

**POLICY BRIEFS ON IMPLEMENTATION AND
OPERATIONAL RESEARCH PROJECTS FUNDED BY
THE GLOBAL FUND TO FIGHT AIDS,
TUBERCULOSIS AND MALARIA (GFATM)
THROUGH INDIAN COUNCIL OF MEDICAL
RESEARCH (ICMR)**

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BACKGROUND & INTRODUCTION

IMPLEMENTATION AND OPERATIONAL RESEARCH

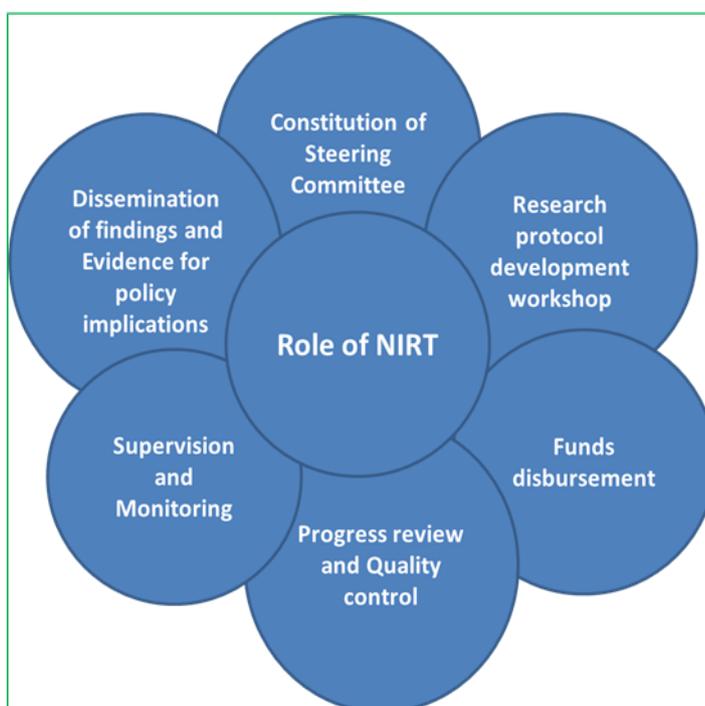
Implementation and operational research (IROR) is of utmost importance because it explores and examines on the ground evidence, which is crucial for effective policy implementation. Despite its important role, there is less focus on funding for IROR as funding sources are generally limited for drugs and diagnostics.

Recognising the need and requirement of research to improve TB programmatic services, the RNTCP (Revised National TB Control Programme) identified its priority research needs and developed a list of 73 priority areas to be addressed through IROR for the effective implementation of the National Strategic Plan (NSP) 2012-17. This novel project is the first of its kind to be funded by the Global Fund through the Central TB Division and ICMR. The project developed an innovative strategy to strengthen implementation research focussing on a multidisciplinary approach.

ROLE OF THE NATIONAL INSTITUTE FOR RESEARCH IN TUBERCULOSIS (NIRT)

NIRT was responsible for coordinating the project from initiation to completion. This included:

- Conceptualising the call for proposals,
- Formation of a representative steering committee for the selection of proposals,
- Capacity building of the researchers on implementation research,
- Finalisation of the proposals,
- Disbursement of funds,
- Reviewing the funded projects through monitoring visits and communication,
- Networking with the stake holders at the different sites,
- Organising a dissemination workshop with policy makers, stakeholders and the teams and
- Preparation of the overall report



DETAILS ON THE PROJECT

Based on the “call for proposals” for implementation and operational research (IR/OR) on TB in the identified priority areas as listed by RNTCP, researchers were asked to apply as multidisciplinary teams (which could include epidemiologists, clinicians, social scientists, statisticians etc.) with maximum four or five members per team. Researchers were encouraged to work on the proposed projects, right from conceptualisation to development of the full proposals, as multidisciplinary teams, as it could help bring forth discussions with varied perspectives.

A total number of 68 IR/OR concept notes were received from various academic and research institutions across the country. A Steering Committee comprising of 13 members with expertise in different health research areas was constituted to review and shortlist the concept notes received. The committee met over two days and discussed the shortlisted proposals and categorized them as A, B and C based on merit. The committee finally selected 15 concepts from the A category based on merit of the proposed research and its alignment with the research agenda set by RNTCP.

The selected investigators were called for as teams for the IROR Protocol Development workshop convened by the National Institute for Research in Tuberculosis (NIRT), Chennai, India from May 30 to June 03, 2016. A total of 69 participants, including researchers (43), mentors and trainers (11), and WHO / TDR experts attended the workshop. A total of 10 projects were selected for funding

The main objectives of the workshop were

- ➔ To build the capacity of participants on implementation and operational research methods and design and on developing the protocols.
- ➔ To strengthen collaboration between academic / research institutions and disease control programmes in conducting implementation and operational research.

All the concept notes were developed into full proposals during the workshop in a phased manner, and reviewed and mentored at every stage.

IMPLEMENTATION AND OPERATIONAL RESEARCH PROJECTS AND THEIR GEOGRAPHIC LOCATION

S.no	Title of the study	Name of the project	Location	
			Districts	State
1	Engaging public sector AYUSH practitioners to increase referral of presumptive TB cases for early tuberculosis case detection in Shimla and Kangra districts of Himachal Pradesh, India	Himachal leopard – AYUSH	Shimla and Kangra	Himachal Pradesh

2	Improving treatment adherence among tuberculosis patients through evening DOTS in Chennai, India	E-DOTS	Chennai	Tamil Nadu
3	Provision of DOTS by a family member to prevent treatment default in tribal and hard to reach areas in the state of Chhattisgarh, India	Indravati – Family DOTS	Kondagaon	Chhattisgarh
4	Systematic screening for presumptive pediatric TB patients and gastric aspirate specimen collection in primary and secondary health care facilities in Rajnandgaon, Chhattisgarh, India	Mahanadi	Rajnandgaon	Chhattisgarh
5	A multi-component health system strengthening intervention to reduce pre-treatment loss to follow-up of smear positive tuberculosis patients in Chennai—A quasi-experimental study	Marina - PTLFU	Chennai	Tamil Nadu
6	Identifying costs contributing to catastrophic expenditure amongst TB patients registered under RNTCP in two metro cities in India	Neelaganga	Chennai	Tamil Nadu
			New Delhi	New Delhi
7	Strengthening Tuberculosis and HIV detection and management through intensified case finding in Central Jail , Aizawl, Mizoram	Nuaben	Aizawl	Mizoram
8	Evaluation of Programmatic management of drug resistant TB using revised tools in three states of northern India.	Gulab— PMDT	-	New Delhi Punjab Jammu & Kashmir

9	Developing an integrated strategy to improve utilization of TB services among injecting drug users in Mizoram	Redcap – IDU	-	Mizoram
10	Identifying and addressing the factors contributing to pre-treatment loss to follow-up of tuberculosis patients referred for treatment from medical colleges in Pondicherry, India	PIMS - PTLFU	-	Pondicherry

SPECTRUM OF GFATM FUNDED IMPLEMENTATION AND OPERATIONAL RESEARCH STUDIES

Based on the study design and methodology, 10 selected projects have been classified in groups (Table -2)

They were themed under the five broad thematic areas of RNTCP OR priority agenda

- ➔ Interventions to improve treatment adherence and prevent loss to care – 4
- ➔ Involvement of NGO/Private providers for universal access to TB services – 1
- ➔ Diagnosis and management of Paediatric TB – 2
- ➔ Interventions for active case findings for high risk groups – 2
- ➔ Programmatic management of drug resistant TB services - 1

RESULTS AND FINDINGS

The highlights of all the IROR studies, including results and research findings have been presented as policy briefs in the forthcoming section.

STRENGTHENING TUBERCULOSIS AND HIV DETECTION AND MANAGEMENT THROUGH INTENSIFIED CASE FINDING IN CENTRAL JAIL, AIZAWL, MIZORAM

EXECUTIVE SUMMARY

Prisoners are vulnerable population, often coming from the lowest socioeconomic groups in societies and, in many cases, from minority or migrant groups, with increased risk of ill health-TB, MDR-TB and HIV. The physical environment under which prisons are managed and operated creates challenges to TB/HIV prevention, control, treatment, and care.

