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CORRESPONDENCE

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Can Cost of Leprosy Case Detection in Urban Areas be Further Reduced?

TO THE EDITOR:

It is estimated that out of the 12 million population in the metropolis of Bombay, 50% live in slums, and this fact poses a challenge to non-government organizations working for the elimination of leprosy, if they have to be really cost-conscious. Although focal surveys in some slums and schools indicate a reduction in the new case detection rate over the past 15 years, there are still about 5000 new cases (including about 400 skin-smear-positive cases) detected every year ([3]). Uneven distribution of active leprosy cases as well as the unpredictable influx of new infectious cases from neighboring states into the slums are unique features of urban leprosy which defy attempts at rationalizing the cost per case detection. Besides, the relapse of a few multibacillary (MB) leprosy cases, adequately treated in the past, adds a new dimension to the hidden source of leprosy infection ([1]). All of this calls for a new cost-effective strategy to be evolved to effect early case detection and to achieve leprosy elimination in urban areas. Earlier we had found that the cost of the conventional techniques employing trained and salaried paramedical workers for case detection was very expensive ([2]).

We undertook the following investigation as a sequel to our earlier study in which we employed trained paramedical workers

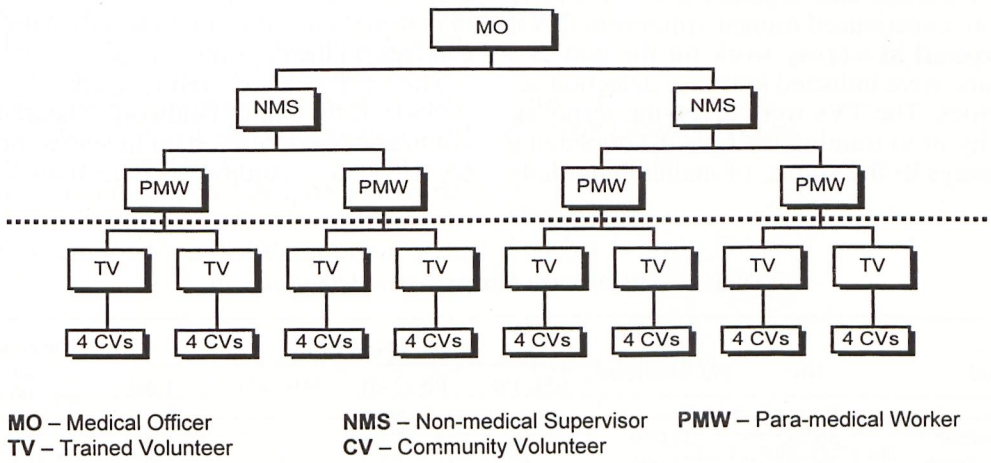

FIG. 1. The organization of the personnel in the project.

