



2081-82

REPORT ON ANNUAL TUBERCULOSIS REVIEW WORKSHOP

17-18 ASAR-2082 (1-2 JULY 2025)

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Executive Summary

The National Tuberculosis Control Center (NTCC) in collaboration with the World Health Organization (WHO) Nepal organized Annual Tuberculosis Review Workshop, from 1–2 July 2025 in Kathmandu. The event convened over 120 participants including representatives from the Ministry of Health and Population (MoHP), NTCC, provincial governments, partner organizations, and the media.

The workshop aimed to review progress and gaps in achieving the goals of the National Strategic Plan (NSP) for TB (2021/22–2025/26), assess the implementation of strategic interventions, identify operational challenges and best practices, and formulate evidence-based recommendations for the next NSP (2026/27–2030/31).

Key progress highlighted during the workshop included the high treatment success rate above 90% maintained for many years, expanding diagnostic services such as AI-supported chest X-rays, and strengthening community engagement through the scale-up of active case-finding activities and mobilization of community volunteers for TB advocacy.

Despite these achievements, some challenges remain. In 2023, only 54% of estimated TB cases and 28% of drug-resistant TB cases were diagnosed and enrolled on treatment. Challenges discussed during the workshop included low utilization of microscopy and GeneXpert sites, reduced TB screening at the primary health care facilities, shortage of TB medicines and GeneXpert cartridges, limited trained human resources, data inconsistencies between national systems (eTB and DHIS-2), limited private sector engagement, and a substantial funding shortfall, with reduced federal and local level funding to support the TB Free Initiative implementation.

To address these challenges, the key recommendations made include strengthening TB screening at outpatient department (OPDs) and active case finding at the local level, enhancing private sector providers through trainings and incentives, harmonizing data platforms, and joint monitoring and supervision. Strengthening coordination among federal, provincial, and local governments was also emphasized to ensure the effective implementation of the national TB program.

1. Introduction

Tuberculosis (TB) remains a major public health problem in Nepal. In 2023, WHO estimated 68000 TB cases with an estimated incidence rate at 229/100,000 population. The number of TB deaths was estimated at 16000 and mortality rate at 54 TB deaths per 100,000 population. Moreover, Nepal is also among 30 high burden countries for DR-TB in the world—3,000 estimated cases every year.

Nepal made progress to maintain the treatment success above 90% every year and continued its effort to decentralize diagnosis and treatment services in the country along with the expansion of laboratory network using WHO-recommended diagnostics. The Government of Nepal has also introduced innovative approaches, such as digital X-rays with AI for TB screening and expanded active case finding among high-risk populations—including those in flood-affected areas and prisons, and migrant communities at border checkpoints. The rollout of all-oral, shorter regimens for drug-resistant TB marks another milestone, improving treatment outcomes and saving lives through a patient-centered approach. Similarly, the introduction of the WHO recommended shorter regimens for TB prevention is another effort made to increase access to TB preventive treatment in Nepal. The TB Free Nepal Initiative, a flagship government program, expended to 149 municipalities, fostering greater local ownership and accountability in the fight against TB.

However, some challenges remain. Only 54% of estimated TB cases and 28% of DR TB were diagnosed in 2023, leaving 46% of TB and 72% of DR TB undiagnosed or unreported cases. While TB incidence and deaths fell by 15% and 11% respectively between 2015-2023, progress lags WHO's 2025 targets (75% reduction in incidence, 50% in deaths). Additionally, 51% of TB patients face catastrophic costs due to the disease.

The national TB program has adopted all the WHO recommended strategies—DOTS Strategy in 1996, Stop TB Strategy in 2006 and End TB Strategy in 2016. The MoHP with support from WHO, Global Fund against TB, HIV and Malaria and other partners is implementing the current national strategic plan (2021/22 – 2025/26) which aims to reduce TB incidence from 238 to 181 and mortality from 58 to 23 per 100,000 people and bring the catastrophic cost to zero. Further, the NSP aims to strengthen political commitment and build a sustainable, patient-friendly health system to end TB. It also focuses on ensuring effective TB identification, diagnosis, quality treatment, and prevention to reduce the disease burden in Nepal.

As part of the 2024/2025 workplan, the National Tuberculosis Control Center (NTCC) with support from WHO Nepal, conducted an annual program review. This review serves as a systematic assessment of program performance over the past year. The completion of this activity marked a key milestone within the PRIME TB roadmap for Nepal.

This review aimed to document progress and achievements, identify challenges and operational barriers, and explore opportunities to strengthen TB services. The findings from this review will support for the evidence-based decision-making for the development of new NSP and future TB control efforts in Nepal.

2. Objectives

The objectives of the review meeting were to:

1. assess progress and gaps toward achieving the goals, objectives, and targets outlined in the NSP for TB.
2. discuss the progress in the implementation of strategic interventions as per the NSP
3. discuss the challenges and efforts required from all the stakeholders to improve TB services, including that prioritized under the TB Free Initiative
4. identify best practices for scale-up of TB activities.
5. make recommendations for program improvement

3. Overview of the review workshop

The Annual Tuberculosis (TB) Review Workshop was held from 1–2 July 2025. The event brought together over 120 participants from a diverse group of stakeholders, including representatives from the Ministry of Health and Population (MoHP), NTCC, all seven provinces, development partners, and technical agencies. (Please find the program schedule in Annex-I and list of participants in *Annex—II*)

The workshop served as a platform to comprehensively review the implementation status of the National TB Program (NTP), assess progress against national targets, and identify operational and systemic challenges. Participants actively engaged in discussions covering program performance, surveillance, diagnostics, TB-Free Nepal initiative, drug-resistant TB (DR-TB), and ongoing innovations including digital tools and public-private engagement.

The meeting also provided an opportunity to share provincial experiences, highlight best practices, and discuss strategic directions to enhance program quality and accelerate progress toward ending TB in Nepal. This collaborative activity fostered consensus on key priorities, with actionable recommendations identified to guide national program in the coming year.

