

Feasibility and Performance of Accredited Social Health Activist (ASHA) led Active Case Finding (ACF) Strategy for Tuberculosis in a Community Health Block of Himachal Pradesh

Ashok Bhardwaj¹, Sunil Kumar Raina², Dinesh Kumar³

¹ Professor, Department of Community Medicine,
Dr. Radhakrishnan Government Medical College, Hamirpur, Himachal Pradesh, ,
^{2,3} Associate Professor, Department of Community Medicine,
Dr. Rajendra Prasad Government Medical College, Kangra at Tanda, Himachal Pradesh,

Summary:

Village level inclusion of Accredited Social Health Activist (ASHA) for early diagnosis and treatment of Tuberculosis (TB) expects increase in case detection. Study was done to assess the feasibility and performance of ASHA led active case finding (ACF) strategy for TB. In a health block with a total population of about 0.18 million, 88 out of 210 ASHAs, were incentivized to screen 44,589 individuals of more than 18 years of age for presumptive TB. A project staff, as a support to ASHA, was recruited for collection of sputum specimens for testing and communicating the results back to ASHAs. ACF identified 489 (1.1%) presumptive cases and 19 confirmed cases of sputum positive pulmonary TB with case detection rate of 0.42/100,000 population additional to already registered cases under RNTCP. Timely and appropriate incentives along with supportive supervision are critical steps for effective execution of desired deliverables ASHA for TB control.

Key Words: ACF; ASHA; Feasibility; Effectiveness; Tuberculosis

Background:

Active case finding (ACF) for tuberculosis (TB) has gained momentum across India. ⁽¹⁾ Its utility and yield depend upon disease epidemiology, to economize the effort, it is advised to be carried out in a high-risk population or high burden setting with a frequency of at least three times in a year. ^(1,2) In various study settings, trained community volunteers tested ACF strategy for its feasibility and effectiveness. ⁽³⁻⁵⁾ Effort was done to utilize Accredited Social Health Activists (ASHAs), as community link workers to identify presumptive TB cases. ⁽⁶⁾ Engaging ASHA for ACF shall ensure cost effectiveness and creates an opportunity to align them for community based disease control. Present study was carried out in the usual primary health care settings to assess the feasibility and performance of ACF with an active involvement of ASHA

Materials and Methods:

This study was carried out in year 2017 in community health

block, Haroli of district Una of Himachal Pradesh. According to the census 2011, the state has 6,864,602 and district has 521,173 population, whereas, local census of the studied health block, mentions a population of about 0.18 million spreading in 196 villages. Revised National Tuberculosis Control Program (RNTCP), for year 2016 and 2017 respectively, state of Himachal Pradesh has caseload of 205.1 and 18.6 per 100,000 population, whereas district has case load of 132.8 and 16.9 per 100,000 population. ⁽⁷⁾

Result

Under the National Health Mission (NHM), one ASHA, resident of the village, was selected for about 800 people primarily to improve community-based mother and childcare. ⁽⁸⁾ In health block, out of total 210, 88 ASHAs were trained for screening of TB among people of more than 18 year of age. One project staff was recruited for supervision and coordination of activities of ASHAs. ASHAs were trained

Corresponding Author: Dr. Dinesh Kumar

Associate Professor, Department of Community Medicine,

Dr. Rajendra Prasad Government Medical College, Kangra at Tanda, Himachal Pradesh, 176002.

Email: dinesh9809@gmail.com

for half a day and were taught about the disease, symptoms, sputum collection, and place of referral for further diagnosis. A one-page questionnaire, in Hindi, was developed for presence and absence of symptoms, which was filled by the ASHA during house visit in her area. In a case, symptoms suggestive of TB, then ASHA handed over two containers for sputum collection to an individual. For every individual with presumptive TB, ASHA assisted collection of on the spot sputum sample and handed over container to patient/family member to collect early morning sputum sample. Accordingly, the screening for TB symptoms and sputum collection activities of ASHA were incentivized. Project staff collected the sputum sample containers from the house of an individual with presumptive TB for transportation to a Designated Microscopy Centre (DMC) for further testing. Later on, staff informed ASHA about test results for further declaration to individuals with presumptive TB. Cases positive for sputum AFB (Acid Fast Bacilli) were facilitated by ASHA and project staff to the doctor at Primary Health Centre (PHC) for treatment as per RNTCP. Prior ethical approval was obtained from the Institutional Ethics Committee (IEC), Dr. Rajendra Prasad Government Medical College, Himachal Pradesh.