In Mizoram new sputum positive TB case detection rate was 59% in 2015 as compared to the RNTCP target of 70%. Overall adult HIV prevalence in Mizoram is 0.8% which is the second highest in India (RNTCP 2015). Poor infrastructure and ineffective implementation of existing program guidelines and strategies in Central Jail also contribute to the increase in low TB/HIV case detection rates.

The present study was conducted in Central Jail, Aizawl to strengthen TB/HIV control and provide evidence to develop guidelines for implementing intensified case finding in prisons across the country. Study findings reported high rates of HIV testing and TB case detection rates among prisoners. Findings highlight the need to have effective TB screening in prisons and in developing TB/HIV case detection and management strategies in prisons.

BACKGROUND

TB and HIV have been documented as one of the common morbidities among the inmates of prisons in various parts of India. The incidence of TB in prisons ranges from 5 to 70 times higher than the general popu-



Due to overcrowding in Indian prisons, prisoners are more vulnerable to infectious and communicable diseases.

Credit: AFP, Zee News

lation. Overcrowding, inadequate ventilation, and lack of quarantine facilities encourage efficient transmission of TB. This is further exacerbated by individual-level factors that increase the risk of TB, including concomitant HIV infection, poor nutrition, personal hygiene, drug addiction, and high-risk behaviors and practices, such as needle sharing and unsafe sex. Common factors known to contribute to the transmission of TB are delayed case detection, poor contact detection, inadequate treatment of infectious cases, high turnover of prisoners, and poor implementation of TB infection control measures. Lack of proper training in standard TB treatment and care practices, insufficient laboratory capacity and diagnostic tools, interrupted supply of medicines, weak integration between civilian and

prison TB services, and low policy/funding priority for prison healthcare are potential barriers to TB control.

According to recent Global Fund review, TB services delivered in prisons have increased in the last decade, but systematic information on funding levels and gaps, services provided, and cost-effective delivery models for delivering TB services in prisons are lacking. There is a need to prioritize TB prevention and control in prison settings including building evidence through operational research. Considering this, the present study was done to strengthened TB and HIV case detection and management through intensified case findings in Central Jail in Aizawl, Mizoram State.

AIM OF THE PRESENT POLICY BRIEF

The present policy brief helps to understand TB and HIV related poor healthcare delivery in central jail in Aizawl district and to inform evidences on the challenges in the implementation of routine TB/HIV case detection and management strategies.

OBJECTIVES OF THE STUDY

- To identify the challenges in the implementation of routine TB and HIV case detection and management strategies in Central Jail, Aizawl.
- To examine the programmatic feasibility and acceptability of inmates and officials in implementing intensified case finding strategy for tuberculosis/HIV among inmates of Central Jail, Aizawl.
- To determine the effectiveness of implementing the strategy of intensified case finding for TB/HIV case detection among inmates of Central Jail, Aizawl.

GAP ANALYSIS

Central Jail in Mizoram is located in Aizawl district, with 40% of inmates being injecting drug users. As per prison records of nearly 800 prison inmates, since 2012 only 14 cases of TB were detected and put on treatment and only 13-14% got tested voluntarily for HIV. Mizoram State AIDS Control Society (MSACS) in partnership with SHALOM, a local NGO conducted an HIV Intervention Program among the inmates of District Jail and Central Jail in Aizawl between 2001 and 2006. During this period 3.6% of 1676 inmates were detected to be HIV positive and 4.6% screened positive for syphilis. The program encountered a number of barriers, particularly due to interruption of supply of HIV test kits. A Comprehensive HIV Prevention Intervention among Prison Inmates was implemented that lasted till 2012. In this, a survey among 415 inmates reported a high level of re-admission rates among the inmates, frequent alcohol/drugs abuse with sharing of needles among injecting drug users, pre-marital sex and sexual initiation at an early age, and common occurrence of divorce and multiple marriages. Knowledge about HIV treatment was very low and only about half of the respondents had tested for HIV.

Although, TB/HIV services to the inmates in Central Jail, Aizawl are provided through existing guidelines

and strategies, there is no information on the referral of TB suspects or HIV status of TB patients among the prisoners. This current scenario in Central Jail is suggestive of poor referral and linkages between HIV and TB services, absence of intensified TB case finding, and inadequate follow up services of prisoners on TB treatment after their release. A routine opt-out HIV testing in prisons done in a voluntary, informed and non-coercive manner can increase case detection, and can help to provide linkage to HIV treatment and care, thus preventing transmission within prisons and in the community.

KEY FINDINGS

- High rates of HIV testing among prisoners in 4 months (More than two-thirds).
- Among those tested nearly one tenth were newly detected positive for HIV.
- More than half of them (53%) screened to be presumptive TB cases.
- One-third sputum samples were tested for TB (smear microscopy).
- Chest x-rays was done for all and 3.3% were diagnosed TB.
- Overall TB positivity was 1.9%

POLICY RECOMMENDATIONS

- Need to include effective TB screening in prisons.
- Upgrading prison health facilities to maximize early diagnosis, initiation of TB treatment, and organizing referrals for those who leave prisons and require follow up care.
- A strong need to involve all key stakeholders (RNTCP, Home Department, Health & FW, MSACS, NGOs) for TB control in prisons.
- TB sensitization and training of all prison staff and stakeholders.

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DEVELOPING AN INTEGRATED STRATEGY TO IMPROVE UTILIZATION OF TUBERCULOSIS SERVICES AMONG PEOPLE WHO INJECT DRUGS (PWID) IN MIZORAM

EXECUTIVE SUMMARY

Injecting Drug Users (IDUs) are highly susceptible for TB because of the physiological effect of injecting drug use and their associated epidemiological factors. Though Mizoram has a relatively high population of IDUs (0.85%), only 12.5% of IDUs utilize general health services (including TB). There is dearth of information regarding the prevalence of TB among IDUs in Mizoram. Moreover, TB among IDUs is usually studied in the context of it being an opportunistic infection of HIV positive IDUs.

This study looked primarily into the relation between IDUs and TB and assessing TB interventions among IDUs. The study findings highlighted the fea-

sibility of integrating TB specific IDU service packages into the TB and HIV control program. Findings also points out the need for sensitization among health personnel for better referral and linkage services.



Source: Foreign Policy Deshkalyan Chowdhury/AFP/Getty Images

BACKGROUND

Injecting Drug users (IDUs) are at high risk of contracting TB infection and of developing the disease compared to the general population. Similarly, outbreaks of drug-susceptible and multidrug resistant (MDR) TB are also common in this group. Being one of the routes for illegal drugs trafficking from the Golden Triangle, Mizoram state has a large population of IDUs, with an estimates of 15200 IDUs respectively (NACO, 2015).

The physiological effect of injecting drugs and epidemiological factors like the environment and risk behaviors (such as bacterial infections, depression, homelessness, tobacco and alcohol abuse, poor hygiene, poor food intake) of drug users contribute to

the high prevalence of TB among this group. Moreover, IDUs with TB take longer to achieve negative culture and thus have increased risk for mortality. All these factors complicates diagnosis and treatment and thus complicates the administration of TB control programmes.

The diagnosis, treatment and prevention of TB among people who inject drugs have been neglected and require immediate attention. The present was conducted in two districts of Mizoram state with the primary aim to improve utilization of TB services among IDUs in Mizoram and to assess feasible and acceptable intervention strategy for better TB care and management among this population.

AIM OF THE PRESENT POLICY BRIEF

The present policy brief gives an information about the factors influencing the utilization of TB services among IDUs. It also informs the feasible intervention strategies that can be integrated into the existing HIV and TB services provided under RNTCP and NACP.