4. Summary of Session

4.1 Day 1: Technical Sessions

1. First Session (Technical Presentations)

The two-day event was opened by Mr Bir Bahadur Rawal, Planning Monitoring Evaluation Surveillance and Research (PMESR) section chief. He welcomed all the participants and highlighted the key objectives of the meeting.

The first technical presentation made by Dr Naveen Prakash Shah, Chief Consultant Chest Physician, NTCC on the clinical update on tuberculosis. The session provided a comprehensive overview of TB diagnosis, treatment, and recent programmatic updates. It covered key diagnostic methods including sputum microscopy, GeneXpert, radiological imaging, and histopathology. A significant focus was placed on drug-resistant TB (DR-TB), highlighting updated national guidelines that include shorter, all-oral regimens like BPaLM/BPaL. At the end of the session current innovations in pipeline such as long acting injectables were shared with the participants.

Dr Kenza Bennani, Team Lead CDS, provided updates on WHO guidelines and guidance on NSP development. The presentation provided a comprehensive update on recent WHO guidelines relevant to tuberculosis (TB) prevention, diagnosis, treatment, and strategic planning. Key highlights included the endorsement of new TB antigen-based skin tests (TBSTs) for infection detection and expanded options for TB preventive treatment (TPT), including shorter and safer regimens. She also highlighted the screening algorithms which now incorporate computer-aided detection (CAD) and C-reactive protein (CRP) testing. Treatment updates emphasized shorter regimens for drug-susceptible and drug-resistant TB, including the 6-month BPaLM/BPaL and BDLLfxC regimens. The presentation also highlighted the importance of social protection in TB control, the launch of the WHO TB Knowledge Sharing Platform, and the establishment of the TB Vaccine Accelerator Council. Finally, WHO's support for national strategic planning and program reviews was emphasized, with a roadmap for Nepal's NSP development briefly introduced to the participants.

Discussions

- a. Clear guidance on use of Truenat in Provinces as Sudurpashim and Koshi Province have procured the machines.
 - To be incorporated when the national guidelines are revised as currently only GeneXpert is included in the guidelines.

- b. Recommendation on Xpert detecting Rifampicin Resistance (RR) in specimens with very low bacterial load leading to potential false-positive RR-TB results, especially in new TB cases
 - Need to analyze the data and seek advice from WHO lab experts on repeating testing with Xpert or LPA. Any changes should be adopted in the national guidelines. Culture and DST to be performed as per the national guidelines.
- c. Concern on Rifampicin resistance with use of single dose in Leprosy contacts
 - There is no WHO evidence to date showing increased resistance due to scaling up of TB preventive treatment or use of single dose rifampicin for leprosy prophylaxis.
- d. Pooling of samples for testing considering the demand vs supply gap of GeneXpert cartridges
 - There is no WHO recommendations on pooling samples for Xpert testing.
 - NTCC highlighted that there are issues with the forecasting of the Xpert cartridges along with the funding gap which limits adequate availability of cartridges.
 - Logistic constraints for GeneXpert cartridges as there is high demand but because of funding issues only over half the requirement is being met.
 - Needs further research as the program is not currently in a position to support pooled testing.
- e. Participants highlighted the issues of shortage of TB medicines due to lack of buffer stock, maintenance issues with Xpert machines, gaps in nutritional support and unavailability of cartridges. There is a need to improve forecasting and planning at different levels of the program.

2. Second Session (Plenary session on provincial presentations)

The second session was a plenary session on provincial progress on TB program implementation.

The session was chaired by Mr Dipak Tiwari, Director, Health Training Center, Bagmati Province and cochaired by Dr Ashish Shrestha (SCI). Three presentations were done in the session by Gandaki and Lumbini Province and Banganga municipality.

Lumbini Province

- Key Progress and Achievements: A total of 6,138 TB cases were notified, with a case notification rate (CNR) of 61 per 100,000 population in the current fiscal year (FY) 2024/2025—showing a decline from the previous year by 60%. Treatment success rate stood at 92%, while TB mortality was recorded at 3% in the same FY. Total of 64,042 smear microscopy tests and 25,000 GeneXpert tests were conducted in the same fiscal year, with a positivity rate of 4% and 13 % in microscopy and GeneXpert tests respectively.
- Challenges and way forward: Major challenges highlighted was on limited GeneXpert cartridges and shortage of TB drugs in province along with insufficient training for the laboratory personnel and medical recorders. Further there are delays in HR recruitment, and issues on availability of recording and reporting tools in the province. Recommendations focused on supply of adequate quantities of Xpert cartridges from NTCC, ensuring timely budget allocation, and expanding etB trainings across all districts within the province.

Gandaki Province

- Key Progress and Achievements: A total of 2,526 TB cases were notified in the current fiscal year, with 74% being pulmonary TB. While drug-susceptible TB (DS-TB) treatment success stood at 88%, drug-resistant TB (DR-TB) success rate was 72% in the current FY. Among the 155 eligible children for TB Preventive therapy 147 were enrolled on treatment with 84% completing the treatment during the same period.
- Challenges and way forward: Major challenges identified were 9% decline in case notification compared to the previous year, decreasing identification of presumptive TB in OPD at primary health care facilities, limited testing of retreatment cases with GeneXpert, inadequate contact tracing of household members and lack of information on TB (mode of spread, diagnosis, treatment) in the communities. Recommendations included expanding GeneXpert use, enhancing community awareness, and ensuring timely supply of medicines and reporting tools.

Banganga Municipality

- Key Progress and Achievement: The TB Free Initiative in Banganga Municipality, Kapilvastu, launched in FY 2021/22, has demonstrated steady progress. The municipality has implemented microplanning, active case finding, contact tracing, activities. From FY 2021/22 to 2024/25, TB case registration ranged from 105 to 121

annually, with over 90% treatment success rate for DS-TB and no reported DR-TB case. Active case finding efforts screened over 2,000 individuals in the current fiscal year, diagnosing and enrolling 21 TB cases while TPT was provided to 6 eligible contacts, with 100% completion rate in the current fiscal year.