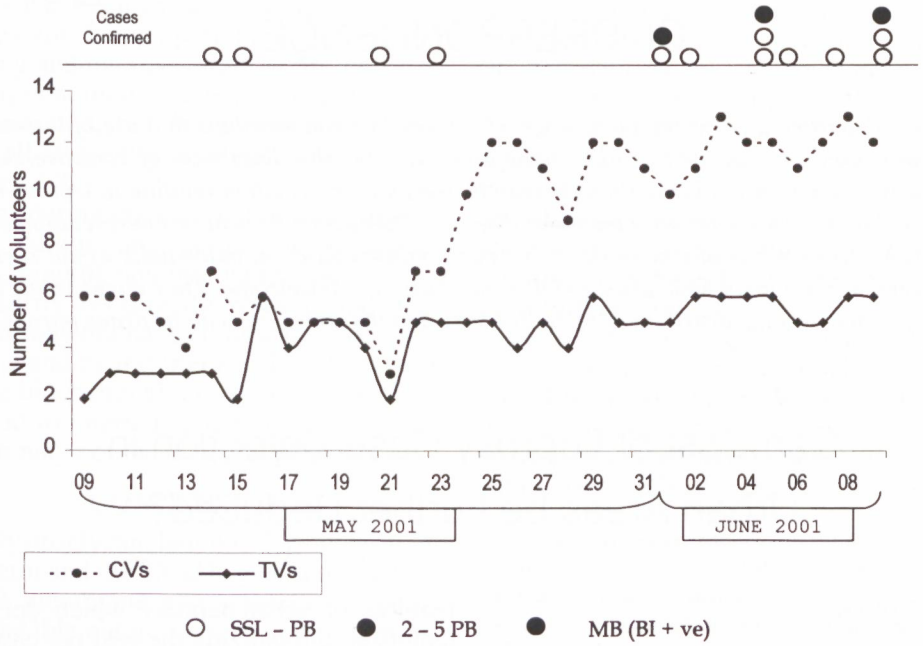

FIG. 2. Number of volunteers and cases detected.

(PMW) for supervision ([2]). The objective of the current investigation was to ascertain whether a) the technology of case detection and supervision could be transferred to the community itself, harnessing the local potential; b) the time of PMW could be saved for more exacting technical work and c) such activity could be an ongoing part of the community enterprise in the long run.

In this study community volunteers (CVs) were picked up from slum communities, trained and supervised by relatively more experienced trained volunteers (TVs) involved in leprosy work for the past 2–3 years, were inducted into case detection activities. The TVs were given the responsibility of a) training the CVs, b) organizing surveys in the slums, c) maintaining daily records and d) preparation of area maps and spot maps of patients' residences, etc. "Suspect cards" were used for case detection. Suspected cases were diagnosed and confirmed by our supervisory staff. Figure 1, a conceptual diagram, indicates roughly the pattern of this strategy.

MOs, NMs and PMWs (shown above the dotted line) form the part of the regular establishment and draw monthly salaries as practiced in conventional systems. TVs and CVs (shown below the dotted line) belong to nonsalaried class and draw only daily incentives on the days they work.

The CVs were reimbursed Rs 30 (US$0.64) for 4 hr of fieldwork. The trained volunteers were offered an incentive or Rs 65 (US$1.36). Additional incentives were

TABLE 1. *Ward wise leprosy case detection rate.*

Ward	No.	No. examined	New cases				Detection rate per 100,000
			SSL-PB	PB (2–5)	MB (>5)	Total	
H—East	36,385	25,030	6	2	—	8	31.9
G—South	35,783	27,096	6	—	1	7	25.8
Total	72,168	52,126	12	2	1	15	28.7

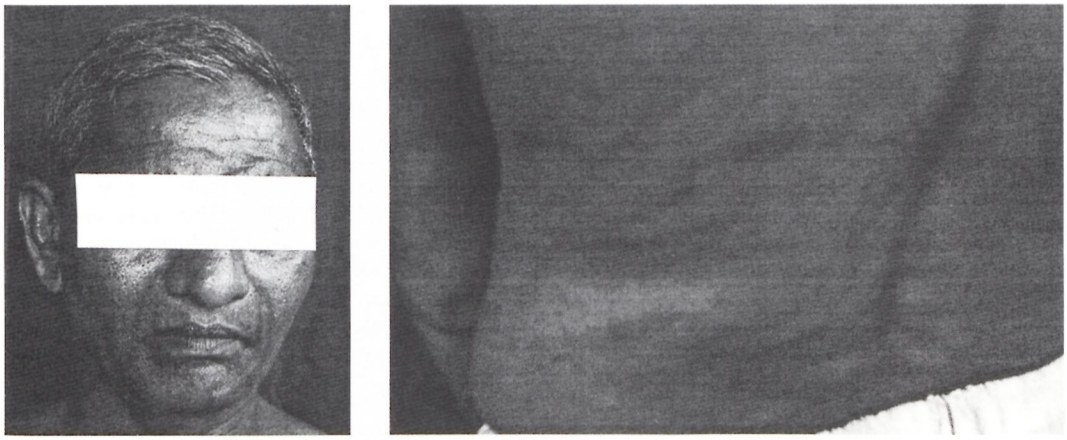

FIG. 3. SK, 52 Male, a smear positive case (BI-4+) identified by a CV in G-South Ward.

offered if the suspected cases were confirmed as definite leprosy patients by the field supervisors. Rupees 20 (US$0.43), 15 (US$0.32), 10 (US$0.21) and 5 (US$0.11) were given for one skin-smear positive, one smear-negative multibacillary (MB; >5 lesions), one paucibacillary (PB; 2–5 lesions) case and one single skin lesion-paucibacillary (SSL-PB) leprosy patient, respectively. (Exchange rate of US$ 1 = Indian Rupees: 47). Figure 2 shows the number of volunteers engaged during 31 days of study period, as well as the cases detected.