GAP ANALYSIS

Early detection of TB and effective treatment has been the backbone of RNTCP success in India. But IDUs are known to have difficulty in completing medical evaluations and treatment adherence. Even symptomatic IDUs delay to receive treatment after TB symptom onset, which can increase TB transmission rates or lead to more severe disease. Deficits in TB knowledge regarding modes of transmission and risk factors also hinder their proper utilization of TB services. Socio-demographic and psychological factors like low motivation for treatment (particularly when a symptomatic), perceived stigma or fear, unstable lifestyle, alcohol use and smoking, and lack of primary care can also be a potential barrier to availing healthcare. Travelling distance, inability to stay as an in-patient and the need to take care of children at home were reported as the



Source: REUTERS/Adeel Halim/Scroll.in

OBJECTIVES OF THE STUDY

- To identify the factors influencing the utilization of TB services among IDUs.
- To evaluate feasibility of integrating IDU specific TB service packages into the TB and HIV program.
- To evaluate sensitization of Health Care providers of TB centres to improve utilization of TB services among IDUs.

top three barriers in North-east India (UNODC, 2012).

There are no separate provisions in the national program for IDUs who required distinct interventions. The TB-HIV collaborative activities in India mainly target only the referral and linkages between HIV and TB services for HIV positive clients and no specific activities are imple-

mented for IDUs. According to the Mizoram State AIDS Control Society (MSACS) report from March-Sept 2015, only 12.5% of registered IDUs availed general health services while 125% availed the health services provided by the Targeted Intervention Drop in Centres where they registered (MSACS, 2015). These imply that the program require customised health services for IDUs including TB services to increase their utilization. WHO recommends an integrated delivery of TB, harm reduction and HIV services for people living with HIV/AIDS. Co-location of services, incentives and street-based outreach had been found to be effective in improving TB treatment adherence and completion (CDC, 2012).

KEY FINDINGS

- ➔ Access to TB services and lack of awareness on TB were major barriers for better utilization of TB services.
- ➔ Urgent need for integrating TB specific IDU service packages into the TB and HIV program which is feasible. Health Care providers in both in TB and IDU care need to be sensitized for better referral and linkage services. The TB specific IDU service packages should include:
 - (i) TB awareness among IDUs through Interpersonal Communication (IPC).
 - (ii) Routine screening of IDUs for TB.
- ➔ All presumptive TB patients had to go to Falcon hospital, which is more than one hour away from Aizawl. This project has helped in establishing a DMC within the civil hospital in Aizawl.

POLICY RECOMMENDATIONS

- National AIDS Control Programme (NACP) should include TB control activities into the present Targeted Intervention program for Injecting Drug Users (IDUs). There needs to be a one stop approach for early diagnosis and treatment of both HIV and TB among IDUs.
- Revised National Tuberculosis Control Programme (RNTCP) should consider IDU specific activities to reach the TB vulnerable population group in order to achieve their targets by 2025. This could include,
 - ⇒ Sensitization of workers in TB centres on IDU issues
 - ⇒ Establish linkages between IDU Drop-in-centres (DIC) and TB centres for screening, diagnosis and management of TB.

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A MULTI-COMPONENT HEALTH SYSTEM STRENGTHENING INTERVENTION TO REDUCE PRE-TREATMENT LOSS TO FOLLOW-UP (PTLFU) OF SMEAR POSITIVE TUBERCULOSIS PATIENTS IN CHENNAI

EXECUTIVE SUMMARY

Pretreatment loss to follow-up (PTLFU), formerly called as “initial default” is a major problem compromising TB control in India. About 100,000 smear-positive TB patients are diagnosed in the Revised National TB Control Programme (RNTCP) every year but never initiate treatment. An earlier study conducted in Chennai ascertained the prevalence of PTLFU (i.e., 22%) across 22 DMCs in Chennai district and the health system and patient-related reasons for PTLFU.

The present study was conducted with the aim to see whether a multi-component health system strengthening intervention can reduce PTLFU in the RNTCP program in Chennai. Study findings showed significant decrease in PTLFU cases post intervention. Our results highlight the importance of prompt registration of TB cases and recording of legible patient details.



The treatment card containing patient’s information is valuable to track patient’s treatment compliance.

Credit: Andrew Aitchison/IN Pictures/Corbis

BACKGROUND

India has 27% of the world’s “missing” cases, representing an estimated one million patients yearly who may not have received health services through India’s RNTCP (WHO Report 2014). One of the major factors contributing to these missing cases is PTLFU. This is alarming as these loss to follow up cases could largely contribute in transmitting TB infection in the community, which poses a challenge in TB prevention and control. The RNTCP estimates that there are nearly 100,000 PTLFU cases yearly in the public sector (RNTCP 2012). It has been reported that about 12% to 13% of newly diagnosed smear-positive cases are “unaccounted for” ever year in the RNTCP.

The ICMR-NIRT has already conducted a study in determining the prevalence of PTLFU and the reasons for PTLFU in Chennai district, which reported health system deficiencies as a significant factor to PTLFU. Based on the findings of this prior study and lack of intervention studies aimed at reducing PTLFU rates, the present study was conducted primarily with the aim to find out whether a multi-component health system strengthening intervention decreases the proportion of PTLFU rates in Chennai.

AIM OF THE PRESENT POLICY BRIEF

This policy brief inform about the impact of health system strengthening intervention in reducing PTLFU cases in Chennai.

OBJECTIVES OF THE STUDY

The **primary objective** of this study was to test whether multi-component health system strengthening interventions can reduce PTLFU in Chennai.

Secondary objectives:

The study also examined if multi-component health system strengthening interventions can reduce:

- The proportion of missing addresses and phone numbers in DMC registers; and
- The proportion of chest symptomatic who do not complete screening with two sputum smears.

GAP ANALYSIS

A systematic review was done that identified 2. 13 local studies on PTLFU conducted in India, with the prevalence of PTLFU ranging from 4.5% to 31.3%. Notably, very few PTLFU patients (<6%) had transferred to private sector TB care and the mortality of these patients ranged from 4 to 22%. There are no prior studies in India that have evaluated interventions aimed at reducing PTLFU rates.

Based on the pilot field work and prior study findings the following three key components of the 3. health system, which contribute substantially to PTLFU were evaluated for the intervention:

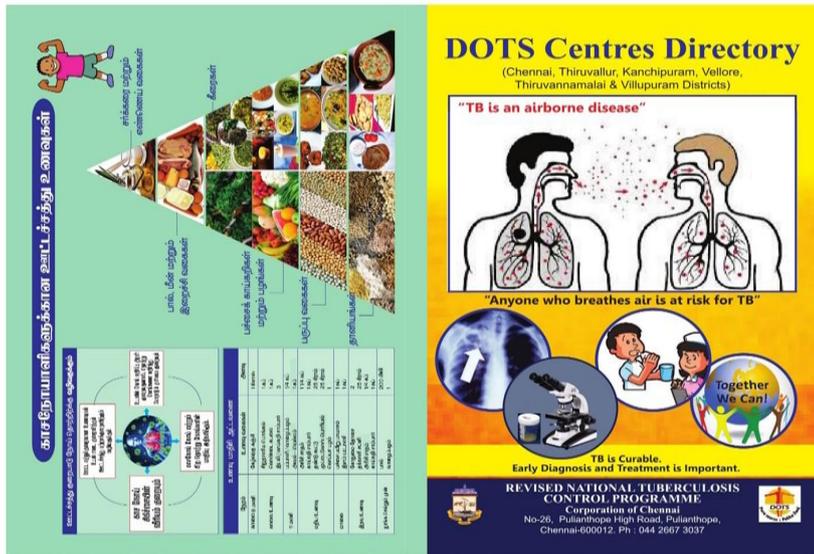
1. **Poor quality of patient records:** Our audit of registers at four major DMCs in Chennai (Otteri, Stanley, Pulianthope, and Royapettah) showed that those chest symptomatic being screened with sputum microscopy, 28% of phone numbers were either missing or unreadable. Also, 48% of addresses were either missing or have a critical error that would make the patient impossible to track.

Patients commonly “lost” during the referral process: Our preliminary research suggested that loss of patients during the referral process may also be a problem. Even though there are 57 DMCs in Chennai, 57% of all smear-positive TB cases diagnosed in 2014 were diagnosed at just four major DMCs. Nearly all of these patients were referred to other TB Units for treatment.