- Challenges and way forward: Key challenges highlighted were limited TB screening for active case finding among high-risk groups in the community, hesitation among newly recruited volunteers to transport sputum, weak multi-level coordination, and insufficient federal funding. Key recommendations were on creating awareness on TB screening in high-risk groups, appoint trained health professionals as TB volunteers and increase the federal budget allocation for TB program

Feedback from Chair and Co-chair

The co-chair highlighted on key programmatic challenges by each province. He highlighted that Gandaki Province has reported stagnant case notifications along with data issues on TPT and ineffective contact tracing. On Lumbini Province, he highlighted the decline in case notification this fiscal year and increased mortality compared to national average and data discrepancies between the DHIS-2 and eTB. For the Banganga municipality, he mentioned the decline of budget allocations risking program sustainability on the longer run.

The chair appreciated the three presentations delivered during the session, though he acknowledged challenges in data compilation—likely due to the fiscal year-end workload. He pointed out that despite long-standing capacity-building efforts, data mismatches between eTB and HMIS systems persist. He also highlighted AI-based X-ray implementation showing varied experiences across provinces, with Gandaki performing well, while Lumbini finding difficulty in using it. He mentioned on the cross provincial learning and emphasized the potential of AI tools in improving case detection. Common issues across provinces and unavailability of R&R tools in Lumbini—possibly due to tender delays—were also flagged. He also highlighted a gap in training activities in Gandaki and suggested better planning, noting that high staff turnover—especially among temporary appointees—may be affecting training continuity. At the end, he mentioned that TB Free implemented Palikas are making progress through a "learning by doing" approach, although budget allocation remains an issue in many areas.

3. Opening Session

The opening session was chaired by Dr. Shree Ram Tiwari, Director of NTCC. Chief guests included Secretary Dr. Bikash Devkota, mayors from various municipalities, former Secretary Dr. Dirgha Singh Bom, former Additional Secretary Dr. Dipendra Raman Singh, and representatives from UNDP and WHO.

Prior to the remarks from dignitaries in the dias, Dr Shree Ram Tiwari provided comprehensive overview of NTP progress, challenges, and strategic directions for the national tuberculosis program. He highlighted the major achievements of the program including expansion of the diagnostic services-mWRD and Xpert XDR sites, and scaling up of active case finding, TB preventive therapy, and community engagement through the TB Free Nepal initiative. However, major challenges persist, including underfunding (43% of NSP unfunded), low treatment coverage (54%), high loss to follow-up, limited private sector engagement, and diagnostic constraints. The way forward emphasized on scaling up TB-free initiatives to all 753 municipalities, expanding preventive treatment, integrating data systems, and strengthening partnerships with private and community sectors. He ended his presentation with the plan for the development of the next National Strategic Plan (2026/27–2030/31) to guide the program for the next five years.

The opening remarks were started with representative from UNDP, Ms Hedieh Khaneghah Panah. She expressed deep appreciation to the MoHP, NTCC and the global fund for their efforts towards at TB Free Nepal. Reaffirming its commitment, she expressed support for the patient friendly health system focusing on the early diagnosis, quality treatment, and prevention among vulnerable groups. She also mentioned on the approach by UNDP as a Principal Recipient which will include strong coordination with national stakeholders, effective sub recipient management, procurement of quality health products, and capacity building.

On behalf of WHO representative, Dr Kenza Bennani, TL, CDS/WHO Nepal, commended Nepal's progress in TB control, including a 47% increase in case notifications since 2019/20, high treatment success rates, and innovations like AI-supported diagnostics and shorter treatment regimens. However, challenges remain, including undiagnosed cases, low preventive treatment coverage, and high economic burden on TB-affected households. WHO reaffirmed its commitment to support Nepal in developing an ambitious, evidence-based National Strategic Plan to End TB, emphasizing the need for integrated, people-centered care, stronger social protection, and multisectoral collaboration to achieve a TB-free Nepal.

The Mayor from Hariwan Municipality, as a TB survivor, shared the municipality's efforts toward becoming TB-free. He highlighted ongoing screening activities and noted that TB prevalence is highest among Janajati communities, followed by Brahmin and Chhetri, with comparatively lower rates in the Muslim community. He personally followed up with drug-resistant TB patients who had missed treatment, emphasizing the importance of adherence. Hariwan ranks among the top municipalities in Madhesh Province for TB indicators, attracting patients from neighboring areas. He stressed the need for honesty, integrity, and belief in the possibility of eliminating TB, underscoring the importance of understanding one's role in the program.

Dr Dirgha Singh Bom, former secretary and NTCC director, reflected on Nepal's journey in TB control, highlighting the country's resilience in implementing TB programs despite political and economic challenges. He recalled the early resistance to DOTS implementation and how it led to the development of a strong TB network and the establishment of NTCC. He advocated for shifting TB awareness efforts from schools and hospitals to communities and health posts and called for continued technical support and the role of organizations like IUATLD in sustaining TB initiatives.

Dr Bikash Devkota, Chief Guest for the event acknowledged the valuable contributions of various partners in Nepal's TB response while highlighting persistent challenges such as low case detection despite high prevalence, limited household engagement, and budget constraints. He emphasized the need to shift from blanket approaches to more focused, problem-based interventions, including better integration with household-level data like family folder concept in Gandaki Province. While progress has been made in areas like AI-supported diagnostics, he stressed the importance of community engagement, quality treatment, and rethinking strategies to address gaps in implementation. He further called for innovative thinking and actionable outcomes from the workshop to drive the final push toward a TB-free Nepal.

The opening session was formally closed by Dr Shree Ram Tiwari, thanking all for the guidance and reiterated commitment to incorporate feedback from the dignitaries in the event into the NSP and TB workplan.

4. Third Session (Presentation by laboratory and partners)

The third session was chaired by Director NTCC. The session included presentation from the laboratory followed by Save the Children and UNDP.

Laboratory presentation

The presentation was done by Mr. Padmanav Ghimire, Laboratory Head NTP.

