The NTP began to use bedaquiline in August 2015, injectable-containing short MDR-TB regimens in August 2017, and delamanid in the 4th quarter of 2017. Increasing numbers of patients have been treated with injectable-containing short MDR-TB regimens and bedaquiline. The proportion of MDR/RR-TB patients treated successfully was about 50% in the 2013-2016 cohort, but decreased to 41% in the 2017 cohort, due to a substantial proportion of loss to follow-up and death. The proportion of loss-to-follow-up remained substantial at 24% even in patients treated with the short MDR-TB regimen, while it was 26% for patients on the longer duration regimen.

Challenges

Under-detection of MDR/RR-TB

The estimated annual number of MDR/RR-TB patients was 24,000 (17,000 – 32,000) in 2018, the number of MDR/RR-TB cases detected (9,799) accounts for 41% of the estimated burden.

Low proportion of MDR/RR-TB cases enrolled on treatment

1. There might have double counting of RR-TB cases (about 6% according to a previous assessment by Challenge TB).
2. Previous investigation showed that reasons for non-enrolment included death before treatment (16%), refusal of treatment (16%), denial of the diagnosis of MDR/RR-TB(8%), socio-economic issues (no family support, distances, work, 5%) and unknown (29% not yet traced and 12% invalid address).
3. Initiation of treatment was considerably delayed due to a long duration of pre-treatment baseline assessment (>2 weeks).
4. Pre-treatment counselling may not be available or inadequate, failing to encourage patients to be enrolled on treatment.
5. There have been barriers (especially financial and transportation) for MDR/RR-TB patients to access care. Patients who knew results of GeneXpert may not be able to travel to treatment centers for enrolment.

6. Patients without insurance may not be able to afford pre-treatment baseline assessment.
7. Patients with RR-TB detected by GeneXpert may not have been informed of testing results.
8. The number of facilities with the capacity to initiate treatment of MDR/RR-TB is relatively small and management of MDR/RR-TB has been too centralized to ensure access to treatment.
9. There has been regulation of those qualified to manage MDR/RR-TB, restricting initiation of treatment to clinicians specialized in internal medicine and chest medicine, making it harder to increase the number of treatment centers.
10. Some patients had repeat GeneXpert test because the first test reported “*M tuberculosis* detected - very low”; this practice may not be consistent with national guidelines of Indonesia .

Long interval between detection and treatment

Field visit observations found that the interval between detection of MDR/RR-TB and enrolment on treatment could be long (>2 months).

Second line DST

We observed a lack of susceptibility testing for fluoroquinolones in a substantial proportion of the MDR/RR-TB cases enrolled on treatment. In patients who did have DST for fluoroquinolone, the turnaround time was relatively long (weeks to months).

Unsatisfactory outcome of MDR/RR-TB

1. A high proportion of loss-to-follow-up and death.
2. Patients have to travel to treatment centers, or a treatment site, on a daily basis, which creates major barriers for patients, and reduces adherence to treatment.
3. Decentralization of treatment to the community would bring treatment services closer to patients, but a community-based supportive model of care of MDR/RR-TB has not yet been established.
4. Human resources for the management of MDR/RR-TB were insufficient; some PMDT treatment centers were over-burdened, contributing to unsatisfactory performance.
5. Management of adverse reaction was inadequate, and technical support on clinical management was rarely provided to PMDT treatment sites.
6. The social and financial support provided to MDR/RR-TB patient was insufficient to overcome the barriers to access treatment.

Recommendations

1. To strengthen detection of MDR/RR-TB, the NTP should expand the use of GeneXpert as the front line test for all presumptive TB cases, especially at health facilities with GeneXpert; establish sputum transportation mechanism to all districts; in districts where sputum transportation has been established, the constraints of sputum transportation need to be identified and addressed.
2. To reduce the gap between detection and enrolment of MDR/RR-TB, the NTP should:
 - a. Engage clinicians to promptly initiate MDR/RR-TB treatment and quickly obtain results of baseline assessments including blood test, ECG, and audiometry, as well as avoid multiple visits of patients before treatment initiation.
 - b. Expand availability of the injection-free regimen. This requires expansion of availability of DST of fluoroquinolone before the use of all-oral regimens, otherwise the risk of acquired bedaquiline resistance will be substantial in patients with fluoroquinolone resistance that is not detected.
 - c. Strengthen pre-treatment counselling through training and supportive supervision, focusing on positive aspects of treatment in order to encourage treatment uptake.

- d. Remove the social and financial barriers (including income loss) for patients to access treatment by mobilizing additional funding from provincial and city/district governments.
 - e. Strengthen the linkage between GeneXpert sites and DOTS/DR-TB units at hospitals and Puskesmas, including implementation of GeneXpert connectivity applications (see Section 2.3), to ensure that health workers are informed of results of lab tests in time; record patients' phone and address upon GeneXpert testing to ensure that all patients will be swiftly informed of results.
 - f. Establish additional PMDT treatment centers (up to 360 according to plan) to bring treatment initiation closer to patients.
 - g. Obtain support of the DG of Medical Services and professional associations to remove restrictions on the qualification of clinicians in the treatment of MDR-TB, so that increased numbers of facilities will be able to initiate MDR-TB treatment.
 - h. Conduct training on interpretation of GeneXpert results - GeneXpert *M tuberculosis* detected, very low, may not need confirmation, unless it is among low risk group of RR-TB.
 - i. Conduct cohort review of GeneXpert *M tuberculosis* rifampicin resistance detected to monitor loss of patients at each step from diagnosis to treatment.
 - j. Enrol additional number of case managers for the management of MDR/RR-TB at treatment centers.
 - k. Develop "advocacy communication social mobilization (information education communication)" materials for strengthening patient education and increasing patients' motivation for treatment
 - l. Address all root causes analysis included in the acceleration plan for PMDT.
 - m. Regarding the TB NSP 2020-2024, activities to prevent initial loss-to-follow-up of MDR/RR-TB and to ensure enrolment of MDR/RR-TB cases on treatment (as above a.-l.) should be added under Intervention 2.2. Optimizing the prevention, diagnosis, and treatment of drug-resistant TB.
3. Strengthen the sputum transportation system (as well as expanding LPA capacity, addressed in section 2.3) to ensure that susceptibility testing of fluoroquinolone by second line LPA will be done in a timely manner. Culture and conventional DST should also be performed in case LPA fails to give results, especially in patients with negative sputum smear.
 4. Whenever bedaquiline is used, the NTP should recommend a regimen that could cover fluoroquinolone-resistant MDR-TB before obtaining the results of DST of fluoroquinolone, because the use of bedaquiline-containing all oral regimens in patients with undetected fluoroquinolone resistance risks acquisition of bedaquiline resistance.
 5. To improve the outcome of MDR/RR-TB, the NTP should:
 - a. Strengthen the capacity of treatment sites for early decentralization of treatment;
 - b. Strengthen education of health workers and incentivize the willingness of health care workers in taking care of MDR/RR-TB;
 - c. Establish provincial consilia for mentoring clinical management of MDR/RR-TB at treatment sites and in the community, under the guidance and support of the national consilium;
 - d. Enhance the capacity of health workers in clinical management of MDR-TB treatment by regular, on-site supervisory visits and off site consultation by provincial consilium; consider developing a catchment area for each treatment center and assign a supervisory role for the treatment center (rather than treatment service alone);
 - e. Strengthen the capacity of City Health Officer/PHO in PMDT supervision;

- f. Reduce the financial barriers for RR-TB patients in going to treatment sites before decentralization of treatment to community level;
- g. Engage civil society organizations and establish patient support groups to establish community-based, patient centered care;
- h. Strengthen management of adverse reactions at treatment centers, treatment sites and also in the community, through training, on site supportive visit, and on-line consultation.

2.9 TB/HIV

Findings

The HIV epidemic is largely concentrated in key populations, although a low-level epidemic exists in some provinces and a generalized epidemic in two others (Papua and West Papua). According to UNAIDS, in 2018, 640,000 people were living with HIV. HIV prevalence among adults (15–49 years) countrywide was 0.4%, but the number of AIDS-related deaths has increased by 60% since 2010, from 24,000 to 38,000 deaths. However, the number of new HIV infections has decreased from 63,000 to 46,000 in the same period.

HIV infection increases the risk of TB disease; therefore TB incidence rises with high HIV prevalence, and HIV prevalence among TB patients is higher than in the general population. TB is still the most common opportunistic infection among AIDS cases reported in Indonesia.

A TB-HIV survey in Indonesia, with stratification of regions based on HIV and TB prevalence, estimated that HIV prevalence among adult TB patients is 2.4% (95% CI: 1.2-4.5%)⁵⁶, about 6 times higher than the HIV prevalence among adults in the general population. Programmatic data of the MOH indicated that in 2019, about 82% of PLHIV were screened for TB, (100% is the target), this performance improved between 2015 (68%) and 2017 (81%) and has been stagnating since 2017. Only 52% of TB patients in 2019 knew their status.

There is persistent very low coverage of preventive treatment among eligible PLHIV; only 12% in 2019 (Figure 25). Furthermore, only 28% of TB/HIV co-infected patients were provided with life-saving ART in 2019. The coverage of co-trimoxazole preventive therapy (CPT) has been fluctuating since 2015. In 2019, only 39% of HIV-associated TB cases received it.

In 2017, both the HIV review team and the TB JEMM strongly recommended rapidly scaling up the TB/HIV response in Indonesia and recommended reaching more than 85% of the burden of HIV and HIV-associated TB in Indonesia through focusing on 141 high HIV burden districts identified through a prioritization exercise by the two national programmes. The country responded with the development of a TB/HIV acceleration plan and obtained funding from the Global Fund and the GOI to implement it. However, there seems to be little progress made in altering the course of TB/HIV in the country judging by the programme performance, with less than 50% of the eligible TB HIV patients receiving ART (41%) and only about 12.4% of the eligible new PLHIV received TB preventive therapy in 2019.

At the policy level, the programmatic implementation of the TB/HIV activities was strengthened by MOH Regulation #21/2013 which promotes HIV testing among TB patients and provision of ART to TB patients living with HIV, regardless of their CD4 level. In addition, there are existing policies and guidelines of the MOH, a National Roadmap for TB/HIV implementation and TB/HIV acceleration plan

⁵⁶ Kementerian Kesehatan Republik Indonesia, 2017. Laporan Hasil Survei Penguatan Kolaborasi TB-HIV di Indonesia 2017

(2018-2020) was developed in response to the recommendations of the 2017 JEMM. There have been many trainings for health facilities to scale up TB/HIV related services covering all provinces. A key strategic objective of National TB Control Strategic Plan 2015–2019 is to improve coordination between NTP and NAP, across programmes and sectors, to reduce TB/HIV burden in the community. However, the JEMM found that this coordination is weak and not functional at lower levels and it does not seem that the policies and trainings had been translated to significantly better performance of implementation of TB/HIV activities.

