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CHALLENGE TB

TECHNICAL BRIEF



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From Lessons to Action: Expanding TB Contact Investigation across Five Afghanistan Provinces

PROJECT CONTEXT

The National Tuberculosis (TB) Control Program (NTP) in Afghanistan began implementing active household contact screening of all bacteriologically confirmed TB cases eight years ago, but the coverage was limited to only a few health facilities, the screening was conducted passively, the number of families screened was low, most cases were missed, and only a small number of children were put on isoniazid preventive therapy (IPT). The result was not acceptable to the NTP because of factors such as lack of an appropriate management structure and screening tools, lack of trained human resources, and low community awareness.

The primary goal of the Challenge TB (CTB) project in Afghanistan is to assist the NTP to reach its strategic objective of increasing TB case notifications by at least 8% annually through comprehensive TB care and prevention activities. This collaboration has entailed

strengthening leadership and management for TB control at the national and provincial levels; expanding access to direct observation of therapy, short course (DOTS); improving quality of care; strengthening health systems to minimize the existing gap in TB case notification; implementing TB infection control to reduce the risk of TB infection transmission to health care workers, clients, and communities; expanding TB surveillance among health care workers; strengthening monitoring and evaluation and operational research; and strengthening the multidrug-resistant TB program through the provision of technical assistance on Programmatic Management of Drug-resistant TB.

The contact investigation of source TB cases resulted in the identification and diagnosis of additional TB cases and the initiation of preventive medicine to children under the age of five.

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PROBLEM STATEMENT

Prior to 2014, a passive contact investigation strategy in the country produced limited results. Most of those with close contact to an infected patient could not visit health facilities,

leading to poor IPT initiation and unacceptable results for children. The greatest challenge was concentrated in five of the most populated provinces in Afghanistan (Kabul, Herat,

Kandahar, Nangarhar, and Balkh). The objective the CTB project was to expand an active contact investigation strategy across the country.

STRATEGIC APPROACH

Contact screening (household screening) is part of the standard operating procedures (SOPs) implementation to address high-risk groups and increase case notifications in the country. Active contact screening was introduced in Kabul for urban DOTS in 2014 by the TB CARE I project, and this approach was expanded to four new urban DOTS-supported cities in late 2015 and to the remaining 29 provinces in 2016 with support from the CTB project and the Global Fund, respectively.

Based on available resources and NTP recommendations, CTB focused on active household contact screening of all bacteriologically confirmed TB index cases in five cities at both public and private health care facilities.

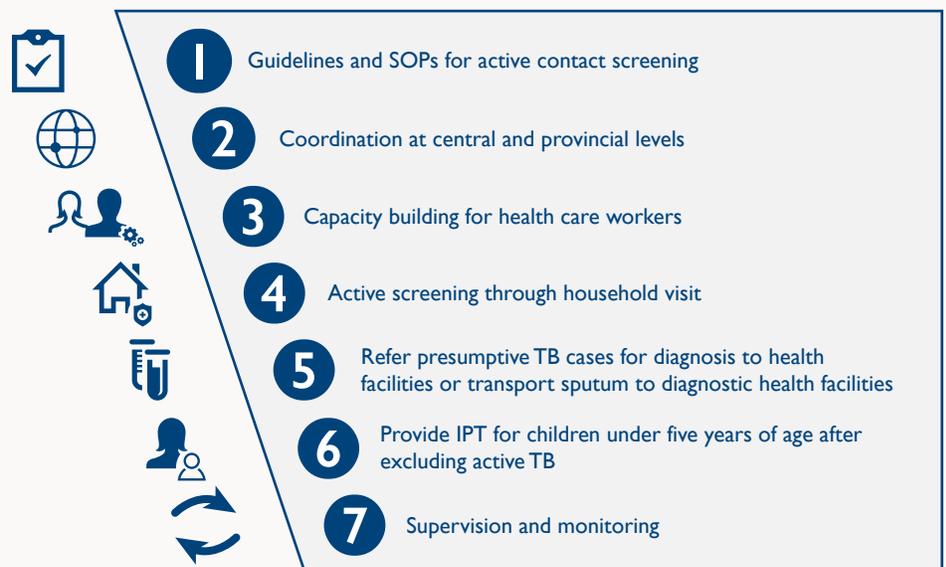
The project used the following approaches (figure 1):

