The Place of Social Work in a Tuberculosis Hospital*

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In a previous publication we have defined “comprehensive medicine” and made special reference to psychosocial factors in illness and treatment. The patient's problems around his illness, his recovery and his readjustment to the community present a challenge to the physician far and above his specific medical and surgical skills. In the past few decades, farsighted medical investigators have come to recognize the importance of planning for the socio-economic and emotional well-being of the patient. To do this professional groups with special disciplines have gradually been enlisted in the total treatment program. One important group is that of social work which is the subject of this presentation.

There is perhaps no professional field which has been less understood or appreciated by the medical profession generally than that of social work. In large measure this may be charged to faulty medical education, a situation which will only be changed as we approach the goal of comprehensive medical care. It is also true that the field of social work, because of its uneven development in the last 30 years, has not always been articulate enough in its interpretation to the physicians. There is, however, a growing awareness in medical education of the importance of social casework with emphasis being laid as well in premedical education on the disciplines of the social sciences.

Such acceptance as was available in the past was purely in the manipulative sense. It was felt that social workers pried into people's affairs, investigated financial status, arranged for welfare aid, wrote innumerable letters, and secured for their clients the common everyday necessities of life. The social worker combined all the features of an errand boy and just avoided the onus of a whipping boy as well.

Doctors have not been aware of the growth of social work with the need for specialization in fields of family case work, medical social work, and psychiatric social work. Such multiplicity of terms and fields has further confused physicians and has widened the gap of understanding. The psychiatric orientation which is given...
in all levels of training of social workers of whatever type has made them further suspect. This is so because most physicians are still unable to accept psychiatry, scoff at it openly, pay lip service to the field if spoken of at all, and will resent even more a non medical group which undergoes and utilizes its disciplines.

Social work from a disorganized and ill developed group has evolved into a well integrated profession with high standards, and with disciplines on a par with other professional workers. From untrained welfare workers, the level has risen to a skilled corps which can and does have an important place in social medicine.

Both in training and in practice, the medical profession has always had a highly individual approach to each patient with the doctor as the sole authority. The nurse has been accepted as a useful handmaiden at the beck and call of the physician, but the social worker has been only thought of in terms of real, practical patient's needs which play no part in the physical status. The inability of the physician to accept the ancillary services of the social worker has held back the psycho-social approach to illness and progress in comprehensive medicine. Especially in chronic medicine is there a need for the social case work approach. In a hospital setting where the patient is removed from the security of his family and enters a new type of community living with a new set of rules by which he must abide, there must be a tempering of the authoritative medical approach by the warm, accepting attitude of the case worker.

It is always interesting in a self-critical fashion, to review our own administrative attitudes regarding the patients under our care. We like best those patients that are submissive and compliant, that ask for little, are grateful for small attentions, and in short, are "good guys." We become extremely angry with the hostile and demanding personality for whom the attentions given them never seem to be enough. The food is bad, the floor is dirty, the nurse does not rub his back properly, the floor physician does not see him sufficiently, and so on 'ad nauseam.' Instinctively the administrative approach is one of counter hostility particularly when the patient continues to raise difficulties long after the incident has passed. The smiling patient is liked, the surly quickly passed by.

Disciplinary discharges are numerous while patients signing out against advice have provoked tuberculosis groups to numerous special studies. A recent study on A.M.A. or irregular discharges in the Veteran's Administration revealed that in most hospitals there were as many as 50 per cent with one hospital ranging in the neighborhood of 75 per cent. In the average hospital the discharges against advice range from 20 to 35 per cent. Studies done
to unravel the problem reveal a multiplicity of causes, all pointing to one main basis. The major attention has been paid to the physical and too little to the emotional needs of the patient. In large measure this may be due to lack of understanding, training and staff facilities.

In addition then to the staff training of physicians, there is need for a social work staff which is psychiatrically oriented. What is then the function of social work within the confines of the hospital?

Social casework is concerned with the many social and emotional problems arising out of tuberculosis and the patient's reactions to them. Its major objective and usefulness parallels that of medical care as it proceeds from the point of diagnosis through the period of hospitalization and after-care. The basic tool of this process is the relationship established with the patient through the technique of interviewing. This involves the sensitive listening and participation by the caseworker in a professional, disciplined manner. The techniques of casework have evolved from extensive professional training which draws upon the fields of sociology, economics and psychiatry. The worker brings to this relationship the kind of personality and talent that enables him to sense the patient's anxiety and feelings in general. The range of casework service is broad as it varies from helping with environmental problems to that of intensive efforts in the areas of personal maladjustment and emotional difficulties.

