

**EFFECTIVENESS OF THE PATIENT PROVIDER SUPPORT AGENCY (PPSA)
MODEL IN IMPROVING PRIVATE SECTOR ENGAGEMENT FOR
TUBERCULOSIS CARE IN ALIRAJPUR**

Dissertation Submitted to



The IIHMR University, Jaipur

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Master of Business Administration (MBA)

in

Hospital and Health Management

By

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Under the Supervision and Guidance of

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CERTIFICATE

This is to certify that SUBHABRATA PATRA in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur has successfully completed his internship at IIHMR University under Mr. Ashish Bandhu, Assistant Professor during April 1- June 30, 2024.

Place: *Jaipur*

Date: *06/07/2024*

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DECLARATION

I hereby declare that this dissertation titled Effectiveness of the Patient Provider Support Agency (PPSA) Model in Improving Private Sector Engagement for Tuberculosis Care in Alirampur is the bonafide record of my original research work. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma.

Information derived from the published or unpublished work of others has been duly acknowledged in the text.

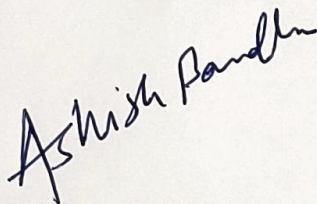

(Signature)

Name of Student Subhabrata Patra

Date: 6/7/24

CERTIFICATE

This is to certify that dissertation titled Effectiveness of the Patient Provider Support Agency (PPSA) Model in Improving Private Sector Engagement for Tuberculosis Care in Alirajpur is a record of the research work undertaken by SUBHABRATA PATRA in partial fulfilment of the requirements for the award of the degree of MBA (Hospital and Health Management) from the IIHMR University, Jaipur under my guidance and supervision and his approach to the research study has been sincere, scientific, and analytical.



Faculty Guide

IIHMR University, Jaipur

Date: 6/7/2024



School Dean

IIHMR University, Jaipur

Date: 07/07/2024.

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Abbreviations:

CBNAAT:	Cartridge-Based Nucleic Acid Amplification
CTD:	Central TB Division
CXR:	Chest X-ray
DBT:	Direct Benefit Transfer
DH:	District Hospital
DM:	Diabetes Mellitus
DMC:	District Microscopy Center
DRTB:	Drug-Resistant TB
DST:	Drug Susceptibility Testing
DSTB:	Drug-Sensitive TB
DTC:	District TB Center
DTO:	District TB Officer
FDC:	Fixed Dose Combination
MoU:	Memorandum of Understanding
NAAT:	Nucleic Acid Amplification Test
NPY:	Ni-kshay Poshan Yojana
NSP:	National Strategic Plan for TB Elimination 2020–2025
NTEP:	National TB Elimination Programme
NTSU:	National Technical Support Unit
PPP:	Public-Private Partnership
PPSA:	Patient Provider Support Agency
SOP:	Standard Operating Procedure
STLS:	Senior TB Laboratory Supervisor
STO:	State TB Officer
STS:	Senior Treatment Supervisor
STSU:	State Technical Support Unit
TU:	TB Unit
UDST:	Universal Drug Susceptibility Testing

Introduction:

Tuberculosis is an infectious disease caused by the bacterium *Mycobacterium tuberculosis*. The major site of the body it attacks is respiratory, although it could spread to all parts of the body. A person gets infected with the TB bacteria when he/she inhales the airborne droplets produced by coughing and sneezing of people already infected by these bacteria. Since ancient periods, it has been recognized as a leading cause of mortality worldwide. Despite great strides in treatment modalities and control measures adopted since the forties of the last century, it remains a significant public health challenge in many countries, particularly those in tropical and subtropical regions. Current therapy includes a minimum six months-long course of antibiotics, but the Such complications, like the emergence of drug-resistant strains, really complicate disease management. Effective control of TB depends on early diagnosis, strict adherence to treatment protocols, and strong public health interventions that reduce its impact on people and society.

Burden of Tuberculosis, 2022:

Although it is a fact that globally, the TB burden remains high, the India National TB Elimination Programme is on its way to success. In 2022, the country recorded 24.2 lakh notifications, the highest ever, up 13% from the previous year because case-finding drives were held across both public and private sectors coupled.

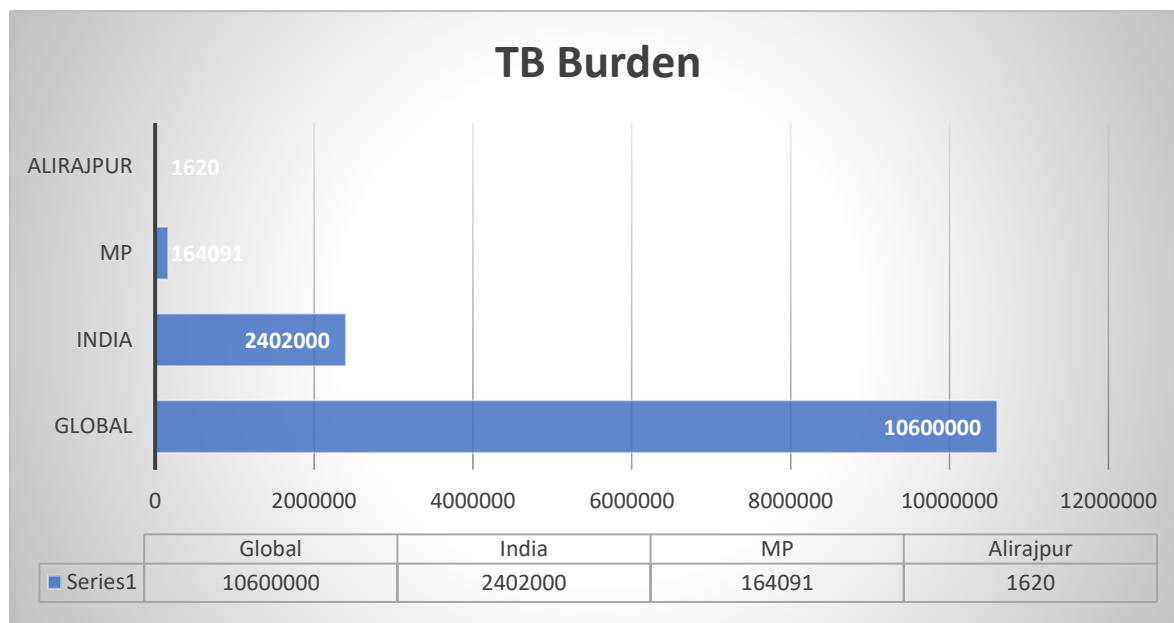
Revised Strategic Plan of India's NTEP increased efforts manifold for elimination of TB by 2025 despite challenges posed by the pandemic. Big increase in identifications of TB due to increased screening through active and passive case finding approaches A large increase in the number of private sector notifications in 2022 to its highest ever, quite indicative of district-wide coverage in TB detection.

