Tubercle **65** (1984) 41-45

A NOVEL SYSTEM TO OBTAIN ADDRESSES OF OUT-PATIENTS– ASSESSMENT IN ROUTINE CLINIC PRACTICE IN MADRAS, S. INDIA*

M. C. Satagopan and S. Radhakrishna

ICMR Institute for Research in Medical Statistics (Madras Chapter), Sathyamurthi road, Madras-600 031, India

K. V. Krishnaswami †

Institute of Tuberculosis and Chest Diseases, Spur Tank road, Madras-600 031, India

P. R. Somasundaram and S. P. Tripathy

ICMR Tuberculosis Research Centre, Spur Tank road, Madras-600 031, India

Wallace Fox

Medical Research Council, Brompton Hospital, Fulham road, London, SW3 6HP

Summary

A novel method of obtaining accurate home addresses from out-patients was introduced as a routine procedure in 6 chest clinics of Madras City, following highly satisfactory results under study conditions. In this method, the patient is given a card (the address card), and asked to get his exact address entered on it by any knowledgeable person of his choice such as a landlord or neighbour. An assessment of the system was undertaken after it had been in operation for about 8 months. A complete and legible address was available for 82 % of 3956 patients, the range in the 6 clinics being 74 % to 91 %. The main causes for failure were : not giving address card to patient (7 %), patient not reattending the clinic (6 %), and patient reattending but not returning the address card (3%). Corrective measures have now been introduced, and a re-assessment will be undertaken in due course.

Résumé

Une méthode nouvelle en vue de l'obtention de l'adresse precise du domicile des malades externes a été introduite en tant que processus de routine dans 6 consultations pour maladie du thorax dans la ville de Madras, après que des résultats très satisfaisants aient été obtenus dans des conditions d'étude. Selon cette méthode, on donne au malade une carte (la carte d'adresse) et on lui demande de faire inscrire son adresse exacte sur cette carte par n'importe quelle personne instruite de son choix, comme son propriétaire ou un voisin. Une évaluation du système a été entreprise après qu'il ait été en operation pendant environ 8 mois. Une adresse complete et lisible existait pour 82 % des 3956 malades, l'éventail entre les 6 consultations allant de 74 % à 91 %. Les causes principales d'échec étaient le fait de n'avoir pas donné de carte d'adresse au malade (7 %), le fait que le malade n'était pas revenu à la consulta-

*This paper is also published in the *Indian Journal of Tuberculosis* (1983), **30,** 93.

† Present address: 4, 17th Avenue, Harrington Road, Madras-600 031, India.

tion (6 %) et le fait que le malade, bien que revenu à la consultation, n'avait pas rapporté sa carte d'adresse (3 %). Des mesures de correction ont été introduites et une reevaluation sera entreprise en temps voulu.

Resumen

En 6 dispensarios de enfermedades respiratorias de la ciudad de Madras se introdujo un nuevo método, coma procedimiento de rutina, para obtener la dirección precisa del domicilio de los pacientes externos, después de haberse obtenido resultados satisfactorios en condictiones experimentales. Según este método se da una tarjeta al paciente (la tarjeta de dirección) y se le pide hacer inscribir en ella su dirección exacta por cualquier persona instruida, a su elección, como por ejemplo el propietario de su habitación o un vecino. Se efectuó una evaluación del sistema alrededor de 8 meses después que había sido puesto en ejecución. Para el 82 % de los 3956 enfermos se obtuvo una dirección completa y legible con una variación entre 74 % y 91 % entre los 6 dispensarios. Las principales causas de fracaso fueron : el hecho de no haber dada la tarjeta de dirección al enfermo (7 %), el hecho que el enfermo no volvió a consultar (6 %) y el hecho que el enfermo aun habiendo vuelto a consultar no trajo su tarjeta de dirección (3 %). Se introdujeron medidas de corrección y se volverá a hacer una evaluación dentro de un tiempo razonable.