Substantial proportion of diagnosed smear-positive patients live outside of Chennai: In 2014, out of 6,135 smear-positive TB patients diagnosed in Chennai, only 3,387 smear-positive patients were started on TB treatment within Chennai. This suggests that 45% of all diagnosed smear-positive cases were either lost to follow-up or live outside Chennai and were therefore started on treatment in another district. A robust patient referral and tracking system with strong communication links between DMCs in Chennai and TUs located outside of Chennai is needed.

INTERVENTIONS IMPLEMENTED

- Training of RNTCP staff on documentation of addresses, communication and referrals.
- Information, Education and Communication (IEC) materials and training manuals such as directory for DOTS Centre, TB awareness posters, new triplicate referral forms, voice messages, DMC address seal, self-addressed postal covers with stamp and stationery items (pen, pencils, scissors and tapes).
- Performance feedback (monitoring and evaluation, review meeting, rewards / motivational sessions).



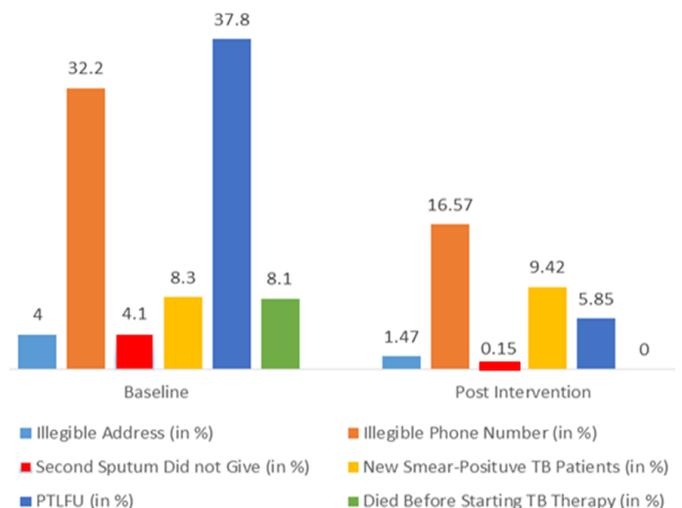
Address Directory of six districts DOTS Centres in Tamilnadu
Source: ICMR-NIRT, Chennai

New referral form for TB treatment
Source: ICMR-NIRT, Chennai

KEY FINDINGS

- ➔ Reductions in PTLFU from 37% to 6% post-intervention.
- ➔ Of 443 PTLFU cases, 183 (41.3%) cases occurred due to untraceable information and 36 (8.1%) had died prior to initiating TB therapy.
- ➔ Of 729 smear-positive TB patients who started TB treatment within 7 days, 65 (8.9%) died without having received a TB number received a TB number.
- ➔ Under reporting of patients with adverse outcomes despite having started on TB therapy highlighting the need for increased transparency and prompt registration of patients.

Baseline and Post Intervention Comparison



POLICY RECOMMENDATIONS

- There is a strong need for timely simple intervention strategies to strengthen the health system, which can help prevent PTLFU.
- This includes legible documentation of addresses of all patients, checking the patient's mobile number with a missed call, SMS messages as reminders, a patient focussed referral form with proper landmarks and contact numbers and a DOTs directory to facilitate early initiation of treatment in the referred centres.
- Need to decentralise the DOTs centres depending on the case detection rate as the majority of TB patients were registered mainly in tertiary centres.

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IDENTIFYING AND ADDRESSING FACTORS CONTRIBUTING TO PRE-TREATMENT LOSS TO FOLLOW UP OF TUBERCULOSIS PATIENTS REFERRED FOR TREATMENT FROM MEDICAL COLLEGES IN PONDICHERRY

EXECUTIVE SUMMARY

The status on initiation of treatment for about 35% of TB patients diagnosed and referred for treatment from medical colleges are presently unknown under the Revised National Tuberculosis Control Program (RNTCP) State Task Force (STF) reporting mechanism. These patients could be a potential source of infection to others in the community, which in turn could lead to overall increase in morbidity and mortality in the community. Information on PTLFU of TB patients diagnosed and referred for treatment from medical colleges to peripheral health institutions is lacking. The present study was conducted in four medical colleges in Pondicherry to identify various factors contributing to PTLFU and to assess the effectiveness of intervention to reduce PTLFU rates. Study result showed significant increase in the proportion of feedback from medical colleges after the completion of interven-

tion. Findings point the need for developing an innovative, feasible and sustainable intervention which could be useful in improving the feedback mechanism and reducing PTLFU among TB patients referred for treatment from medical colleges.



A busy RNTCP centre. Source: NIRT, Chennai

BACKGROUND

The Revised National Tuberculosis Control Program (RNTCP) was launched with the aim to achieve and maintain cure rates and case detection rates among New Sputum Positive (NSP) patients and in the community. However, patients loss to follow up has hindered in achieving high TB cure rates. Both patient and health-system related factors have contributed to pretreatment loss to follow up (PTLFU), including patient's unwillingness, symptoms being mild, personal reasons and dissatisfaction with health services.

Every year, approximately more than 196000 TB patients are diagnosed at medical colleges, of which more than 154000 are referred for treatment to peripheral health institutions (PHI). However, medical colleges receive feedback about only 66% of them from the PHIs. Hence, status of the rest of patients diagnosed and referred for treatment from medical colleges are unknown. These patients could be a potential source of infection to others in the community (NTF Report 2010). To identify these patients, trace them and start them on treatment as soon as possible is a challenge. Therefore, it is important to find out the reasons for

PTLFU among TB patients diagnosed and referred for treatment from medical colleges to PHIs and to develop feasible interventions to reduce the proportions of PTLFU.

AIM OF THE PRESENT POLICY BRIEF

This policy brief inform about the proportion of TB patients diagnosed and referred for treatment from medical colleges to peripheral health institutions and the proportion of these referred TB cases that went unreported. It also show the effectiveness of intervention in scaling up proportion of feedbacks from TB patients.

OBJECTIVES OF THE STUDY

- To assess the effectiveness of the intervention to reduce the proportion of PTLFU of all TB patients diagnosed and referred for treatment from medical colleges to peripheral health institutions.
- To identify the patient and health providers related factors that contribute to PTLFU of all TB patients diagnosed and referred for treatment from medical colleges to peripheral health institutions.
- To strengthen the on-going intervention based on the findings of qualitative study among the stakeholders.

GAP ANALYSIS

Risk factors for initial default among new patients have been reported in several studies from India, however data on PTLFU of TB patients diagnosed and referred for treatment from medical colleges to peripheral health institutions is lacking or remain unreported. There are hardly any study conducted to find out the magnitude and reasons for PTLFU of TB patients diagnosed and referred for treatment to peripheral health institutions. These patients are missed out from the routine reporting system.

In a descriptive, retrospective study conducted at a tertiary care hospital in Delhi (2011), it was found that majority (94%) of patients with TB seen in the referral Centre at a tertiary care facility were referred to a

peripheral health institution nearest to their place of residence.

They received feedback on referral for 79% of patients from the National Capital Region (NCR) of Delhi and for 47% of patients from outside the NCR of Delhi (Khandekar J, 2013).

According to STF report 2015 of Pondicherry, about 90% of TB patients diagnosed at medical colleges were referred for treatment to peripheral health institutions. Out of them, feedback on referral was received for only 57% and the status of remain-

ing 43% was unknown (Pondicherry STF Report 2010). There are no studies on developing interventions and testing the effectiveness of such interventions to combat pretreatment PTLFU of TB patients diagnosed and referred for treatment from medical colleges to peripheral health institutions.