In the health block, ACF strategy screened 44,589 individuals > 18 years, and total 489 (~1.1%) presumptive and 19 confirmed cases of sputum positive for AFB were detected. ACF has a case detection rate of 0.42/100,000 population and is additional to already registered cases under RNTCP. Of the identified cases with pulmonary TB, 4 had scanty, 6 had 1+, 5 had 2+, and 4 had 3+ sputum AFB grading. In addition, screening was done for 213 migrant laborers working in brick kilns and stone crusher sites located near to some studied villages, where 24 presumptive cases were observed but none was confirmed for TB. ACF costs a total of INR: 276,601, which includes honorarium given to ASHA (INR: 44,962), Travel and training (INR: 14,865), and salary of the supervisor (INR: 216,774). Its effectiveness observed to be as INR 6.2 per individual screened, INR 565.6 per presumptive case identified, and INR 14,557.9 per confirmed case. The cost is largely attributed to salary of project staff and honorarium to ASHAs.

Discussion

Independent from current study, in year 2016, a study was conducted in same health block, where analysis showed that on an average out of pocket (OOP) expenditure of INR 3515.6 was made by 32 patients with TB (17.6%) among 182 passively identified cases. This expenditure was done before starting the treatment under RNTCP and largely for transport and medication. However, the treatment is provided free of cost under the RNTCP, but OOP expenditure was for seeking treatment from private practitioners for their illness during initial period. Apportioning the OOP for patients, current ACF strategy expected to avoid OOP amongst four patients (17.6% of 19 patients). Therefore, the

cost benefit ratio of the current ACF strategy expected to cost about INR of 23.8 per OOP averted rupee by the patient. (Table: 1) Transferring the task of sputum collection from project staff to ASHA by providing additional incentive will further improve the cost effective ratio.

Most of other studies utilized community volunteers except one, in which trained ASHAs along with intensified awareness drives in selected communities improved the case finding in settings with low case detection rate.⁽⁶⁾ We have not carried any awareness campaign but ASHA were incentivized to screen for presumptive TB and sputum collection in field settings. It is feasible and appeared to be a cost effective strategy in terms of screening of population for symptoms of TB and yield in terms of identifying cases with TB. Therefore, ASHAs can be capacitated to identify presumptive cases of TB using a simple questionnaire and trained to collect sputum sample. Applying an exchange rate of INR 64 for one US dollar, effort in Cambodia revealed house-to-house ACF as a cost effective strategy where it incurred about INR 15,936 per case detected, which is quite similar to the current study.⁽⁹⁾ Screening for TB among contact becomes less cost effective, wherein it could incur around INR 19,712 and 28,340 for detection of an additional case with TB.^(9,10)

Over the disease course, entrusting and incentivizing ASHAs for case detection and treatment completion not only strengthen, but also comprehensively align the efforts for secondary prevention. Engagement of ASHAs is important for identifying presumptive cases, sputum sample collection, reporting laboratory results to patients, and for community based directly observed treatment to reach the unreachable.⁽¹¹⁾ ASHA as an activist has already engaged in improving maternal and childcare, and perceived as a link worker that an activist. In addition, expansion of their role in community based prevention and control of chronic diseases has been proved to be feasible and effective.^(7,12,13) It is better that the ASHA is well supported by the equipped health system in order to generate and sustain the trust of community.⁽¹⁴⁾ A comprehensive well-incentivized grass root level strategic plan along with desired logistic support at health centre, needs to be crafted for the ASHA. Translation of ASHA from a recognized and practiced link worker to an activist will take a certain time with ongoing experience for knowledge and skills. Timely and appropriate incentives along with supportive supervision are critical steps for effective execution desired deliverables ASHA for TB control.

Acknowledgement:

We thank Zonal Task Force (ZTF) in RNTCP, North Zone, India for providing the financial assistance.

Conflict of Interest : None

References:

1. Nagaraja SB, Satyanarayana S, Shastri S. Active tuberculosis case finding in India: need for introspection. *Public Health Action*. 2017;7(4):307.