Introduction

In the tuberculosis programme in India, as in many other developing countries, the procedure most commonly employed to retrieve patients who fail to attend the out-patient clinic on the due date is to post a reminder letter [1]; very occasionally, a home visit is paid by a health visitor. Obviously, an accurate home address is a *sine qua non* for the success of these attempts. Unfortunately, under the pressure of a long queue of patients, addresses are often elicited by registry clerks in a hurried or casual manner, and have been reported to have a disappointingly low level (about 65 %) of accuracy [2, 3]. Motivation of the clerk by a senior consultant physician had little effect [4]. Further, the use of experienced health visitors to elicit addresses resulted in only limited improvement [4]. We therefore evolved a new method (the address card method), which consists of giving the patient a card with a printed message in Tamil, the local language, and asking him to get his exact address entered on it by a responsible person of his choice, such as a neighbour, the landlord, a friend or the local postman. This method was tested under study conditions in 4 chest clinics in Madras City [4] and in 4 large towns in Tamil Nadu State [3], and was found to be highly satisfactory (Table I), the overall acceptability being 97 % and the accuracy being 84 %. Following these findings, the address card was introduced as a routine procedure in 6 chest clinics in Madras City, and this paper describes an assessment of the system after it had been in operation for about 8 months.

Methods

At a special meeting of the health visitors, nurses and medical officers in charge of the 6 chest clinics, the Director (K. V. K.) briefed them about the findings of the research studies with the address card [2, 3, 4], and outlined the procedures to be employed for introducing the card into routine practice in the clinics, A cyclostyled set of instructions for health visitors was also given. (see Appendix).

The address card was to be given to every patient admitted to treatment for tuberculosis. No special inputs or supervision were provided-that is, the system was left to function as a routine clinic procedure. Subsequently, at monthly meetings with his medical officers, the

Table I. Acceptability and accuracy of the address card under study conditions

Centre	*Acceptability** (%)	*Accuracy*** (%)
Madras–Clinic 1	97 (150)†	84 (136)
–Clinic 2	98 (123)	81 (110)
–Clinic 3	97 (101)	96 (95)
–Clinic 4	89 (111)	81 (78)
Madurai	98 (275)	82 (132)
Coimbatore	97 (287)	83 (156)
Salem	96 (308)	82 (102)
Tiruchirapalli	99 (394)	88 (122)
Total	97 (1749)	84 (931)

*That is, among patients who reattended, the percentage who returned a completed address card.

**That is, percentage of letters posted to the 'address card' address that were received by the patients.

† Numbers in brackets are the denominators on which the percentages are based.

Director made routine enquiries about the working of the address card system. None of the clinic staff knew that a formal assessment would be undertaken at a later date.

When the system had been in operation for about 8 months, 2 statisticians from the Institute for Research in Medical Statistics visited each clinic and collected appropriate data to provide a general assessment of the operational aspects of the system, and in particular to determine the proportion of patients for whom a completed address card was available. No attempt was made in this study to investigate the accuracy of the address recorded on the address card.

Results

During the 8-month period, 4276 patients were admitted to treatment in the 6 clinics. The treatment card (the patient's record card), to which the address card was supposed to be pinned, could not be traced for 320 (7.5 %) patients despite a careful search (some of these patients could have been transferred to other clinics of their choice). The address card system could therefore be assessed in the remaining 3956 patients only (Table II).

Table II. Findings of interim assessment at 8 months

	Total for 6 clinics		*Findings in individual clinics (%)*					
	No.	*%*	*A*	*B*	*C*	*D*	*E*	*F*
Address card not given to the patient	269	6.8	12.2	5.4	2.1	7.0	11.4	5.0
Address card given, but patient did not reattend	254	6.4	6.1	10.2	6.7	3.3	2.7	3.3
Patient attended, but address card not returned	128	3.2	5.2	3.4	2.6	3.1	2.7	0.0
Address card returned, but								
(a) not traced in the clinic	61	1.5	2.2	1.7	0.8	1.3	2.4	0.7
(b) entry incomplete	7	0.2	0.3	0.3	0.1	0.0	0.0	0.0
(c) entry illegible	6	0.2	0.1	0.4	0.1	0.0	0.0	0.0
Address card with complete address available	3231	81.7	74.0	78.6	87.5	85.4	80.8	91.1
Total patients in analysis	3956	100.0	872	1002	951	459	369	303

The clinic staff failed to give the patient an address card in 6.8 % of instances, the range being 2.1 % to 12.2 % in the 6 clinics. The patient received the address card but did not reattend the clinic subsequently in 6.4 % of cases (range 2.7 % to 10.2 %), and reattended but did not return the card in 3.2 % (range 0.0 % to 5.2 %). The address card was returned but mislaid or lost in the clinic in 1.5 % of instances (range 0.7 % to 2.4 %), while the entries were incomplete in 0.2 % and illegible in 0.2 %. The net result was that an address card with a complete address was available for 81.7 % of the patients, the proportions in the individual clinics ranging from 74.0 % to 91.1 %.

