

DOST Model' for DR-TB Patients, New Delhi: Perspectives of Healthcare Providers

Vindhya Vatsyayan^{1*}, Theresa Pattery², Khasim Sayyad³, Jason Williams², Arnab Pal¹, Vikas Panibatla³, Ashwani Khanna⁴

¹Clinton Health Access Initiative (CHAI), Delhi, India

²Johnson & Johnson Global Public Health R & D, Breese, Belgium

³TB Alert India, Hyderabad, India

⁴Delhi State TB Control Office, Delhi, India

Email: *vikass@tbalertindia.org

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Abstract

Introduction: In India, tuberculosis continues to be a major public health problem and there is a growing concern about drug-resistant tuberculosis as most of the patients are from private sector. The National TB Elimination Programme (NTEP) in collaboration with TB Alert, India (TBAI) and Clinton Health Association of India (CHAI) had implemented a collaborative project to strengthen the network between the private practitioners and public healthcare facilities in New Delhi during 2019 and 2020. **Methods:** A study was conducted to understand the enablers and challenges encountered by them during the implementation of the project. This is a qualitative exploration of the “healthcare providers” on a project linking DR-TB patients in private sector with government health facilities. The process of data collection involved face-to-face in-depth interviews of healthcare providers, the Doctors mainly from private and public health facilities, the paramedical workers from general health system and paramedical from the project using an interview guide administered through a trained researcher. **Results:** The study findings revealed that all healthcare providers were completely aware of the DOST project in the health system, the model led to early diagnosis and initiation of quality treatment. There were no major challenges to the implementation of the project. The healthcare providers wish to have this project implemented for a longer duration. **Conclusion:** The perspectives of healthcare providers towards the “DOST” project were optimistic and call for re-initiating the project in the area.

Keywords

DOST, Drug-Resistant Tuberculosis Patients, India, Health Care Providers

1. Introduction

In India, tuberculosis (TB) continues to be a major public health problem despite the effective National TB Elimination Programme (NTEP). The country contributes to nearly 27% of global TB burden and according to the India TB report 2022, there were nearly 1.93 million Drug sensitive (DS) TB cases notified in 2021 [1]. Similarly, in the country 48,232 drug-resistant (DR) TB patients were diagnosed and 43,380 (90%) were initiated on treatment [1]. For over many decades, the private health sectors have been dominating in providing first point of care to the presumptive TB patients and hence, the engagement of private sector has been crucial to the programme, especially in the diagnosis and treatment of DR-TB patients [2] [3]. The process of diagnosing a DR-TB patient from a private sector and linking the patient to domicile care for NTEP treatment within a short span of time is complex as it is dependent on many factors like patients' health seeking behaviour, the financial health of the patient's family, the accessibility and availability of public health facilities at the vicinity of the patient, awareness, and inquisitiveness of the patients to undertake timely and appropriate treatment [4] [5].

The NTEP in collaboration with TBAI and CHAI had implemented a collaborative project to strengthen the network between the private practitioners and public healthcare facilities in New Delhi during 2019 and 2020. It was referred to as "DOST" model to link and support DR-TB patients from private sector [6]. The structure of the model was based on three key pillars: 1) the field staff called as treatment coordinators; 2) Call center; and 3) Mobile health Information Technology platform called as Connect for Life™ (Johnson & Johnson). The model envisaged providing treatment adherence support using a combination of mobile health (mHealth) and information communication and technology (ICT) solutions and trained field personnel. Through this project, the private practitioners were sensitised on the importance of drug-resistant tuberculosis, and they were requested to refer the presumptive drug-resistant TB patients to the government health facility as soon as they identify the patient through project workers. Accordingly, the physicians informed the project workers once the patients were identified and the project workers contacted the patients, counselled them on the importance of diagnosis and treatment of drug-resistant TB. The project staff accompanied the patients to the appropriate health facilities and ensured that all the patients undergo appropriate diagnostic tests and are initiated on treatment in a timely manner. The authors have published the process of DR-TB care services provided under the project elsewhere and it essentially included prompt identification of presumptive DR-TB patients, sample collection and transportation, testing and reporting, conduct of pre-treatment evaluation, ambulatory care of DR-TB patients, regular follow-up, and screening of family members [6]. Under this project, about 9331 private sector patients were subjected to cartridge based nucleic acid amplification test (CBNAAT), 382 (4%) patients were diagnosed with DR-TB, 301 (79%) were linked to NTEP Delhi and

231 (76%) patients were initiated on treatment in the public sector. It becomes important for the policy makers and the programme managers to know the usefulness and ease of implementation of the project for further escalation and replication in other parts of the country [7] [8]. Hence, we conducted a study amongst the NTEP healthcare providers, private practitioners and the DOST project staff to understand the enablers and challenges encountered by them during the implementation of the project.

