



Annual Report India

**GHN-I-00-09-00006-01, Task Order 01
(or TB IQC Task Order 2015)**

October 1, 2012 through September 30, 2013

Submitted to:

US Agency for International Development

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Summary

COUNTRY	India	REPORTING PERIOD	October 1, 2012 - September 30, 2013
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FUNDING SOURCE	TO2015 FY10 carryover funds
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OVERVIEW

With support from USAID, PATH and its partners continue to assist the CTD in strengthening of the RNTCP and will collaborate with WHO, civil society consortia, and others working in TB control in the country, all of which have the ultimate goal of providing universal access to high-quality TB prevention, diagnosis, and treatment, thus working toward the elimination of TB as a public health problem in India. PATH's strategic objective is to provide universal access to high-quality diagnosis and treatment for all TB patients in project areas. This objective will be achieved through activities designed to contribute toward improved case notification and treatment success rates, in addition to system strengthening of RNTCP Phase 3.

ACHIEVEMENTS

Strengthening laboratories, diagnosing more cases of MDR-TB

Ensuring that laboratories have the equipment, training, and procedures in place to diagnose TB, including drug-resistant forms, is critical to helping people access lifesaving treatment as quickly as possible. During the reporting period, PATH played a pivotal role in infrastructure upgrades in five laboratories (PGI Chandigarh, IRL Dharampur, IRL Patiala, KIMS Hubli, IRL Aligarh) to allow for the introduction of LPA. Among the five laboratories, four (except IRL Aligarh) have completed proficiency testing. IRL Aligarh is in process of completing its proficiency testing. Prior to the laboratory upgrades, MDR-TB diagnosis was not available in the project areas. Once certified, these four upgraded laboratories will provide MDR-TB diagnostic services for a total population of about 30 million.

Universal access through integrated health delivery systems

Under the leadership of the CTD, partner Initiatives Inc., with support from PATH and WHO, is in the final stage of completion of Phase 3 of the Human Resources for Health pilot in four districts, an activity that was initiated in December 2012 to test district administrative and block program management integration. Pilot monitoring is underway, and despite the very short time frame for the pilot activity, some notable achievements have been made. District and block staff were oriented and STSs have been appointed to the block level in all four districts. The study has found that key administrative processes have been improved. BMOs have begun taking ownership of the RNTCP, and anecdotal evidence suggests that their involvement is pushing PHC medical officers to incorporate increased TB-related activities.

CHALLENGES

Challenge	How is PATH addressing this challenge?
A lack of standardization of the specifications for vendors applying to carry out laboratory upgrades resulted in a wide range of prices quoted.	PATH worked to develop standard specifications for laboratory upgrades that were communicated to vendors through the request for proposals process.
Lengthy approval processes delayed final delivery of the video training module (for STSs and BMOs) for the Human Resources for Health project.	Extensions were sought and approved in order to complete the work. In addition, a scaled down copy of the module is on standby.

MAJOR CHANGES TO WORK PLAN THIS REPORTING PERIOD

Change	Why is PATH making this change?	Approval from USAID
Additional upgrades for 7 LPA clean rooms and 3 BSL-3 containment laboratories were added to the work plan.	With rapid expansion of PMDT services in the country, the CTD identified more laboratories to be upgraded for introduction of newer diagnostics.	This change was approved by USAID on February 12, 2013.
Development of a video training module for BMOs under the Human Resources for Health pilot was included.	To introduce integration, taking into account the huge training loads and for addressing standardization of the training content across the country, the CTD requested this activity.	This change was approved by USAID on February 12, 2013.
Extension of the PMDT unit until May 2014.	The CTD requested, for extension of support to the PMDT unit.	This change was approved by USAID on February 12, 2013.