- Key Progress and Achievements: The National Tuberculosis Control Program has made significant strides in expanding and strengthening TB diagnostic services across Nepal. The TB laboratory network includes 785 microscopy centers, 118 mWRD (GeneXpert) centers, and 2 culture laboratories. The expansion of Xpert MTB/RIF Ultra and Xpert XDR services in strategic locations has enhanced diagnostic capacity, with over 197,000 Xpert tests conducted in FY 2023/24—a 25 % increase from 2022/23 and 76% increase from 2019/20. Training programs on fluorescent microscopy and GeneXpert operations have been conducted to build technical capacity. The overall functionality of GeneXpert modules stands at 87%, reflecting improved maintenance.
- Key challenges and way forward: Key issues include insufficient human resources dedicated to TB diagnosis, inadequate mWRD cartridges and consumables mainly due to funding constraints along with inaccurate forecasting at the provincial level, and gaps in equipment maintenance and warranty coverage. To address these, the program aims to develop a comprehensive National TB Laboratory Plan and implement structured supervision, monitoring, and evaluation of all diagnostic sites. Strengthening supply chain management and expanding technical support were also highlighted as a way forward to ensure consistent diagnostic performance and contribute to achieving national TB control targets.

Queries & clarifications:

- a) Use of existing COVID laboratories and PCR machines for TB testing?
 - While globally many countries are exploring this, the specificity and sensitivity of current setups are not ideal for TB. Until a universal kit is developed, widespread use remains challenging.
- b) JANTRA raised a concern on four module GeneXpert machine not being functional and the need to sample transportation to Kathmandu.
 - NTCC informed about its effort for warranty expansion which is planned for all 90 Xpert sites to address such issues and will be completed by the end of July.
- c) Dr Kenza raised a concern that while utilization of Xpert sites is not optimum we also need to address the sample transportation issues along evaluating the performance of Xpert sites. She also mentioned that once we can reach 80% target for GeneXpert as initial TB tests for TB patients, DRS surveys will no longer be required.

- d) One of the participants mentioned that sputum smear processing is still being done in open tables and not in the biosafety cabinets.
- NTCC responded to it saying ideally it would be good to have biosafety cabinet which program should prioritize doing in open tables with good airflow should not be barrier to doing the activity

Save the Children (SCI)

Mr. Mim Singh provided reflection on the implementation of grant by SCI during it being the principal recipient of the global fund. He showcased five years of collaborative efforts in Nepal's TB response, emphasizing community-driven interventions, strengthened diagnostic and treatment systems, and expanded public-private partnerships. Despite notable gains, challenges such as limited community engagement, data inconsistencies, and weak coordination with private providers continue to hinder progress. Key recommendations included enhancing digital adherence tools, expanding DR-TB treatment centers, improving private sector integration, and strengthening local diagnostic capacity.

UNDP

Dr Karma Gurung from the UNDP presented on the key focus areas for the UNDP which includes effective management of Sub-Recipients (SRs), ensuring the procurement of quality-assured health and non-health products and equipment, support for the capacity building of entities and develop resilient and sustainable health system for health.

The closing for Day 1 was done by the Director thanking all the participants and expressing commitment to address issues and concerns in the upcoming plan and NSP.

4.2 Day 2 (July 2, 2025):

The second day was begun by the recap of Day 1 by Ms. Basundhara Sharma, Public Health Office, PMESR section from NTCC. Following this, there was a presentation by Mr. Bir Rawal on Monitoring and Evaluation of NTP. He highlighted that the Nepal has made significant strides in TB control through robust monitoring and evaluation of the program. Data management has been enhanced via NTPMIS, which integrates real-time case-based reporting, interoperability with HMIS, and tools like the eTB register and GXMIS. Despite progress, challenges such as high loss to follow up, under-enrollment in treatment, and limited human resources persist. He further recommended the need for system upgrades, expanded biometric tracking, and capacity building to ensure sustained progress toward the goal of eliminating TB by 2050.

1. Fourth Session (Panel Discussion)

The panel discussion was organized with the objective of addressing key issues, challenges, and recommendations for strengthening TB prevention, diagnosis, treatment, and care in the context of developing Nepal's upcoming National Strategic Plan (NSP).

Key areas for the panel discussions were formulated as below:

- ✓ How can we address funding gaps for TB?
- ✓ What is needed for Nepal to address missing TB cases?
- ✓ How can we scale up TB Preventive Therapy?
- ✓ How can we strengthen the response to DRTB to improve diagnosis, treatment access?
- ✓ How can we improve meaningful engagement of partners?
- ✓ What will be the way forward for TB Free Initiative?
- ✓ How can we improve TB information system?

The discussion was moderated by Dr. Jhabindra Bhandari and featured a panel of valued experts as below:

1. Dr. Dirgha Singh Bam (Former Director General, DoHS/MoHP and Director, NTCC)
2. Dr. Rajendra Pd. Pant (Former Director General, DoHS/MoHP and Director, NTCC)
3. Dr. Dipendra Raman Singh (Former Director General, DoHS/MoHP)
4. Dr. Naveen Prakash Shah (Chief Consultant Chest Physician, NTCC)
5. Mr. Ramesh Budathoki (Mayor, Hariwan Municipality- TB Free) and
6. Mr. Anil Thapa (Former Chief, HMIS, Management Division, DoHS/MoHP cum Chief of PMERS at NTCC)

Each panelist was engaged with specific guiding questions (**Annex III**) aimed at drawing from their experience and perspectives on the historical evolution of TB program in Nepal, assessing gaps and challenges in the federal context, evaluating the effectiveness of the current NSP, and proposing strategic recommendations for the future. Their insights covered diverse aspects such as health system resilience, multisectoral collaboration, data and surveillance, gender equity, local government involvement, and operationalization of policies.