INTERVENTION STRATEGIES

- ➔ Motivation of TB patients diagnosed at medical colleges to start treatment timely.
- ➔ Ensuring complete contact details of all “TB suspects” in the RNTCP laboratory and treatment register
- ➔ Retrieval actions by home visits and/or by phone calls if that information is recorded on the hospital registration database/ DMC laboratory register.
- ➔ Training and regular supervision of RNTCP Laboratory Technician and Health Visitor.
- ➔ Supervision of RNTCP DOTS Centre and ensuring prompt referral.
- ➔ Regular communication between Medical College RNTCP MO-TB and STS/STLS to ensure prompt initiation for treatment / feedback.
- ➔ Establish an effective electronic communication system between Medical College, District TB Offices, State TB Offices to obtain feedback regarding outcome of treatment among all TB patients diagnosed at medical colleges.



KEY FINDINGS

- ➔ Out of 618 TB patients referred from medical colleges to peripheral health institutions for treatment, feedback was received for 282 (46%) TB patients. Therefore, the proportion of not reported TB patients was 54%.
- ➔ Some sustainable and feasible interventions at the level of medical college /core committee were identified keeping in view the guidelines issued by the RNTCP for defaulter retrieval under program conditions.
- ➔ The proportion of feedback received from four medical colleges at baseline was 46% which had increased to 61% and 66% in the first and second quarters of 2017 respectively. It clearly shows that our interventions were effective.

POLICY RECOMMENDATIONS

- ➔ The magnitude of the PTLFU of TB patients diagnosed and referred for treatment from medical colleges to peripheral health institutions is a matter of concern. Early identification and prompt treatment is key to prevent the spread of TB infection in the community.
- ➔ RNTCP needs to include the tested strategies in the national training module and ensure effective implementation in all medical colleges.

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IDENTIFYING THE COSTS CONTRIBUTING TO CATASTROPHIC EXPENDITURE AMONGST TB PATIENTS REGISTERED UNDER RNTCP IN TWO METRO CITIES IN INDIA

EXECUTIVE SUMMARY

Despite free care, Tuberculosis (TB) takes a toll of patients' finances. TB often causes catastrophic economic effects among TB patients and their households. Such costs can create access and adherence barriers which can affect treatment outcomes and increase risk of transmission of disease. To overcome access and adherence barriers, as well as to minimize the economic burden for TB patients (and their households) it is therefore essential to address both direct and indirect costs.

The present study was done in two metro Indian cities among TB patients to identify the factors contributing to catastrophic costs during TB therapy. Findings report that indirect costs due to absence from work and TB patients' households with lower annual income were the major contributing factor for high catastrophic expenditure.



High out of pocket medical expenditure leads to increased incidence of poverty. Source: Microgiving/ Ivan Sanford

BACKGROUND

The TB-specific indicator of “catastrophic total costs” direct medical payments for treatment, direct non-medical payments (transportation, lodging charges, nutritional food) and indirect costs (loss of income). Given the often long health seeking period and the six months to two years period of treatment, this catastrophic expenditure may in turn impact adherence leading to poor treatment outcomes and increase incidence of poverty. It is important to understand the direct and indirect costs involved in TB care and how its effecting the patient and their families and also the key factors contributing to these expenditures should be addressed.

Interventions are needed to address high medical costs, as well as costs of food and transport and lost earnings. Health financing and delivery models, as well as social protection mechanisms (such as job protection, paid sick leave, social welfare payments) need to be considered.

This study was conducted with the aim to find out the households of TB patients experiencing out of pocket expenditures and to identify the costs contributing to the catastrophic expenditure. It was done in two metropolitan cities in India (Chennai and New Delhi) amongst TB patients, including children registered under RNTCP in both sites.

AIM OF THE PRESENT POLICY BRIEF

This policy brief provide an insight about the direct and indirect costs experienced by TB patients and their families and the costs or factors leading to catastrophic expenditure.

OBJECTIVES OF THE STUDY

- To estimate the proportion of households that experience catastrophic expenditure due to TB.
- To find out the various costs contributing to catastrophic expenditure due to TB.

GAP ANALYSIS

The overall costs borne by patients during diagnosis and treatment of TB have been largely ignored, even though such costs are often larger than the direct costs to the government. Ignoring these costs leads to an underestimation of the total costs of TB and this can lead decision makers to make poor choices in health care. Besides this, households attempt to cope with these costs by diverting resources from reducing other forms of consumption such as withdrawing children from school or borrowing or selling assets.

A study from Uganda reported that absence from work or quitting job or loss of wages due to the disease—visits to be made for TB treatment, side effects of anti TB drugs and inability to work (Saunderson 1995).

Lost earnings due to TB were also reported by patients. Studies have shown that the average time lost from normal activities was 9.5 months (range week to three years); the average income lost from inability to work was 89% of GDP per capita. In South Africa, lost earnings were even higher i.e., 16% of GDP per capita (Floyd et al. 1997; Wilkinson, 1997). Income reductions were much smaller: average income fell by 5% for poor households, 2.3% for households with

income between poverty and the national average, and 3.3% for households with income above average in a study conducted in Thailand (Karnolratanakul et al. 1999).

A survey of patients in Bombay showed that nearly 10% of income was spent on travelling to the clinic twice a month to collect drugs (Chakraborty et.al. 1995). In another study in rural Ghana found transport costs to be larger than direct costs (Van der Werf et al. 1993). Clearly, such expenditures could lead to defaulting from treatment, particularly among the poor. Studies on the economic impact of TB was conducted earlier by ICMR-NIRT, Chennai in 1997, which found substantial lost earnings about 15% of annual household income (Ramachandran et al. 1997). Lost earnings exceeded direct medical costs by two times in Tamil Nadu and almost three times in Uganda and South Africa.

Around 24% of all people hospitalized in India in a single year fall below the poverty line due to hospitalization. An analysis of financing of hospitalization shows that large proportion of people, especially those in the bottom four income quintiles borrow money or sell assets to pay for hospitalization (World Bank 2002).

KEY FINDINGS

- 44% of adult TB patients in Chennai and 8% in Delhi experienced catastrophic expenditure (i.e., more than 20% of the family annual income was spent for TB treatment).
- Among children, 24% in Chennai and 7% in Delhi experienced catastrophic expenditure .
- In both cities, indirect costs due to work absenteeism was a major contributing factor for high catastrophic expenditure.
- It was also observed that higher proportion of lower annual income (less than Rs. 100 000(\$1410) people experienced catastrophic expenditure due to TB.

POLICY IMPLICATIONS AND RECOMMENDATIONS

- There is a need to monitor health and social protection coverage in the context of TB care and prevention.
- Early detection and treatment important in reducing the indirect costs and extra costs incurred during the pre-diagnosis period
- Further medical assistance schemes could be introduced to make TB treatment more pro-poor, and financial incentives and nutrition support to TB patients could also be another way to ensure financial protection
- Introducing new digital technological interventions such as 99DOTS and video supported home based TB care, video observed therapy (VOT), eHealth portal could also reduce catastrophic costs to TB patients.
- There is an urgent need to promote sensitization among school children on TB and availability of free treatment at government health facility. This will help in preventing 'Catastrophic School Absenteeism', poor school performance and school impairment of these children due to TB.

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IMPROVING TREATMENT ADHERENCE AMONG TUBERCULOSIS PATIENTS THROUGH EVENING DOTS IN CHENNAI, INDIA

EXECUTIVE SUMMARY

In addition to socio cultural, economic and health system barriers in accessing care in RNTCP, there are additional difficulties such as fixed days of service, inconvenient fixed timings and waiting time etc. Studies show that loss of wages and work timings as some of the reasons for non-compliance to TB treatment. Most of the urban population work in organized and unorganized sector with fixed work timing and Chennai being a metro city where almost one-fifth of the Tamil Nadu organized sector working population lives has smear positive TB prevalence of 228/100000 population. Considering this, the present study was conducted to determine the factors leading to treatment interruptions and default to DOTS and assess whether provision of DOTS in the evening improves the treatment adherence in Chennai district. Study result showed favourable treatment outcomes among all TB patients who took evening DOTS. This study findings point to the need for provision of RNTCP services at a time convenient to the patient especially in the evening in urban settings that would improve access to TB services.