Challenges

The JEMM observed the rising trend of TB/HIV co-infected (Figure 15), and the persistently low performance of key TB/HIV indicators as indicated above.

This program performance, coupled with the strong stigma against HIV and TB in the country fuel the drivers of concentrated HIV epidemic (Key Population) and, the non-integration of TB and HIV services and concluded that the country is not yet winning the fight against the dual epidemic. A lot of prioritization and recommitment will have to be done if the tide is to be reversed. TB JEMM and HIV external review, which took place simultaneously, made the following observations:

There is an existing National TB/HIV working group/forum that provides technical support at the national level. However, the working group is not being optimized to identify key bottlenecks at the facility/community level. The meetings are not functioning consistently and efficiently at the provincial and district level and as identified in the 2017 JEMM and HIV review there is still lack of systematic monitoring of such meetings at the provincial and district levels by the NTP and NAP. The persistently low INH coverage, low HIV testing rate among TB patients and low uptake of ART by co-infected patients are clear evidence of the functionality of the working group. In addition, some clinicians still resist initiating ART for TB patients and reluctance to offer INH to eligible patients, as well as the reported low level of offering PITC services

HIV testing services

TB treatment sites often refer patients for HIV testing: the risk is that the referred TB patient will either not arrive at the referral center or not return, especially if the test is positive, because of the stigma attached. Hence, the system is opened to the risk of low HIV testing among TB patients.

Provider initiated HIV testing and counselling (PITC) was adopted as a national strategy for TB patient since 2013 (Minister Decree no.21/2013). However, HIV testing has not been consistently offered to TB patients due to high levels of stigma associated with HIV, TB patients sometimes become violent and cases of intimidation of healthcare workers for offering HIV testing service to TB patients were also reported. Usually, voluntary counselling and testing is practiced instead of PITC and this is a barrier for high uptake of HIV testing in TB patients.

Contributing to the low uptake of HIV testing is the quality and skill set of the frontline healthcare worker at the DOT center in providing counselling services. The JEMM observed that the high refusal to test rate registered at the facility level could be addressed by paying attention to improving skills in mitigating stigma and the quality of the approach in offering the HIV tests. Furthermore, HIV tests are not offered free of cost at all sites particularly if the patient does not belong to the Puskesmas area or lacks insurance cover. Clients often prefer seeking HIV testing at the puskesmas where they are not known and often far from their catchment clinic. Not offering a free service will further contribute to people not knowing their status and fuel stigma. HIV testing should be available free of charge at every facility.

Linkage to ART

Since the last review in 2017, the number of ART initiation sites and satellites has increased and the percentage of TB/HIV patients that received ART increased from 29% (2017) to 41% (2019), this is a marked increase supported by the test and treat policy adopted by Indonesia as well. However, ART coverage remains very low particularly among the HIV positive TB patients. A challenge is that TB/HIV co-infected patients must be referred to ART initiation sites that is often far from their homes and catchment Puskesmas to start ART. While it is not feasible and not efficient for all TB sites to be ART initiation sites, it is however imperative that a functional linkage and referral system be established and monitored to ensure that TB patients that require life-saving ART get it without delay.

Intensified TB case finding and TB prevention at HIV care sites

The proportion of PLHIV screened for TB (82%) remains stagnant and below the 100% target over the last three years. In line with the policy, TB screening should be done for all PLHIV as an entry point for TB/HIV care. The screening algorithm is not consistent with many implementers still using cough of more than 2 weeks instead of cough for any duration. PLHIV do not receive GeneXpert MTB/RIF as the first test for diagnosis of TB although it is recommended by the national guidelines. Some service providers offer the test only to those they perceived as “high risk”.

Over 88% of those in need of preventive therapy were not on it. Many physicians were not comfortable with prescribing INH, hence, denying the PLHIV their right to be offered proven TB preventive therapy. The same observation was made in 2017 and was thought due to a fear of emergence of drug resistance. This should be noted as abuse of human rights, and addressed by the MOH TB and HIV programmes as a matter of urgency.

Other key observations

TB/HIV data is not routinely analyzed and there is no cross linkage or validation done to ascertain and improve programme performance. There is no forum for periodic data review meetings within districts to compare TB and ART treatment sites’ data to improve programme performance. Facilities generally do not review their monthly data to inform implementation, hence gaps that could have been identified and corrected at the facility level persist and are only picked up at higher levels. There is little capacity of the TB focal persons at the Puskesmas to analyse and interpret the data.

The observation was made in 2017 that BPJS covers only 1 consultation per month for chronic conditions, including TB/HIV. This persists and discourages provision of quality TB/HIV services. Co-infected patients are prone to have cause to visit facilities more than once in a month. There should be a review of this systemic bottleneck.

Implementation of infection prevention and control practices are variably implemented at different facilities. Some healthcare workers use surgical masks instead of an N95 mask. Staff indicated that N95 was meant for DR-TB and other areas where there is perception of higher risk. Cough triage is not appropriately and consistently done and. Of further concern is the lack of systematic surveillance of TB among healthcare workers while there seems to be high transmission at some health facilities: one facility had two lab officers with TB in the previous year.

Recommendations

1. The NTP and NAP should identify the factors that currently impede the full functionality of the TB/HIV forum/technical working group at the national level, and collaborative mechanisms at the provincial and district levels.
 - a. The scope of collaborative TB/HIV work should be clarified at the lower level to include coordination of linkages and supportive supervision where appropriate;
 - b. Data review should be regularly carried out to monitor programme performance;
 - c. This strengthening should be phased in, starting with the priority TB/HIV districts;
 - d. Address the bottleneck in INH and ARV coverage implementation as a matter of national priority and urgency.

2. The Provinces should establish a district forum to address data quality, referrals and linkages:
 - a. The district should lead the implementation of data quality assessment to identify and address data management issues that impede achievement of targets;
 - b. Provinces and districts should hold regular coordination meeting to:
 - Ensure implementation of referral/arrival follow up;
 - Data validation and cross matching TB and HIV data;
 - c. Engage pharmacists to ensure uninterrupted availability of HIV rapid tests, isoniazid, co-trimoxazole;
 - d. Streamline the flow of information on HIV status from the HIV testing to the treatment sites.

3. The NTP and NAP should facilitate the use of cascade analysis from both HIV and TB entry points to identify gaps and inform interventions:
 - a. National, province and partners as part of the capacity assessment should ensure all DOTS centers and ARV sites in the priority TB/HIV districts masters the use of cascade analysis for TB/HIV programme. They should be trained and mentored on this to facilitate improved data quality and use at all levels.
 - b. Cascade analysis should be used to identify facility performance and should be routinely used, develop an electronic form that will give quick access to the performance of the sites
 - c. The use of TB/HIV Dashboards should be introduced to rapidly identify the weakest facilities for intervention priorities
 - The dashboard should have the low performing indicators as the focus for the initial period:
 - i. Percentage of new PLHIV received IPT
 - ii. Percentage of TB patient known their HIV Status
 - Percentage of TB HIV patients received ART

NAP with the support of the NTP should expand HIV testing services to all facilities saturating the priority high burden districts first. They should ensure the full package of HIV testing services by building the capacity of healthcare workers at facility level, focusing on stigma mitigation strategies, and improving the quality of counselling.

4. NAP and NTP should facilitate the use of GeneXpert MTB/Rif as the first test for TB diagnosis in PLHIV and continue to improve access and utilization.

5. The NAP and NTP and Provinces should improve infection prevention and control practices, and:
 - a. Establish a systematic surveillance of TB among healthcare workers;
 - b. Carry out airborne infection control risk assessment and ensure implementation of IC plans;
 - c. Rapidly communicate the guidelines on the correct use of N95 and surgical masks.

6. Engage TB/HIV stakeholders in addressing the above key recommendations and leverage on existing resources where available
 - a. Revise the TB/HIV acceleration plan to include these new recommendations as necessary;
 - b. Consider adding some of these recommendations into GF proposal.

2.10 Barriers to Universal Access: Communities, Rights, and Gender

Findings

Communities, rights and gender (CRG) aims to strengthen national TB responses by focusing on identifying and overcoming the social, legal, and economic barriers to universal TB access. A CRG Assessment has been undertaken in Indonesia, providing insights into some of the barriers experienced and observed during the JMM.

The importance of a TB response that is rights-based, people centered and gender sensitive was emphasized in the UNHLM TB Political Declaration. The targets and commitments in the Political Declaration include:

- Management of side effects, and care, as well as psychosocial, nutritional and socioeconomic support (P14);
- Involvement of communities, civil society and other groups including women, prisoners, people living with HIV, people who inject drugs, urban and rural poor, ethnic minorities among others (P17);
- Recognize various socio-cultural barriers and the need to develop integrated, people centered, community-based and gender sensitive health services based on human rights (P18);
- Promoting access to affordable medicines (P19);
- Enacting measures to prevent tuberculosis transmission in workplaces, schools, transportation systems, vehicles, prisons (P25);
- Supporting an end to stigma and all forms of discrimination, including by removing discriminatory laws, policies and programmes (P37);
- Providing special attention to the poor, children and the elderly in accordance with the principle of social inclusion (P38);
- Develop national tuberculosis strategic plans to include all necessary measures in the Political Declaration (P48).

It is critical that the new Indonesian national strategic plan responds to both the UNHLM commitments above and the challenges from the JEMM.

Challenges

In many regions of Indonesia, civil society organizations are participating in the TB response, including in hospitals, puskesmas and undertaking outreach at village level. There is a willingness of government partners at both the district and the national levels to partner and engage with civil society. With support of the Global Fund, LKNU and Aisyiyah are currently active in 191 out of 514 districts. With the conclusion of Challenge TB, the level of civil society led activities has been reduced.

Networks of TB survivors are active at the national level, and in several provinces as well. There is a need to significantly scale-up their access to resources and their organizational and institutional systems and technical capacity. Community-led monitoring and advocacy for demand generation of new drugs including TB preventive therapy (TPT) and diagnostics are limited, with most civil society actors primarily engaged in service delivery.

