

5. Is it Safe ?

(a) The answer is yes—if the minimum conditions are met. A tuberculous patient is dangerous to the family while infectious—the rate of conversion represents the effect of treatment on prevention.

(b) A careful tuberculous patient is not dangerous to live with. It will depend how much and how effectively they co-operate in following preventive advice.

(c) The effect can be judged from secondary cases in the homes—2% of the contacts are found to have active disease at the initial examination which is a markedly low figure. A good index is the discovery of miliary and meningitis cases amongst contacts of known cases. Our analysis shows this to be rare.

6. What is its place in the total control programme ?

If this much can be achieved, is there any scope for doubt ? Appreciation and courage is needed. Patients know it by experience, and they even teach the doctors. In countries with a large number of sanatoria beds, patients today prefer domiciliary treatment, and beds

are lying vacant. We started Home Treatment 17 years ago and we were considered to be *out of tune and time*, but home treatment of the tuberculous patient is the fashion today and we are in good company ! It has been our approach for a number of years, and we can now advocate with confidence. I have tried to convince people that this situation is no mere index of lack of resources, but is also conditioned by the success it can bring for the individual and the community. It is based on successful results and is in keeping with trends in other countries where mass approach is the aim and objective. Home Treatment has the moral and social advantage of not interfering with the family life in the home and is comparatively inexpensive ; you can treat 3-4 patients for the cost of treating one in a hospital bed. With the limited resources, both financial and technical, we have to cut the cost according to our cloth. Thus our national control programme lays down the following priorities (1) B.C.G. (2) Domiciliary Service (3) Training Centres (4) Isolation beds for infectious cases (5) Research. You can see how high the Home Treatment stands in this picture of priorities.

Domiciliary Nursing Care

With Emphasis on Disposal of Sputum

By

Mrs. M. Paul, R.N.

Chief Public Health Nurse, New Delhi T.B. Centre

Domiciliary Treatment and why it is the main plank of our National Tuberculosis Programme, has already been discussed by Dr. Sikand. The chief advantage of sanatorium (at least in these days of anti-microbial treatment when majority of patients can be treated effect-

ively from the O.P.D. also) is isolation and thus prevention of spread of infection to the rest of the family and other contacts. Therefore home-treatment, if it is to be as effective as sanatorium treatment from the community's point of view (rather than the individual patient's

public health measures to prevent spread of infection as far as possible in the home should be constantly kept in view. We all know that it is not the tuberculous patient who is dangerous *but his sputum*, which for all practical purposes, is the only source of infection.

Every time a patient with active disease coughs, he spreads infection through sputum spray. The bacilli can survive for a long time in dark, moist and ill-ventilated rooms. Therefore the poorer the light and ventilation in a home the greater the risk of infection to others sharing the room or the house with the patient; over-crowding is an additional menace. Thus isolation in a well ventilated, hygienic place is the first requirement though, as I will show later on, it is the most difficult to obtain under the existing conditions in our country. The degree of isolation required depends on the condition of the patient and his infectious status. Isolation is also dependent on economic conditions, the available accommodation and therefore adaptations have to be made in most instances.

If circumstances permit, a separate room, the best ventilated and lighted should be set aside for the patient's use. Failing that, a verandah—the whole or portion thereof if available, can be used. Situations will, however, arise, more often than not, where neither a separate room nor a verandah can be set aside. The best that can be done under these circumstances would be to cordon off a portion of a room with curtains, *chiks* or even gunny bag, for the patient's use, keeping in mind all the time that this improvisation is, perhaps, only a little better than nothing at all. Protection of children in such houses is a real problem. It may not be possible in these days of financial stringency for patients to arrange boarding out of the children with other relations. The advice that we usually give under these circumstances is to let the children spend as much time of the day as possible out of doors away from the patient, and for the rest, trust to Providence, BCG, and the quick conversion of the patients' sputum with the help of modern drugs.

It is worthwhile pointing out here that out of a total of nearly 2,091 active cases of pulmonary tuberculosis on our books, isolation is possible only in 529 or 25.3%. It can be improvised in another 158 or 7.6% and in the rest 1,404 or 67.1%. Situated as we are, isolation is impossible. Fortunately, however, 1,023 out of these are sputum negative and therefore isolation is not essential. The remaining 381 or 18.6% open cases where isolation is not at all possible, is a challenge to the community. If we have to make home-treatment safe, means for isolating these patients as long as they are infectious, must be found. **If we cannot isolate the patient, we must isolate his sputum.**

I have already mentioned that the source of infection is sputum and the way in which it can carry the germs is either direct, *e.g.*, through droplet infection, or indirectly through the sputum which has not been properly collected and disposed off.