Following priorities were identified from the panel discussions categorized into the four major themes which are listed below:

Theme 1: Strengthening Governance, Policy and Planning, financing, and human resource for TB

- Advocacy for stronger political commitment at the ministerial level.
- Cascade the political commitment at the local level.
- Strengthen the managerial and technical capacities at the local level of the program.
- Establish a coordination mechanism at all levels (National, Provincial, Local Level) for program management through regular meeting and supervision effort.
- Consider different scenarios in the prioritization of activities for the new national strategic plan: Underfunding scenario, and fully funded plan.
- Utilizing local level/palika as an opportunity for local resource generation.
- Sensitization of the local leaders for resource generation.
- Assign dedicated Human Resource for TB at all levels of the program and strengthen their managerial capacities.
- Appreciation, Motivation and Rewards to the health workers.
- Plan buffer stock for TB medicines and other consumables in forecasting.
- Need to develop strategy for resource mobilization for TB program.

Theme 2: Improving Multisectoral collaboration, community engagement and social protection

- Define Community (Diverse Community Structures/Networks) and Create environment for effective community engagement.
- Expand Health Insurance Scheme to cover all TB patients.
- Identify key sectors beyond health to contribute to TB response and build linkages for effective multisectoral collaboration.
- Integration and prioritization of the activities in the context of the multisectoral approach.

Theme 3: Strengthening TB Services Delivery

- Integrated approach to TB screening at the community (TB screening along with elderly program, safe motherhood, NCDs etc.).
- Design focused intervention to find the missing TB cases.
- Clearly define the high-risk population that should be targeted by active case finding next to outreach population.
- Consider integration of DR TB services in the existing TB centers.
- Use & scale up of rapid test/newer technologies.
- Deprioritized the incentivized interventions/activities for program sustainability.
- Consider developing or updating National guidelines to incorporate diagnosis and management of EPTB, pediatric TB and clinically diagnosed TB NTCC to ensure effective collaboration with private health sectors with defining the role and responsibilities of both parties.

Theme 4: Strengthening Program Supervision, Monitoring and TB Information System

- Build on qualified Human Resources for program supervision and monitoring at all levels.
- Ensure adequate budget allocation for M&E (10%).
- Continue PME workshops at all levels.
- Conduct RDQA, data verification & validation program.
- Conduct second round of Prevalence Survey for trend analysis & estimate subnational TB prevalence.
- Interoperability of eTB and HMIS.
- Strengthen the Data management committee at all levels.
- Conduct Death Audit, modalities to be defined.
- Orientation of local levels on use of Data at Service Delivery Sites.
- Translate the findings from PCS and DRS into action.

2. Fifth Session (Plenary session on provincial and subrecipients progress)

The fifth session was a plenary session on provincial progress and sub-recipient (SR) efforts in the implementation of the TB program. The session was chaired by Dr. Anup Bastola, Ministry of Health, and Population (MoHP), and Dr. Sushil Koirala, Noora Health. Presentations were delivered by: - Provincial Tuberculosis Treatment Centre (PTTC) - Gandaki Province - Koshi Province - Sudurpaschim Province - Sub-Recipients (SR) Partners (BSWN, JANTRA, BNMT, MPDS, TB Nepal, NATA)

Provincial Tuberculosis Treatment Centre (PTTC) - Gandaki Province

Dr. Sunil Raj Gautam, Director of PTTC, presented a summary of PTTC's tuberculosis program for the fiscal year 2081/82.

- **Key Progress and achievements:** - Active case finding (ACF) was scaled through AI-based X-ray screening across several palikas. Internal Quality assurance ensured as per the NRL recommendations through regular rechecking of sputum microscopy slides.
- **Challenges and way forward:** - Key challenges include inadequate number of trained radiologists and TB physicians along with lack of lead shielding during AI X-ray screening posing occupational risks. Limited supply of GeneXpert cartridges affecting diagnostic testing for all the presumptive TB cases. The way forward highlighted was to expand diagnostics to include biopsy, TB PCR, IGRA, etc. Provide radiation safety gear and technical training. Strengthen supply chain for GeneXpert and TB medicines. Enhance outreach with OPD screening and TB awareness campaigns.

Koshi Province

On behalf of Koshi Province, Mr. Tulshi Guragain, TB-Leprosy Officer, presented a summary of the province's tuberculosis program.

- Key Progress and achievements: TB case notification was 3,740 cases in the current fiscal year with a decline of 12% compared to 2023/2024; DR-TB and DS-TB success rates were 72% and 86%, respectively in the current fiscal year.
- Challenges and way forward: The province faces key challenges including limited private sector engagement, low screening at the primary health care facilities, inconsistent data between HMIS and eTB systems, and irregular supply of logistics and IEC materials. To address these, efforts should focus on strengthening OPD-based screening and private sector reporting, enhancing training and monitoring for eTB/HMIS data systems, and improving local-level orientation for TB-Free initiative coordinators.

Sudurpaschim Province

On behalf of Sudurpachim Province, Mr. Manoj Ojha, TB-Leprosy Officer, presented a summary of the province's tuberculosis program.

- Key Achievements and Progress: Total of 2,777 TB cases were notified in the current fiscal year, covering 45% of the estimated cases for the province, with a treatment

success rate of 90% and 78% for DSTB and DRTB respectively . AI-supported X-ray screening reached over 21000 individuals across 35 municipalities and 9 prisons with diagnosis of 122 TB cases (1% yield). Budget utilization was 98% for the current fiscal year.

- Challenges and way forward: Persistent low case detection, , and non-functional GeneXpert machines (e.g., at Mahakali Hospital) remain major barriers. Additionally, poor death reporting, data mismatches between eTB and HMIS, and inadequate patient support for transportation and nutrition were noted. To address these gaps, it was recommended to conduct mobile diagnostic camps, improve GeneXpert cartridges supply, implement verbal autopsy and mortality reporting, and provide financial and human resource support to TB-Free municipalities.

Sub-Recipients (SR) Presentation (BSWN, JANTRA, BNMT, MPDS, TB Nepal, NATA)

The presentation was done by JANTRA representing all the SR's.