While patient-centered treatment delivery is being implemented through facility DOTS and community DOTS, prohibitive incidental costs and the lack of formalized counselling and peer support remain a significant gap. The enabler payment for DRTB patients also remains a challenge to access (due to delays with data entry into eTB Manager). TB stigma in communities, workplaces and health facilities, with widespread reports of people losing their employment and/or personal relationships, mean that challenges remain that impede timely diagnosis and treatment completion. Addressing these issues in the context of a consolidated PMDT would be appropriate, while also ensuring these socio/economic issues are not forgotten for DS TB as well.

The JEMM observed that key and vulnerable populations with TB can access services, but this could be further strengthened. The engagement of the midwife network was one particularly promising example of gender-sensitive programming, although additional attention could be given to gender sensitive programming. Partnerships with Islamic boarding schools offer a significant opportunity for broader engagement and awareness raising, as well as screening (see 2.2). Scaling-up tailored programming to the needs of urban poor, prisoners, PLHIV, people on remote islands and the elderly will be important in order to find and treat all people who need it. Frequency of screening in prisons and opening hours to services for urban poor could both be extended and expanded.

A national TB communication strategy^[31] has been developed as has an innovative phone application *Dering*, piloted in Bogor, to help support patients who are completing their treatment. Given widespread misinformation on 'alternative' TB remedies, the implementation of a communications strategy must be multi-sectoral as well as culturally and linguistically appropriate (noting the 724 distinct languages and dialects). It should be paired with stigma reduction interventions, widespread treatment literacy efforts for patients and TB survivors and framed around demand generation for highest quality prevention and treatment drugs and diagnostics.

CRG Recommendations to ensure a strong National Strategic Plan

1. The NTP and the NSP writing team, together with TB survivor networks and civil society, should ensure the following are featured in the NSP:
 - a) **UNHLM targets and commitments** (listed above). Noting these commitments to include TB affected community mobilization and engagement, participation of TB survivors, overcoming social, legal and socio-economic barriers to accessing services and stigma, both **Strategy 5** of the NSP and the 'gap and root cause analysis' sections of NSP must prioritize these issues;
 - b) a significant **scale-up of civil society advocacy and peer support interventions** from the current level of only 191 out of 514 districts. This should include increased support to enhance the coordination role of the national level TB Survivor networks. Funding, in part should be explored from Swakelola Type III – a new form of funding for CSOs via a social contracting regulation from MoH/LKPP (No 8 2018). Under this scheme, CSOs/NGOs become a formal partner with the Gol in the implementation of programs at all levels (national down to the district);
 - c) the inclusion of further key population data in the NSP (including urban poor and prisoners) and to further consider how best to enhance interventions for **TB key and vulnerable populations** including:
 - i. Increasing the frequency of screening and testing in **prisons** and detention settings,
 - ii. developing an engagement plan on how to reach **elderly** populations,
 - iii. enhancing flexibility of services for **urban poor** to ensure hours of operation that complement working hours of clients,
 - iv. ensuring **health workers** who *may* interact with people who have yet to be diagnosed DR TB have adequate protection – including N95 masks;

- v. to scale up screening, peer support and TB preventive treatment among **PLHIV** by utilizing existing PLHIV networks and organizations, and
 - vi. to scale up projects/organizations already demonstrating impact in reaching, screening and engaging **isolated island** communities.
2. TB survivor networks, with support from NTP, should conduct a **Stigma Measurement Assessment**, subsequently develop a stigma and discrimination elimination plan and conduct stigma reduction interventions as a priority.
 3. The NTP, together with District Health Officers, should scale up access to quality and comprehensive **peer support and counselling**, including training cadres of TB survivor-led counsellors, as soon as possible with the aim of TB survivor peer supporters and counsellors in all provinces where there is active TB civil society. The NTP, together with TB and HIV community counsellors should provide training to all TB survivor peer supporters in counselling and patient support and integrated into broader PMDT interventions.
 4. CSOs and TB survivor networks, with the support of the NTP, should engage **legal aid** providers at the national and provincial level 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 and 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 should be undertaken by civil society, the NTP and legal aid service providers.
 5. The NTP should work with civil society to map **capacity needs** of TB survivor networks and organizations nationally and at district level and develop a plan for **community systems strengthening** for networks of TB survivors. Capacity mapping should include organizational strategy, governance arrangements, finance, M&E, as well as programmatic capacity needs including **advocacy, treatment literacy, community-led monitoring for demand generation**.
 6. The NTP, in partnership with TB CSOs and TB survivor networks, should increase the management capacity and technical skills of CSOs related to Swakelola Type III (**Social Contracting**) including improving competencies regarding budget management and sharpening sectoral expertise in fields that are competitive advantages of CSOs.
 7. The NTP, in partnership with civil society and the Ministries of Women Empowerment and Child Protection, as well legal experts, should try to 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, **undertake gender and human rights sensitization training**. This training must cover enabling legal environments, mental health, key populations, gender equality and the interaction between gender and accessing services. To complement this, partners involved in the training, should develop a comprehensive national TB Gender Responsive Framework.
 8. The NTP, in partnership with DHOs, should conduct a **training of data managers** on entry of patient data (into ETB for as long as it persists, or into SITB when it is implemented) to facilitate access to enabler payment. Explore options for domestic funds to expand enabler payments to TB/HIV patients and DS TB patients, and community-led monitoring to report delays in accessing the enabler payments.
 9. The NTP should seek an **external, expert review of the communications strategy**, which includes further analysis of messaging, reach and mediums, while also ensuring the strategy is multi-sectoral, that it is culturally appropriate and inclusive in terms of as many spoken languages as possible, that it focuses on stigma reduction, that it is accompanied by a clear plan for implementation, and that the plan is implemented at national provincial and local levels.

10. Civil Society and TB survivor networks should be supported by the NTP to conduct an information and advocacy campaign to fast track access to **TB preventive treatment and new oral DR-TB regimens** which focuses on reducing incidence of TB, and adverse effects incurred from injectables – including among key and vulnerable populations. The NTP should develop **indicators for M&E** to include TB affected community role and interventions – particularly on the level of affected community and civil society engagement, peer support and stigma reduction campaigns.
11. The NTP should work with MOH on the **'Burung' mobile phone application** to incorporate a patient feedback mechanism and monitoring on stigma, drug access, adverse effects and other patient challenges into the application. This can be incorporated into a broader community-led monitoring framework.

2.11 Research and Innovation

Findings

Research is critical for providing to Programs scientific evidence for tools and strategies to improve TB detection and treatment. The Indonesian NTP has made some notable achievements since the last JEMM in the area of *Research and Innovation*. Since 2017, the TB Research Network (JETSET) was established with activities supported through the Global Fund. The mission for JETSET is to promote, map, prioritize, and synergize TB research efforts among the Ministry of Health, the NTP, academic and research institutions, and medical practitioners. JETSET also serves as a platform to discuss research findings to inform policy. The group convenes during the *INA Time Conference*, the annual Indonesia scientific meeting that allows for the sharing of research findings through symposia, workshops, and poster sessions.

Additional national level research accomplishments for Indonesia include the TB inventory study (2017) and the first ever nationwide drug-resistant TB survey (2018). Results from both of these have contributed to a better understanding of the TB situation in the country. A whole genome sequencing study is currently being conducted by the National Institute for Health Research and Development (NIHRD, MOH) based on the drug-resistance survey and the NTP is organizing a TB patient cost survey, which is planned to start in the first quarter of 2020. Additionally, a health care worker knowledge, attitudes, and practices survey and an implementation study on DPPM is planned. WHO will be conducting a mission to Indonesia in 2020 to further assess the status of research as part of implementation of a global TB research strategy.

In terms of innovations, Indonesia has had some significant accomplishments since the last JEMM. *SITB*, has been developed as a replacement for the *SITT* surveillance system and will be fully implemented in 2020. *SITB* allows for the integration of DS and DR TB recording and reporting, lab, and case management and is accompanied with the following inter-operable apps that are designed to improve case notification and patient management

- *WifiTB* – private notification app
- *SITRUS* – sputum transport tracker app
- *ENAM* – patient treatment support (enabler disbursement) app
- *EMPATI* – MDR case management app
- *SOBATB* – community engagement app

Other activities and innovative demonstration projects that are currently occurring in the country include the piloting of a locally developed digital adherence treatment app, *Dering*, in Bogor by the Ministry of Health and a few active case finding demonstration projects that are being conducted

throughout the country by different partners. Examples include: cadres used for door to door TB/Malaria screening; screenings at clinics, prisons, Islamic Boarding Schools; and three TB REACH funded projects: community mobilization on Nias Island; Zero TB Cities, Yogyakarta using mobile vans and offering preventive treatment, and mobile TB factory screening in Jakarta. Results from these projects can help inform the NTP on appropriate case-finding strategies for different settings.

Although the NTP has made progress in the area of *Research and Innovation* since the last JEMM some challenges remain.

Challenges

- The TB research budget from the Ministry of Health is limited;
- The NTP does not have oversight for the determination of TB research priorities, this comes from NIHRD, MOH;
- JETSET lacks structure and an umbrella organization that is responsible for supporting the network and determining its activities. Currently two options are being discussed 1) JETSET becomes fully independent or (2) JETSET is mostly independent, but has some support and oversight provided by the TB Sub-Directorate;
- JETSET lacks a means for communicating and reporting upon its activities; currently the website is not functioning;
- There is no formal research dissemination strategy at the programme level (e.g. evaluation and piloting studies are not routinely published/disseminated);
- At the provincial/district/ facility level the capacity to conduct research and data analysis is minimal; in many districts the provision of basic TB services is not being met and needs to be the priority;
- Training opportunities for improving research skills are limited;
- Network issues and computer access limitations across the region may hinder the use of digital innovations;
- Implementation and use of innovative digital apps, such as *Wifi*, has been suboptimal resulting in low-uptake.