ENVIRONMENTAL IMPACT STATEMENT

During the reporting period, laboratories were upgraded to include LPA:

- There was no damage to sensitive ecosystems, as work involved only minimal upgrades in existing buildings.
- Most of the materials were prefabricated; thus, there was no need to store equipment/machinery.
- No toxic materials were used (the resin-based epoxy flooring was in semi-solid form, not powder, so it did not cause harm).
- Every effort was made to avoid excess construction material, and any leftover material was recycled as possible. Disposal of unusable material was done in an environmentally sound manner by the contractors.
- The coolant used was free of chlorofluorocarbons.
- The negative-pressure rooms will mitigate any contamination while undertaking TB diagnostic work, and written guidelines and training for proper maintenance of the facilities have been provided.
- Disposal of laboratory infectious waste is done in accordance with RNTCP guidelines. There has been no adverse impact of these activities on the environment.

Global Indicators

NATIONAL LEVEL

India

Indicator	Value	Comments	Time period
Number of new SS+ TB cases notified	629,589	The RNTCP does not disaggregate by sex.	2012
New smear positive notification rate per 100,000 population	51/100,000		2012
Number of new SS+ TB cases successfully treated	564,500		2011
New smear positive treatment success rate	0.88		2011
Number of MDR/XDR-TB cases diagnosed	17,373		2012
Number of MDR/XDR-TB cases who initiated treatment	14,059		2012
Number of TB patients tested for HIV	821,848		2012
Percentage of TB patients tested for HIV	0.56		2012
Number of TB/HIV patients on ART	34,852		2011
Number of health care providers trained in TB elements	0		2012

Chandigarh

Indicator	Value	Comments	Time period
Number of new SS+ TB cases notified	1,012	The RNTCP does not disaggregate by sex.	2012
New smear positive notification rate per 100,000 population	92/100,000		2012
Number of new SS+ TB cases successfully treated	777		2011
New smear positive treatment success rate	0.87		2011
Number of MDR/XDR-TB cases diagnosed	62		2012
Number of MDR/XDR-TB cases who initiated treatment	62		2012
Number of TB patients tested for HIV	2,667		2012
Percentage of TB patients tested for HIV	0.95		2012
Number of TB/HIV patients on ART	13		2011
Number of health care providers trained in TB elements	0		2012

Delhi

Indicator	Value	Comments	Time period
Number of new SS+ TB cases notified	13,940	The RNTCP does not disaggregate by sex.	2012
New smear positive notification rate per 100,000 population	82/100,000		2012
Number of new SS+ TB cases successfully treated	11,703		2011
New smear positive treatment success rate	0.85		2011
Number of MDR/XDR-TB cases diagnosed	1,793		2012
Number of MDR/XDR-TB cases who initiated treatment	1,670		2012
Number of TB patients tested for HIV	37,964		2012
Percentage of TB patients tested for HIV	0.73		2012
Number of TB/HIV patients on ART	565		2011
Number of health care providers trained in TB elements	0		2012

Himachal Pradesh

Indicator	Value	Comments	Time period
Number of new SS+ TB cases notified	5,037	The RNTCP does not disaggregate by sex.	2012
New smear positive notification rate per 100,000 population	73/100,000		2012
Number of new SS+ TB cases successfully treated	4,273		2011
New smear positive treatment success rate	0.9		2011
Number of MDR/XDR-TB cases diagnosed	118		2012
Number of MDR/XDR-TB cases who initiated treatment	96		2012
Number of TB patients tested for HIV	7,624		2012
Percentage of TB patients tested for HIV	0.56		2012
Number of TB/HIV patients on ART	26		2011
Number of health care providers trained in TB elements	0		2012

<i>Karnataka</i>			
Indicator	Value	Comments	Time period
Number of new SS+ TB cases notified	27,855	The RNTCP does not disaggregate by sex.	2012
New smear positive notification rate per 100,000 population	45/100,000		2012
Number of new SS+ TB cases successfully treated	23,877		2011
New smear positive treatment success rate	0.83		2011
Number of MDR/XDR-TB cases diagnosed	156		2012
Number of MDR/XDR-TB cases who initiated treatment	90		2012
Number of TB patients tested for HIV	63,521		2012
Percentage of TB patients tested for HIV	0.94		2012
Number of TB/HIV patients on ART	7,697		2011
Number of health care providers trained in TB elements	0		2012

