

Active case detection survey of malaria cases in Surat City: a field based study

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Key words ABER – active case detection – malaria – malaria worker – PSMP – SMC

Infectious diseases are still persisting as a major health problem in India in spite of having national programmes for the control of most of these diseases for almost half a century now. One of the major problems, which we are still facing, is that of malaria. Malaria kills more than one million people each year in the world, especially children¹. In India, there were approximately 1.1 million positive cases reported in the year 2000². The economic burden is also extremely high, accounting for a reduction of 1.3% in the annual economic growth rate of countries where malaria is endemic³. In India, Surat City is considered as one of the major metropolitan cities. Because of the major movement of the population in this city malaria continues to be a public health problem. There are urban health centres and mobile units of Surat Municipal Corporation (SMC) which are providing free laboratory services. The improvement of malaria work in Surat over several years is due to the vigilant and dedicated work by SMC. Extensive and intensive antimalarial activities carried out by the Corporation have been instrumental in this achievement. Various antimalarial activities carried out by the Corporation are as follows: case detection, vector control activities, human resource development, spreading IEC (information, education & communication) and legal implementation. One of the major functions of SMC as mentioned above is the active case detection (ACD) of malaria cases which is done through house-to-house survey by malaria workers. The workers visit the area once in 15 days. Main responsibility of

the malaria workers is to find a fever case in the last 15 days in the family, collect slide if a fever case is found and provide radical treatment through follow-up visits. There are 200 such workers working in different parts of the Surat City. The present study was done with the aim of finding fever cases through ACD, study their treatment seeking behaviour and assess whether the malaria services provided by the malaria workers are being utilised or not by the general public.

This was a field based cross-sectional study done in the month of July-August whereby, house-to-house survey of 2000 families covering a population of 8427 individuals was done. A total of two hundred workers of SMC have been allotted different areas of Surat City for conducting fortnightly visits, which have been categorised in to slum areas, areas with middle class families and posh areas. About eighty malaria workers were working in slum areas, 70 in areas with middle class families and 50 in posh areas of the city. Overall 20 study areas were selected by this method. Eight out of 80 slum areas, seven out of 70 areas with middle class families and five out of 50 posh areas were selected for survey by stratified random sampling technique⁴. A total of eight slum areas covering 800 families, seven areas with middle class families covering 700 families and five posh areas covering 500 families with an overall population of 8427 individuals were interviewed through house-to-house survey in three months time. It was decided that 100 houses would be covered in each area. Minimum

three fever cases were to be looked for in hundred houses. Rational behind keeping the lower limit of three fever cases was as follows. As per the NAMP (National Anti Malaria Programme now National Vector Borne Disease Control Programme) guidelines, annual blood examination rate (ABER) should be 10% per year and 1% per month in the transmission season⁴. Since we were inquiring about fever cases in the last 15 days in a single family:

$$\text{ABER} = \frac{0.5\% \text{ for 15 days} \times 500}{100} \quad \begin{array}{l} \text{(100 families = 500 persons,} \\ \text{taking average family} \\ \text{size of five)} \end{array}$$

= 2.5 (rounded) three fever cases per 100 families

It was decided that three fever cases were to be looked for, in 100 houses through house-to-house survey, but if three or more fever cases were detected before completion of 100 houses, even then the survey was continued till all 100 houses were completed. With the help of a pre-designed questionnaire which included questions on fever/history of fever in the last 15 days, duration of fever, treatment seeking behaviour of fever cases as well as the interviewed households and utilisation of services provided by malaria worker like giving blood to the malaria worker for PSMP (peripheral smears for malaria parasite)/ever given blood to malaria worker for PSMP, taking treatment from him, etc. With the help of health inspectors working in the Department of Community Medicine, Government Medical College, Surat, interviews were initiated. The first house to be interviewed in a housing society was randomly picked with the help of last digit of a currency note (random number). Interviews were taken preferable from the head of the household/available person. Repeated visits were conducted if the head of the household/any other person in the house was not available for the interview. Locked houses were not included in the study. A total of twenty areas with 2000 houses and a population of 8427 individuals were surveyed over a span of three months. Data were compiled and analysed on MS excel 2000 version.

Overall 117 fever cases were detected in 20 above mentioned areas whereas 59 (50.4%) cases were from slum areas, 39 (33.3%) cases were from middle class areas and 19 (16.3%) cases were from posh areas of Surat City. Majority of the fever cases were 48 (41) in the age group of < 15 years followed by 42 (35.8%) in the age group of 16–35 years, 21 (17.9%) in the age group of 36–65 years and 6 (5.1%) in the age group of 56–65 years. Out of 117 (100%), 10 (8.5%) fever cases waited for one day, 19 (16.2%) fever cases waited for two days and 88 (75%) fever cases waited for 3–5 days before getting themselves investigated/consulted by the doctor. This showed that fever is still not perceived as a serious symptom in the community. The fact that 62 (53%) fever cases did not get themselves investigated for PSMP and 19 (16%) fever cases did not take any treatment which strengthens this theory.

About 80% families reported that they or their family members had met the malaria workers coming in their locality at some or the other point of time. The fact that 80% families reported that they had met the worker at one or the other occasion shows that the malaria workers regularly conduct these visits from time-to-time. Only 53% families knew the purpose of malaria workers visits (to inquire about malaria case in the family). When asked whether the family members had ever utilised the services of malaria workers (like giving blood to the malaria worker and taking medication from them), 44% families replied that they had, while 48% families told that they always went to private practitioners for any ailment and 7% said that they relied upon government/trust hospitals. There are studies which support the fact that the services provided by the government are not utilised by the community⁵. Majority of fever cases, 25 (45.4%) went to private practitioner for laboratory diagnosis and this has been supported by the work of others⁶. Only 18 (32.8%) out of 117 fever cases got their blood investigated from the malaria workers coming to their respective locality. About 12 (21.8%) fever cases went to SMC/government laboratory for blood investigation. An important finding in this study was that 62

(53%) fever cases did not get their blood investigated for PSMP. Regarding the treatment 58 (59.2%) cases went to private doctor and this fact has been substantiated by the work of others⁶. About 20 (20.5%) cases took treatment from malaria workers, while 18 (18.3%) cases went to SMC hospital/government hospital and 2(2%) fever cases took home treatment and 19 (16.2%) fever cases did not take any treatment.

It seems that there is still a need to propagate about services provided by the malaria workers so that more and more people can utilise their services. Only 53% families knew about the propose of the malaria workers visit. People should be made more aware regarding the services provided by the malaria workers like their fortnightly visits and other functions; like collection of blood and providing treatment to a fever case. It is also suggested that more vigorous antimalarial activities like use of ITMNs (Insecticide treated mosquito nets), IEC (information, education and communication) materials should be carried out in the slum areas of Surat City. Importance of IEC has already been highlighted in many other studies⁷. Fever was not perceived as a serious symptom by the community, so more stress should be laid by the IEC authorities on this aspect. It may also be concluded that more understanding of the “barriers” is required to improve utilisation of government services by the com-

munity and this fact has been substantiated by the work of others⁸.

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