- Technical capacity for the NTP in the development and revision of SOPs and guidelines for active contact screening
- Coordination of activities with related stakeholders at all levels,

- including the NTP, Global Fund, provincial health offices, Basic Package of Health Services (BPHS) nongovernmental organizations (NGOs), and the private sector
- Training and mentorship of health care workers on contact screening practices
- Household visits for index TB cases to screen all family members for signs and symptoms of TB, collect samples from presumptive TB cases, and refer individuals to a health facility for diagnosis

- Screening of children in close contact with index cases, referring children who have signs and symptoms to health facilities for further evaluation and diagnosis, and referring those without signs and symptoms for isoniazid (INH) preventive therapy (IPT)
- Supervision and monitoring of screening practices, including randomly checking 15% of screened contacts to confirm appropriate practices

FIGURE 1. Strategic algorithm for contact screening



PROJECT IMPLEMENTATION

1. Guidelines and SOPs for Active Contact Screening

Prior to 2014, only passive contact investigation mechanisms were implemented by the NTP in DOTS centers (index TB cases were asked to bring all family members to a diagnostic health facility for screening). The TB CARE I project supported the NTP to revise the SOPs for case detection and management of TB in children to include contact screening mechanisms. Other activities included:

- Translating the revised SOPs into local languages (Dari and Pashto) and distributing them to all health facilities
- Training medical staff on active screening
- Integrating contact screening in the NTP training curricula

2. Coordination and Expansion to Provincial Level

In early 2014, when active contact screening was applied in Kabul urban DOTS health facilities, the mechanism was introduced to the NTP and Ministry of Public Health during a coordination workshop, and the NTP agreed to apply it. Based on the outcome of the program implementation in Kabul, the NTP requested the CTB project to start this activity in four other populated Afghan provinces. With support from CTB, the following activities were conducted to improve coordination with key stakeholders:

- Challenge TB presented the activity at an NTP task force meeting in Kabul early 2015
- The NTP agreed to implement active contact screening in

- five provinces (Kabul, Herat, Kandahar, Nangarhar, and Balkh) with support from CTB
- A consolidated work plan was developed to implement active contact screening in the remaining provinces with support from the Global Fund
- Active contact screening was introduced to all health facilities in during quarterly review workshops conducted at the Kabul Public Health Office (PHO), and the activity was coordinated with the Kabul Public Health Department, MOVE (the BPHS implementer of Kabul), the private sector, and the directorate of tertiary hospitals
- Active contact screening was introduced in the Herat, Kandahar, and Nangarhar PHOs and BPHS NGOs during an urban DOTS introduction workshop in 2015
- In late 2016, active contact screening was introduced in the Balkh PHO, BPHS NGOs, and health facilities during a coordination workshop

3. Capacity Building for Health Care Workers

The NTP training curriculum was revised to include active contact screening. In early 2015, training needs were assessed in all five urban DOTS cities. Each three-day training included SOPs for case detection, treatment, pediatric TB, TB infection control, drug management, and recording/reporting systems.

FIGURE 2. SOP for childhood TB, including contact investigation



All diagnostic centers were included in the program, and in 2015, 452 in charges, nurses, lab technicians, and other health care workers were trained on the SOPs and active contact screening. A monitoring worksheet was created for health staff conducting home visits to record information about index TB cases, including contact information, which would be verified by the patient for accuracy.

4. Active Screening through Household Visits

During the program introduction, BPHS NGOs and PHOs agreed that a health care worker from the diagnostic facility where an index TB patient was registered would conduct household visits (in Afghanistan, a bacteriologically confirmed TB case is defined as an index TB case). One person, most often the DOTS nurse, would perform the household visit and screen all family members, although a community health supervisor or lab technician from the health facility might conduct the activity if a DOTS nurse is unavailable.