Among 3433 patients who were given an address card and who reattended, 3305 (96.3 %) returned the address card. However, a complete and legible address was available for only 3231 (94.1 %). The proportions in the 6 individual clinics were 90.5%, 93.1 %, 96.0%, 95.1 %, 94.0 % and 99.3 %, respectively.

Discussion

The address card method has proved to be highly acceptable even under routine clinic conditions. Thus, complete and legible addresses could be obtained from 94 % of 3433 patients who were given an address card and who reattended, as compared with 97 % of 1749 under study conditions (Table I). However, considering all patients admitted to treatment in the 6 clinics during the 8-month period, an address card with a complete and legible address was available for only 82 %. This is rather disappointing, as the methodology of the address card is quite simple and one might have expected an outcome in the range of 90-95 % from the experience under study conditions [3, 4]. The causes for the shortfall are several, but the important ones are failure of the health visitors to give the patient an address card (7 %), failure of the patient to reattend the clinic (6 %) and failure of patients who reattended, to return the address card (3 %). The first cause is a failure at the clinic level and should be largely overcome by tightening up clinic procedures. The other two depend more upon the patient, and can be reduced by greater efforts on the part of the clinic staff in explaining to the patients the importance of reattending the clinic and returning the completed address card. Steps have now been taken to improve the efficiency of the system under routine conditions and a reassessment will be undertaken in due course. If undertaken too soon, it may yield a falsely high level of success, and so adequate time will be given for the system to settle down into a routine. At the next assessment it is also planned to test the accuracy of the addresses by posting letters and verifying whether they are, in fact, received by the patients.

The findings of the present study emphasise the importance of testing out all new procedures under routine conditions. Unfortunately, operational studies of this type are undertaken infrequently. It is by a process of assessment, evaluation, mid-course correction and reassessment that the gap between the results achieved under study conditions and those under routine conditions can be bridged.

Acknowledgements

We are grateful to Miss R. Jayasri, Mr R. Ramakrishnan and Mr N. Ramalingam for assistance in data collection, and to all the staff members of the 6 chest clinics for their co-operation.

References

1 National Tuberculosis Institute, Bangalore (1966). District Tuberculosis Programme-Treatment Organizer's Manual.

2 Krishnaswami, K. V., Satagopan, M. C., Somasundaram, P. R., Tripathy, S. P., Radhakrishna, S., & Fox, W. (1979). An investigation of the accuracy of the home address given by patients in an urban community in South India. *Tubercle,* **60,** 1.

3 Radhakrishna, S., Satagopan, M. C., Krishnaswami, K. V., Tripathy, S. P., Vaidyanathan, B., & Fox, W. (1980). A study of the accuracy, and factors influencing accuracy, of home addresses of patients obtained by registry clerks and address cards in four large towns in South India. *Tubercle,* **61,** 197.

4 Radhakrishna, S., Satagopan, M. C., Krishnaswami, K. V., Tripathy, S. P., & Fox, W. (1979). Efficiency of address cards, experienced health visitors and motivated registry clerks in obtaining the home address of urban patients in South India. *Tubercle,* **60,** 151.

APPENDIX

Instructions for Health Visitors

1 General

1. Make the following entries on the treatment card, preferably using a rubber stamp.

Date address card given :	
Date address card returned :	
Address on treatment card :	Correct/Corrected

2. In the treatment register, introduce 2 extra columns headed 'Date address card given' and 'Date address card returned'.

II. When a patient is admitted to treatment

1. Give the patient an address card, and enter 'Date card given' on the treatment card and in the treatment register.
2. Ask him to get his exact postal address entered on it by a *literate* person–e.g. heighbour, landlord, friend, postman.
3. Motivate him to return the completed card within a week–e.g. by saying 'We will often have to write letters to you about your health. It is important that these letters reach you without delay. So, it is in your interest to ensure that we have your exact address'.

Ill. When the address card is returned

(i) Enter 'Date card returned' on the treatment card and in the treatment register.
(ii) Check whether the address on the card agrees with that on the treatment card. If it does, encircle 'Correct' in the treatment card. If there is any difference, correct the address on the treatment card and encircle 'Correct'.
(iii) Pin the address card to the treatment card.

IV. Once a week

On a particular day *every week* (e.g. Saturday), identify from the treatment register patients who have not returned the address card within one week, and attach a red slip to their treatment cards.

V. When any patient reattends

If there is a red slip attached to the treatment card, remotivate the patient to bring back the address card (if he has lost it, give him another card).