- Key Achievements and Progress: The TB program has made significant strides by achieving coverage across all high and medium TB burden districts. Key interventions such as Active Case Finding (ACF), TB Preventive Therapy (TPT), contact tracing, and TB screening in prisons have been successfully implemented. These efforts have been complemented by strong community engagement strategies, including the mobilization of TB champions, the formation of patient clubs, and the involvement of peer educators. These initiatives have played a crucial role in raising awareness, supporting patients, and enhancing early detection and treatment adherence.
- Challenges and Way Forward: Despite these achievements, several challenges persist. Engagement with private pharmacies remains limited, with less than 10% coverage, hindering broader outreach. Operational issues such as logistical gaps (availability of falcon tubes, Xpert cartridges), digital literacy barriers among field staff, and weak follow-up mechanisms have also impacted program efficiency. Additionally, high initial loss to follow-up and inconsistencies in data reporting continue to pose significant hurdles. Moving forward, the SRs aims to expand screening efforts to include vulnerable populations and high-density settings. Strengthening the capacity of field teams through digital training, improving logistics for diagnostics and treatment supplies, and enhancing data systems for better monitoring and follow-up were mentioned as essential steps to address the challenges.

Feedback from the Chair (Dr. Anup Bastola)

- There is a need to strengthen focus on research and innovation, as this area is currently under-addressed.
- Research and innovation should be clearly incorporated into the National Strategic Plan (NSP) to ensure sustained progress and integration into national priorities.
- A detailed, activity-wise discussion is necessary. This will facilitate a thorough review and help identify gaps and opportunities for improvement.
- Such discussions should ideally occur prior to planning exercises, ensuring evidence-based decision-making and alignment with national goals.
- The identified activity is relevant and timely; however, adequate human resources and strategic planning are essential for effective implementation.
- It is encouraging to note that AI-assisted X-ray technology is being utilized, which demonstrates progress in leveraging innovation for TB diagnosis

3. Closing Ceremony

Dr Shree Ram Tiwari, Director, NTCC summarized the two days event highlighting the key issues and way forward from the event. He mentioned that total of 129 stakeholders participated in the event (MoHP-70, Provinces-29, Partners-22 and Journalist-8). The key issues and way forward were summarized in Table 1 below:

Table 1 Summary of key issues and way forward for the national TB program

Thematic areas	Key Issues	Way Forward (Responsibility)
Screening and Diagnosis	Low utilization of Microscopy (MC) and GeneXpert (GX) sites	Strengthen OPD screening and active case finding at peripheral levels (Local level)
	Inadequate OPD-based screening for tuberculosis	Institutionalize intensified screening practices at the primary health care facilities (Local level)
	Minimal private sector engagement	Engage more private providers via training, incentives, and integrated reporting (NTCC and SR)

	Inadequate maintenance of GeneXpert machines	Maintain existing systems; implement 90 warrant extensions by the end of July 2025 (NTCC)
TB Treatment care and support	DR referral centers at provincial hospitals not functional (Karnali)	Provide capacity building and infrastructure support (NTCC)
	New labs at the local levels lack quality assurance	Strengthen supervision and lab quality control systems (PPHL)
	Private doctors not adhering to NTP protocols	Conduct CME and clinical training to improve the compliance (NTCC)
Health System (HR and logistics)	Insufficient cartridges for testing at GeneXpert sites	Cartridges to be procured (currently in pipeline) along with need of optimization of X-ray screening (NTCC & Provinces)
	Lack of trained laboratory staff at new facilities	Continue training to the lab health workers (NTCC & PPHL)
Data, monitoring and supervision	Data inconsistency (eTB vs DHIS2)	Harmonize data systems (NTCC) and conduct regular data quality audits (Province)
	Weak supervision and monitoring	Carry out joint monitoring mission (NTCC and Provinces)
	Insufficient engagement of community and private sector	Scale up TB Free Initiative and SR activities (All Stakeholders)
	Coordination gaps across federal, provincial, and local levels	Foster collective action across federal, provincial and local levels (All levels)

He further summarized the panel discussion recommendations into four strategic themes.

Theme 1 focused on governance and financing, recommending stronger political advocacy, local resource generation, and rebuilding the TB workforce. **Theme 2** emphasized multisectoral collaboration and community engagement, including expanding insurance coverage and integrating cross-sectoral efforts. **Theme 3** addressed service delivery through integrated screening, private sector engagement, and updated clinical guidelines. **Theme 4** highlighted the need for skilled M&E personnel, data audits, and better use of digital systems. The recommendations would be rightly highlighted in the upcoming NSP.

Dr Suresh Mehta, PHLMC, Koshi Province emphasized the importance of granular-level discussions to better understand implementation challenges and refine strategic actions. He highlighted that funding alone is not a major constraint and there is a need to improve coordination among stakeholders to maximize the use of available resources and avoid duplication of efforts. He further added the need to streamline data collection by focusing on essential and actionable indicators, rather than collecting an excessive number of variables.

In terms of programmatic priorities, he stressed the need to enhance engagement in TB Preventive Treatment (TPT) to expand coverage and impact. He also expressed optimism about the TB vaccine currently in Phase 3 trials, describing it as a potential gamechanger for future TB control efforts.

Dr Anil Thapa reechoed the need for improved data quality and full utilization of DHIS-2, along with early, calendar-based planning and reviews across all levels. He highlighted the clear role delineation among federal, provincial, and local governments to reduce duplication, while federal commitment should remain vital for strategic direction and resource allocation. Strengthening provincial-level training, ensuring medicine availability, and maintaining robust supply chains were highlighted. Additionally, enhancing PPM effectiveness and defining indicators for TB-free pallikas were identified as priorities for the program.

Finally, the session was closed by Dr Naveen Prakash Shah thanking all the participants and highlighting directions for active case finding, enhancing diagnosis and effective engagement of private sectors.