BACKGROUND

The key focus of RNTCP is to prevent drug resistant TB by providing access to quality diagnostic services and Directly Observed Treatment, Short Course (DOTS) services in a decentralized manner. The treatment is provided closer to the patient's residence by DOTS providers to minimise the patient's expenditure for travel and loss of wages but still many of them face barriers for accessing care. At least one-third of the patients initiated on Anti TB Treatment (ATT) are irregular for treatment due to socio-economic or health related barriers. Besides this, other common barrier to treatment adherence is work related and the work timings. treatment completion can be improved by efforts to minimize treatment interruptions and improving adherence to treatment. Interventions such as reinforced counselling by health personnel, decentralization of treatment, DOTS supporter chosen by the patient reduces the proportion of default rates. One of the intervention strategies that could combat higher default



TB patient receiving directly observed treatment in India; Source: IPTC photo Metadata

rates especially for the day-time workers who are unable to attend DOTS clinic during day time may be evening DOTS. The present study was conducted in Chennai among TB patients diagnosed and initiated on CAT I treatment between 2016 to 2017. The study was done with the aim to assess whether provision of DOTS at a time convenient for the patient in the evening will improve treatment adherence especially in TB Units (TU) with higher default rate.

AIM OF THE PRESENT POLICY BRIEF

This policy brief help us to understand the barriers leading to treatment interruptions and default to DOTS. It also inform the effectiveness of providing evening DOTS in the improvement of treatment adherence among TB patients.

STUDY OBJECTIVES

- To compare the treatment outcomes among TB patients started on Category I treatment by evening DOTS and routine DOTS between 2016 and 2017 in Chennai district.
- To determine the factors for treatment compliance among TB patients started on Category I treatment by routine DOTS and Evening DOTS in Chennai district between 2016 and 2017.

GAP ANALYSIS

TB patients non-compliance to anti-TB treatment deals blow to the national program fights against this disease. At least one third of the patients initiated on ATT are irregular for treatment and it is neither easy to predict the patient characteristics for non-compliance nor prevent non-compliance by improving patient education. There are various patient-related and health-system related barriers in regularity to TB treatment. Fixed days for TB service, inconvenient and fixed timings, and waiting time is a concern particularly for working TB patients as they either have to take leave from work during the treatment days or vice versa.

Study among new pulmonary TB patients in Mumbai, largest city in India with a population >18 million, almost one fifth of the patients who were non adherent to therapy mentioned their duty schedule as the reason for missing treatment. Similarly, studies conducted in different countries reported interruptions in TB treatment due to work related reasons

such as work load and lack of money or financial crisis in the household. In a study done in Thiruvallur district in Tamilnadu, almost, 12% of the patients lost greater than 60 days of work during treatment, however returned early to work establishing the economic benefit to the patient and their family.

Interventions such as reinforced counselling by health personnel, decentralization of treatment, DOT supporter chosen by the patient reduces the proportion of patients who defaulted. Chennai being one of the largest and most populous city in the country, with increase effect of urban living of TB infection and 20% of the population working in organized sectors, call for an intervention strategy that is highly convenient and feasible for TB patients in treatment compliance. One of the interventions that could be studied to combat higher default rates especially for the day-time workers who are unable to attend the DOTS clinic during day time may be evening DOTS.

KEY FINDINGS

- Almost one out of seven patients had opted for taking DOTS in the evening.
- More than 90% of the patients had conveyed that the Centre being closer to their residence was the reason for taking DOTS in the routine time .
- Convenient timings was another reason for opting for evening DOTS and the reason they said was what helped them completing treatment .
- All patients from the evening DOTS group had favorable outcomes (cured/treatment completed).
- Almost 40% had conveyed the need for improvement in the TB services in the evening DOTS clinics and need for frequency of drug supply
- With program moving from DOTS to daily treatment, the convenience of the patients to avail the TB services need to be studied.

POLICY IMPLICATIONS

- Evening DOTS is an adjunct strategy if it is implemented using the available program resources.
- There is a need to assess the choice of patient with regard to preferences for morning or evening DOTS.
- Adherence of DOTS needs to be ensured according to patient willingness and availability.

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ENGAGING PUBLIC SECTOR AYUSH PRACTITIONERS TO INCREASE REFERRAL OF PRESUMPTIVE TB CASES FOR EARLY TUBERCULOSIS CASE DETECTION IN SHIMLA AND KANGRA DISTRICTS OF HIMACHAL PRADESH, INDIA

EXECUTIVE SUMMARY

Engaging AYUSH who are often the first and preferred point of contact for a substantial proportion of people with symptoms consistent with TB could lead to early TB diagnosis. This study was conducted among AYUSH practitioners in two districts of Himachal Pradesh, to facilitate the referral of presumptive TB cases to improve early TB case detection. Study findings reported high acceptability of involvement from AYUSH in TB control program. The number of TB case referrals from AYUSH to TB clinics was pretty encouraging. Involvement of AYUSH in TB control program could be promising.



AYUSH-A traditional Systems of Medicines. Source: Press Information Bureau (PIB)

BACKGROUND

Tuberculosis (TB) is a major public health problem with global incidence of 9.6 million in 2014, of which, about three million TB cases were either not diagnosed, not treated, or not reported to national TB programs. These missing cases result to increased transmission, morbidity and mortality. In the state, the case detection performance has plateaued at 14000 against expected level of 18500 cases annually.

Many presumptive TB patients consult a parallel AYUSH (Ayurveda, Yunani, Sidhha and Homeopathy) health care delivery system, which is socio-culturally more acceptable and accessible and often acts as a first point of contact. However, AYUSH is not engaged formally in Revised National Tuberculosis Control Program (RNTCP) to follow the Standards for TB care in Himachal Pradesh. To achieve the targets

as envisaged in Universal Access to TB care, there is a need for an engagement of key stakeholders such as public sector AYUSH practitioners to increase referral of presumptive TB cases for an early case detection in Himachal Pradesh.

The present study was conducted in Kangra and Shimla districts of Himachal Pradesh (covering one third of the state population) with the objectives to engage public sector AYUSH practitioners to increase referral of presumptive TB cases for early TB case detection in Himachal Pradesh and to compare the (proportional) change in referral and case notification rate of presumptive TB cases before and after an interventional package, which includes capacity building, facilitation and linkages of AYUSH facilities with RNTCP institutions.

AIM OF THE PRESENT POLICY BRIEF

This policy brief inform about a study conducted among AYUSH practitioners for referral of presumptive TB cases to increase case detection and their potential involvement in TB control program.

OBJECTIVES OF THE STUDY

- To engage public sector AYUSH practitioners to increase referral of presumptive TB cases for early TB case detection in two districts of Himachal Pradesh.
- To compare the (proportional) change in referral and case notification rate of presumptive TB cases before and after intervention.

GAP ANALYSIS

In Himachal Pradesh, there is an Ayurveda Medical College (AMC) and 934 AYUSH practitioners in public sector. The AMC referred 318 presumptive TB patients for sputum in 2015, of which 54 were found sputum positive. Besides, a pilot study in one of the districts engaging public AYUSH practitioners yielded a four-fold rise in referral of presumptive TB cases after few interventions, as compared to corresponding quarter of previous year. Similarly, positive response from students was seen through linkages of university hospitals in China. Considering the key role of this important stakeholder in the TB control program, to achieve the target of universal access, it is proposed to test these interventions in a larger setup to demonstrate a significant impact by engaging AYUSH practitioners.

KEY FINDINGS

- ➔ Acceptability to be involved in the TB control programme was found high among AYUSH practitioners .
- ➔ Intervention through sustained sensitization of AYUSH practitioners on TB is key and can help promote referrals of presumptive TB cases.
- ➔ Referral of presumptive TB cases from AYUSH to the TB clinics in 1 year was 1492 cases.
- ➔ Among those referred, sputum positive cases detected was encouraging— SPR (Sputum Positive Rate) was 16% to 18%.

POLICY RECOMMENDATIONS

- ➔ Engaging AYUSH practitioners have potential in increasing TB case detection rates and in facilitating early treatment initiation and could be a step forward towards universal access.
- ➔ RNTCP could consider the mainstreaming of AYUSH in the TB control program.

