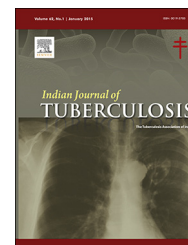


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## Short Communication

# Lessons learnt from active tuberculosis case finding in an urban slum setting of Agra city, India<sup>☆</sup>

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## ABSTRACT

Active case finding (ACF) is recognized as one of the key strategies to reach the missing 3 million cases in high tuberculosis (TB) burden countries. In India, we conducted ACF as a pilot project to assess its operational feasibility in four slums of Agra city in 2012 and covered 3940 households (in 14 wards) with a population of 21,870. Trained community volunteers visited households with an intention to provide information on TB and refer those with cough  $\geq 2$  weeks for sputum smear examination.

Volunteers identified 8 persons with cough of  $\geq 2$  weeks by asking the first or the main respondent of the household. However, by directly asking (or probing) all available members of the household, they identified 374 persons with cough of  $\geq 2$  weeks. All 382 persons with cough of  $\geq 2$  weeks were referred for sputum smear examination. While 40% of those referred reached health facilities for sputum examination on their own, 60% had to be accompanied by the community volunteers to the health facility for sputum smear examination by Ziehl-Neelsen staining method. Eventually, seven persons were found to be sputum smear positive. This study highlighted important aspects for implementing ACF: First, all household members have to be asked for TB symptoms and Second, mere referral for sputum examination is not enough and there is a need to support people to reach the health facility for sputum smear examination.

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## 1. Introduction

Early diagnosis and treatment is critical for providing optimal care to tuberculosis (TB) patients and also to prevent its spread in the community. Globally, an estimated one third of the 9.6 million incident cases are either undiagnosed or diagnosed

but not notified to public health authorities.<sup>1</sup> Active case finding (ACF) is therefore, one of the key recommended strategies to ensure early diagnosis and link patients to appropriate diagnostic and TB treatment services that are available under the National TB Programmes in high TB burden countries.<sup>2</sup> In India, there has been over reliance on passive case finding; i.e., diagnosing TB among those

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presenting to the health facilities. This passive case finding strategy was earlier believed to detect significant proportion of incident TB cases that is necessary for its control while being less burdensome on health system in a resource constrained environment. However, recent studies have shown that this strategy could have contributed for delay in diagnosis of TB and continued transmission.<sup>3,4</sup> Therefore, Government of India currently recommends ACF in marginalized and vulnerable communities.<sup>5</sup> However, the mechanisms for implementing ACF were not clear and hence we undertook a feasibility study in the slums of Agra to understand the operational challenges in its implementation. In this study, we report on (a) the health care providers from which the slum population seek medical care commonly, (b) the results and key lessons learnt in implementing active TB case finding in this setting.

## 2. Methods

Agra district with a population of 4.5 million is one of the most populated districts of India. Nearly one-third of the population resides in the urban areas. 'Agra city' has 0.5 million slum population distributed in about 90 wards (average number of households per ward is 2900 with ~17,000 populations) [<http://southasia.oneworld.net/resources/indias-urban-poverty-in-agra-slums>]. In 2013, 5955 smear positive TB patients were diagnosed from the entire district under the National TB Programme (NTP).<sup>6</sup>

Agra is also one of the 300 districts where Global Fund supported Project Axshya is being implemented by The International Union Against Tuberculosis and Lung Disease (The Union) to enhance access to TB services in the vulnerable and marginalized populations (<http://www.axshya-theunion.org>). Of the 417 slums in the city, four slums that were reporting the highest number of TB cases were purposively selected in consultation with district level authorities to pilot test the feasibility of implementing ACF.

Ten community volunteers of a local NGO who were working with the national health programmes in these slums as USHA (Urban Social Health Activist) were provided one day training to undertake the following activities: visit house to house, provide information about TB (symptoms, mode of

transmission, diagnosis, treatment and availability of TB services), collect demographic details of the household members and ask if any of them have cough of  $\geq 2$  weeks. Volunteers initially asked the main or the first respondent of the household about the presence of cough of  $\geq 2$  weeks in them and in the other members of the household. Thereafter, they individually contacted all other available household members and asked them about the presence of cough of  $\geq 2$  weeks. All persons with cough of  $\geq 2$  weeks were line listed and referred to the nearest public health facility for sputum smear examination. If the line listed persons did not visit the health facility on their own for up to a week, then community volunteers revisited the households and accompanied them to the public health facility.

The volunteers were paid an honorarium of INR 10 per household visited, with additional incentives for accompanying people to the health facility to undergo sputum smear examination. This activity was supervised by supervisors from the project Axshya and Senior TB supervisors from the Revised National TB control programme. This activity was conducted from August to October 2012 under routine programmatic conditions in consultation with the district health authorities. The data was entered in an excel sheet and analyzed using SPSS 11.0 version software.

## 3. Results

A total of 3940 households were visited which comprised of 10,594 adult population aged 18 years and above (5374 males and 5220 females) and 11,276 persons (aged less than 18 years) with a mean household size of five persons.

Nearly 92% of household respondents mentioned that they approached a nearby private healthcare provider in case of any illness and 78% of these providers were within 0.5 KMs of their residence. More than 90% of the household respondents had heard of TB, and in those who had heard of TB, almost all knew that TB is curable and that cough of  $\geq 2$  weeks is a symptom of TB (Table 1). By asking the main or the first respondent of the household, the volunteers identified 8 persons with cough of  $\geq 2$  weeks. However, by directly asking/probing all available members of the household they identified 374 persons with

**Table 1 – Awareness about TB in four slums of Agra city (India) and the number of persons with pulmonary TB symptoms (cough of  $\geq 2$  weeks) identified through active case finding, 2012.**

Number (%) who had heard about TB (Total respondents N = 3940)	3567 (90.5)
Number (%) who knew that cough of $\geq 2$ weeks could be TB (Total respondents N = 3567 <sup>a</sup> )	3564 (99.9)
Number (%) who knew that TB is curable (Total respondents N = 3567 <sup>a</sup> )	3560 (99.8)
Number (%) who mentioned having a member with TB in their household? (Total respondents N = 3940)	17 (0.4)
Number (%) who mentioned a family member to be having cough of $> 2$ weeks (response by the first/main respondent) [Total respondents = 3940]	8 (0.2)
Presumptive TB persons identified following probing each available member of the household by the community volunteer	374
Total presumptive TB persons identified in the study	382
Total sputum smear positive patients identified in the study	7

<sup>a</sup> Includes only those respondents who had heard about TB.

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