2. Methods

It was a qualitative study conducted during January to July 2021 amongst the NTEP programme staff, the DOST project staffs, and the private practitioners. The process involved face-to-face interview of healthcare providers using an interview guide which was pilot tested and administered through a male trained researcher (KS) who is a graduate and non-medical personnel. He was working for the project at the time when interviews were conducted. The researcher was trained by a dedicated expert in qualitative research studies for seven days through online platforms. All the interviews were conducted after obtaining the participants written consent. There was no prior relationship established with the study participants by the researcher. Few of the participants were aware that the researcher wanted to receive the feedback on the project implementation. To reduce the interviewers' bias, the researcher made efforts to create conducive environment where in the participants could express their views and feedbacks honestly. The healthcare providers were randomly selected, and the interviews were conducted at a place and time convenient to the participants. It was ensured that no other persons were present in the room during the interview. The interviews were conducted at the workplaces after obtaining prior appointment from the participants telephonically. The interviews were designed to last for fifteen minutes. Field notes were taken during the interview and provisions were made not to conduct repeat interviews. The researcher moved on to the next question when saturation point was obtained. All the interviews were audio recorded after obtaining consent. At the end of the interview, participants were provided a chance to go through the audio recordings for validation and participants provided their feedback. Prior permission was obtained by the competent authorities and ethics approval was obtained for the conduct of the study. The probes and areas or themes for interview were focused on: 1) awareness of the participants on the project, 2) their perceived benefit to the patients, 3) the advantages of having such a mechanism in the health system, 4) the challenges encountered by them during the implementation with emphasis on identification, diagnosis, and treatment initiation of the patients, 5) perceived challenges with respect to patients and 6) their suggestions to improve the quality of the intervention.

All the audio recordings of the interviews were transcript by the researchers and then analysed manually. No softwares were used to analyse the data and

coding tree was not framed. The major themes were derived in advance and the quotes were grouped according to the probes used in the interview guide. There were no minor themes to arrive at. Care was taken not to disclose the identity of the participants in their quotations except for the information on which group of healthcare providers they belong to. The data were analysed by two separate researchers VV and VP for consistency of reporting. In case of discrepancy the KS was contacted for final decision.

3. Results

A total of 28 participants were interviewed for the study and there were no dropouts from the study. The profile of those interviewed were 1 state TB Officer, 1 District TB officer, 10 NTEP programme staff, 10 project staff and 10 private practitioners.

1) Awareness

All healthcare providers were completely aware of the DOST project in the health system, and they appreciated the mechanism put in place that effectively managed to bridge the gap and link the patients for treatment initiation at the NTEP DR-TB centres.

“It was a nice project in which patients were counseled by DR-TB linkage team and was referred to us directly. The treatment initiation was started as soon as patients visited us and by this even the family members were not infected by TB” ...NTEP staff.

“The DR-TB project that was through JEET was an okay project because the MDR patients from private was connected and referred to us. This was the benefit because we were not able to trace patients in private. From you all, the patients from private lab, private doctor were traced. Nikshay ID was prepared and sent to us. Then the medicines were given” ... NTEP staff.

“DR-TB project was very good. In private sector earlier doctor were not much aware. Like MDR is diagnosed what should be done. Now, because of this project at least 90 percent of the private doctors understand what should be done when MDR or XDR patients are diagnosed and that they should be referred to public sector” ...doctor, private practitioner.

“All the services were very nice. DR-TB linkage project was nice because patients were receiving correct treatment at right time and place” ...doctor, private practitioner.

2) Perceived benefit to the patients

The healthcare providers opined that the implementation of the model led to early diagnosis and initiation of quality treatment without any financial burden to the patient's family. The window shopping of the doctors or the laboratories drastically reduced, and they were committed to treatment adherence with proper counselling and guidance to the patients and their family members.

“Firstly, early diagnosis... for patients its early diagnosis. Early treatment was initiated, and patients continued their treatment. If patients were in private, then

they would have paid and ideally it is wrong. Today, through you all patients are linked with us. Patients receive medicines and the Nikshay yojana introduced by respected Prime minister through which patients receive Rs 500. Patients are in benefit only” ...NTEP staff.