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FAMILY DOTS TO PREVENT TREATMENT LOSS TO FOLLOW UP IN HARD TO REACH AREAS OF KONDAGAON DISTRICT, CHHATTISGARH STATE, INDIA

EXECUTIVE SUMMARY

Adherence to treatment is essential to achieve success in TB treatment. According to TB India report 2014 and 2015 the cure rate of new smear positive sputum cases is about 80% in the state of Chhattisgarh, India. The lost to follow up rate among the new smear positive sputum cases is about 7%.

The vision of WHO's End TB strategy cannot be achieved unless rigorous efforts are taken to treat lost to follow up cases. Family DOTS have been implemented in many developing countries as an effective

strategy. This implementation research aimed to examine the effect of family DOTS on TB treatment adherence among new smear positive sputum, new smear negative and extra pulmonary TB patients to minimize lost to follow up in Chhattisgarh. Study findings report that statistically there was no significant differences in the Family DOTS and Standard DOTS with regard to cure rates, treatment completion, lost to follow up rates and death. Family DOTS may not be effective in this area and family members may require more training in order to become more effective DOTS provider.

STUDY BACKGROUND

Tuberculosis (TB) remains a worldwide healthcare problem and is one of the major health concerns in Chhattisgarh, India. The state is witnessing an increasing trend in the number of Multi-Drug Resistant Tuberculosis (MDR-TB) cases. One of the underlying factors for the increase in MDR-TB is the rise of treatment lost to follow up cases. The TB India report 2014 shows that there are about 7% lost to follow up cases among the new smear positive sputum cases. Poor implementation of Directly Observed Treatment Short Course (DOTS) strategy is a threat to the achievement of high cure rate. Adherence to TB treatment is crucial to achieve cure rate while avoiding the emergence of drug resistance.

One of the studies conducted in Raipur district, Chhattisgarh suggested that only 13.2% of the DOTS centres properly implemented DOTS strategy



A child watches as her mother takes her TB medications (DOTS) © WHO/TBP/Gary Hampton

and only 9.5% of the treatment cards were updated. This difference may vary across different districts. This suggests that there is serious negligence in implementing DOTS strategy in the state. Moreover, there is no uniformity of DOTS providers in the state.

GAP ANALYSIS

The standard DOTS have been implemented throughout the nation to eliminate TB. But it has been a challenge in state such as Chhattisgarh, which has lots of hilly and hard-to-reach areas. Also, the diversity of languages in the state, worsen the situation further to disseminate the communication materials which are key for behavioral change. Many studies conducted in different parts of the world suggest that family DOTS is one of the effective methods to increase treatment compliance among TB patients. Nevertheless, this strategy is more effective in rural rather than in urban setting. These different studies showed cure rates ranging from 85% to 95% involving family members as DOTS providers (Newell JN, et.al., 2006; Duangrithi D, et.al., 2014).

India's experience on family DOTS has been a promising attempt to find solution to the increasing number of multi drug resistant TB in the country. It is also a well known fact that domiciliary chemotherapy of tuberculosis conducted from outpatient clinics is widely practiced in developing countries. A cluster-randomized trial conducted in Gujarat among newly diagnosed paediatric TB patients suggests that treatment success rate was 95.8% (Dave PV, et.al., 2016). However this study was limited to paediatric TB patients only. Further studies are needed to generate evidences on different setting and different age group of TB patients before scaling up this strategy at mass level.

STUDY OBJECTIVES

- To study the outcome of family DOTS in relation to conversion rate, cure rate and treatment completion.
- To study the treatment outcome differences among patients supervised by household members and health care workers (Current DOTS providers).
- To study the feasibility and acceptability of family DOTS by TB patients and their families, perceptions of health care providers.

Intervention	Activity	Responsibility
Family member	DOTS provider	<ul style="list-style-type: none"> • One of the family members as DOTS provider. • Supervise drug consumption of the patient.
Mitanin (ASHA workers)	Health Education	<ul style="list-style-type: none"> • Provides health education to patients as well as family members. • Makes family visit and fills treatment card. • Coordinates with care givers for intervention if a patient defaults. • Strengthens village health committee. • Assists Mitanin trainer to train committee or group members on TB.
Community leaders	Health education	<ul style="list-style-type: none"> • Make home visit, educate and counsel defaulters.
Senior Treatment Supervisor (STS)	Health education & Counseling	<ul style="list-style-type: none"> • Provides health education and counseling to defaulters. • Provides training to Mitanins on TB.
Block MO/DTO	Health education & Counseling	<ul style="list-style-type: none"> • Makes home visit to educate and counsel defaulters.

KEY FINDINGS

- It has been observed that the Family DOTS have resulted in lower rate of cure and treatment completion compared to current DOTS facilities (68% vs 72%).
- Higher rates of death in the family DOTS group when compared to control group (11% vs 9%).
- Higher rates of lost to follow up in the family DOTS group (16% vs 8%).

POLICY IMPLICATIONS AND RECOMMENDATION

- No significant differences were found between Family DOTS and Standard DOTS. It is therefore, the family DOTS may not be an effective strategy to prevent treatment lost to follow up rates among TB patients compare to standard DOTS.
- Though the Family DOTS were found to have less or equal impact compared to the standard DOTS; it can be used wherever the community DOTS providers are not effective enough or where standard DOTS cannot reach patients.
- Adding an intervention component where family members are offered DOTS training may increase the success of family DOTS.

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SYSTEMATIC SCREENING OF PRESUMPTIVE PAEDIATRIC TB PATIENTS AND GASTRIC ASPIRATE SPECIMEN COLLECTION IN PRIMARY AND SECONDARY HEALTH CARE FACILITIES IN RAJNANDGAON DISTRICT, CHHATTISGARH

EXECUTIVE SUMMARY

Early diagnosis of paediatric Tuberculosis (TB) is important concerning the rapid progression from infection to disease among children. However, limited access of paediatric TB diagnostic technique leads to low notification of paediatric TB in Chhattisgarh, India.

This study was conducted by the State Health Resource Centre (SHRC), Chhattisgarh to test the feasibility on gastric aspirate specimen collection through training of healthcare providers. Findings reported the need for sensitizing health providers at the public and private care centres on screening of presumptive paediatric patients on gastric aspirates for improving diagnosis and care of paediatric TB cases.



Childhood TB makes up a substantial fraction of the total TB burden. Source: CDC

BACKGROUND

It is estimated that paediatric TB constitutes 10–20% of all TB in high burden countries, accounting for 8–20% of TB-related deaths (Cossio MLT, et.al. 2015). According to the TB India 2014 report, 5% of all new paediatric cases were in 0-14 years. However, children with TB are given low priority in most National Health Programs and are neglected in this epidemic.

There are inherent challenges in diagnosis and treatment of paediatric TB, including low levels of awareness about paediatric TB, lack of training for paediatricians in diagnostic modalities and drug algorithms. These challenges lead to cases being missed as well. Even though the Central TB Division and the Indian Academy of Paediatrics have together brought out Standard Paediatric TB guidelines, it is yet to be disseminated amongst all paediatricians.

Early diagnosis of paediatric TB is important because there is a rapid progression from infection to disease among children that may later contribute to the epidemic. An innovative method is needed to diagnose paediatric TB and one such method is the collection of gastric aspirate. The Revised National Tuberculosis Control Program (RNTCP) has recommended the collection of gastric aspirates for diagnosis of children as standardized method for to control paediatric TB.

This study was conducted in Rajnandgaon, Chhattisgarh with the aim to estimate proportion of presumptive paediatric TB patients, acceptance of gastric aspirate and proportion of patients among whom gastric aspirate was collected and found positive for M.TB.

AIM OF THE PRESENT POLICY BRIEF

To inform the importance of screening presumptive paediatric TB cases and collection of gastric aspirate specimens for paediatric TB care and management.