This refocus also applies to rather more dangerous strains of drug-resistant TB. Over 63,801 MDR/RR-TB cases were diagnosed in 2022. The early detection and treatment of the regular as well as drug-resistant forms of TB are very important for controlling this disease.

Burden over Madhya Pradesh, 2022:

Now, by the base estimates in 2022, Madhya Pradesh had approximately 164,091 cases of TB, out of which 150,155 were pulmonary cases and 36,138 were extra-pulmonary cases [3]. This is a high burden for TB in the state; thus, the control measures being taken ought to continue with enhanced efforts. For such a large number of cases, strong public health initiatives, increased funding, and community awareness programs are required to curb this menace. spread of this infectious disease.

At a more local level, the district of Alirajpur, located in Madhya Pradesh in India, recorded 1,620 TB cases in 2022. As this number indicates, there is a persistent problem of TB locally; it thus shows the need for targeted interventions at the community level. Early detection, effective treatment strategies, and education regarding the disease are all important elements of tackling TB in areas where incidence rates are high, as in Alirajpur.



Government Schemes:

The Government of India has launched quite a number of comprehensive schemes under the National Tuberculosis Elimination Program (NTEP) to achieve the ambitious goal of eliminating TB by 2025. Such endeavours target all dimensions of TB control, from early. It extends from detection and effective treatment to preventive measures and community engagement.

The key initiatives and their detailed descriptions are as follows:

1. National Tuberculosis Elimination Program (NTEP)

The National Tuberculosis Elimination Program is the premier governmental undertaking of India motivated toward fighting tuberculosis. NTEP leads national efforts for control of TB under the National Health Mission. Their vision, enunciated in the National Strategic Plan, 2017-2025, is for a "TB-free India." NTEP provides free of cost, quality diagnosis, and treatment for TB through the public health system across the country. The program functions through a well-defined structure with four levels: This goes from the national to the sub-district levels. The program is guided at the national level by the Central TB Division, headed by a National Program Manager. Activities at the state and district levels are managed by the State TB Cells and District TB Offices, respectively, while at the sub-district level, this is managed by the Tuberculosis Units. There are also expert committees and national TB institutes which extend necessary support to the program.

2. TB Mukh Bharat (TB Free-India):

Infection Prevention and Control (IPC) Project Launched on September 9, 2022, by the Honourable President of India Smt. Droupadi Murmu, the TB Mukh Bharat IPC Project is a significant initiative under the Pradhan Mantri TB Mukh Bharat Abhiyaan. This project emphasizes stringent infection prevention and control measures in healthcare facilities, households, and communities to curb TB transmission. The President urged citizens to Together, let us aim to eliminate TB within this spirit of Jan Bhaagidari or

people's participation, considering it as a mission footing war. This project is, therefore, aimed at cutting short the risk of TB infections by duly ensuring proper hygiene, better sanitation, and sufficient ventilation at priority, along with the availability of adequate personal protective equipment (PPE).

3. TB-Mukt Panchayat:

The TB-Mukt Panchayat is a community-level initiative launched on March 24, 2023, under the leadership of Prime Minister Narendra Modi. The prime goal behind this initiative has been to spread awareness regarding the diseases and actively involve local leaders and community members in all TB control activities. In essence, what TB Mukh Panchayat intends to do is to ensure an enabling environment for the preventions, detection, and treatment of TB through community mobilization for action and local leadership. To this end, what is necessary is collective action and Grassroots participation in this initiative could really make a difference in controlling TB at the community level. [8]

4. Shorter TB Preventive Treatment (TPT):

This means the scaling up of shorter and more efficient preventive therapies among people at a risk of developing TB. The TPT, therefore, has the goal of enhancing adherence to preventive therapy through shortening and simplifying regimens in high-risk populations, including household contacts of patients with active TB and persons living with compromised immunity, for this will reduce their risk of getting TB.

5. Family-Centric Care Model for TB:

The Family-Centered Care Model for TB addresses social determinants of health, which impel TB outcomes and gives holistic care to patients. It recognizes that the family is an integral part of the patient's treatment and recovery process. This model involves family members in the care and support of a person living with TB as a means to increase adherence to treatment. This will improve health outcomes overall. It deals with feeding, mental health, and socio-economic conditions, thereby giving holistic care to the TB patient.

6. Patient Provider Support Agency (PPSA):

Under the PPSA model, any third-party agency or NGO with the selection by an NTEP unit at a state, city, or district level enlists participation from the private sector of doctors in the treatment of TB cases. This provides comprehensive services such as diagnosis, notification, patient adherence and support, and treatment linkages. a. Linking TB Control Efforts with Private Sector Health Providers Under the PPSA model, any third-party agency or NGO selected by an NTEP unit at the state, city, or district level will enlist participation from the private sector of doctors in the treatment of TB cases. The PPSA model focuses on an enhanced access to quality TB care through timely and effective treatment.

■ What is PPSA?