Recommendations

1. The NTP should have oversight for establishing national TB research priorities and a mechanism for the translation of research results into practice. For information on developing a national research plan, refer to the WHO resource, *A Toolkit for Developing A National TB Research Plan*: www.who.int/tb/publications/TB_research_toolkit/en/
2. JETSET should have a clear organizational structure and communication platform to disseminate information about research activities and findings;
3. The NTP should link to other presidential high-level research priorities to leverage resources and should engage with multidisciplinary stakeholders, Ristek, and international research agencies for additional support;
4. The NTP should ensure that there is dedicated staff and budget for operational research (OR) - the Global Fund can support OR activities;
5. The NTP should strengthen capacity by offering OR training opportunities for all levels; starting at the national and district level
6. OR should be used to identify approaches that can improve case detection and treatment outcomes.
7. When implementing a treatment regimen or diagnostic test new to Indonesia, the NTP should take into consideration results from existing research on the efficacy and safety of these tools; additional studies may not need to be conducted to replicate results, instead the OR should focus on how best to implement these new tools within the Indonesian context;

8. At Provincial/District levels, programs should link with academic institutions for research support;
9. Pilot/demonstration projects should be evaluated to assess impact and the results should be used to inform policy and translated into practice; recognizing that proven interventions may still need to be tailored to different settings and contexts within the country;
10. To improve the dissemination of innovations, the NTP should consider using implementation frameworks that allow for understanding the barriers and facilitators for the uptake of the new interventions, and methods to address those barriers;
11. The NTP should consider conducting OR for the following topics to improve TB case detection and treatment as identified through the JEMM:
 - a. Assessing barriers to access TB services for men, elderly, uninsured (near poor), and other key populations;
 - b. Evaluating different screening algorithms and contact investigation methodologies to determine optimal approaches to find persons with TB;
 - c. Determining optimal methods to engage private sector TB;
 - d. Assessing and implementing new diagnostic tools to improve detection of TB: stool in children, LAM for PLHIV, and new skin tests and IGRAs for infection;
 - e. Using digital x-ray, mobile vans or handheld cameras, and artificial intelligence software for case finding in the community and settings such as prisons;
 - f. Determining reasons for low treatment initiation and LTFU, adverse events management for MDR-TB;
 - g. Pilot use of additional digital adherence technologies for treatment support;
 - h. Identifying barriers and facilitators for TB prevention treatment uptake for both providers and community.

2.12 Logistics and Supply Chain Management

Findings

The Indonesia supply chain system is managed by the MOH Directorate General of Pharmaceuticals and Medical Devices (Farmalkes) which supplies medicines to 34 provincial installations which in turn supply 514 districts, which serve a total of 24,223 health facilities countrywide.

The TB supply chain system is separate for FLDs and SLDs. FLDs are supplied from Farmalkes Warehouse to the provinces which then service the district warehouses. Hospitals and Puskesmas are then supplied from the district warehouses. Currently there are 11,678 total facilities for drug sensitive TB which comprise 1,831 public and private hospitals, 9,656 Puskesmas and 191 others e.g. prisons and private clinics.

SLDs are managed from a MOH central warehouse to provincial installations which in turn supply PMDT hospitals, though a quarterly ordering and reporting cycle. The PMDT hospitals decentralize patient care to satellite facilities, mainly Puskesmas. At the time of the JEMM, there were 360 PMDT hospitals and 2,304 DR TB satellite facilities.

The logistics team within NTP is responsible for coordination of supply chain activities in the country. For SLDs, the team works closely with the PMDT team to undertake national quantification and coordinate procurement. For FLDs, the districts and provinces are responsible for generating their own annual commodity forecasts based on previous consumptions and patient targets. The districts forecasts are collated into province plans which are then put together to generate national requirements. NTP then coordinates with Farmalkes for procurement. At subnational level the Wasors coordinate supply chain activities within provinces and districts in close coordination with the logistics staff

The government supports procurement of FLDs and some SLDs while most SLDs are procured through GF support. The government also supports procurement of the bulk of diagnostics especially the GeneXpert Cartridges. Government procurement of TB medicines and diagnostics is mainly handled by Farmalkes and is through competitive bidding. It is a requirement that products to be procured using government funding should be registered with BPOM Indonesia and must also be listed in the government e-catalogue.

The previous JEMM was conducted in 2017. Among the key recommendations were; implementation of daily dosing for Cat1 patients, controlling the sale of loose single formulations of TB medicines, capacity building of PSM team and institutionalization of QuanTB as quantification and EWS tool. The JEMM also recommended strengthening of quality assurance and control as well as the need to make the distribution system more responsive.

The JEMM observed:

- The NTP has already initiated plans to implement daily dosing for Cat 1 patients. Procurement of daily dosing patient kits for the initial 20% of patients has been initiated. The coverage will then be scaled up to 50% in 2022 and 100% in 2023.
- Transition to the new WHO guidelines for DR TB is on course: the clinical expert team including TB Wasors and PMDT technical officers has already been oriented on the new regimens. Procurement of medicines has also been initiated. The new regimens will be implemented from May 2019 and will see complete phase out of injectable based regimens by August 2020;
- Phase out of Cat 2 is being implemented. Patients will instead be placed on appropriate regimens based on DST results.
- There was notable improvement in time taken to process pre-shipment tax exemption and custom clearance for medicines imported in country, however there is need to further address the delay;
- The NTP is already using the QuanTB tool for quantification of SLDs and to generate early warning reports. The tool is however yet to be used on FLDs. Five staff from the PSM team have been trained on QuanTB however only one staff can independently use the tool;
- Good collaboration exists between BPOM and NTP. BPOM has facilitated fast track registration of medicines as needed by the NTP such as bedaquiline, delamanid and rifapentine, and is committed to fast track registration for new drugs/patient kits. Import permits can be processed within one day when all the required documentation is available
- The NTP has established a national logistics workshop bringing together provincial TB Warsors, pharmacists and NTP staff. The workshop focuses on planning for FLD and SLD stocks and other updates from the program. Plans are under way to hold the workshop twice per year and eventually make it quarterly;
- A logistics management information system has already been included in SITB which is planned to be rolled out from May 2020. Commodity information managed through the eTB Manger and SITT will be transitioned into SITB;
- The provinces have adequate distribution budget drawn from both APBD and central government (DAK/APBN);

- Good inventory management practices were observed at the provincial and district warehouses as well the hospitals visited. Stock cards in use were largely up-to-date. Good storage conditions were also observed with clean storage areas, temperature and humidity monitoring, shelving and use of pallets.

Challenges

- Delay in procurement of medicines for transition to new WHO regimens, bedaquiline was not yet registered in government e-catalogue;
- Local manufacturers were yet to apply for registration with BPOM for the daily dosing kits, raising concerns for possible delays in government procurement planned to be initiated in 2021;
- Implementation of the new shorter LTBI treatment regimens is being constrained by challenges with access to rifapentine, which is yet to be registered in the government e-catalogue. The cost of access in country is much higher compared to global prices offered by pooled procurement mechanisms such as StopTB/GDF;
- The eTB Manager was not updated at the provinces and the hospitals visited. The quality of data reported through this system which is used to inform national forecasting of SLDs is not reliable. We found it difficult to get stock data reports for cartridges from GeneXpert sites to the national level as most labs did not update stock data on eTB Manager;
- The current distribution system where provinces push FLDs to districts as the stocks are received from central level Farmalkes results in storage space constraints at the district warehouse and a risk of overstock and wastage through expiry;
- In most regions visited, erratic supply of Cat II medicines was observed. Low stock levels of SLD medicines mainly clofazimine, linezolid and delamanid were observed at provinces and health facilities, which was attributed to low stocks at the central warehouse.
- The field teams reported low uptake of isoniazid for IPT (both 100mg and 300mg). Some regions had stock outs of isoniazid while others reported that stocks were available. A few facilities were reported to have excess stocks and some expiries of both strengths of isoniazid;
- Single drug formulations were procured by hospitals and were being used to treat patients especially for patients seen outside DOTS clinics. This is despite huge stocks of Kombipak which contains loose single formulations being in most facilities;
- Ordering and reporting timelines for FLDs were not clearly defined or adhered to, some facilities placed orders when they ran out while others submitted regular reports to the district warehouse;
- District Hospitals and Puskesmas visited indicated they had not received logistics focused supportive supervision for several years

Recommendations

1. FAMALKES and NTP should fast track registration of bedaquiline, delamanid and rifapentine into the government e-catalogue to pave the way for timely procurement and phase-in of new WHO treatment regimens for DR TB and new 3HP (isoniazid and rifapentine) LTBI treatment regimens. In the meantime, the NTP should work with the Global Fund to ensure that procurement of bedaquiline is made in time for the transition planned to commence from May 2020;

2. The NTP and FAMALKES should work with the local manufacturers to expedite, without delay, registration of locally manufactured kits with BPOM and listing in the e-catalogue in order to accelerate implementation of daily dosing Cat 1 kits; the public health imperative is daily treatment for all without delay. Commercial concerns of the manufacturers should take second place.
3. The NTP and FAMALKES should restrict availability of single formulations to adverse reactions or where replacement of one of the FDC medicines is needed clinically;
4. The NTP should work with WHO and other stakeholders to ensure that complete phase out of Cat II regimen is implemented by end of 2020 as planned;
5. The NTP should continue to address the current delays in obtaining pre-shipment tax exemption and custom clearance for medicines imported in country. NTP should take advantage of the current President's prioritization of TB as a disease to engage high level MOH and relevant government institutions to permanently address recurrent delays in procurement and agitate for government to allow procurement from global pooled procurement mechanisms such as GDF, which will ease access to quality medicines at affordable cost;
6. The NTP should ensure that SITB, which provides for management of all commodities/logistics information in one module, is implemented as planned;
7. The NTP should work with provincial wasors and logistics teams to establish pull-based distribution of FLDs from province to the districts informed by stock status and patients' enrolment in order to prevent overstocks and address storage space constraints at the district warehouses;
8. The NTP Logistics team should provide clear guidance and SOPS on recording of daily dispensed medicines at health facilities, the minimum and maximum stock levels, as well as adhering to ordering and reporting timelines to at all levels.
9. The NTP Logistics team should provide technical support to the wasors and provincial logistics staff to regularly monitor their stock levels and ensure timely ordering, especially for SLDs;
10. The NTP Logistics team should provide training on TB logistics management for all levels and conduct regular logistics-focused supportive supervision so that commodity management standards are maintained.

2.13 Accountability and Multi-sectoral Collaboration for the End TB Response

Findings

This was a new area for assessment within the JEMM, following the political declaration of the UN High-Level Meeting on TB⁵⁷ to strengthen accountability mechanisms, "preferably under the direction of the Head of State or Government" (see paragraph 48, Ref. 61). Furthermore, the declaration called on WHO to ensure the implementation of a new Multi-sectoral Accountability Framework for TB⁵⁸ and to facilitate collaboration across Member States and all stakeholders.