Results. Within a period of 31 days through rapid screening of 52,126 slum dwellers, a total of 15 new leprosy patients were identified by the CVs who were supervised by TVs. This gave a case detection rate of 28.7 per 100,000. One of them was a skin-smear-positive MB case (Table 1, Fig. 3). The mean cost of case detection was Rupees 1192/- (US$25) per case and Rupees 17,890/- (US$380) per skin-smear-positive case. Table 2 shows the comparative cost per new case detection.

This exercise showed that the leprosy detection technique could be further simplified by using CVs and TVs in urban areas following highly simplified, task-oriented training. The pattern of the volunteers adopted in this experiment has led to quick detection of new leprosy cases at a slightly higher cost as compared with the cost in our earlier study ([2]).

The slightly higher cost per case detected could be due to the following reasons: a) lower endemicity of the area surveyed, b) possibility of cases having been missed and c) quality of performance of case detection requiring guidance/supervision by senior field staff.

The advantages of this strategy are that it is community based and the experienced, salaried paramedical staff can be utilized for more technically demanding work, including the prevention of disabilities along with the routine leprosy elimination program.

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TABLE 2. *Cost per new case detection.*

Personnel	All new leprosy cases	Skin-smear-positive cases
Trained PMWs & CVs	Rs 879/- (US$19)	Rs 14,500/- (US$308)
CVs & TVs	Rs 1192/- (US$25)	Rs 17,890/- (US$380)

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Nodular Penile Lesion in Hansen's Disease Mimicking Sexually Transmitted Disease

To the Editor:

Lepromatous leprosy is a disease with widespread involvement of integuments because of hematogenous dissemination of organisms. Some areas like the axilla, groin, perineum and a narrow transverse band of skin over the lumbosacral region have been described as "immune zones" because of their relative warmth ([4]). There are some reports of involvement of genitalia in lepromatous leprosy ([3, 8, 9]). In this communication, we are reporting a case of lepromatous leprosy with a nodular lesion over the prepuce of the penis, mimicking a sexually transmitted disease.

Case report. A twenty-seven-year-old, Hindu male, who is a truck driver by profession and has had a history of multiple extramarital contacts with multiple commercial sex workers, came to our sexually-transmitted disease clinic with a complaint of having a nodular lesion over the prepuce of his penis for the last two months. On examination a hard nodule over the prepuce was seen causing phimosis and, consequently, there was difficulty retracting the skin over the glans, giving the suspicion of a sexually-transmitted disease. Further examination revealed nodular lesions over his trunk and face, ulcerative lesions over his scrotum and thighs, and glove and stocking anesthesia with bilaterally-thickened and tender ulnar and common peroneal nerves. Oral ulcers or lymphadenopathy were not present. The patient did not take much notice of these lesions, except for the penile lesion which caused difficulty in retracting the prepuce and, therefore, causing difficulty in his ability to have sexual intercourse. The bacterial index by slit-skin-smear was 4+ from his earlobe, eyebrows and one of the nodules on his back, and histopathology from the nodular lesion over his trunk was consistent with lepromatous leprosy. Serum VDRL in dilution and ELISA for HIV were performed and were negative. He was put on multidrug therapy—multibacillary (MDT–MB) for leprosy.

After 8 weeks of treatment with MDT, while the lesions over other sites started regressing, the penile lesion regressed less and was still causing much distress to the patient. At this stage a biopsy was taken from the lesion over the prepuce and it revealed multiple non-caseating, epithelioid granuloma with langhans giant cells and epidermal atrophy, suggestive of tuberculoid leprosy. Serum VDRL in dilution and ELISA for HIV were repeated and were