The PPSA model is a strategic initiative within the National Tuberculosis Elimination Program that involves the careful selection and engagement of a third-party agency or NGO by state, city, or district NTEP units with the objective of systematically integrating private-sector doctors into national TB control efforts, ensuring very much that private health providers are actively involved in this model is capable of providing comprehensive management of TB patients, and it can be described as an ensemble of elongated and multi-dimensional services that revolve around accurate and timely diagnosis, systematic notification of TB cases, vigorous patient adherence support mechanisms, and seamless treatment linkages. The PPSA model seeks to substantially grow access to high-quality TB care by ensuring that a large number of people through secure collaborations with private-sector health care providers of patients are offered timely, efficient and standardized care that it is essential to realize the ultimate goal of TB elimination. It creates one complete circle not only turning the public health programs to hold hands with private health care providers leading to a momentum of collaboration but also to sharing practicing the best, utilizing the resources well and realizing a great improvement in the patients' outcomes that lead to the success of TB eradication, in a nutshell control measures at the community, sub-national, and national level.[5,6

Key activities and role of PPSA include:

1 Private Notification: Mapping of Private Health Facilities:

- **Mapping:** Ensure 100% mapping of Private Health Facilities (Private Medical Practitioners, Private Laboratories, and Chemists) available in the districts for private notification of each TB patient.
- **Engagement:** Engage the private sector for notification, treatment adherence, address verification, and contact tracing.
- **Reporting:** Share block-wise (Rural) and ward-wise (Urban) mapping data with NTEP/STSU on a monthly basis.
- **Network Expansion:** Increase the number of private providers/health facilities in the PPSA network.
- **Sputum Referrals:** Keep sputum referrals format at doctor's clinics/health facilities, to be correctly filled by the Sputum Collecting Agent.
- **Consumables Supply:** Provide and replenish falcon tubes, sputum containers, thermocol boxes, and zipper bags at doctor's clinics/health facilities.
- **Coordination:** Strategize sputum collection and transportation (SCT) in close coordination with Active Case Finding (ACF).
- **Positivity Rate:** Maintain an average positivity rate of at least 10% for private samples mobilized by PPSA.
- **IEC Materials:** Display IEC materials related to NTEP in Hindi at every private facility.
- **Nikshay Portal:** Facilitate notification of private TB cases and referrals in the Nikshay portal.
- **Data Management:** Keep all data reports correctly and completely filled and updated, submitted to the District Tuberculosis Centre (DTC) monthly in both hardcopy and softcopy.

- **Engage Informants:** Engage AYUSH doctors and unregistered practitioners as informants.
- **CME:** Ensure Continuing Medical Education (CME) in every quarter in coordination with District Tuberculosis Officer (DTO).

2 UDST (Naat + Culture):

- **Testing Facilitation:** Facilitate private patients in getting UDST (Naat + Culture) testing done at district or block level private health facilities.
- **Testing Rate:** Ensure at least 70% UDST (Naat + Culture) testing against notified private cases within 7 days of notification.
- **Kit Shortage Reporting:** Inform NTEP via email about any shortage of Naat testing kits.
- **Exemption:** Apply for exemption in case of kit shortage.

3 Validated Bank Details Including ABHA ID:

- **Collection:** Collect bank details, including passbook copy, Aadhar card copy, and ABHA ID for 100% private patients within 7 days of notification (15 days for out-of-district/state patients).
- **Consent Form:** Use a consent form for minors' bank details, as per NTEP format.
- **Account Facilitation:** Facilitate opening of bank accounts for private patients when required.
- **Nikshay Portal:** Update bank details and ABHA ID on the Nikshay portal.
- **Validation Correction:** Undertake necessary corrections for any non-validated bank details.

4 HIV and DM Screening:

- **Testing:** Conduct HIV and DM screening for 100% notified patients within 7 days of notification.

5 Extra Pulmonary Testing:

- **Availability:** Ensure availability of specialists, infrastructure, instruments, and consumables for sample collection.
- **Sample Collection:** Collect and pack samples as per NTEP guidelines.
- **Documentation:** Maintain all documents and registers.
- **Nikshay Entry:** Enter respective details in Nikshay.
- **Storage:** Ensure appropriate storage of samples as per NTEP guidelines in case of delays.
- **Specialist Support:** Ensure availability of specialists for procedures like FNAC, biopsy, gastric lavage, etc., and have necessary instruments and infrastructure.

6 Successful Treatment:

- **Microbiological Tests:** Ensure 100% microbiological confirmatory tests for patients who have completed treatment.
- **Outcome Reporting:** Report outcomes (Cured or Treatment Completed) within 15 days of treatment completion.
- **Extra Pulmonary Patients:** Ensure appropriate tests for extra pulmonary patients, including CT scan, ultrasound, and others as indicated by the doctor.

7 Sputum Collection and Transportation:

- **Sample Collection:** Ensure sputum collection from private health facilities to designated labs within 48 hours.
- **Verification:** Verify 0.5% of transported samples by the DTC.
- **Collection Centres:** Establish sample collection centres in private healthcare facilities/community.
- **Tracking:** Develop a web-based application to track sample collection and transportation.
- **Runner Appointment:** Appoint runners for sample collection and transportation, ensuring regular follow-ups.
- **Positivity Rate:** Maintain a minimum sputum positivity rate of 15%.
- **Counselling:** Counsel patients on expectorating a good sample and ensure accurate packaging and labelling.
- **Storage Facility:** Ensure appropriate specimen storage as per NTEP guidelines.
- **Result Coordination:** Coordinate with laboratories for timely delivery of results and maintain necessary documentation.

8 Contact Tracing (Geo-mapping) and TPT:

- **Geo Mapping:** Perform geo-mapping of all notified patients in private health facilities.
- **Contact Tracing:** Conduct contact tracing of family members within the given KPI timeframe.
- **IGRA Testing:** Share line lists of eligible household members for IGRA testing with DTOs.
- **Screening:** Screen contacts during the first home visit and provide treatment as per PMTPT guidelines.