<i>Punjab</i>			
Indicator	Value	Comments	Time period
Number of new SS+ TB cases notified	15,680	The RNTCP does not disaggregate by sex.	2012
New smear positive notification rate per 100,000 population	56/100,000		2012
Number of new SS+ TB cases successfully treated	13,751		2011
New smear positive treatment success rate	0.88		2011
Number of MDR/XDR-TB cases diagnosed	331		2012
Number of MDR/XDR-TB cases who initiated treatment	276		2012
Number of TB patients tested for HIV	32,842		2012
Percentage of TB patients tested for HIV	0.83		2012
Number of TB/HIV patients on ART	318		2011
Number of health care providers trained in TB elements	0		2012

Results Framework

TO2015 FY10 India Carryover Work Plan

Goal: To strengthen NTP capacity to achieve universal access to TB care and control in project-supported areas.

OUTCOME	INTERMEDIATE RESULTS	INDICATOR TARGETS	RESULTS AS OF SEPTEMBER 30, 2013
Strengthened IRL capacity to attain and maintain RNTCP certification for culture and drug susceptibility testing by addressing gaps in infrastructure and providing technical support in planning and management of good-quality diagnostic services.	Increased PMDT capacity for early diagnosis and treatment of drug-resistant TB cases in project-supported areas.	MDR-TB case notification rate.	The current MDR-TB case notification rate is 1.4 per 100,000 population.
		100% of population with access to PMDT services under RNTCP.	This target was met as of March 2013.
	Increased laboratory capacity for early diagnosis of drug-resistant TB cases.	12 laboratories with LPA infrastructure upgraded.	This reporting period, five laboratories were upgraded: IRL Patiala, PGI Chandigarh, IRL Dharampur, AMU Aligarh, and KIMS Hubli. The upgradation work is ongoing in the remaining six laboratories and is expected to be completed by October 2013.
		Three laboratories with BSL-3 infrastructure upgraded.	The BSL-3 upgradation in KIMS Hubli, STDC Ahmedabad, and BHU Varanasi is ongoing and will be finished before the end of the project.
		Two laboratories where proficiency testing has commenced.	Proficiency testing completed in four laboratories, including IRL Patiala, PGI Chandigarh, IRL Dharampur, and KIMS Hubli.
		Number of specimens processed by targeted laboratories (cumulative total).	A total of 12,778 specimens were processed in laboratories that have started testing services.
		Number of MDR-TB cases diagnosed by targeted laboratories (cumulative total).	A total of 1,799 drug-resistant TB cases have been diagnosed in laboratories with testing facilities.
	Strengthened capacity in planning and implementation of PMDT services at the central and state levels.	PMDT unit at the CTD established and functioning.	Completed. The project helped establish a functioning PMDT unit housed in the CTD. The project will continue to support the PMDT unit through May 2014. Key contributions of the PMDT unit include providing support for the rollout and scale-up of PMDT services, reviewing progress made by states in implementing PMDT services, providing technical support for improving quality of services and capacity-building and planning support. For further details, please see the PMDT unit's progress report.
		Ten districts visited for central PMDT appraisal.	Completed. Ten districts have been visited for central PMDT appraisal. The PMDT unit has helped debrief state health officials and prepare appraisal reports to inform national planning.

OUTCOME	INTERMEDIATE RESULTS	INDICATOR TARGETS	RESULTS AS OF SEPTEMBER 30, 2013
Technical assistance provided at the national level to support development of a status report and operational guidelines on ACSM along with IHBP.	Strengthened health system capacity in human resources integration, ACSM, AIC, and compulsory TB case notification activities.	New smear positive case notification rate in project-supported areas.	The new smear positive case notification rate in project-supported areas is 51 cases per 100,000 population per year.
		New smear positive treatment success rate in project-supported areas.	The new smear positive treatment success rate in project-supported areas is 87%.
	Improved access to information and increased capacity in human resources needs, planning, and implementation of integration strategies.	Integrated pilot completed in four districts.	Completed. The pilot integration guidelines have been developed and submitted to the CTD. With support from project partner Initiatives Inc., case studies about the pilot have also been prepared and submitted to the CTD.
		One video training module completed.	The script has been drafted and filming is complete. With support from partner Initiatives Inc., the "field ready" module will be handed over to the CTD the week of the October 21.
	Improved capacity in planning and implementation of ACSM strategies at the national and state levels.	Contribution to ACSM status report.	Completed. PATH contributed to the development of the ACSM status report designed to inform ACSM planning at the national and state levels.