GAP ANALYSIS

The World Health Organization (WHO) indicates that sputum microscopy smear-positive TB in children (<14 years old) accounts for 0.6%–3.6% of all reported cases. TB is widely prevalent among children, especially in those with coexisting severe malnutrition and immunodeficiency. Chhattisgarh is one of the high priority states in terms of high malnutrition and immunodeficiency among children (Socio Economic and Caste Census 2011). Some challenges were observed during this paediatric TB surveillance:

(i) Difficulty in paediatric TB diagnosis due to untrained healthcare providers in health facilities (ii) Lack of knowledge regarding standard case definition

(iii) increased extra-pulmonary disease in children and low public health priority of paediatric TB.

In Chhattisgarh, methods of alternate specimen (Bronchoalveolar Lavage, Gastric aspirate, Induced sputum) collection to diagnose Paediatric TB cases are still limited to tertiary health care facilities only. An innovative method is a need of the hour to diagnose paediatric TB. Imparting training to health careproviders about TB diagnostic algorithm and methods of alternate specimen collection (i.e. Gastric aspirate) down the line (i.e. below tertiary health care facility) could be one of the strategies to improve notification of paediatric TB cases.

OBJECTIVES OF THE STUDY

- To estimate the proportion of presumptive paediatric TB patients out of all out-patients (OPD) in 0 to 10 years age group.
- To know acceptance rate of the parents for the gastric aspirates as a method of specimen collection, if children are unable to produce sputum.
- To find out proportion of patients among whom gastric aspirate collected out of those eligible.
- To find out the proportion of gastric aspirate specimen found to be positive for Mycobacterium TB.

INTERVENTION

Two days training by the Department of Paediatrics, AIIMS Raipur on Gastric Juice Aspiration was conducted, wherein one doctor and one nurse each from 48 PHC, 10 CHC, and 1 DH were trained. This training provided hands on demonstration of gastric aspirate specimen collection from presumptive paediatric TB cases. After the training, they were asked to implement the project by doing the gastric aspiration and send the collected samples to the district for testing. Mitanins (ASHA workers) working in Rajnandgaon district as community health workers were also trained in taking gastric aspirates. After the training a referral network was established in which the Mitanins referred presumptive TB cases directly to facilities.

KEY FINDINGS

- Of the total OPD (n=109712), 0.49% were presumptive TB cases.
- Among those eligible for gastric aspirate (n=460), 81.52% gastric aspirate were collected.
- 0.80% were found positive for M.Tuberculosis.
- The acceptance rate of parents for gastric aspirates as a method of specimen collection was 78.89%. Patients and parents were enthusiastic about the test.
- Increase in samples tested - 426 samples collected at periphery.

POLICY RECOMMENDATIONS

There is need for sensitising all doctors at the public and private care centres on the screening of presumptive paediatric patients on gastric aspirates. However, this diagnostic tool can only supplement other diagnostic tools such as Mantoux test, X-ray and CBNAAT and cannot substitute other tools. Furthermore, there is a need to re-examine the quality of presumptive paediatric case detection, training, specimen selection and transportation for intervention sustainability.

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REVISION OF TOOLS FOR EVALUATION OF PROGRAMMATIC MANAGEMENT OF DRUG RESISTANT TUBERCULOSIS (PMDT) AND THEIR USE IN THREE STATES OF NORTHERN INDIA

EXECUTIVE SUMMARY

Evaluation of any programme requires a set of indicators and tools for assessment, however very limited work is done on this aspect under the programme. Some indicators are being used have variability in the definitions of core indicators but additional indicators need to be developed that are critical for monitoring and evaluation of the rapid scale-up of Programmatic Management of Drug Resistant Tuberculosis (PMDT).

This study was conducted in three Drug Resistant TB (DR-TB) Centres in the states of Delhi, Himachal Pradesh and Punjab. The study aimed to develop a list of indicators and tools to assess the available indicators. Development of list of indicators and

revision of the existing evaluation tools for PMDT was done using in-depth interviews among WHO RNTCP consultants and staff of the Centres and focus group discussions among the Multi-drug Resistant TB (MDR-TB) patients from these three DR-TB Centres. Study findings found minimal engagement of private sector in the national TB control programme and lack of transport agencies in any of these states for transport of drugs to districts. With the help of the feedback on the methodology, evaluation tool and indicators from the evaluation teams, the revised PMDT evaluation tools and core indicators developed are now aligned to the updated Guidelines for PMDT in India (2017) and current programme needs.

BACKGROUND

Programmatic management of drug resistant tuberculosis (PMDT) was launched under revised national TB control programme (RNTCP) in year 2007 in a phased manner to cover the whole country by 2013. However, there is a strong need to update the tools available for evaluation. Evaluating the PMDT and identifying the gaps in the implementation will help provide important information for improving the PMDT services. There is a need to develop a common list of indicators as well as a uniform tool for evaluation of PMDT services which will facilitate comparability of data and facilitate cross learning for improved management of MDR-TB at national level.

Rajasthan, Kerala and Delhi have developed certain tools for assessment of PMDT but these tools are not being used at the national level. Moreover, on comparison of these tools, there was large Inter tool variability.

Therefore, this study was conducted with the aim to review and update the existing evaluation tools, its usage to evaluate the level of implementation of PMDT in three states of northern India and to finalize the tools based on lessons learnt.



AIM OF THE PRESENT POLICY BRIEF

To report the findings of the study conducted in three states of North India (i.e., Delhi, Punjab and Himachal Pradesh) that assessed the programmatic management tools of drug resistant TB in the DR-TB Centres.

OBJECTIVES OF THE STUDY

- To review the existing tools using the developed a list of indicators for evaluation of PMDT.
- To evaluate the level of implementation of PMDT services in three states of Northern India using revised tools.
- To make recommendations and suggest suitable interventions.
- To refine the evaluation tools and indicators for sharing with the programme for integration. with the evaluation systems of RNTCP.

GAP ANALYSIS

Even after 5 years of implementation of PMDT, treatment success rate ranges from 30%-60% in various parts of the country among MDR-TB patients. Uncured patients continue to suffer for months to years transmitting MDR-TB continuously in the community before succumbing to the disease. This low cure rate could be due to non-availability of drugs, poor accessibility to TB services, and social and economic barriers in various parts of the country. Evaluating the PMDT and identifying the gaps in the implementation of these tools provide could help in improving the available PMDT services or developing additional indicators to the programme management. However, tools required for the evaluation have been developed by only three states across India i.e. Delhi, Kerala and Rajasthan.

Various programme related documents like PMDT guidelines for India, National strategy document 2012-2017 and WHO guidelines for PMDT mentioned and stressed the need for an evaluation of the programme. However, no publications could be found except one Review of Programmatic Management of Drug Resistant Tuberculosis Guidelines for Treatment of MDR-TB and Difficulties in its Implementation in Government Medical Colleges of Madhya Pradesh and Role of Pulmonary Medicine Departments by Bhargava et al, which studied the barriers to PMDT implementation at a medical college.



KEY FINDINGS

- On detailed desk review, three arms of PMDT were identified i.e. Case detection, Treatment and Programme Management. Core set of indicators for each arm was developed.
- Rifampicin resistance notification rate per 100,000 population was highest i.e., 7.2 in Delhi, followed by 4.2 in Punjab and lowest i.e., 2 in Himachal Pradesh.
- Cure rate for MDR-TB ranged between 35%-40% in three states.
- Minimal engagement of private sector in RNTCP activities.
- Human resource shortage was seen across three states with approximately 50% of sanctioned key staff posts lying vacant at DR-TB centres.
- No transport agency was identified in any of the study sites for transport of drugs to districts.
- Lack of supervision and monitoring of NIKSHAY.
- Feedback on the methodology, evaluation tool and indicators from the evaluation teams was incorporated to finalize and align with the latest version of the PMDT guidelines 2017.

POLICY IMPLICATIONS AND RECOMMENDATIONS

- The revised PMDT evaluation should be scaled up as an integral component of the RNTCP evaluation mechanism for internal and external evaluation.
- The tools should include a core set of indicators for case detection, treatment and programme management. Periodic evaluation with the revised PMDT tool would help prevent low cure rate among MDR-TB patients due to various structural and programmatic barriers.

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