“Sir, Benefits were (Long pause). Firstly, the guidance, which was lacking, it was provided to them. Patients use to visit here and there. Second big thing is even if they visited private clinic, they were not able to afford it as treatment is very costly of MDR. Hence, patients would have to leave treatment in middle. This is one of the biggest benefits that they were linked to government facility which help them to afford treatment and adherence was more for treatment completion. Now almost people don't leave treatment, like for example few patients' treatment are for 18 months and they get frustrated taking such long treatment and would leave in between. But after Mr. S and the entire team of MDR supported the patients, even in ADR cases, they were provided support by making them understand that this is just the reaction, don't worry about it and support had provided them to complete treatment” ...Project staff.

“...all tests were free of cost; further treatment was also free of cost. Treatment being very expensive. DR team provided guidance how to proceed, where to visit, which chest clinic to visit. This helped patients to clarify his confusion about which chest clinic to visit and how to proceed. The patients were given guidance about the chest clinic and treatment procedure...” ...Project staff.

“Firstly, patient was benefited. Early diagnosis and early treatment. Earlier this was not the case, 4 - 5 months private doctor provide treatment according to his knowledge and will. No proper guidelines were followed. Patients were referred to us when the condition was worsened. The benefit was early treatment” ...doctor, private practitioner.

“Through this project the major thing is MDR patients from private were not able to reach us earlier but now they come to us. From past 1.5 years we received 34 - 35 patients from private sector. This was possible from your support and if this wasn't there, they might be getting treatment from private sector. In private sector as per guidelines they would have not received treatments. The outcome was good, follow up was done. Medicines were changed due to adverse effects.” ...District TB officer.

“Ah! Benefit. I can only think that the patient is properly guided to get the treatment from the designated centres of theirs. Instead of you know, going here & there. The patients are directly sent to the centre where they get treatment of MDR” ...doctor, private practitioner.

“Early Diagnosis and early treatment initiation of patients. Tests were free of cost. Patients were satisfied because they don't have to visit different places. It was beneficial for to get everything at one place.” ...doctor, private practitioner.

“From this projects patient received benefits. They did not leave the treatment in between. Time to time follow up was done. Patients were in contact with us and government facilities hence, patients were motivated for treatment completion” ...project staff.

3) The Advantages of having such a mechanism in the health system

The healthcare providers are of the opinion that having such mechanism benefits the health system significantly, the private practitioner's apprehension regarding their referred patients were addressed once they were informed about the patients to the project staff. The practitioners were confident that their patients will be appropriately managed at the DR-TB centres with good quality laboratory testing and treatment free of cost.

“Ah! Sir, I would like to mention from private practitioners' perspective that private provider is the single point of contact for their patients, specifically, just for an example if a provider refers patients to public sector, then patient would not have any idea that who should they meet. How treatment will be initiated? Like they keep facing a lot of problems and had to hassle a lot to reach the right place. Patients keep getting confused and wondering where to go? How many times we must go? There was no information available. With this project, the private provider now had a single point of contact that is the treatment coordinator. Because of them patients were referred to public facilities. Patients returned to us during their treatment and shared what services were being provided to them which was made possible due to these linkages. Through this project, private providers received help and somewhere I will say, for patients it became a brand as it ensured that patients received timely counselling, when to come, what all to counsel. This was a big help for the private provider”. Doctor, private practitioner.

“I think health advantage is mainly to the patients. They reach the right place for the treatment and the advantage for doctor is that it became easier for them to now channel the patient to the right treatment centre...” Doctor, Private practitioner.

“All the private doctors were happy because MDR patients can transmit, and doctors didn't wanted others to get infected. Doctors themselves informed us about the patients and we linked them to public facilities. Doctors were happy that proper treatment was provided as the MDR Treatment is expensive and patients cannot afford it. Patients and doctors both were receiving help. The cases were also reduced. Patients received treatment.” ...Project staff.

“There was no benefit for me but yes for patients it was beneficial like GeneXpert test cost is 2200 rupees. It was free of charge through this project. If patient is Rifampicin resistant, then patients were counseled by your team. Right treatment and guidance were provided. If my patients are treated well then, I have benefit that I have given treatment and good services to my patients.” ...Doctor, private practitioner.