The simplest way to reduce the chances of droplet infection, apart from isolation, is to advise the patient to cover the mouth while coughing and sneezing; Patients, who can afford, are advised to use tissue paper which can be burnt after use. For the majority of the patients, we advise them to use pieces of clean cloth—rags—as handkerchieves, and boil these before use again. This is within the means of practically everybody and is safe and effective.

This brings us to one of the most important preventive measures, *i.e.*, collection and disposal of sputum.

Collection of Sputum: Rich patients can be advised to use a proper enamel mug with a detachable hinged cover (like those in use in hospitals). No doubt from the aesthetic point of view, it is the best method but is often beyond the means of most of our patients. The requirements of a good spittoon are that it should be cheap, handy, there should be no hole in the lid, the lid should be easily detachable, and it should be strong enough to stand fire every day for about half an hour. The spittoon which we recommend

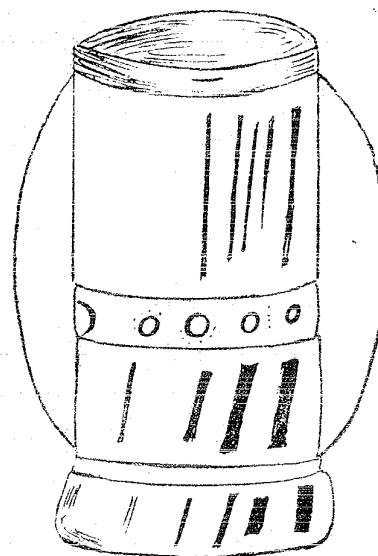
to our patients (and incidentally supply free to most of them) is an empty cigarette tin because it has most of the above qualities. Granted it cannot stand frequent boiling or heat for very long, but it costs so little that it can be easily replaced.

Disposal of Sputum. The methods usually recommended for disposal are burning, disinfectants and boiling. We do not recommend burning of the sputum because it is a messy affair and not very pleasing to the sight. Again no family in India will ever agree to burn the sputum on the same fire on which they cook their food, and most families cannot afford an alternative set-up for burning the sputum only. The use of disinfectants is equally not possible for the majority of the patients. For one thing they are expensive and secondly, even if some of them are cheap, they are dangerous to handle; and some take a long time to kill the germs. Those patients who can, are advised to put some dettol in the spittoon and then to dispose it off in the flush.

The method of disposal that we invariably recommend to our patients is boiling. For this purpose we have devised this *sigree*. We have conducted experiments on disposal of sputum with this *sigree* using burning charcoal, coke and *uplas* (cowdung cakes). If the *sigree* is filled up to the brim with red hot charcoal and a cigarette tin half filled with sputum is put on it then the sputum on an average reaches a maximum temperature of 90° to 100° centigrade in about 20 minutes' time and this temperature is maintained for at least 20 minutes. The lowest maximum temperature that we got by repeated experiments with burning charcoal was 85° C. and this temperature was maintained for 30 minutes. Subsequent culture of the boiled sputum showed that all tubercle bacilli had died and the culture was sterile.

The practical advice, therefore, that we give to our patients regarding disposal of sputum is to fill the *sigree* upto brim with burning charcoal. Put the

cigarette tin containing sputum on it and leave it in one corner of the room or compound till it starts cooling off (this further obviates the use of a watch which most people do not possess). When the fire has cooled off, the boiled sputum can be disposed off in any drain, the cigarette tin cleaned and used again. If, in the early stages of treatment, an occasional patient is expectorating large quantities of sputum, the boiling procedure can be repeated morning and evening, but for most of the patients, once in 24 hours usually suffices.



The *sigree* costs about 75 nP these days and is supplied free to all patients. The advantages of this method are that it is not unsightly, it is within the means of everybody because even the poorest home has a fire, and therefore red hot charcoal is easily available. The *sigree* can be kept in one corner of the room and need not be taken into kitchen and, above all, it is absolutely safe. Of course, patients have to be goaded into using it regularly but then the same can be said about other preventive advice to which the patient is not used, and which has to be taught over and over again. We have

(Contd. on page 227)