⁵⁷ United Nations General Assembly resolution 73/3 (2018) The Political Declaration of the High Level Meeting of the General Assembly on the Fight against Tuberculosis. (http://www.un.org/en/ga/search/view_doc.asp?symbol=A/RES/73/3)

⁵⁸ World Health Organization, 2019. Multisectoral Accountability Framework to accelerate progress to end the tuberculosis epidemic. https://www.who.int/tb/WHO_Multisectoral_Framework_web.pdf?ua=1

As seen in the work preparing the Indonesian Presidential Initiative, and a possible Decree, it is evident that the leadership of Government is serious about pursuing actions with high-level oversight. There is interest from the Ministry of Health to pursue a full baseline assessment on multi-sectoral accountability at all levels as recommended in the WHO framework. WHO has offered further dedicated technical support to the Ministry of Health during 2020, but a full assessment was not possible within the context of the JEMM.

In the opening days of the Mission, the National TB Programme Manager introduced review members to representatives of several Ministries for some introduction to their linked work. This included the Ministries of Home Affairs and of Village Affairs. The four components of the accountability framework were used to explore this thematic area during the Review: (a) Commitments, (b) Actions, (c) Monitoring and reporting; and, (d) Review. Questions were provided to all field teams to explore a few related aspects during the field visits and the desk review of the six provinces from the 2017 mission.

The core team also used a draft checklist of key elements under each component of the WHO framework in consolidating findings from teams.

Accountability across government, sectors and diverse stakeholders in the End TB response is particularly challenging in Indonesia, given its geographical size, dispersion and diversity of population, federal structures, and local health, economic and development conditions. As noted elsewhere in this report, coherent national development policy and initiatives, such as JKN, and other social protection initiatives, can provide some leverage for improving accountability and reducing inequalities.

Commitments

- Indonesia's commitments under the UNHLM Political Declaration include reaffirmation of the SDG target of ending the TB epidemic by 2030, and the associated End TB Strategy, as well as targets for treatment of cases, preventive treatment, funding and research (see Sections 1.1 and 2.5).
- A 2019 SDG-related report by the Government of Indonesia estimated that US\$ 2.5 trillion a year is needed to meet all the SDGs in Indonesia⁵⁹, through domestic and external financing. The numbers are daunting. As noted throughout this report, in spite of progress in several areas since 2017, Indonesia is not yet on track on its TB commitments towards 2022 and 2030 targets. The Presidential Initiative is expected to include affirmation of the ambitious targets the Government is aspiring to towards ending TB and its aim for multi-sectoral collaboration.
- In countries such as India and the Philippines, Head of State decrees, personalized commitments and/or Parliamentary laws have made End TB commitments concrete and heightened focus on regular checks on accountability. Movement towards a Presidential decree in Indonesia is welcome. The potential for TB to be among the top priorities for health of the Government (alongside UHC, family and maternal/child health, stunting etc.) would be further recognition of heightened commitment.
- There is a TB indicator, the number of presumed cases identified, among the limited list of minimum services standards to be monitored nationwide by the Ministry of Home Affairs.

⁵⁹ Republic of Indonesia. {SDG Process} Voluntary National Review, 2019.

https://sustainabledevelopment.un.org/content/documents/2380320190708_Final_VNR_2019_Indonesia_Rev3.pdf Accessed 24th March 2020.

- The engagement of business leader, Mr Panigoro in chairing the Indonesian Stop TB Partnership, is another example of stakeholder commitment.
- Some provinces (e.g., S.W. Sulawesi, DKI Jakarta) have Governor-set TB regulations and/or Mayor/Head of District decrees that define roles and deliverables and appear to facilitate convening power, as noted during the desk reviews.
- Overall, translating national commitments to provincial and local government commitments and actions is the crux of the challenge in Indonesia; especially given financing and human resource capacity constraints and variations in sub-national priority-setting.

Actions

- Periodic National TB Strategic Plans (NSPs) for TB control are well established in Indonesia. A costed NSP 2020-2024 has been drafted. It aims to achieve universal access to good quality diagnosis and treatment, and a massive increase in TB prevention, including targets that are ambitious, though not all in line with aspirations for universal access to TB services by 2022.
- A recent workshop organized by the NTP and partners using the WHO people-centred framework approach to help inform the NSP, included brainstorming on the roles that need to be played by key ministries. This is a step towards specific agreements for collaboration. For some cross-sectoral efforts, such as TB screening in prisons, there is already collaboration across ministries but reporting and reviewing of results appears to be lacking.
- There is no formal mechanism for multi-sectoral collaboration yet, nor one public mechanism for civil society engagement. Global Fund financing is enabling a greater voice and engagement of NGOs and CSOs. Local examples of collaboration do exist, such as the establishment in 2019 of a West Java stakeholder team for TB elimination.
- National budget commitments for TB drugs and increases in recent years (see Sections 1.6 and 2.1), alongside ongoing global and bilateral support (including from The Global Fund and USAID) and dedicated work on TB within strategic purchasing and benefit packages of the JKN are important actions, though still far from sufficient to fill central and local finance gaps.

Monitoring & Reporting

- Monitoring and reporting mechanisms if operationalized properly (see last element of Section 1.7), could prove far more powerful for measuring accountability for TB progress. The Minimum Standards measure for TB is not easy to utilize as it is based on local incidence estimates; lack of full electronic reporting and data interpretation capacity hampers accountability, just as they inhibit quality of services and impact.
- The lack of a national TB report produced without delay in both Bahasa and English, restricts the effect of advocacy around good results, or stakeholder actions to overcome poor performance.

Review

- Truly systematic regular internal programmatic review of performance across TB services is lacking.

- Periodic Joint External Monitoring Missions with partners and independent experts are co-organized by the Government and results and recommendations do inform strategic planning and actions. However, there is not yet any formalized high-level review of TB performance within and beyond Government, either through health sector committee, dedicated commission or Congressional/parliamentary effort. The minimum standards review via Home Affairs is not likely to be sufficient.
- The field teams suggested that some Governors do review reporting on TB eg. Nusa Tenggara Timur, and E Kalimantan.

Recommendations

1. The NTP and its partners should:
 - a. urgently ensure that the Presidential Decree on TB and related derivative documents, including the National Strategic Plan, next budget submissions and Global Fund request are ambitious, rights-promoting, system-strengthening, operational, with measurable time-bound objectives, performance monitoring and high-level review. The documents should build on consultations held with civil society, affected people, and the full range of Government authorities, partners and stakeholders. These documents must represent a whole-of-government/whole-of-society approach and not just a national health programme approach.
 - b. ensure that regular collaboration mechanism(s) are set up to take forward implementation, with focus on civil society engagement and priority cross-ministerial engagement (eg those relationships which can reduce missed TB cases, and enhance social protection, stigma reduction and work security/lack of discrimination).
 - c. ensure enhanced reporting, not just monitoring of TB prevention and care interventions. Produce periodic TB reports with summaries for review, advocacy and public awareness purposes. Enable civil society auditing/reporting.
2. The MOH, working with the Presidential Initiative, should establish a high-level review mechanism convened by Government, aligned with, or within, existing mechanisms. It should draw in representatives of all key stakeholders, without which ownership will be limited. High-level leadership should ensure similar review mechanisms at provincial level, with special dedicated support for review efforts for low-resourced and heavier-burdened provinces. Independent partnership efforts are of great value, but cannot replace the Government's duty and its stewardship responsibility.
3. The MOH and NTP should explore how TB results and review recommendations can inform other key development reviews, including Indonesia reporting as part of the voluntary reviews of the UN High-Level Political Forum, or the Indonesian Poverty Reduction Acceleration Task Force, for example.

Annex 1 - Provincial reports

1. East Kalimantan

Introduction

A team of 11 national and international experts (see below) visited East Kalimantan Province, January 22 – 27th. The purpose of the JEMM was to review the performance of the NTP of Indonesia, determine the reasons for observed success or challenges, and make recommendations for progress towards TB elimination. The team met provincial and district health officials and representatives of Civil Society Organizations. They visited 13 health facilities in the public and primary sectors, at hospital and primary care levels, in Samarinda and Kutai Timur Districts. They visited a provincial level reference laboratory in Samarinda and interviewed 6 patients.

Findings

In spite of recent increases, the TB program is detecting only about 40% of estimated TB cases in the Province. It is assumed that many of the remaining 60% sought care in public or private facilities but were not diagnosed, or were diagnosed but not reported and supported for appropriate treatment.

Drug resistant TB is of particular concern. In 2019, the program only diagnosed 139 cases of drug-resistant TB, of these only 70 were registered, and only 35 initiated treatment. These unacceptably high losses from diagnosis to treatment initiation appear to result from bureaucratic delays, inadequate access to services, weaknesses in patient tracking, and poor counselling.

Diagnosis of pediatric TB is also of concern. In 2019, the program reported 721 cases for children (0-14 years). While these numbers suggest an improvement from previous years, many children are still being missed. GPs and Puskesmas staff reportedly lack confidence in obtaining sputum from children; based on a scoring card system, children with presumptive TB are referred to a pediatric specialist at the hospital, potentially resulting in a delay of diagnosis. Even at the hospital most children were clinically diagnosed, potentially resulting in overdiagnosis in some situations.

The program remains highly dependent on sputum microscopy for diagnosing TB. Whereas there are 206 sputum microscopy centres, only 16 facilities have GeneXpert molecular diagnostic machines. GeneXpert machines are underutilized, at only 14% of their capacity, due to access barriers. There are no systems to transport samples to GeneXpert sites. BPJS rules require that patients referred to hospitals for GeneXpert testing or chest x-ray see chest specialists rather than going directly to the lab. Those without BPJS cards are required to pay IDR 50,000 BPJS administration fee, even though hospitals are supposed to waive this fee because they are paid to administer the tests by the PHO.

Routine TB screening takes place in only 2 of the 11 jails and in none of the 5 prisons. Screening is based on symptoms and sputum microscopy—techniques that are known to miss many or most TB

infections. Digital chest x-ray and GeneXpert would be more appropriate screening technologies for this setting.

Coverage of TB preventive therapy (recommended by the NTP for child contacts of TB patients and PLHIV) is minimal, in part because the drugs are unavailable but also because clinicians are not trained or confident in this area.

There have been minimal efforts to engage the large private healthcare sector. TB notifications are recorded from only 1 of 1,482 Private GPs/clinics and 12 of 28 private hospitals. Although private notifications have increased they still represent only 16% of the total. There is no effort to engage private pharmacies or laboratories. The District PPM Model was supposedly launched in 8/10 districts in 2019, and KOPI branches have apparently been established, but these formal structures have not yet produced any effective activities. There is no staff person dedicated to PPM, in either the government or the professional associations.