4) Challenges related to implementation

Most of the healthcare providers did not face any significant challenges during implementation as there was structured pathway for flow of patients and the project personnel's responsible for managing the patients. There were instances of persuading the patients to avail treatment from government health facilities, however, they overcame the challenge with counselling the patient and their

family members. The programme managers felt that the government health facilities could not provide the cleaner environment at the health facilities when compared to the private health facilities and there were no mechanisms to cut down the long waiting period for tests and consultations.

“No sir, there weren’t any challenges as such because we had CBNAAT testing if the patients were resistant for drugs. To us Mr. S was appointed, So I use to inform him. Further procedure and follow ups were taken by sir. We didn’t face any challenges” ...Project staff.

“Sir, there were 3 - 4 patients in my knowledge who denied before getting linked in the public sector, these patients denied the consent to take treatment from government sector even after proper counselling was provided to them. Initially, we faced it. I feel it was a minor case, I would say less than 0.001%. But I would say this was all in one good project sir” ...Doctor, private practitioner.

“No, we didn’t face any. In fact, we received help. Sometimes diagnosis services were not available with us and that had to be done from outside. Which was arranged by your team which was beneficial for us. It made work easy for us.” ...District TB officer.

“Yes, of course there were challenges because private practitioner’s facilities are a different environment where patient relate to cleaner area, patients don’t have to stand in ques and time will not be consumed much. They will have the flexibility of going to practitioner at a time which suits them. But for public sector we have fix timing. There are many other patients as well, so there can be delay but patients are counseled about timing and ques. If there are ques, then you must follow it. Of course, you will get best treatment and opinion and quality drug and treatment will be given free of costs. It is because the newer drug like Bedaquiline, Delamanid were being given when required. These medicines are not available outside the system. So that was made available. Sometimes, when we compare environment there are delays and time will be taken. The VIP treatment they receive in private won’t be possible. But overall diagnostic care and treatment services will be better. I think patient will be benefiting and so will their relatives.” ...State TB Control Officer.

“There were challenges, like a patient staying in small localities, drinking alcohol, not taking treatment properly, family not agreeing and patient not willing to take medicines. We had explained them and their family about treatment. So, the family could be saved” ...NTEP staff.

5) Challenges related to patients

Initially the patients were hesitant to approach the public health facilities probably because they had to wait in long queues, overcrowded areas, lack of infrastructure, perceived notion on lack of quality health care services but the project staff handheld the patients in getting their investigations and treatment initiated in a short span of time which later gained the trust from the private practitioners and patients; they started referring more patients to the facilities. The challenges were minimal, and the patients responded very positively to the mechanism of linkages.

“Earlier patient had issue in going to government hospital for to seek care for their own treatment. But after receiving help from us they didn't face such issues.” ...NTEP staff.

“Once patients came to me, he was not facing any issue in fact he was happy because government doctors sometimes don't talk and attend as per patient's expectation but when they went along with treatment coordinator who was a familiar face at the govt. facility they were attended properly and were told about TB and its treatment properly.” ...Project staff.

“The challenge is that the patient is unaware about where to go and what to do. If patients from private are diagnosed, we email it to DTO office. The coordinator from DTO office coordinates with patients and counsel them. There is process for testing so DR team visits to different facilities for ear or eye related tests. Patients are already tensed and must visit different facilities. The benefit from this project was that the team coordinates everything and make simplify the process for patients. Since the patients are unaware, they end up visiting the chest clinic directly or to the other departments leading to delays and wastage of time. hence their time is wasted in this.” ...NTEP staff.

6) Suggestions

The support provided by the project to the programme was immense. The healthcare providers wish to have this project implemented for a longer duration. The project proved to be a catalyst for private practitioners and the DR-TB centres. The health system witnessed greater adherence in treatment and the providers complimented the services delivered from the project and has expressed their interest to collaborate with the project if the project is re-started in New Delhi. Some of the providers insisted to have incentives for patients' referrals immediately from the NTEP while some felt the patients' time should be compensated.

“Sir, the process was good. The project was only for 18 months, this project should be continued because project is helpful.” ...NTEP staff.

“My only suggestion is services should be continued till end. Be it tests or adherence or guidance.” ...doctor, private practitioner.

“I feel this project should be extended and in Delhi it should be re-started again. The team of Tb Alert India who was working so efficiently from which patients will receive benefits. Now, the TPT, household activities, linkage of tests and follow-up. All these have increased government work. If both the team are working with government then patients will be benefited. Loss to follow up rates will be reduced, and success rate will be increased. Death rate will be reduced.” ...NTEP staff.

