

After successful completion of a TB REACH wave 1 project in Pakistan, the National TB Control Program (NTP) began a TB REACH wave 3 project in February 2013 for the study “Effectiveness of widening circle of contact screening from within the household to 100 m around the index case on case finding through outreach using GIS”. The project introduces an innovative strategy for active case finding through contact screening in 3 cities in the Punjab Province and the Capital Territory, utilizing all SS+ notified cases registered at Basic Management Units (BMU)s as index cases for contact tracing.

The evaluation population districts are Islamabad, Lahore, Faisalabad and Rawalpindi, while the control populations are Multan,

Hafizabad, Kasur and Jhelum. Initial screening of household contacts, i.e. those normally resident or sharing the same airspace, is followed by a widening circle screening of close community contacts. Close community contact is defined as those in a circle 100m around the index case. The coordinates of the household are entered into a Geographic Information System (GIS) database via a mobile phone link. The evaluation population is divided into 18 zones of approximately half a million residents each. Each zone is covered by 50 Field Officers. Beginning 1st July 2013, the Field Officers were trained in their respective provinces and began their fieldwork by obtaining a list of index cases from each BMU. The goal is to detect an additional 3,010 smear positive TB cases.



Stop TB Partnership
TB REACH

Pakistan

National TB Control Program (NTP)



For GIS software and applications using GIS, the NTP signed an agreement with LMKIT (an independent IT solutions company), which is providing services for a web host model to observe GIS-based performance of Field Officers and real time data collection. Data collection is being carried out in all four evaluation cities, and a Project Coordinator, District TB Coordinator and NTP focal persons are monitoring the project. The data is received on a daily basis in the NTP Research Unit. Suspects identified through screening are sent for sputum smear microscopy. Those found smear positive are registered in the BMU and followed up for treatment, while those found smear negative are sent for GeneXpert testing. Those suspects in whom confirmed TB is detected are registered for treatment in the same way as for smear positive cases. Those suspects in whom rifampicin resistance and confirmed TB are detected are registered as MDR TB cases.

The project is detecting significant numbers of TB cases through household and community screening in the intervention districts, while also increasing the use of GeneXpert and screening in children. Project activities have resulted in a 15.1% increase in smear positive cases detected compared to the pre-intervention period, 85% of which are additional, i.e. may not have been found in the absence of the TB REACH project. 715 of these cases have been bacteriologically confirmed through GeneXpert analysis, with 13 MDR cases and 1,136 all-forms TB cases having also been found, of which 1,064 cases are registered in respective BMUs as per National Guidelines.

The top achievement of the project is the screening of children in households and the community, which has contributed to more than doubling the screening targets set up until at least the 3rd quarter of implementation. And until the start of the project, GeneXpert was never routinely used to screen smear negative TB presumptive cases, marking another project achievement that will continue to improve TB case detection in the future.