The team found serious problems of data quality throughout its review. Within health facilities, data is inconsistent between laboratories, clinics and pharmacies, and staff are often using out-of-date forms; records are uploaded into SITT after months of delay; and data in the national SITT system was usually different from that found during the visits

Underlying challenges include a shortage of trained staff able to focus on TB. Less than half of public sector doctors and nurses have been trained in TB. Resources for supervision are scarce.

There is incomplete information on funding available for TB activities in the Province, since TB budgets and expenditures from District funds and BJPS are not reported. The budget available from Central and Regional Government and from the Global Fund was around IDR 3.5 billion per year 2016-2019, but has fallen to IDR 2.5 billion in 2020 as a result of reduction in resources from the Global Fund. The Province has relied on the Global Fund for up to 95% of its TB budget in recent years.

Recommendations

The team made a number of specific operational recommendations in each technical area. Following are the five main recommendations for consideration by Provincial and District authorities.

1. Capitalize on the Presidential TB Initiative to engage all Provincial and District leaders in oversight of TB elimination and increase Provincial and District budgets for TB

2. Increase GeneXpert utilization from 14% to 80% by implementing specimen transport systems and ensuring that referral hospitals respect MOU commitments to remove financial and bureaucratic barriers
3. Secure resources to add contracted officers assigned to TB PPM and hospital engagement in three urban districts
4. Extend active case finding to all prisons and jails, using more sensitive screening technologies (digital chest x-ray and GeneXpert)
5. Improve quality, consistency and timeliness of data through training and improved supervision.

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2. West Java

Introduction

Two teams of the Joint External Monitoring Mission for TB visited Bogor and Kota Bandung from 22-27th January.

Achievements in West Java

There is major provincial political commitment with increased APBD 1 funding in 2019 to IDR 1 billion (US\$ 73,000), although this will fall by 30% in 2020. There is clear improvement in performance since 2015, notably in case notification rate which increased from 49% to 76%, 2016-2019, with 97,390 cases notified in 2019 (about 184/100,000, but well below national incidence rate of 316/100,000). This is mostly due to expansion of the numbers of hospitals and increase in proportion of facilities engaged in DOTS. Significant expansion of GeneXpert machines to 347 modules although utilisation is low. Activities are underway in PPM, TB/HIV, childhood TB, intensified case finding, management of drug resistant TB, and coordination with civil society. Management and distribution of supplies is good.

Challenges

About one third of all patients remains un-notified. The private sector is insufficiently engaged – their potential is not being used. The lack of training, exacerbated by high turnover, is undermining the potential impact of staff, particularly in improving stigma (including from family, neighbours, employers, health providers and self-stigma) and staff-patient relations, and encouraging patients to undergo life-saving treatments.

Treatment in the Provincial TB Programme (PTP) is intermittent (every other day), while there is strong evidence this is less effective than daily treatment. Intermittent treatment is a likely cause of failure to notify patients from within the public and the private sector, as well as contributing to drug resistance and relapse.

Many problems stem from weak organisation and management, and failures to communicate important information from one facility to another. Accurate monitoring and evaluation is seriously hampered by a weak electronic surveillance system (SITT) that is generating inconsistent data, and a “mopping up” approach that has the potential of significant duplication of notifications.

2,073 cases of rifampicin-resistance were diagnosed in 2019, out of an expected 3,109 among notified cases, but only 50% were started on treatment because they died beforehand, or had difficulties in access, or refused because of concern about side effects etc. Information on the seriousness of RR/MDR TB and the risks of no treatment is not being effectively provided to patients. Half of those who start treatment die, fail to get cured, or are lost-to-follow up.

While HIV testing of TB patients has increased to 38%, this is insufficient. ARV treatment of PLHIV with TB is only 22%, which means 78% of these patients will die from their HIV infection. Provision of potentially life-saving preventive therapy to PLHIV is only 25%.

Opportunities

The Presidential TB Initiative kick-off on January 29th in Cimahi is a major opportunity both for the country and province.

High level recommendations to the Province

1. The provincial TB programme (PTP) should take full advantage of the Presidential TB Initiative, understand quickly the mechanisms that the Initiative will set up, and work hard to ensure additional funding and other support flows to W Java. Provincial and district authorities need to have TB programme performance as an indicator in provincial and district development plans.
2. The PTP should urgently expand the scope of the PPM initiative and target at least a 10-fold increase in GP engagement, and a 3-fold increase in private hospital engagement, through a practical approach that avoids too many committees, and focuses on practical solutions to the barriers that prevent GPs from notifying cases and ensuring treatment completion. There are good examples to follow in Pakistan and India.
3. The PTP should eliminate delays in treating DR-TB, and cut the initial loss to follow up. Treatment outcome should be improved, through additional support to patients, and use of the new all-oral regimens.
4. DHO should ensure that **all** patients with TB undergo provider-initiated testing and counselling (PITC) for HIV and **all** (100%) PLHIV with TB should be offered ART and treatment of latent TB infection. Training staff will be key to success:
5. Sufficient staff needs to be recruited to manage the increasing load of patients. A major training initiative needs to be undertaken by the PHO, in coordination with the NTP, to significantly upskill both the public and private staff delivering TB services to patients. This must include communications skills, ways of addressing stigma against people with TB and HIV, and the importance of effectively passing on life-saving information to patients.
6. In coordination with the NTP, and the new SITB surveillance system, the PTP should invest in its M&E system and staff to improve the reliability and consistency of its data - and be very cautious about adding the results of the mopping up operation to the notifications figures.
7. The PTP and partners should fund patient support organizations to develop their capacity to scale up provision of peer support and counselling, stigma reduction and advocacy to, and on behalf of, TB patients, who may otherwise continue to be lost to follow up.

3. South Sumatra

Findings

South Sumatra has 17 Kota and Kabupaten (4 cities and 13 districts), and a population of 8.4 million. The number of DOTS facilities was 341, in which 239 provided smear microscopy services.

The estimated annual number of incident TB cases is 33,733. TB notification rate increased from around 110 per 100,000 population in 2014 to 268 per 100,000 population in 2018. TB case detection rate was 40% in 2017, increased to 67% in 2019 mainly due to mopping up activities. In 2019, the number of TB cases notified was 12,128, and the number of TB patients found during mopping up activities was 10,357, totaling 22,485. Treatment successful rate of TB maintained above 90% in 2016-2018.

The proportion of childhood TB among all reported TB cases was 10% in 2018, ranging from 2% in Prabumulih to 37% in OKU. The proportion of TB patients with HIV testing was 1% in 2016, increased to 23% in 2018. The proportion of HIV positive TB patients who were on antiretroviral therapy was 10% in 2016, increased to 55% in 2018.

South Sumatra began to establish GeneXpert site in 2014, and has established 30 GeneXpert sites by the end of 2019. The monthly number of GeneXpert test increased from 872 in Jan 2018 to 3280 in Dec 2019. The average GeneXpert utilization rate was around 50% in 2019, ranging from 7% in RS Talang Ubi to 176% in M Hoesin hospital. The number of PMDT treatment centers established was 14, located in 11 districts; 6 districts did not have a PMDT treatment center.

The number of RR-TB cases increased but enrollment on treatment remained low: 46% (51/110) in 2017, 36% (102/281) in 2018, and 41% (161/391) in 2019. Of the 51 RR-TB patients enrolled in 2017, 21 (41%) were successfully treated, 10 (20%) lost to follow-up, 16 (31%) died and 2 failed. Of the 102 RR-TB patients enrolled in 2018, 49 (48%) were successfully treated, 23 (23%) lost to follow-up, 20 (20%) died, 3 failed and 6 were still on treatment.

In BBLK in 2019, second line LPA was done in 205 specimens, 14 did not have M tuberculosis detected, 5 invalid and 185 have M tuberculosis detected, in which 168 were susceptible, 15 (8%) FQr and 3 (1.6%) SLIr, (one XDR).

In 2019, the uptake of IPT was very low at 7.3 % among child contacts < 5 years despite relatively large number of contacts assessed by cadres. It was also low at 4.4% in PLHIV. Only 20% (4405/22137) of people with new or relapse TB know their HIV status. Only 54% (35/65) of HIV-positive people with TB were put on ART.

No stock out of drugs was noted. Entry symptom screening has been conducted in prison.

Challenges

11. Insufficient budget to address the challenges in TB prevention and care
12. Substantial number of estimated TB cases are not detected
 - Under-utilization of GeneXpert due to ineffective transportation mechanism; insufficient number of GeneXpert sites.
 - Chest radiograph (CXR) has not yet been used in the identification of presumptive TB cases.
 - Lack of systematic screening and active TB cases finding in the community, workplace, and health care facilities.
 - Low number of presumptive TB cases examined in several health care facilities.
 - Patients had a long path to diagnosis and faced financial hardship related to TB
13. High proportion of clinically diagnosed TB cases
 - CXR has been inadequately used in the diagnosis of pulmonary TB without sputum examinations.
14. Management of comorbidities was weak

- Lack of intensified TB case finding among the elderly, diabetic patients, smokers, patients with mental problem and other high risk groups.
 - TB patients were not routinely screened for diabetes and provided with assistance on smoking cessation
15. Diagnosis of childhood TB was weak
 - Over-diagnosis of childhood TB in some districts and under diagnosis in others.
 - Inadequate capacity of Puskesmas for the diagnosis of childhood TB.
 16. Reporting of TB was incomplete, especially in the private sector; a substantial number of TB cases not detected during mopping up activities.
 17. Under-detection of MDR/RR-TB and poor outcome of treatment
 - Limited number of facilities with capacity in the initiation of MDR/RR-TB treatment.
 - Community-based supportive model of care of MDR/RR-TB has not yet been established.
 - High proportion of RR-TB detected were not enrolled on treatment
 - Low number of RR-TB patients with second line LPA tests.
 - Insufficient human resource and inadequate training.
 - Active drug safety and monitoring was not in place; inadequate management of adverse reaction.
 - Insufficient social and financial support provided to MDR/RR-TB patients.
 18. A substantial proportion of health workers working on TB have not been trained.
 19. CXR has not been used in the detection of presumptive TB in prisons.
 20. Priority not given to TB prevention. HCW and patients are not well informed of the importance of treatment of latent TB infection.
 21. Cough triage was not systematically implemented at Puskesmas and health care workers were not screening for TB. Number of HCW with TB was not monitored.
 22. Monitoring and supervision were relatively weak, unable to detect and address several programmatic challenges.
 23. PPM remained insufficient to ensure adequate diagnosis of and reporting of TB Not all private clinics were engaged. Outcomes of treatment was largely unknown.
 24. Lack of encoding at health facilities due to inadequate capacity and lack of commitment from HCW. Paper-based recording system resulted in duplication of work.
 25. Stock of TB drugs was monitored separately for those from the program and those procured by pharmacy directorate.
 26. Some TB patients were uninsured, and had faced significant economic burden.
 27. Multisectorial approach was limited, missing opportunity to obtain support from sectors other than health.
 28. No operational research at provincial level.