9 Doorstep Delivery of Drugs:

- **Drug Delivery:** Ensure doorstep delivery of drugs to private patients on a monthly basis, with follow-up and collection of consumed drug strips.
- **Prescription Verification:** Verify prescriptions, pick up TB drugs from the NTEP/service provider's warehouse, and deliver them to patients.
- **Nikshay Portal:** Facilitate drug distribution entries on the Nikshay portal.

Study area:

❖ Geography Profile:

Alirajpur is a city located in the Alirajpur tehsil of Alirajpur district in the state of Madhya Pradesh, India. It is situated in the Malwa region, near the borders of Gujarat and Maharashtra, covering an area of 3182 square km. [13] There are 6 blocks (Alirajpur, C S Azad Nagar, Jobat, Katthiwada, Soundwa & Udaigarh) in this district.



Demography (2011 Census):

Population: 728,677 (Male-362,542 & Female-366,457)

Literacy :37.22%

Sex ratio: 1009(1,009 females for every 1,000 males)

- ❖ **Health Facility:** The district has a total of 39 private health facilities staffed by MBBS and AYUSH doctors. The distribution of doctors across the district's six blocks is as follows:

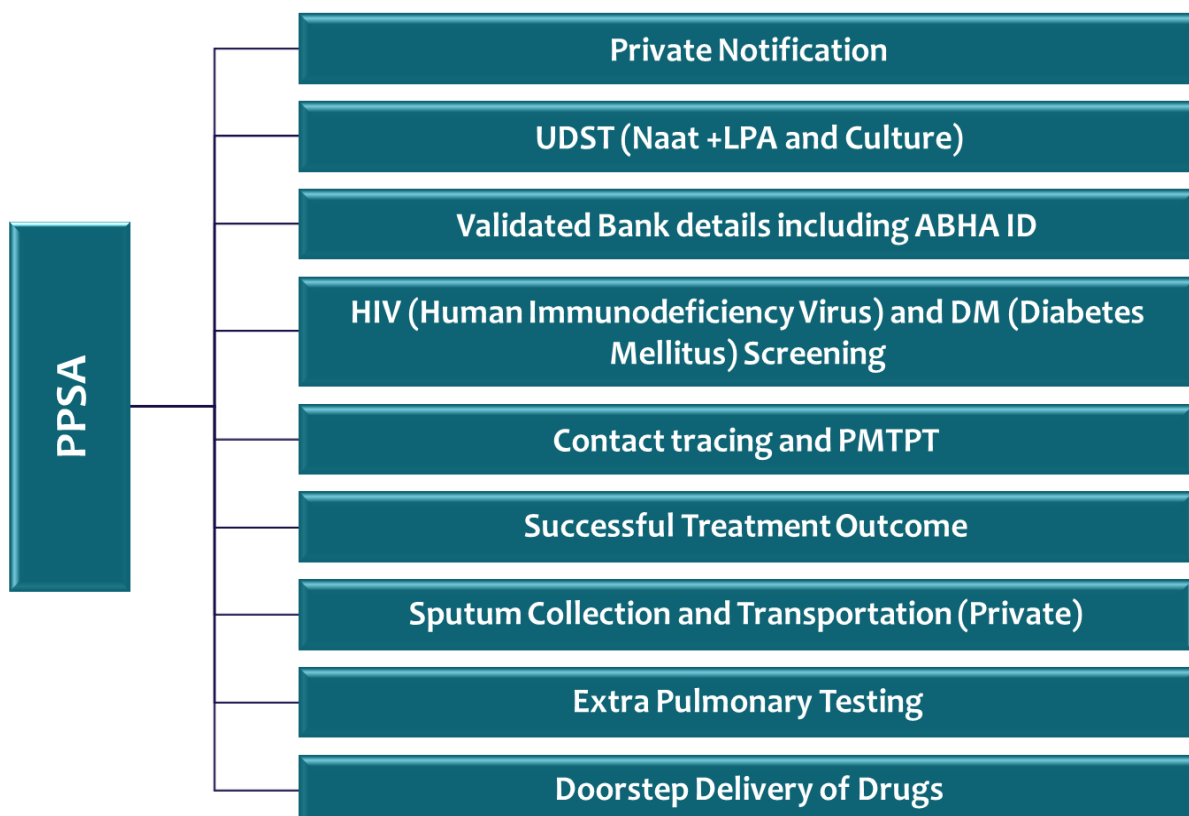
Blocks	MBBS	AYUSH
Alirajpur	4	10
C S Azad Nagar	2	4
Jobat	2	8
Kattiwada	0	1
Soundwa	0	4
Udaigarh	0	4

- ❖ **TB Unit:** The district is equipped with 1 Designated Microscopy Centre (DMC) and 5 Tuberculosis Units (TU)

Study Objective & Methodology:

Evaluate the Effectiveness of PPSA in TB Notification and Management:

- Assess the efficiency and comprehensiveness of the PPSA's efforts in mapping private health facilities and ensuring the notification, treatment adherence, address verification, and contact tracing of TB patients.
- Analyze the Role of PPSA in Enhancing Diagnostic and Treatment Services:
- Investigate the facilitation of diagnostic testing (UDST, Naat + Culture) and the provision of essential services, such as sputum collection and transportation, by PPSA to improve TB diagnosis and treatment outcomes in the private sector.
- Examine Data Management and Reporting Processes:
- Evaluate the effectiveness of data collection, management, and reporting by PPSA, focusing on the accuracy, completeness, and timeliness of data shared with NTEP and other relevant stakeholders.
- Assess the Impact of PPSA on Patient Support and Treatment Success:
- Analyze the strategies employed by PPSA to support TB patients through financial management (validated bank details, ABHA ID), HIV and DM screening, contact tracing, and the provision of doorstep drug delivery services, and measure their impact on treatment adherence and successful treatment outcomes.