Annex-1: Agenda

Day 1 (2082 Asar 17)

Master of Ceremony: Mr. Bir Bahadur Rawal

Registration :- Sarita Sigdel and team

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16:00-16:15	Achievement and challenges of Global fund GC-6	Mim Bahadur Singh (SCI)
16:15-16:30	Global fund GC-7 Update	Dr Karma Gurung (UNDP)
16:30-16:45	Presentation by TB Free Palika- Banganga Municipality, Kapilvastu	Mr TP Paudel (Health Unit Chief)
16:45- 17:00	Closing for Day 1	

Day 2

Time	Session	Facilitator
Tea and Registration (09:30 -10:00)		
10:00-10:10	Recap of Day 1	Ms Basundhara Sharma
10:10-10:30	Updates on provincial recording and reporting status including eTB, TB free, DHIS 2	Mr. Bir Rawal, PMESR Chief
Session 2: Panel discussion on scaling up TB prevention diagnosis,treatment, and care Facilitator:Dr. Jhabindra Bhandari Note Taker: Barsha Thapa		
10:30 -12:30pm	Areas for Panel Discussion: <ul style="list-style-type: none"> How can we address funding gap for TB? What is needed for Nepal to address missing TB cases? How can we scale up TB Preventive Therapy? How can we strengthen the response to DRTB to improve diagnosis, treatment access? How can we improve meaningful engagement of partners? What will be the way forward for TB Free Initiative? How can we improve TB information system? 	<ul style="list-style-type: none"> Dr. Rajendra Pant Dr. Dipendra Raman Singh Dr. Dirgha Singh Bam Upendra Karki, KageshworiManshara Municipality, Kathmandu Dr. Naveen Prakash Shah
Session 3: Plenary session on provincial progress on TB program implementation Chair: Dr. Anup Bastola Co-Chair: Dr. Sushil Koirala		
12:30-13:00	Provincial presentation	Koshi (Director, PHD)
Lunch Break (13:00 – 14:00)		
14:00-14:20	Provincial presentation	Karnali (Director, PHD)
14:20-14:40	Provincial presentation	Sudurpaschim(Director)
14:40-15:00	Discussion (for 3 provinces)	All
15:00 -15:10	Reflections on SR interventions	
Tea Break (15:10 – 15:30)		
15:30-15:45	Key summary of review workshop	Mr. Bir Bahadur Rawal
15:45-16:15	Closing Ceremony	All

Annex-II: List of Participants

Name	Designation	Organization
Dr. Bikash Devkota	Secretary	MoHP
Dr. Shreekrishna Shrestha	Additional Secretary	MoHP
Dr. Prakash Budhathoki	Speaker	MoHP
Dr. Shree Ram Tiwari	Director	NTCC
Yasodha Aryal	Director	NHTC
Dr. Bibek Kumar Lal	Director	FWD-DoHS
Keshav Raj Pandit	Director	NHEICC
Dr. Yuvanidhi	Director	STIDS
Dr. Dirgha singh Bam	Former Health Secretary Former Director at NTCC	
Dr. Rajendra Pant	Former Director, NTCC Former, DG, DoHS	
Baikuntha Nepal	Mayor	Vyas Municipality, Tanahun
Dr. Naveen Prakash Shah	Chief Consultant Chest Physician	NTCC
Ganesh Tamang	Under Secretary-Admin	NTCC
Bir Bahadur Rawal	Under Secretary-Statistics	NTCC
Jhanak Raj Dhungana	Deputy Director	PHLMC, Sudurpaschhim
Dr. Sunil Raj Gautam	Deputy Director	PTTC, Gandaki
Gyan Bdr. BC	Public Health Officer	Health Directorate, Gandaki
Rajendra Ranabhat	Lab Tech. Inspector	PTTC, Gandaki
Manoj Pd. Ojha	TB/Leprosy Officer	Health Directorate, Sudurpaschhim
Sashank Kalouni	Team Leader	MPDS, Sudurpaschhim
Anil Thapa	Former Chief, MESR	NTCC, HMIS/MD
Dr. Pradip Prajapati	Physician	Sukraraj Tropical Hospital
Ritu Pantha	Chief, IHIMs	DoHS
Chhedi Prasad Yadav	IHIMS	DoHS
Lokraj Pandeya	Sr. HEO	NCASC
Shivalal Sharma	Statistics Officer	NCASC
Dr. Chandra Lal Jha	Director	EDCD
Asmita Ojha	Public Health Administrator	NCASC
Dr. Anup Bastola		MoHP
Karuna Kanel	Lab Tech	PPHL
Resna Manandhar	Lab Tech	PPHL
Anjana Khadka	Public Health Officer	Health Office, Bhaktapur
Narayan Bahadur	Director	PPHL, Bagmati
Rajaram Adhikari	TB/Leprosy Officer	Health Office, Lalitpur
Tibrata Sharma	Lab Tech. Inspector	Health Office, Bhaktapur

Name	Designation	Organization
Dipak Pd. Tiwari	Director	Provincial Health Training Center, Bagmati
Dr. Anju Karki	Public Health Administrator	PHLMC, Bagmati
Bishal Tamang	Lab Officer	PPHL
Dr. Asmita Pokharel	Microbiologist	PPHL
Dr. Roshan Dhakal	Health Administrator	Health Directorate, Gandaki
Dr. Madhushree Dhakal	Public Health Administrator	Health Directorate, Gandaki
Ramesh Budhathoki	Mayor	Hariwan Municipality, Madhehs
Tulsi Pd. Guragain	TB/Leprosy Officer	Health Directorate, Koshi
Dr. Suresh Mehata	Director	PHLMC, Koshi
Prakash Chandra Karki	Director	PPHL, Koshi
Dr. Rajendra Kumar Giri	Act, Director	Provincial Health Logistic Management Center
Shiva Shankar Mahato	Public Health Officer	NTCC, HMIS/MD
Sarita sigdel	Finance Officer	SCI
Santa Ram Rajauria	Lab Tech	NTCC
Ram Kumar Dahal	BMET	NTCC
Ganesh Mulmi	Suga	NTCC
Bhanubhakta Basyal	PHA	HD, Karnali
Kalam Kumar Thapa	Deputy Director	PPHL, Karnali
Mahesh Bajracharya	Orthopedic Surgeon	NTCC
Ishwari Pd. Bhusal	Lab Tech Inspector	NTCC
Bhogendra Kumar Acharya	Statistics Officer	NTCC
Sushmita Sharma	Finance Officer	NTCC
Basundhara Sharma	Sr. PHO	NTCC
Meera Hada	Medical Lab Tehnologist	NTCC
Netra Neupane	PHI	NTCC
Daulat Tuladhar	PHI	NTCC
Mukesh Kumar Mikalam	Radiographer	NTCC
Santosh Sharma	PHI	NTCC
Padmanav Ghimire	Sr. Medical Lab Technologist	NTCC
Thuma Pun	Nursing Officer	NTCC
Shyam Kumar Oli	HA Officer	NTCC
Bharath Khadka	Section Officer	NTCC
Sapana Phunyal	ANM	NTCC
Aakriti Rai	CMA	NTCC
Asmita Ale	Staff Nurse	NTCC
Divya Aryal	Staff Nurse	NTCC