OUTCOME	INTERMEDIATE RESULTS	INDICATOR TARGETS	RESULTS AS OF SEPTEMBER 30, 2013
Effective expansion of PMDT services supported through identifying and addressing gaps.	Improved support services for drug-resistant TB patients in pilot areas.	Modules for health care workers on counseling drug-resistant TB patients developed.	Completed. A training curriculum for health care workers on counseling drug-resistant TB patients has been developed and shared with the CTD for review and approval.
		15 health workers trained in drug-resistant TB counseling.	Due to CTD approval delays on the module, the training program for GLRA and State TB cell staff from Delhi could not be conducted.
	Strengthened health system capacity in human resources integration, ACSM, and AIC activities.	New smear positive case notification rate in project-supported areas.	The new smear positive case notification rate in project-supported areas is 46 per 100,000 population. Data were averaged from four districts: Kangra, Kuruksthra, Shimoga & Noth, and Paraganas.
		New smear positive treatment success rate in project-supported areas.	The new smear positive treatment success rate in project-supported areas is 85%. Data were averaged from four districts: Kangra, Kuruksthra, Shimoga & Noth, and Paraganas.
		MDR-TB case notification rate in project-supported areas.	The MDR-TB case notification rate in project-supported areas is 0.8 cases per 100,000 population. Data were averaged from four states: Haryana, Himachal Pradesh, Karnataka, and West Bengal.
	Improved capacity in training, planning, and implementation of AIC activities at the national, state, and facility levels.	Module on building design and engineering approaches for AIC training in India developed.	Complete. The module on building design and engineering approaches for AIC training in India has been developed and shared with the CTD.

Activity Monitoring

TO2015 FY09/FY10 India Carryover Work Plan

Objective 1: Strengthen IRL capacity to attain and maintain RNTCP certification for culture and drug susceptibility testing by addressing gaps in infrastructure and providing technical support in planning and management of good-quality diagnostic services.

Activity	OUTPUTS	TARGETS	EXPECTED DATE OF COMPLETION	STATUS AS OF SEPTEMBER 30, 2013	PROGRESS TO DATE
1.1 Provide technical assistance for accreditation of selected IRLs.	Number of laboratories that started proficiency testing.	Four laboratories started proficiency testing.	n/a	Completed	The process has been completed in IRLs at Dharampur, Patiala, Chandigarh, and KIMS Hubli. The process of proficiency testing has started in AMU Aligarh.
	Number of laboratories with infrastructure for culture and DST completed.	Three laboratories with infrastructure for culture and DST completed.	Sep-13	In progress	Infrastructure upgrades for culture and DST were completed for IRL Dharampur and KIMS Hubli. The third laboratory will be completed before the end of the project.
1.2 Provide management training and follow-up support for laboratory managers (STDC directors) and microbiologists with the aid of existing partner training modules (PATH and FIND).	One workshop.	One workshop.	n/a	Completed	The "Tuberculosis Laboratory Management" training was conducted in April 2013 in Mumbai. The training was jointly organized by PATH, the CTD, and FIND, with technical input from WHO. More than 30 microbiologists from NRLs, IRLs, medical colleges with RNTCP-certified TB laboratories, and regional microbiologists participated in the training. In addition, directors of 11 STDCs participated. Participants left the workshop with lessons learned from their colleagues as well as improved their skills in critical areas such as biosafety, quality assurance, laboratory certification, human resources management, management of supplies, and information systems.
1.3 Provide support for infrastructure upgrades in laboratories.	Laboratories upgraded for LPA and BSL-3.	11 LPA; 3 BSL-3.	Jul-13	In progress	LPA upgradation completed in KIMS Hubli; IRLs Dharampur, Patiala, PGI-Chandigarh, STDC Hyderabad, Dr S N Medical College-Jodhpur, and AMU Aligarh. BSL-3 and LPA upgradation work is ongoing in the other laboratories.
1.4 Support the installation of equipment at one laboratory.	Equipment installed.	One laboratory.	n/a	Completed	Upgraded equipment was installed at one laboratory, allowing for improved diagnostic capabilities.