Methodology:

Private Notification:

Mapping of Private Health Facilities and Private Notification:

Achieve a monthly target of 20 TB notifications from Alirajpur district's private sector. The PPSA agency will ensure 100% mapping of private health facilities, facilitating comprehensive TB patient notification through engagement in treatment adherence, address verification, and contact tracing. Private providers will be mapped block-wise and ward-wise, with monthly updates shared with NTEP/STSU. Sputum referrals will be accurately filled at clinics, and consumables provided by PPSA will be replenished timely. Regular visits to practitioners will increase notifications by 10% from the baseline, and the PPSA will ensure training, data accuracy, and the display of IEC materials.

Sputum Collection and Transportation:

Ensure the efficient collection, transportation, and testing of sputum samples from presumptive TB patients in Alirajpur district's private sector, targeting 300 samples monthly. By engaging private health facilities, we will replace existing collection mechanisms, ensuring patient convenience and real-time tracking. Samples will be transported to designated labs within 48 hours, with 5% verified by the District Tuberculosis Centre (DTC) for quality assurance.

UDST (Naat+LPA + Culture):

To facilitate UDST (Naat + Culture) testing for notified private TB patients in Alirajpur district. The PPSA agency will ensure 80% of notified cases undergo UDST within 7 days, either at district or block level private health facilities. The agency will manage the supply of testing kits and promptly notify NTEP of any shortages. Regular engagement with private health

Nutritional Counselling

H5Content

Nutritional Counselling begins with the nutritional assessment of TB patients by:



Nutritional Status:

Assessing the height, weight and BMI of the TB patient



Diet and Preference food for TB patients



Current appetite and food intake of TB patients

Based on the nutritional assessment, following information can be conveyed to TB Patients

- Patients with TB should be encouraged to have **frequent food intake** in the form of three meals and three snacks.
- Attempts should be made to **increase the energy and protein content** in the meals and snacks without increasing its volume.
- The addition of oil, butter or ghee to the chapati or rice can **increase the energy content** of the diet.
- Pulses** in other forms, e.g. sprouts, roasted Chana, groundnuts, can be taken as snacks in either fried or in roasted form. **Milk and eggs** to be included in the diet.



providers, accurate record-keeping, and timely updates to NTEP will ensure efficient patient management and adherence to TB control protocols.

Validated Bank details including ABHA ID:

To ensure the collection and updating of bank details, Aadhar card copies, and ABHA IDs for private TB patients in Alirajpur district within 7 days of notification. For minor patients, parent bank details will be collected with consent. The PPSA agency will facilitate bank account opening when needed and ensure all information is updated on the Nikshay Portal. The agency will collaborate with NTEP staff to create/map ABHA IDs and address any issues with bank detail validation promptly to ensure smooth financial management for TB patients.

HIV (Human Immunodeficiency Virus) and DM (Diabetes Mellitus) Screening :

The effectiveness of the PPSA Agency in implementing mandatory HIV testing and Diabetes Mellitus (DM) screening for all TB-notified patients in Alirajpur district, Madhya Pradesh.

Successful Treatment:

the PPSA Agency's performance in Madhya Pradesh's Alirajpur district on ensuring successful TB treatment outcomes. We will assess completion rates of microbiological confirmatory tests for cured patients and treatment adherence confirmation for those completing treatment regimens. This analysis will cover 100% of notified patients with outcomes reported within 15 days of treatment completion.

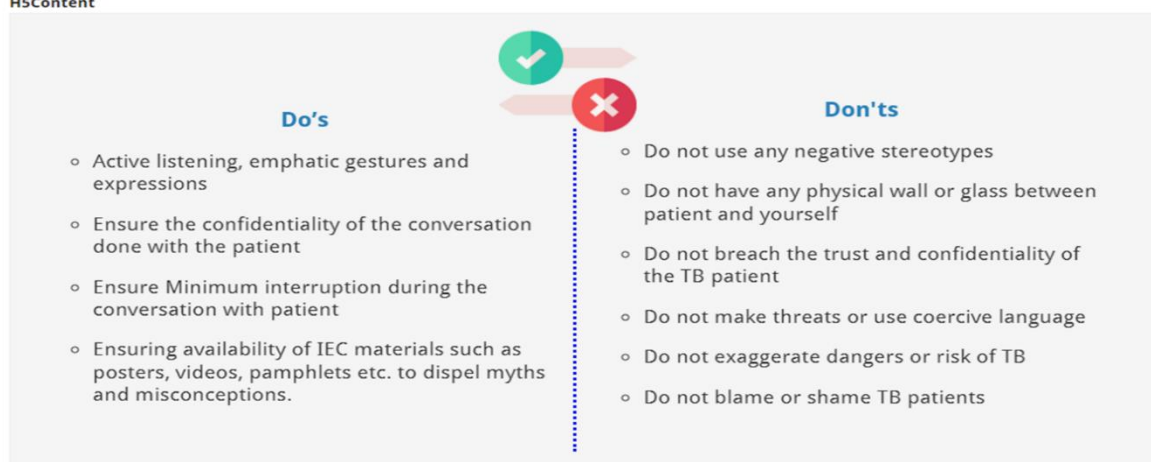
Contact tracing (Geo-mapping) and TPT:

The PPSA Agency's implementation of programmatic management for TB preventive treatment (PMTPT) in Alirajpur district. We will assess:

- Geo-mapping of all notified private facility TB cases.
- Contact tracing completion rates for household members within designated timeframes.
- Delivery of IGRA testing for eligible contacts via line lists shared with DTOs.
- Implementation of TB workup (sputum collection) for suspected cases.
- Provision of IPT for eligible household contacts above 5 years old.

Do's & Don'ts for Patient Communication

H5Content



Doorstep Delivery of Drugs

The effectiveness of the PPSA Agency's door-step delivery program for TB medications to private patients in Alirajpur district. We will analyze data on:

- Completion rates of monthly medication deliveries to patients' homes.
- Follow-up procedures to assess adherence and collect used medication packaging for monitoring.
- Agency's efficiency in verifying prescriptions, obtaining drugs, and updating the Nikshay portal with distribution information.

Counselling of TB Patients

H5Content

Confidential dialogue **between** a **health care provider** and a **patient** that helps a patient to define his/her feelings, cope with stress, and to make **informed decisions regarding treatment**.