Name	Designation	Organization
Rajesh Kaiti	Medical Lab Tehnologist	NTCC
Bimala Suwal	Lab Tech	NTCC
Samjhana Phuyal	Lab Tech	NTCC
Sapana Shrestha	Lab Tech	NTCC
Prakriti Gautam	Medical Lab Tehnologist	NTCC
Mitral Baral	Desk Editior	Journalist
Mahesh Gautam	Editor	Journalist
Jyoti Adhikari	Reporter	Journalist
Sanjita Khanal	Reporter/Editor	Journalist
Ram Bdr. Malla		WHO
Dr. Rabin Gautam	NPO	WHO
Barsha Thapa	TA for TB	WHO
Dr. Kenza Bennani	Team Lead-CDS	WHO
Sushmita Gyawali	PHO	NTCC
Dr. Abiral Barakoti	MO	NTCC
Sikha Basnet	PHO	NTCC
Jeevan Gautam	Sr. Medical Lab Technologist	NTCC
Kamala Karki	Store	NTCC
Maya Paudel	Admin	NTCC
Renuka Karki	Radiographer	NTCC
sunita Dulala	Sr. AHW	NTCC
Dr. Gajananda Bhandari	Program Specialist	UNDP/Global Fund
Saroj Dhungel		UNDP/Global Fund
Bihanshan Kuikkel	Epidemiologist	STAC
Hedieh Khagda	Program Manager	UNDP/Global Fund
Pam Pd Neupane	Editor	Journalist
Om baral		UNDP/Global Fund
Lok raj joshi	M&E Coordinator	SCI
Krishna Acharya	Reporter	Journalist
Buddha Das Narayan	DCM	BNMT
Kamal Dhakal	Clinic Incharge	TB Nepal
Dr. Sushil Koirala	CR	Noora Health
Sanjay Shrestha	PM	NATA
Dr. Karma Gurung	TB Analyst	UNDP/Global Fund
Dr. Jhabindra Bhandari	Consultant/Expert	
Santosh Rai	Correspondent	Journalist
Mitra Baral	Correspondent	Journalist
Mim Bahadur Singh	Sr. Program Management	Save the Children
Sharan Gopali	Executive Director	JANTRA

Name	Designation	Organization
Dr. Bhawana Shrestha	Chief	GENETUP/NATA
Bijay Maharjan	Project Chief	JANTRA
Dr. Mukti Khanal	Team Leader	BWSN
Dr. Kenza Bennani	Team Lead, CDS	WHO
Sujan G. Amatya	Comms	WHO
Gyanendra Shrestha	NPC	BNMT
Thagraj Poudyal	Health Section Chief	Banganga Municipality
Netra lala Aryal	Health Education Administrator	Health Directorate
Parshuram Chhatikelu	Lab Technician officer	Health Directorate
Dipendra Kumar Mandal	Medical Lab Technologist Administrator	PPHL, Lumbini

Annex III: Panel Discussion questions

Dr. Dirgha Singh Bam	Dr. Rajendra Pd. Pant	Dr. Dipendra Raman Singh	Dr. Naveen P. Shah	Mr. Ramesh Budhathoki	Mr. Anil Thapa
How is TB prevention and control historically evolving in Nepal? What are your experiences and observations on NTP's success from the past?	How do you assess Nepal's TB programme in terms of strengths and areas of improvements to sustain the progress and reach the national targets?	From policy and strategic perspectives, in your observations and experiences, to what extent NTP is effectively implemented, and what are the gaps in terms of: <ul style="list-style-type: none"> ○ Resilient health and community systems ○ Multi-sectoral engagement and partnerships (Public Private Mix) for comprehensive approach to address TB? ○ Surveillance and data management, evidence-informed strategic information? 	How is NTCC/NTP scaling up efforts to ensure that all people with TB have access to <ul style="list-style-type: none"> ○ High-quality diagnosis ○ Treatment, care ○ And prevention How do you assess the NTP's service delivery systems, laboratory facilities, new technologies, supplies for strengthening TB Free Initiative? What are your recommendations for new NSP for consideration in diagnosis, treatment, care and prevention?	What are your observations and insights around TB Free Initiative at local level in terms of challenges and opportunities to reach out poor and socially marginalized populations? How is local government mobilizing resources (technical plus human resources) to sustain the progress, what are the new plans or priorities for local governments regarding TB free initiative, local	How do you see the TB surveillance and information system? What are the strengths and areas of improvements in the TB information system? What are the challenges in the integrated approach to TB information system What will be your recommendations for strengthening the TB information system
How do you see the burden of TB in health systems, and what are the gaps and challenges in the changed federal context?	How can we address the funding gaps in TB program? What could be the key strategies and options for localization of NSP and resource mobilization for sustainability?				
What are your key recommendations					

for the National Strategic Plan?	<p>To what extent current NSP is operationalized in the federal context?</p> <p>What the critical gaps to be addressed in next NSP?</p>	<ul style="list-style-type: none"> Gender, human rights and equity-based access <p>What would be the role of partners to address funding gaps for sustainability of NTP in the changed context of funding landscape?</p> <p>What would be your recommendations for new NSP for consideration?</p>		<p>ownership, and sustainability?</p> <p>What are your recommendations for new NSP to consider in their strategic actions?</p>	
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Annex-IV: Pictures from the program



Report on Annual Tuberculosis Review Workshop, 1-2 July 2025







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