Objective 2: Provide technical assistance at the national level to support development of a status report and operational guidelines on ACSM along with IHBP.					
Activity	OUTPUTS	TARGETS	EXPECTED DATE OF COMPLETION	STATUS AS OF SEPTEMBER 30, 2013	PROGRESS TO DATE
2.1 Contribute to development of ACSM status report for RNTCP.	Contribution to ACSM status report.	Contribution to one status report.	n/a	Completed	PATH contributed to the development of an ACSM status report for the RNTCP. Insight and recommendations based on PATH's ACSM experience in India were included.

Objective 3: Support effective expansion of PMDT services by identifying and addressing gaps.					
Activity	OUTPUTS	TARGETS	EXPECTED DATE OF COMPLETION	STATUS AS OF SEPTEMBER 30, 2013	PROGRESS TO DATE
3.1 Assess the readiness of new districts to commence PMDT activities.	Readiness assessments completed.	Ten districts.	n/a	Completed	PATH conducted assessments in 10 new districts to determine the readiness of the districts to commence PMDT activities. Findings were shared with the CTD and state- and district-level health authorities to inform planning. For findings of the assessments, please see deliverables.
3.2 Continue to support the PMDT program management unit.	PMDT unit supported.	PMDT unit staffed until May 2013.	May-14	In progress	PATH will continue to support the PMDT unit.
3.3 Support community care of drug-resistant TB patients to improve adherence and treatment completion.	MDR-TB counseling training conducted.	One training workshop.	May-13	Cancelled	The MDR-TB counseling training was cancelled, as CTD approval of the training curriculum did not occur with sufficient time to conduct the training.
3.4 Assess human resources needs and related management requirements to realize universal access and effective RNTCP integration with general health systems and the NRHM.	Phase 3/4 of Human Resources for Health assessment conducted.	Phase 3/4 completed.	Sep-13	In progress	With support from PATH and WHO, Initiatives Inc. is in the final stage of completing Phase 3 of the Human Resources for Health pilot in four districts. This activity was initiated in December 2012 to test district administrative and block program management integration. All activities will be completed the week of the October 21.
3.5 Develop a module on building design and engineering approaches for AIC trainings in India.	AIC training module completed.	One AIC training module completed.	Sep-13	Completed	A training module on building design and engineering approaches to be included in AIC trainings has been developed and submitted to the CTD for approval.
Objective 4: Disseminate activities and evaluations carried out under TO2015 and additionally respond to CTD requests for technical assistance for ongoing and new emerging initiatives.					
Activity	OUTPUTS	TARGETS	EXPECTED DATE OF COMPLETION	STATUS AS OF SEPTEMBER 30, 2013	PROGRESS TO DATE
4.1 Implement dissemination plan for TO2015.	Dissemination workshop.	One dissemination workshop completed.	n/a	Cancelled	Due to the continuation of the PMDT unit, this activity is not being conducted.

Photos: Completion of LPA Lab under Infrastructure up-gradation at STDC, Nagpur, India



Before: Nagpur IRL. Photo credit: PATH.



After: Nagpur IRL. Photo credit: PATH.