The patient should be counselled at all the three phases i.e.,

Pre-treatment counselling`

- About TB disease and treatment
- Air borne infection control
- Need for adherence
- Public Health Actions
- Identification of adverse events
- Tobacco /Alcohol cessations
- Identification of comorbidities

During Treatment Counselling

- Importance of Adherence
- Identification of adverse events
- Importance of timely follow ups
- Public Health Actions

Post treatment Counselling

- Testing at the end of treatment
- Long term follow up
- Tobacco /Alcohol cessations

Literature review:

S.No.	Author and Year	Title/ Objectives of the study	Key Findings
1.	Michael Gardam, Geetika Verma, Ann Campbell, Jun Wang & Kamran Khan (2009)	Impact of the Patient-Provider Relationship on the Survival of Foreign Born Outpatients with Tuberculosis	• Patient-provider language discordance was found to significantly increase the risk of death among foreign-born outpatients with active tuberculosis. • Treatment in a dedicated tuberculosis clinic was also associated with a reduced risk of death • Treatment by a physician experienced in tuberculosis care was associated with a lower risk of death
2.	Ramya Ananthakrishnan (2019)	Successfully Engaging Private Providers to Improve Diagnosis, Notification, and Treatment of TB and Drug-Resistant TB: The EQUIP Public-Private Model in Chennai, India	• Nearly half (48.7%) of the private providers approached participated in the project by referring at least one patient to an EQUIP center for evaluation. This highlights the potential for engaging private providers in tuberculosis (TB) control efforts. • A total of 2,621 patients underwent testing through the EQUIP project, resulting in 1,232 (47.0%) TB diagnoses. Among these, 727 (59.0%) cases were bacteriologically confirmed, with GeneXpert (56.3%) and smear microscopy (2.7%) being the primary diagnostic methods. • A notable finding was the identification of 26 rifampicin-resistant TB cases (confirmed

			through GeneXpert), representing 3.7% of GeneXpert-diagnosed cases. • Among drug-susceptible TB patients receiving EQUIP support, 89.4% achieved treatment success. For rifampicin-resistant TB cases, 77% of those notified started and continued on second-line treatment.
3.	Nimalan Arinaminpathy, Sarang Deo, Simrita Singh, Sunil Khaparde, Raghuram Rao, Bhavin Vadera, Niraj Kulshrestha, Devesh Gupta, Kiran Rade, Sreenivas Achuthan Nair & Puneet Dewan (2019)	Modelling the impact of effective private provider engagement on tuberculosis control in urban India	• The majority of TB patients in India initially seek care from private healthcare providers, contributing significantly to healthcare delivery but facing challenges such as inaccurate diagnostics and treatment delays. • Despite progress in reducing TB deaths through the RNTCP's public sector services, substantial challenges remain due to the overwhelming presence of private healthcare in the initial stages of care-seeking. • Initiatives like the Public Private Support Agency (PPSA) model in Mumbai and Patna have shown promising results in increasing TB notifications from the private sector. However, their epidemiological impact on TB incidence needs empirical validation. • The model identified key parameters influencing its outcomes, including diagnostic accuracy, treatment adherence, and

			coverage of PPSA interventions among private providers. These factors were crucial in determining the success of TB control efforts in the private sector.
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Result:

April-June:

The performance of the NTEP program on our district for the second quarter of 2024 (April-June).

Sputum Collection :

The NTEP program varied 100% in the collection regarding sputum for all three months of reporting period (April, May and June). We succeeded in obtaining specimens in April from all the 26 patients screened. This success rate continued in May and June with collections from 163 and 223 patients respectively. This consistent increase in the number of sputum collections attests to a steady effort in actively searching for and testing presumptive TB cases in our district.

The program was actively diagnosing cases of TB throughout the quarter. Following is the monthly break-down: :

April: Eight patients diagnosed with pulmonary TB and one patient with extrapulmonary TB - lymph node.

May: The diagnosed cases increased to 16 pulmonary TB patients. Additionally, five Based on the X-ray, 15 patients were identified to have presumptive pulmonary TB.

June: TB detections continued to increase with 17 pulmonary, TB cases including 1 diagnosed based on X-ray while the 2 extra-pulmonary, TB cases were in lymph node.

It is of importance to note the increase of the TB detections mainly pulmonary over the three months; this may require further investigation for such a trend so that to understand the reasons.

Patient Support:

Comprehensive patient support is the mainstay of the NTEP (PPSA) programme. Here is what we achieved:

HIV and DM Testing:

All diagnosed patients were subjected to mandatory HIV and Diabetes Mellitus testing during the quarter. Co-Prevalence of these comorbid conditions with TB is important for its effective treatment.

Direct Benefit Transfers (DBT):

Bank passbooks and Aadhaar cards of all patients have been collected to enable DBT for their treatment. This allows for timely financial support to be made to patients under treatment.

Contact Tracing and Geo-Tagging:

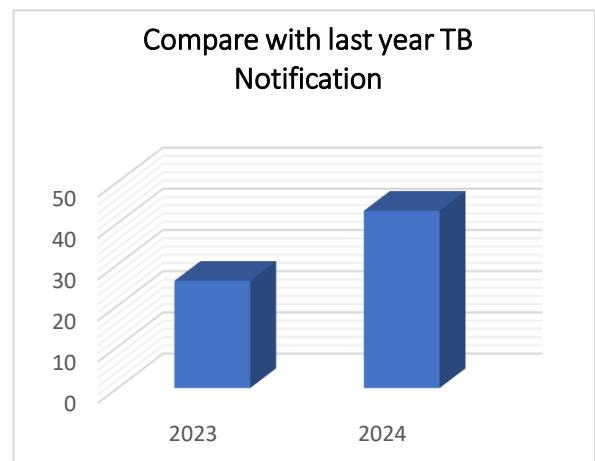
Contacts traced and geo-tagged for the diagnosed cases during the reporting period have been completed meticulously. Such an approach is comprehensive in avoiding the spread of TB through identifying and managing possible exposures.