Table 1: Cost-effectiveness and estimated cost-benefit ratio for active case finding (ACF) strategy in a health block of Himachal Pradesh.

Current Study			Former Independent Study		
Formula	Variable	Value	Formula	Variable	Value
a	Total Cost (INR)	276601	h	OOP	111498
b	Cases Identified	19	i	Cases with OOP	32
c	Presumptive cases	489	j	Case Studied	182
$d=b/c \times 100$	Proportion of cases	3.9	$k=i/j \times 100$	Proportion of cases	17.6
$e=b \times (k/100)$	Expected Cases with OOP	3.3	$l=h/i$	OOP expenditure per patient	3484.3
$f=a/b$	Cost effectiveness ratio	14557.9			
$g=(a/e)/l$	Expected cost benefit ratio	23.8			

- Azman AS, Golub JE, Dowdy DW. How much is tuberculosis screening worth? Estimating the value of active case finding for tuberculosis in South Africa, China, and India. *BMC Med.* 2014;12:216.
- Prasad BM, Satyanarayana S, Chadha SS, Das A, Thapa B, Mohanty S, et al. Experience of active tuberculosis case finding in nearly 5 million households in India. *Public Health Action.* 2016;6(1):15-8.
- Prasad BM, Satyanarayana S, Chadha SS. Lessons learnt from active tuberculosis case finding in an urban slum setting of Agra city, India. *Indian J Tuberc.* 2016;63(3):199-202.
- Reddy KK, Ananthkrishnan R, Jacob AG, Das M, Isaakidis P, Kumar AM. Intensified tuberculosis case finding amongst vulnerable communities in southern India. *Public Health Action.* 2015;5(4):246-8.
- Parija D, Patra TK, Kumar AM, Swain BK, Satyanarayana S, Sreenivas A, et al. Impact of awareness drives and community-based active tuberculosis case finding in Odisha, India. *Int J Tuberc Lung Dis.* 2014;18(9):1105-7.
- Central TB Division. Ministry of Health and Family Welfare, Government of India. Available at: <https://nikshay.in/> (Accessed on 02/10/2018).
- Singh MK, Singh J, Ahmad N, Kumari R, Khanna A. Factors Influencing Utilization of ASHA Services under NRHM in Relation to Maternal Health in Rural Lucknow. *Indian J Community Med.* 2010;35(3):414-9.
- James R, Khim K, Boudarene L, Yoong J, Phalla C, Saint S, et al. Tuberculosis active case finding in Cambodia: a pragmatic, cost-effectiveness comparison of three implementation models. *BMC Infect Dis.* 2017;17(1):580.
- Sekandi JN, Dobbin K, Oloya J, Okwera A, Whalen CC, Corso PS. Cost-effectiveness analysis of community active case finding and household contact investigation for tuberculosis case detection in urban Africa. *PLoS One.* 2015;10(2):e0117009.
- Singh AR, Pakhare A, Kokane AM, Shewade HD, Chauhan A, Singh A, et al. 'Before reaching the last mile'- Knowledge, attitude, practice and perceived barriers related to tuberculosis directly observed therapy among ASHA workers in Central India: A mixed method study. *J Epidemiol Glob Health.* 2017;7(4): 219-25.
- Balagopal P, Kamalamma N, Patel TG, Misra R. A community-based participatory diabetes prevention and management intervention in rural India using community health workers. *Diabetes Educ.* 2012;38(6):822-34.
- Balagopal P, Kamalamma N, Patel TG, Misra R. A community-based diabetes prevention and management education program in a rural village in India. *Diabetes Care.* 2008;31(6):1097-104.
- Saprii L, Richards E, Kokho P, Theobald S. Community health workers in rural India: analysing the opportunities and challenges Accredited Social Health Activists (ASHAs) face in realising their multiple roles. *Hum Resour Health.* 2015;13:95.

How to cite this article:

Bhardwaj A, Raina S K, Kumar D. Feasibility And Performance of Accredited Social Health Activist (ASHA) led Active Case Finding (ACF) Strategy for Tuberculosis in A Community Health Block of Himachal Pradesh. *J Comprehensive Health* 2019;7(2):57-59.