5. Screening Method and Sample Transport

When a new index TB patient is identified and registered for treatment, a health care worker will coordinate a household visit to this patient if needed. The focal point will take the contact register book, contact information sheet, and sputum containers. All close contacts (any person who has been exposed to an index case and lives in the same household) are registered in the

A TB patient identified through active contact screening – DOT – Jebrahil CHC, Herat (Photo credit: MSH/Afghanistan)



TABLE I. Contact Investigation Data from Kabul, Herat, Kandahar, Balkh, and Nangarhar, 2017 (Source: NTP surveillance department)

INDICATORS	ALL QUARTERS 2017
Bacteriologic confirmed TB cases (index cases)	7,864
Bacteriologic confirmed cases evaluated	6,271
Household contacts registered	44,469
Household contacts examined/screened for TB	6,641
Household contacts diagnosed as bacteriologic confirmed TB	392
Household contacts diagnosed as all forms of TB	602 (1,354/100,000 pop)
Number of children under 5 years of age	8,585
Number of children put on INH preventive therapy	7,946
Number of children who completed IPT treatment	5,631

contact register. Health workers ask for signs and symptoms of TB (e.g., cough for more than two weeks with sputum, weight loss, fever, night sweating, loss of appetite), and any presumptive TB cases among the contacts will be registered as presumptive TB cases. After collecting a sputum sample, the presumptive TB patient will be asked to come to the health facility for further investigation. If the sputum smear

microscopy is negative, the patient will be referred for x-rays and other diagnostic procedures.

6. Screening Children in Close Contact with Index TB Cases

According to the SOPs for contact screening, all children who are in close contact with index TB cases must be screened for active TB. During household visits, health care workers screen and register all children in the contact book;

those under the age of five are screened for signs and symptoms of TB. If presumptive TB is found, the child will be referred to a health facility for further investigation. If sputum is available a sputum exam is done; otherwise, the child will be referred for x-rays, a tuberculin skin test, and other consultations. If TB is confirmed, the child will be registered for treatment. For children under the age of five without signs or symptoms of TB, IPT will be started and the child will be registered in health facility contact register book. A six-month supply of INH (10mg/Kg) will be provided for the child, and family members will be asked to support the administration of the drug.

7. Supervision and Monitoring of the Screening Program

Active contact screening is part of the NTP reporting and surveillance system, and all health facilities provide reports on a quarterly basis to the NTP. Tracking household contact investigations is an indicator on the NTP supervisory checklist, and supervisors/monitors should consider this during their evaluation of health facilities and the community. CTB provincial technical officers supervise and monitor the activity in close coordination with provincial TB coordinators and BPHS TB focal points. CTB provincial officers provide timely supervisory visits from health facilities, check all contact registers, and conduct random interviews with index TB patients in health facilities or by phone (each quarter, between

Screening children with close contact to index cases in Jalalabad city (Photo credit: MSH/Afghanistan)



A DOTS nurse at Maiwand Hospital discusses contact investigations with a supervisor (Photo credit: Dr. Darwish, CTB/MSH)



10% and 20% of index TB patients are interviewed by CTB provincial technical officers to ensure data accuracy and program quality). CTB supports the NTP to conduct quarterly data review workshops in all five urban DOTS cities (Kabul, Herat, Mazar, Kandahar, and Jalalabad). All health facility in charges present their TB activities, including contact investigation data. The technical team from CTB, PHOs, NGOs, and the NTP provides feedback, sets new

targets for each health facility, and checks all registers.

CTB also supports the supervisor and training costs associated with the active screening program. Assigned health care workers receive a quarterly transportation subsidy for each household visit after all documentation is completed. Recording and register books are supplied to all health facilities, and sputum containers are supplied by the NTP.

RESULTS AND ACHIEVEMENTS

In 2014, active household investigations piloted in Kabul by TB CARE I identified 1,540 index TB cases and evaluated 1,218 (79%) of those. Among the 3,847 households screened and registered, 347 (9%)

were determined to be presumptive TB cases and 39 cases (11%) of all forms of TB were identified. A total of 519 children under the age of five were put on IPT.