Compare to last year performance(Q2):

This report presents the performance of the National Tuberculosis Elimination Program during. This is under the PPSA in our district for the second quarter of Q2: 2024; April – June: I managed various activities regarding the programs that were important for the effective functioning of the TB Detection and Management This report also contains a comparison of key metrics to the same Corresponding period in the last year (April – June 2023).

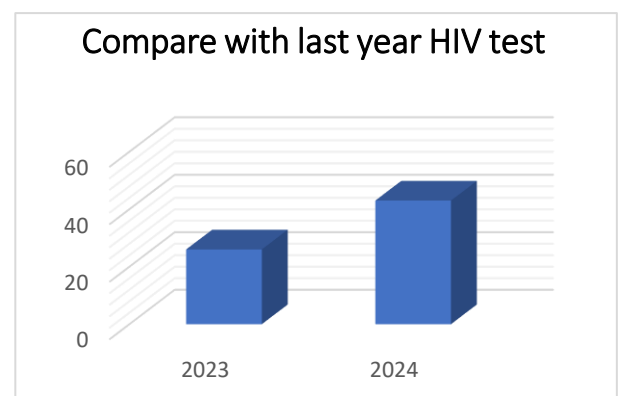
TB Notification:

- A significant increase in TB notifications was observed this year compared to the previous year. We identified 44 TB cases in Q2 2024, compared to 30 notifications in Q2 2023. While this represents a positive development in terms of case detection, it also raises concerns about a potential rise in TB prevalence in our district. Further analysis is recommended to understand the reasons behind this increase.
- It is noteworthy that the TB notification target for the second quarter of 2024 was set at 50 cases. Although the current notification level of 44 cases falls short of this target by 6 cases, the observed increase from the previous year indicates progress towards meeting or exceeding annual notification goals.



HIV Testing:

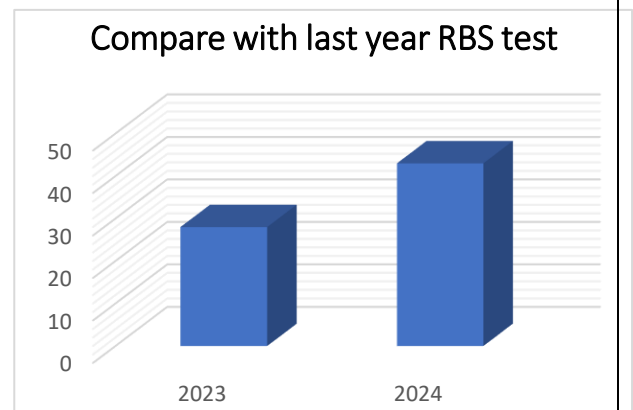
- The number of patients who underwent HIV testing also increased this year. We completed HIV testing for 43 patients in Q2 2024, compared to 26 in Q2 2023. Receptiveness to HIV testing is crucial for early identification and management of co-morbidities that can impact TB treatment outcomes. The increase in testing numbers suggests a growing awareness of the importance of HIV testing among patients.
- The increase in HIV testing from 2023 to 2024 suggests enhanced efforts in identifying and managing co-infections among TB patients, thereby improving overall patient care and treatment outcomes.



RBS Testing:

In terms of RBS (Random Blood Sugar) testing, the second quarter of 2023 reported 28 tests performed. This figure denotes the number of individuals who underwent RBS testing during the specified period. Comparatively, in 2024, RBS testing saw an increase to 43 tests during the same quarter. This represents a notable rise of 15 tests, indicating improved screening and monitoring of blood sugar levels among TB patients compared to the previous year.

The increase in RBS testing highlights efforts to manage diabetes mellitus, a common comorbidity among TB patients, thereby ensuring comprehensive care and better treatment outcomes.



Direct Benefit Transfers (DBT):

Like the trends in TB notification and HIV testing, the DBT enrolment also showed a Positive increase. Facilitating DBT enables the provision of financial assistance in time for treatment related to TB, thereby improving Treatment Adherence and Patient Outcomes

Contact Tracing and Geo-Tagging:

Contact tracing and geotagging of patients and all diagnosed cases, their Contacts, were meticulously completed for both periods: Q2 2023 and Q2 2024.

Our district NTEP (PPSA) programme did very well in the second quarter of 2024. It achieved a high increase in TB notification, HIV testing, and DBT enrolment compared to the corresponding quarter of the previous year. The targets for TB notification have not been met, though the trend is very encouraging. We will continue working on better case detection and efficient management of patients, and understanding the rising tide of notifications for TB. A year-by-year increase needs, therefore, a detailed analysis in order to understand whether this represents a rise in true prevalence or improved detection of TB.

Conclusion:

The NTEP (PPSA) program has seen optimistic progress in the Alirajpur district during the second quarter of 2024. We have achieved a 100% success rate in sputum collection during the quarter, which helped in the effective identification of TB cases. There has been a significant increase in the number of diagnosed cases of TB compared to the corresponding quarter in 2023. Though this trend is welcome for early detection, further investigation is called for to know reasons for an increase in notifications of TB cases. The programme had a strong focus on comprehensive patient support by making HIV and DM testing mandatory amongst all diagnosed patients. DBT was facilitated by collecting bank details from patients so that they can receive timely financial incentives to adhere to treatment. Contact tracing and geo-tagging of patients and their contacts was completed scrupulously for all diagnosed cases, showing commitment towards prevention of transmission of TB. Some key improvements compared to last year include the increase in notified TB cases, from 30 to 44; an increase in HIV testing, from 26 to 43; an increase in RBS testing, from 28 to 43—probably indicative of increased patient awareness about TB and related conditions. Although this fell short with regard to target achievement for notification of TB cases—the 44 versus 50—the trend is extremely encouraging.

Moving forward, we will focus on:

- Investigating the reasons behind the increase in TB notifications.
- Enhancing efforts to achieve the TB notification target for the remaining quarters.
- Encouraging continued adherence to patient support services, including HIV and DM testing, DBT enrolment, and contact tracing.
- Implementing robust data analysis to monitor program effectiveness and identify areas for further improvement.