Evaluation and Operations Research							
Title	Purpose of study	Evaluation type and method(s)	PATH field contact	PATH DC contact	Partner	IRB status	Status/Results
Evaluation of Training Outcomes: National Training on Design and Engineering Approaches to Airborne Infection Control to Prevent Tuberculosis Transmission in India	To evaluate the outcome of the training "Building Design and Engineering Approaches to Airborne Infection Control" in terms of implementation of national AIC guidelines in the field.	Qualitative, cross-sectional study	Satish Kaipilyawar	Tope Adeyoyibi	n/a	Determined not research by PATH IRB.	The evaluation has been completed, and the report is currently being finalized.

Deliverables					
TO2015 FY10 Carryover India Work Plan					
Activity in FY10 Carryover India Work Plan	Deliverable	Target date of completion	Status as of September 30, 2013	Name of file	Dissemination
Objective 1: Provide technical support to laboratories in project areas, in addition to strengthening IRL capacity to attain and maintain accreditation for culture and drug susceptibility testing by addressing gaps in infrastructure, planning, and management to complement PATH's technical support.					
1.2 Provide management training and follow-up support for laboratory managers (STDC directors) and microbiologists with the aid of existing partner training modules (PATH and FIND).	Workshop report from laboratory management training, including a list of the IRL staff that were trained.	Mar-13	Completed	TB Lab Mx Training report_CNP_25APR13	USAID
1.3 Provide support for infrastructure upgrades in laboratories.	LPA and/or BSL-3 upgrade completion certificates from completed laboratories.	Oct-13	In progress	Lab completion certificates folder	USAID
1.4 Support the installation of equipment at one laboratory.	Equipment installation completion certificate.	Oct-13	Completed	Dharampur LPA Lab completion of installation certificate	USAID
Objective 2: Provide technical assistance at the national level to support development of a status report and operational guidelines on ACSM along with IHBP.					
2.1 Contribute to development of ACSM status report for RNTCP.	PATH contribution to ACSM status report.	Apr-13	Completed	ACSM study final report	USAID, partners
	Trip reports.		Completed	Trip report - Gujarat ACSM, February 2013.	USAID

Objective 3: Support effective expansion of PMDT services by identifying and addressing gaps.					
3.1 Assess the readiness of new districts to commence PMDT activities.	Reports for each district appraisal in which PATH has participated.	Mar-13	Completed	Site Assessment Reports: JNMC, Ahmedabad, Jodhpur	USAID
3.2 Continue to support the PMDT program management unit.	Quarterly report of the PMDT program management unit.	May-13	Completed	Report of PMDT Unit	USAID
3.3 Support community care of drug-resistant TB patients to improve adherence and treatment completion.	Finalized training module for health workers on counseling of MDR-TB patients.	Feb-13	Completed	MDR-TB counseling module drafts	USAID, RNTCP
	Training report	Feb-13	Cancelled		
3.4 Assess human resources needs and related management requirements to realize universal access and effective RNTCP integration with general health systems and the NRHM.	Integration guidelines.	May-13	Completed	Integration Guidelines	USAID, CTD
	Integration case studies.	May-13	Completed	Integration case studies	USAID, CTD
	Job descriptions and task lists for selected staff.	Nov-13	In progress		USAID, CTD
	Performance appraisal tools and procedures for selected RNTCP contractual staff.	Nov-13	In progress		USAID, CTD
	Finalized orientation modules.	May-13	Completed	Finalized Orientation Modules	USAID, CTD
	Pilot monitoring tools.	May-13	Completed	Page 17 - 20 of the Integration Guidelines	USAID, CTD
	Training methodology review report.	May-13	Completed	Integration Pilot Report FINAL	USAID, CTD
	Video training modules for BMO.	Oct-13	Pending		USAID, CTD
	Facilitator's guides to accompany video training modules.	Oct-13	Completed	RNTCP BMO Training-10-15 Final	USAID, CTD
3.5 Develop a module on building design and engineering approaches for AIC trainings in India.	Training module on building design and engineering approaches for AIC in India.	Apr-13	Completed	IC Curriculum (Final); IC Curriculum Annex 2 - Handouts	USAID, RNTCP
Trip report.				Trip report folder	USAID

GeneXpert[®] Procurement

Not applicable for this project.