Recommendations

- Provincial government may allocate additional funding for TB prevention and care
- Strengthen transportation mechanism to increase utilization of current GeneXpert sites, and to further expand the number of GeneXpert sites.
- PHO needs to work with NTP to develop a plan in introducing CXR for the detection of presumptive TB cases; ensure access to X ray at Puskesmas.
- To conduct active TB cases finding in the community and systematic screening in health care facilities, especially among the elderly, those with diabetes, those who smoke, and people with high risk of TB, such as miners, patients on immune-suppressive therapy.
- Engage professional society to ensure optimal use of CXR in the diagnosis of pulmonary TB. Presumptive TB detected by CXR needs bacteriological examinations.
- Engage professional society in strengthening the diagnosis of childhood TB. The national algorithm for the diagnosis of childhood TB may need revision, possibly including use of other specimen types (e.g. stool and nasopharyngeal aspirate).

- Continue to strengthen mandatory reporting of TB, through linkage with health insurance (no reporting no reimbursement). A monitoring mechanism needs to be conducted periodically to monitor progress in completeness of reporting.
- Work with NTP to urgently establish additional PMDT treatment centers who are able to initiate treatment of MDR/RR-TB.
- Ensure RR-TB cases detected are enroll on treatment:
 - Strengthening the linkage between GeneXpert lab and DOTS/DR-TB units at hospital and puskesmas
 - Conduct cohort review for smear positive, GeneXpert positive, and RR-TB to ensure enrollment on treatment.
 - Patients should be informed of results in a timely manner and be supported to visit treatment center for assessment and treatment.
 - Pre-treatment counseling should be strengthened.
 - Enhance the capacity of facilities in clinical management of MDR-TB treatment, especially adverse reactions.
 - Engage CSO and establish patients support group for community-based patient centered care
- Ensure sputum transportation of MDR/RR-TB patients to BBLK for second line LPA.
- Advocate for more funding to conduct training for new employees and those already employed (e.g. refresher training). Explore other training modes (e.g. online).
- Introduce CXR for entry screening and regular systematic screening in prisons including inmates and prison staff in coordination with PHO, laboratory, and ministry of justice.
- Introduce CXR for contact examinations and other high risk groups to find more TB.
- Set provincial and district targets for preventive treatment and monitor achievements as a key indicator during performance review. Expand preventive therapy to contacts ≥ 5 years and other risk groups. Introduce short regimen. Strengthening counselling on TB preventive treatment for contact and PLHIV. Leverage on existing home visit activities by cadres and disseminate information on preventive treatment.
- Set infection control plan at all levels and designate a person in charge of monitoring its implementation. Monitor number of HCW diagnosed with TB to assess performance of infection control practice.
- Advocate for more budgets for monitoring and supervision activities and increase capacity of staff to conduct quality supervision.
- Engage private sector, including clinics and pharmacies in referral, diagnosis, treatment and mandatory reporting through promotion of national standard of TB care.
- PHO and DHO should ensure that data entry is done at health facilities. NTP should explore implementation of full electronic recording and reporting system in locations where feasible.
- Pharmacy units should manage MDR-TB drugs and GeneXpert cartridges.
- Strengthen coordination with other programs (e.g. NCD) under the Ministry of Health as well as other ministries (e.g. Justice and Labor) to intensify case finding activity, improve quality of care and provide social and financial support to patients. Set mutually agreed targets and ensure accountability by all programs and ministries concerned.

South Sumatra JEMM team member:

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Appendix 2 Person met in the field (South Sumatra team)

Name	Institute	Name	Institute
Nurjanah	Subdit RS Dit P2P Kemenkes	Siti Rofiqah Nuriyah	CCM - POP TB
Fawzr	Dinkes Kota	Tri Hari Irfan	Dinkes Prov SS
Muyono	Dinkes Prov SS	Ranti Yuliana Putri	Dinkes Prov SS
Yudhi Setiawan	Dinkes Plg	Tri Hartati	IO PPM - Yayasan KNCV Palembang
Marsal Husnan	Dinkes Prov SS	Donna Pertiwi	Dinkes Kota Palembang
Muhamad Idrus	Dinkes Kota Palembang	M. Rizky	Dinkes Prov SS
Dina Frasasti	Subdit TB	M. Firanata	Dinkes Prov Sumsel
Dahniar	RSMH	Natalie Duyen	RSMH
Vanlianal	RSMH	Sri I.	RSMH
Endang Wahyuni	RSMH	Nurlela	RSMH PK
Eny Rahmawati	RSMH	dr. Devi Azri Wahyuni Spm, K.mars	RSMH
RA linda A	RSMH	Indah Nurmalia Dewi Skp MHSM	RSMH
Marsal Husnan	Dinkes Prov SS	R Sudarp Spm K- P	RSMH
R Harun	RSMH	Muhamad Idrus	Dinkes Kota Pbg
Jony Anwar	RSMH	Ryanti Ismail	RSMH
Zubaedah	RSMH	Misran Ana	RSMH
Dr. M. Syahrul	Dirut RSMH	Nurjanah	Subdit RS Dit P2P Kemenkes
dr. Mliri Iryani	Kapus PKM Dempo	Nellyana	BBLK Palembang
dr. Fitrianti	Dokter	Obrin Porulian	BBLK Palembang
dr. Marlia R	Dokter	Junaidi	BBLK Palembang
dr. Selly Aprida	Puskesmas Dempo	Citra Wulandari	BBLK Palembang
Siti Rofiqah Nuriyah	CCM - POP TB	Marsal Husnan	Dinkes Prov Sumsel
Dina Frasasti	Subdit TB	Joko Misanto	BBLK Palembang
Sri Aswati	RS Charitas	Sr. M. Fausta Fch	RS Charitas
Marwiyah	RS Charitas	dr. Benny Loho	RS Charitas
Setia Lestari	RS Charitas	dr. Elina Waiman Sp A	RS Charitas
Lenny	RS Charitas	dr. Harsono Santoso	RS Charitas
Siti Miloh Inrawati	RS Charitas	dr. Cicilia Partini	RS Charitas
Halimah D	RS Charitas	Sugiyono	RS Charitas
Sr. Albertin Fch	RS Charitas	Rahmat Fajri	Dinkes Kota Palembang
Dina Frasasti	Subdit TB	Ranti Yuliana Putri	Dinkes Prov Sumsel
dr. Chairatun Nisa	Klinik Sayang Bunda	Resty Akmalia	Klinik Sayang Bunda
Dra. Rohantana Siregar	Klinik Sayang Bunda	Septy Dwi Damayanti	Klinik Sayang Bunda
Drs. James Purba	Klinik Sayang Bunda	Indah Kesuma Dewi	Klinik Sayang Bunda
Tri Atika, Am. Kep	Klinik Sayang Bunda	Winda Ayu Safitri	Klinik Sayang Bunda
Mia Mustika	Klinik Sayang Bunda	Hj. Halimatussakdiah	PKM Plaju
Ribut Sugiarti	PS TB Care Aisiyiah	Intan Permatasari	PKM Plaju
R Nurhasanah	PS TB Care Aisiyiah	Irma Suryani	Mantan Pasien TB

Lisdaniar	PS TB Care Aisyiyah	Romayansyah	SSR TB Aisyiyah Palembang
Dwi Agus Santi	PS TB Care Aisyiyah	Yudi Ariza	SR TB Aisyiyah SUMSEL
Sayayu	PS TB Care Aisyiyah	Lufita Harianto	SR TB Aisyiyah SUMSEL
Suhairoh	TB Care Aisyiyah	Ika Febriyanti	SR TB Aisyiyah SUMSEL
Dr. Mahmud S	Rutan Klas I Palembang	Karina Dianita, S. Kep	Rutan Klas I Palembang
dr. Haikal Mubarak	Rutan Klas I Palembang	Fridon H. M Pasaribu S.Kep	Rutan Klas I Palembang
Yoshar Julizar, SH., M.Kom	Rutan Klas I Palembang	Dimas Aditya A	Rutan Klas I Palembang
Farida, S. Kep. Ns	Rutan Klas I Palembang	Dwi Kornia, S.kep. Ns	Rutan Klas I Palembang

4.Nusa Tenggara Timur

Findings

East Nusa Tenggara province has 21 districts and one city (Kota Kupang) with a total population of 5.3 million. There are 420 primary health care facilities in the province of which 417 are engaged in TB programme. Similarly, 18 out of 23 general hospital, 15 out of 22 private hospitals and all 5 military hospitals are engaged with the TB programme. There are 31 HIV testing and counselling centre and 19 facilities have HIV treatment and care facilities.

The estimated annual number of incident TB cases is 22,960. In 2018 the TB notification rate was 193 per 100,000 population. TB case detection rate was 29% in 2017 and has remained at similar level at 30% in 2019 with wide variations across districts (3% in – 85%). Treatment successful rate of TB has remained lower than national average with at 76% in 2028.

About 15,000 TB cases are missed each year. Out of the 651 estimated MDR-TB cases only 34 were put on treatment. Out of 1,940 patients known their HIV status, 215 were HIV positive but only 56 were put on ARV.

Smear microscopy is the main stay of drug sensitive TB diagnosis. Only re-treatment cases are referred for GeneXpert test. EQA is inadequate and limited to slide cross checking that too limited participation by MCs. Other components of EQA including supervision is generally missing.

There are 15 GeneXperts systems established in the province, however the one in District Hospital, Belu did not work in entire 2019. Data analysis related to 40 functional modules suggested extremely low overall utilization rates at about 6%. Sputum for culture is sent to Sanglah Hospital (Bali) and for DST and SL LPA send to BBLK Surabaya (East Java).

Chest X-ray services are only available in district hospitals and private hospitals. Diagnostic algorithm is not uniformly applied as per national guidelines.