“The MDR-TB linkage program is completely fine. It was a support to a public program. Same project should be continued. It is useful for us and program”. ...doctor, private practitioner.

“Sir, there is a small suggestion which I felt might have been included i.e., some monetary benefit to the patients, might be we can include financial factor. Patients lose their daily wages. If we could provide some monetary benefit to

them, I think it will improve retention in care. Otherwise, I feel this is the only thing we can do. Lost to follow up patients can be covered.” ...doctor, private practitioner

4. Discussion

To our knowledge, this is one of the first studies conducted in the country to understand the perspectives of healthcare providers on a project implemented to strengthen the DR-TB linkages between the private sector and DR-TB centers. Our study findings reveal that the “DOST” project implemented for linking and support of DR-TB patients from private sector had garnered a lot of trust and had been a backbone for smooth implementation of the programmatic management of drug-resistant TB (PMDT) in New Delhi during the implementation period.

The study findings have following programmatic implications. First, there remains a void in delivery of healthcare services to connect or link patients from private sector to the DR-TB centers. A project like “DOST” was quite popular among the health staff and it supports the system in filling service delivery gaps; however, there remains a challenge of sustaining such projects through the health system, The healthcare providers found this mechanism to be effective and had intentions of continuing it for a longer period.

Second, the private practitioners had a win-win situation as they were assured about their patients getting linked appropriately nearer to their domicile and various investigations for diagnosis, pre-treatment evaluation and quality DR-TB drugs are provided to their patients free of cost. The catastrophic expenditure naturally shall be lowered for those patients who are under the ambit of project implementation area. Initially, due to the general reputation of public, overcrowded health facilities, the patients had shown hesitancy for seeking treatment but later accepted the services after repeated pursuance by the project staff.

Third, the NTEP should devise mechanisms to empower existing general health staff in performing such activities depending on the need and should think of incentivizing the community volunteers on providing services of linking the patients. A newer public private under NGO scheme for linking should be envisaged under the programme and the programme managers should be encouraged to link with NGOs to improve the quality of DR-TB care services in their districts. Several models to involve private healthcare providers for drug sensitive TB patients have been implemented in the country in the past [4].

Fourth, the uptake of NGO schemes varies across the states and countries. There are studies that demonstrate the effectiveness and improvement in the quality-of-care services provided to the community by the involvement of NGOs under TB programme [9] [10]. These schemes become useful for the programme managers where there are weak links between the general health system and the private health sector or community. The costs involved in engaging these NGOs

should not be considered as financial burden by the programme since the trust and community empowerment they provide is immense in the long run.

The study had following strengths and weaknesses. The strengths were the interview of the key NTEP implementers like State TB control officer, District TB officer, private practitioners and project staff who were really involved during implementation. Their perspectives have added uniqueness to the study findings. The limitations were not all the healthcare providers involved were interviewed and hence, the study findings cannot be extrapolated to other areas. There could have been interviewers' bias since the researcher was involved in the project implementation as well.

5. Conclusion

To conclude, the perspectives of healthcare providers towards the 'DOST' project were optimistic and calls for re-initiating the project in the area. Based on the insights collected from diverse stakeholders, this programmatic implementation has shown that linkage to care from Private to Public sector can help to reduce the incidence and burden of MDR-TB and prevent exposures to family members and community to achieve the END-TB target by 2025. The model has the potential to be replicated across the country.

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Authors Contribution

Vindhya Vatsyayan, Theresa Pattery, Jason Williams, Arnab Pal, and Vikas Panibatla: conceptualization. Vindhya Vatsyayan, Theresa Pattery, Jason Williams, and Arnab Pal: methodology. Vindhya Vatsyayan, and Khasim Sayyad: project management. Vindhya Vatsyayan, Vikas Panibatla, Ashwani Khanna, and Jason Williams: supervision. Vindhya Vatsyayan and Vikas Panibatla: data analysis. Vindhya Vatsyayan, Khasim Sayyad, and Theresa Pattery: writing first draft of manuscript. All authors made critical comments and approval of final draft of manuscript and have read and agreed to the published version of the manuscript.

Conflicts of Interest

Vindhya Vatsyayan and Arnab Pal were employed by Clinton Health Access Initiative (CHAI). Theresa Pattery and Jason Williams were employed by Johnson & Johnson Global Public Health R & D. KS and Vikas Panibatla were employed by TB Alert India. The remaining author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Author Disclaimer

The views expressed in this article are of the authors and do not represent the views of the authors' organizations.

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