In 2015, CTB expanded urban DOTS to four new cities (Herat, Kandahar, Jalalabad, and Mazar) and active household investigation to four additional provinces (Herat, Kandahar, Nangarhar, and Balkh). Based on a consolidate plan with the NTP and Global Fund, it was agreed that CTB would implement a full package of active household contact investigation in the five provinces where urban DOTS was already implemented.

The data trend from 2015 to 2017 shows significant improvement. In 2017, of 7,864 index cases, 6,271 (80%) were evaluated, 44,469 close contact households were screened, and 6,641 (15%) of those were determined to be presumptive TB. The percentage of presumptive TB cases in general out-patient departments is 3%. In total, 602 cases of all forms of TB (9%) and 392 bacteriologically confirmed TB cases (6% of presumptive) were identified and put on treatment. This intervention identified 5% of all bacteriologic cases in five provinces (7,864). The prevalence of TB cases is very high among household contacts at 1,354/100,000 population (44,469 households), while in the general population it is 189/100,000 population (WHO global report 2017).

In 2017, 8,585 children under the age of five were registered, and IPT (INH preventive therapy) was initiated for 7,946 (92%) of those; 5,631 (71%) children completed their IPT course. The trend of child screening and IPT has improved each year (Table 4).

TABLE 2. Results from Kabul to Show the Trend of Active Case Screening (Source: NTP surveillance system, quarterly)

INDICATOR	2014	2015	2016	2017
Bacteriologic confirmed TB (index cases)	1,540	1,632	1,696	2,031
Household contacts registered/screened	3,847	6,040	8,684	10,081
Household contacts examined for TB (presumptive)	347 (9%)	645 (11%)	1,005 (12%)	1,132 (11%)
Household contacts diagnosed as bacteriologic confirmed	20	32	45	48
Household contacts diagnosed as all forms of TB	39 (11%)	53 (8%)	105 (105)	155 (14%)
Children under 5 years of age registered	678	836	981	1,538
Children put on INH preventive therapy	519 (76%)	728 (87%)	851 (87%)	1,483 (96%)
Children who completed IPT treatment	213 (41%)	319 (43%)	440 (51%)	900 (61%)

TABLE 3. Trend of Contact Investigations in Five Provinces

INDICATOR	2015	2016	2017
Bacteriologic confirmed TB (index cases)	6,186	7,303	7,864
Household contacts registered/screened	22,194	35,169	44,469
Household contacts examined for TB	4,874 (22%)	4,941 (14%)	6,641 (15%)
Household contacts diagnosed as bacteriologic confirmed	246	292	392
Household contacts diagnosed as all form TB	464 (9%)	567 (11%)	602 (9%)

TABLE 4. Indicators for Pediatric TB

INDICATOR	2015	2016	2017
Children under 5 years of age	3,799	5,778	8,585
Children put on INH preventive therapy	3,399 (89%)	5,275 (91%)	7,946 (92%)
Children who completed IPT treatment	2,382 (70%)	3,762 (71%)	5,631 (71%)

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LESSONS LEARNED

Active contact investigation identifies more TB cases. The yield of TB is higher in close contacts (1,354/100,000) than in the general population, which was 135/100,000 in 2017 (NTP data 2017). Active household investigation has increased the identification of TB cases by 5% each year in the intervention areas. The number of children put in INH preventive therapy has also increased, and the outcomes of preventive therapy have improved each year.

CTB provinces have sustained high case notification and children on IPT. In those provinces where CTB is working, contact investigation has found additional TB cases, and the IPT rate is 71%. Contributing factors to this success include technical officers who conduct follow-ups and random checks with index cases, a good tracking system, timely data use and good coordination, and good financial management for transportation costs of health care workers.

CONCLUSION

Active household contact screening is a more effective method than passive screening for finding TB cases among close contacts and identifying children for IPT. Using new technologies like GeneXpert may increase the number

of cases identified among contacts. Focusing on screening of all form of TB as index cases will identify additional cases, and the current algorithm for contact investigation should be revised.

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