By strengthening our program's reach and effectiveness, we aim to significantly contribute to achieving the national goal of TB elimination in India.

Recommendation:

1. Establish Local FLPA Examination Facilities:

Currently, these sputum samples are sent to Indore for First Line Probe Assay examination, resulting in considerable delay in making a diagnosis and starting treatment. It takes at least 3-4 days for sample dispatch and some more time for examination in Indore. This can allow for a longer period of infectiousness and higher transmission rates in the community. These delays can be mitigated, and treatment can be timely if FLPA examination facilities are established within our district. This will ensure prompt diagnosis, and appropriate treatment will be initiated to improve patient outcome and limit further transmission of TB. In addition, locally available facilities could increase patient trust in testing and compliance because patients will receive faster feedback about their condition.

2. Empower AYUSH Doctors for Clinical Diagnosis:

In Alirajpur, the number of MBBS doctors is not sufficient to diagnose and treat the high number of cases that occur due to TB. It has an adequate number of AYUSH doctors who could be effectively used to fill this gap. Permitting AYUSH doctors to clinically diagnose, if properly trained, would significantly enhance health care capacity in delivery. Structured training should be conducted for AYUSH doctors in diagnosis and management of TB. They are empowered with the required knowledge and skills for accurate diagnosis and effective treatment. This would ensure optimum utilization of the available human resources, and the patients would receive timely, quality care. Further, there is a need for continuous professional development and support to the AYUSH doctors to maintain high standards of care and be updated on the latest TB management protocols.

3. Prioritize Treatment Adherence Over NPY Documentation:

While the "government's obsession with generating NPY documentation— Bank, ABHA ID— directed toward administrative purposes relating to guarantees to the patient for feeble and other forms of support was needed, treatment adherence stood much ahead. Compliance in treating TB is important for rendering a drug-resistant strain of these bacteria and toward the goal of a TB-free India. This will be bettered by rebalancing the emphasis, with increased focus on monitoring and supporting patients throughout the treatment course. These will be accomplished through large-scale improvements in the patient follow-up system, counselling, and adherence support, such as directly observed therapy, digital adherence technologies, and community-based support systems. Importantly, the importance of completing treatment and dangers of failing to adhere should be impressed on patients at every opportunity.

References:

1. Suseela RP, Shannawaz M. Engaging the private health service delivery sector for TB care in India—Miles to go! Trop Med Infect Dis [Internet]. 2023;8(5):265. Available from: <http://dx.doi.org/10.3390/tropicalmed8050265>
2. Gardam M, Verma G, Campbell A, Wang J, Khan K. Impact of the patient-provider relationship on the survival of foreign born outpatients with tuberculosis. J Immigr Minor Health [Internet]. 2009 [cited 2024 Jul 5];11(6):437–45. Available from: <https://pubmed.ncbi.nlm.nih.gov/19127431/>
3. Gov.in. [cited 2024 Jul 6]. Available from: https://tbcindia.mohfw.gov.in/wp-content/uploads/2023/06/5646719104TB_AR_2023_04-04-2023_LRP_final.pdf
4. 2. TB disease burden [Internet]. Who.int. [cited 2024 Jul 6]. Available from: <https://www.who.int/teams/global-tuberculosis-programme/tb-reports/global-tuberculosis-report-2022/tb-disease-burden>
5. Gov.in. [cited 2024 Jul 6]. Available from: https://tbcindia.mohfw.gov.in/wp-content/uploads/2023/05/3641774273Final-Operations-Manual-for-Partnerships_10-04-23.pdf
6. Path.org. [cited 2024 Jul 6]. Available from: https://media.path.org/documents/PPSA_Toolkit_89YDt8C.pdf?_gl=1*17wt93d*_gcl_au*M TA5NDU3NDazMC4xNzE5ODk2Mjkx*_ga*MTM5NTA1MTgxNC4xNzE5ODk2Mjky*_ga_YBSE7ZKDQM*MTcyMDIzMjExNi4yLjAuMTcyMDIzMjExNi42MC4wLjA.
7. GUIDANCE DOCUMENT. PRADHAN MANTRI TB MukT BHARAT ABHIYAAN [Internet]. Gov.in. [cited 2024 Jul 6]. Available from: https://tbcindia.mohfw.gov.in/wp-content/uploads/2023/05/1583929709Guidance-Booklet_02-08-2022.pdf
8. Nic.in. [cited 2024 Jul 6]. Available from: <https://tbcindia.nic.in/WriteReadData/l892s/956455182TB%20Mukt%20Panchayat%20Handbook.pdf>

9. [cited 2024 Jul 6]. Available from: <http://file:///C:/Users/dpmal/Downloads/9789290228059-eng.PDF>

10. Gov.in. [cited 2024 Jul 6]. Available from: https://nhm.gov.in/New_Update-2021-22/Presentation/PS-MD-Orientation-workshop-26-08-2021/NTEP.pdf

11. Ananthakrishnan R, Richardson MD, van den Hof S, Rangaswamy R, Thiagesan R, Auguesteen S, et al. Successfully engaging private providers to improve diagnosis, notification, and treatment of TB and drug-resistant TB: The EQUIP public-private model in Chennai, India. *Glob Health Sci Pract* [Internet]. 2019;7(1):41–53. Available from: <http://dx.doi.org/10.9745/GHSP-D-18-00318>

12. Arinaminpathy N, Deo S, Singh S, Khaparde S, Rao R, Vadera B, et al. Modelling the impact of effective private provider engagement on tuberculosis control in urban India. *Sci Rep* [Internet]. 2019;9(1):3810. Available from: <http://dx.doi.org/10.1038/s41598-019-39799-7>

13. Wikipedia contributors. Alirajpur district [Internet]. Wikipedia, The Free Encyclopedia. 2024. Available from: https://en.wikipedia.org/w/index.php?title=Alirajpur_district&oldid=1221197638