Active Case Findings efforts were limited to house to house screening once a year for a limited number of HHs particularly 5-6 houses around the index Pulm Smear +ve cases. Symptom screening and smear microscopy is used for ACF. The yield of cases from such activity was found to be limited.

Adequate staff and volunteers are available in the system for conducting large scale ACF interventions.

Supervision of programme implementation is done by wasors at various levels. Monitoring of the Programme is expected to be done through meeting which are not very regular. Programmatic recording and reporting is mostly paper based at peripheral level with older versions of forms and formats being used in facilities visited. SITT is used at district and provincial level.

Daily regimen with 4 drug FDC at IP, Intermittent Regimen with 2 drug FDC in CP is being used under the Programme. Cat II regimen with injection Streptomycin is still in use. DOT is mostly by family members. Follow-up is not regular and patient counselling inadequate

Coverage of TB preventive treatment is limited including among children and PLHIV. Adult household contacts are not given any TOT. It was found that INH has been stock out in the province for over a year.

In Puskesmas where HIV test kits are available- almost 100% of TB patients are tested for HIV. However, not all Puskesmas have kits. In the district hospitals HIV testing for TB patients is generally low. ART coverage low. Efforts for active TB case finding in HIV care centres is not adequate.

Stock of SLD at Provincial level low because delay in sending request to national level. There is a possibility that HF will get stock-out if the drug supply is not sufficient. There are a huge number of cartridges in Province warehouse and with the short shelf life. Provincial warehouse had poor storage conditions particularly for related toGeneXpert cartridges that are temperature sensitive. Record maintenance is satisfactory

Challenges:

- Substantial number of estimated TB cases are not detected due to multiple reasons, including: low referral of presumptive TB cases; over reliance on smear microscopy, under-utilization ofGeneXpert, lack of regular sample transportation system, difficulty access to chest radiograph and patients facing a diagnostic and delays and financial hardship related to TB
- There are no culture and DST facility in the Province, so samples have to be transported to referral laboratory in Surabaya and Denpasar
- Many of the staff interviewed were not clear on NTP criteria forGeneXpert test ordering
- Lack of TB supervisory staff – limited to three at Public Health Laboratory who also have other responsibilities. There is no earmarked funding for Lab supervision.
- CXR is only available at public general hospital and private facilities.
- Lack of training to medical officers on diagnostic algorithm
- Utilize the well-staffed general health system health workers and community health workers for TB care support activities, train, support, supervise these staff for TB care.
- Lack of clear guidelines and planning on ACF for different settings
- X-ray andGeneXpert is not routinely available for ACF activities
- Earmarked budget for ACF is not available to facilities.

- Community engagement is mostly lacking though a large cadre of health volunteers are supposed to be in place.
- No effort for intensified case finding in hospitals.
- Supervisory visits are generally irregular/adhoc. Better from district level but not from Provincial level. No active supervision from any other senior level staff from district, provincial and national levels. Lack of earmarked funding for supervision
- Supervisory staff lack technical and communication skills in analysing and interpreting data and taking appropriate corrective actions.
- Monitoring and supervision poor- not enough patients tested, diagnosed ones are not initiated on treatment as a combination of poor communication between GeneXpert lab and TB Wasor.
- Procurement challenges hinders speedy transition to daily regimen, a staggered transition plan over 3 years
- DR TB patient doesn't have sufficient culture/ DST lab result because the HF didn't send the sputum to referral lab (RSUP Sanglah for culture, BBLK Surabaya for DST and SL LPA).
- DR-TB treatment initiation is centralised at selected hospital level. Counselling to patients and family has been sub-optimal in most cases.
- TB/HIV collaboration is more informal than formal with meetings, joint review etc
- Access to HIV test kits is variable.
- Coverage of TB preventive treatment is rather low and most for children <5 years.

Recommendations

- Institutionalise smear EQA immediately including panel testing and on-site supervision
- Recruit/ designate more Lab supervisory staff and provide funds for transport. Make Provincial level plan for supervision
- Ensure that budget for EQA is included in future budget plans at all level
- Update training/communication/ intense supportive supervision to all doctors including on use of GeneXpert for TB diagnosis
- Monthly report of GX utilization should be reported to provincial and national level
- Sputum transport mechanism should be built by the DHO so that Gx utilization can be improved
- Expanding access of CXR at Puskesmas level may be considered and taken up with regulatory authorities. Use of AI for large scale CXR reading may be considered.
- Proper microplanning for ACF at community level with risk group identification, prioritization (socially, geographically vulnerable population).
- Expand community engagement with leadership of local government and community leaders
- Use Chest X-Ray for screening and Rapid Molecular Tests for diagnosis

- Intensified case finding in hospitals with active screening with CXR for all clinically high-risk groups
- Province should actively consider set up mobile TB screening and testing using mobile vans fitted with Digital CXR and rapid molecular tests.
- Need to focus on supportive supervision- allocate more funds, designate more staff
- Train supervisory staff in supportive supervision in all aspects of Programme
- Make budgetary provisions for priority TB programme interventions with built-in flexibility of usage
- Develop a revised Supervision and Monitoring Strategy with focus to the new vision to end TB
 - Regular TB programme focused review- monthly at district and quarterly at Provincial level
 - Internal Evaluations- led by National and Provincial levels
 - Monthly video conference by National level
 - Regional Review meeting on focused thematic areas identified through stringent monitoring
 - TB surveillance units at National and Provincial levels
- Work with NTP for rapid transitioning to WHO recommended daily regime regimen by end of this year.
- Recommend stopping Cat II regimen and ensure Universal DST
- Train and support pediatricians with right tools such as GenXpert for diagnosis of pediatric TB
- NTP to take up this urgent issue at highest level, if local manufacturer is not able to supply, use available alternate source of procurements including GDF
- Patient support systems including patient and family education, counselling, peer support group, community treatment supporters, cadre staff for regular interaction with patients, digital adherence monitoring etc.
- Establish live communication system through mobile between GeneXpert lab, TB Wasor, DR Treatment centres, Puskesmas and patient's family
- Explore -Specimen transportation system using postal services or alternatives
- NTP needs to transition to shorter all oral DR-TB treatment regimen
- Decentralised treatment initiation at Puskesmas after proper trainings for medical officers and establishing live communication systems
- Strengthening community support groups/network and provision of social and financial support for DR-TB patients.
- TB/HIV collaboration needs to be formalised with monthly meetings and joint monitoring by the two programme
- All Puskesmas to have HIV tests and provider-initiated counselling and testing (PICT)

- Close monitoring of all TB/HIV patients is required for ensuring ART is provided as per national policy
- LTBI treatment for all PLHIV, screened negative for TB.
- Need to implement, monitor and review LTBI management among all contacts. Consider shorter LTBI regimen like 3HP
- Active TB screening among diabetes patients, diabetes screening of all TB patients with cross referrals and joint monitoring
- TB-Tobacco programme coordination with Tobacco cessation counselling and support for TB patients who smoke
- Establish active co-ordination with Maternal and Child Health services at all levels and joint monitoring of activities. Active screening for TB at ANC, immunization centers etc

Team Members : Dr Partha Pratim Mandal (Team Leader), Dr Sreenivas A Nair, Dr Eliana Muis, Sulisty, Yoana Anandita, Hanifah Rizky P, Yakub Gunawan, Ani Herna Sari, Anastasia Armimi

Sites visited: Kupang City and Belu District (WZ Johannes Hospital, Vice Major's Office, Puskesmas Oesapa, Provincial Warehouse, Provincial Health Laboratory, Puskesmas Sikumana, Siloam Hospital, BPJS, DHO Belu, Mgr Gabriel Manek Atambua Hospital, Puskesmas Haliwen, BPJS Belu, Puskesmas Silawan, Mota'ain Port Health Office (KKP), Patient's house

Annex 2. Concerns about the organisation of JEMM 2020 and recommendations for future reviews.

1. The Review started with a lack of focus in the terms of reference. In future this can be corrected by adequate discussion in the preparatory stage. However, the reviewers coned the issues down to prioritise the President's Initiative on TB, the need for expansion of provision of TB care in the private sector (and the financing necessary to achieve this), active case finding, the quality of care provision, human resources and the quality of data from the programme's surveillance, monitoring and evaluation system.
2. One and a half days of initial presentations were insufficient for such a large review: in future, two days should be made available to allow for a more detailed presentation and discussion of the recent progress and status of the Programme, and particularly, evaluation of the implementation of the recommendations of the JEMM, 2017, and presentation and discussion of the questions to be asked in the field about each of the technical areas.
3. Two days for the presentations of the field missions and discussions of findings, challenges and recommendations were inadequate. Extra days could have been gained by debriefing to the PHOs on the Friday or Saturday, rather than waiting until the Monday morning. Four to six days are recommended for discussing the findings and preparing recommendations, depending on the size of the country and the review team. In this case, debrief summaries ready for presentation on the 30th to the stakeholders and the Minister were only made possible by team leaders working through the night.
4. All teams noted significant differences in the data presented by provinces, and that prepared by the Central Unit. *(This will be addressed in more detail in the section on monitoring.)*
5. Since the Jakarta team undertook a desk review of the performance of provinces included in the 2017 JEMM, and not a site visit, this JEMM did not include visits to some of the multi-sector agencies such as MenkoKesra, Bappenas, Ministry of Finance, Home Affairs, etc. , which would have enabled addressing the review of "socio-economic determinants of TB and coordination with non-health ministries", for example. If in future there is not a specific visit to Jakarta then, either (a) the desk review team (external reviews, NTP and PHOs) could build this into the schedule; or (b) a separate Jakarta team could be established specifically to meet central authorities within and beyond Ministry of Health.

For future desk reviews

1. Working with 2 groups of 3 provinces each worked well and was useful for cross-learning but to make this most effective there should be a print-out of the provincial data and presentations to begin with - a data driven discussion requires all reviewers to look at multiple provincial datasets during each technical topic
2. Headsets and translators would be particularly helpful.
3. Greater preparation time is needed pre-desk review for the reviewers to work together to come up with a feasible short list of questions to be used for all provinces and to prioritize the technical areas (in case time is limited).
4. The desk review could be structured so that all questions are asked/answered on Day 1; then the desk review team can review questions and begin to complete the reporting

template. Day 2 can be used to focus on follow-up questions/clarifications and reviewing results with the Provinces to ensure accuracy of information and that all critical areas/needs are captured.

5. The PHOs should stay 2 full days. If they cannot, then the review team should know early to be able to structure the review to gather all the information needed and discuss review results with the provinces before they depart.