Inventory

Project commodities costing more than \$500 purchased during this reporting period.

No commodities costing more than \$500 were purchased during the reporting period.

Success Story

Design and engineering approaches to improve TB infection control in India

Health facilities are places of healing, yet they can also put patients and health care workers at risk. With support from USAID, and in collaboration with India's Central TB Division and the World Health Organization, PATH and Partners in Health provided intensive training for Indian architects and engineers responsible for planning, designing, and implementing TB infection control measures in health facilities in line with national guidelines. Documenting the outcomes of this training provides a glimpse of what training participants have been able to accomplish since their return home and what challenges lie ahead for protecting their communities from TB.

In Nagpur, the TB burden remains high and many facilities are in need of infrastructure-related improvements to prevent TB transmission. Training participants from this area reported major improvements such as installation of mechanical ventilation systems, laboratory renovation efforts, and changes to improve infection control in hospitals. One administrator outlined a few of the improvements being made in his facility since his training: "We are providing isolated wards for infectious cases, increasing sunlight into the rooms, increasing the amount of open areas, and changing the design of windows to improve air flow".

Two state TB officials decided to conduct risk assessments of several health facilities and began undertaking major advocacy efforts to promote infection control programming in Maharashtra State. As a result of these efforts, infection control is now included in the Annual Program Implementation Plan of the National Rural Health Mission (NRHM), a nationwide health program. The NRHM has since allocated 6.9 million rupees (roughly \$115,000) for infection control activities in four local health facilities.

At the patient level, the evaluation uncovered that fast-tracking TB patients to protect others from infection was not common practice among trainees, raising important questions about what challenges remain for health care facilities with large numbers of patients visiting each day. One medical officer from Jharkhand recognized this problem and started using skills from the training to advocate for change and bring health leaders together. He stated, "After attending the training, the first thing that we did in our quarterly meeting was to form AIC committee. We organized quarterly meeting where all DTOs from all districts are present. That is a very important meeting, as health secretary, STOs, and other concerned people are part of it."

As training participants continue their efforts to conduct infection control and slow the spread of TB, their successes and challenges should be acknowledged and will be used to improve future training, national programming, policy, and resource allocations throughout India.



Use of personal protective measures in drug-resistant TB wards,

Acronyms List

ACSM	advocacy, communication, and social mobilization
AIC	airborne infection control
AMU	Aligarh Muslim University
ART	antiretroviral therapy
A/V	audio/visual
BMO	Block Medical Officer
BSL-3	Biosafety Level 3
CDC	US Centers for Disease Control and Prevention
CTD	Central TB Division
DOTS	internationally recommended TB control strategy
DST	drug susceptibility testing
EQA	external quality assurance
FIND	Foundation for Innovative New Diagnostics
FY	Fiscal Year
HIV	human immunodeficiency virus
IHBP	Improving Healthy Behaviors Program
IRB	institutional review board
IRL	Intermediate Reference Laboratory
KIMS	Karnataka Institute of Medical Sciences
LPA	line probe assay
MDR-TB	multidrug-resistant tuberculosis
MOU	memorandum of understanding
NAICC	National Airborne Infection Control Committee
NIRT	National Institute of Research in Tuberculosis
NRHM	National Rural Health Mission
NRL	National Reference Laboratory
NSP	new smear positive
NTP	National Tuberculosis Program
PGI	Postgraduate Institute of Medical Education & Research
PIH	Partners in Health
PHC	Primary Health Centre
PMDT	programmatic management of drug-resistant tuberculosis
PPM	public-private mix
RFP	Request for Proposal
RNTCP	Revised National TB Control Program
SS+	sputum smear positive
STDC	State TB Demonstration Centre
STS	Senior TB Supervisor
TB	tuberculosis
TB/HIV	tuberculosis and HIV co-infection
USAID	US Agency for International Development
WHO	World Health Organization
XDR-TB	extensively drug-resistant tuberculosis