It would indeed be difficult to describe the many aspects of social casework in a tuberculosis sanatorium. At best we may be able to give some indication of the broad areas covered by social casework with a closer examination of some of its practices. Generally speaking, it can be said that social casework functions in relation to the client or patient, and to the community around him. There are many problems that can be worked through with the patient in an interview situation. On the other hand, the patient has many difficulties in his immediate and more remote surroundings. These can be dealt with by the social worker either by interviewing or corresponding with patient's family, community agencies and the staff that is servicing the patient in the hospital. We would like to point out that the major emphasis in social casework is the relationship between the patient and the case worker. Any productive activity must be patient centered. It means that the patient must be involved to a great extent in the thinking and planning for his welfare.

Social casework with the tuberculous patient and his family deals with the problems that he has to face in the progressive stages of his life as a patient. Thus we might say that casework should be available at the point of diagnosis, at the beginning
period of hospitalization when there are problems around adjustment, at crucial points in treatment such as surgery, at the point where the patient should be thinking of discharge and related plans for rehabilitation and also for some time after the patient has been discharged.

Let us take the first problem; that is, the patient's reaction to the diagnosis. It is rare that the individual who has just learned of his tuberculosis has no deep emotional reactions to it. Many people have considerable anxiety and, therefore, are blocked from considering next steps. Some may become extremely depressed and may, therefore, behave in a rather irrational manner. A few somehow go on as though they never heard their diagnosis; such individuals unconsciously block out this knowledge because of their inability to tolerate it. The case worker attempts to work through with the patient his feelings about tuberculosis. Such a process enables the patient to overcome enough anxiety in order to plan for treatment and for whatever assistance the family may need. In some cases all a patient will need is the reassurance that the economic problems resulting from his disability will be met by some social agency. In other cases the social work problem may be more complex because of the meaning of the disease to such patients. Thus the insecure person who has strong feelings of inadequacy will be given a chance to talk about his sense of defeat and failure brought out by his disease. The acceptance of these feelings by the social worker will mean an acceptance of the patient as an individual. There are too many variations on this complicated problem to be taken up in our limited space. It is important to point out that casework affords the kind of interview that permits the patient to bring out his many feelings and doubts into the open. The social worker does not barrage the patient with too much information, nor does he reassure falsely with cheery platitudes. Professional experience has shown that premature fact giving or pollyannish "you'll be all right" statements often create an emotional block which damns up the patient's feelings and obscures the problems of the disease. When the social worker has enabled the newly diagnosed patient to talk through his feelings about the disease, the latter can be helped with the problem of securing hospitalization.

Once the patient comes to the hospital he has many feelings about being there and about having to undergo strict routine. The social worker sees the patient immediately after he arrives at the hospital. The series of interviews during the first few weeks of the patient's stay are so carried on as to give the patient the feeling that he can talk freely about his new situation. Some patients will express a great deal of lonesomeness for their families, especially
if they are far away from home. The warmth and understanding shown by the social worker bring about some transfer of dependency from the patient’s family to the worker. Thus the newly created gap between the patient and his family is to some extent filled in by the relationship with the case worker. This does not mean the beaming of sweetness and light upon the patient, nor does it mean persuading the patient to cheer up and be good. Rather, the process is one of bringing out in the open, feelings of anxiety and even anger without making the patient feel ashamed.

It is important to note in this connection that many patients have conflicts about accepting dependency upon the staff. Some patients have had a need to be successful in their social and economic activities and their illness and hospitalization have prevented them from attaining such goals. The doctors and other members of the hospital staff often notice that such patients are extremely resentful of having to lie down and to accept orders. The interviews with the social worker can bring out into the open their reasons for such resistance to the hospital regimen. The patient is, therefore, better able to examine the basis for his feelings, and also finds it easier to accept dependency because of the tolerant attitude of the social worker.

There are many other reasons why a patient may find it hard to adjust to the hospital in the beginning or at any other time during his stay. There are, for instance, economic and environmental problems in the patient’s family. The social worker is unique in the field of human relationships insofar as he works with the family and community. It often happens that the worker has to discuss at some length with a patient’s wife, husband, parent or any other meaningful relative the problem of the disease as it has affected them. The wife and mother may need some specific help in securing relief for the family, or medical care for one of the children. Perhaps she may find the new burden of being both father and mother too difficult. Her relationship with the social worker becomes a source of support and security to her and at the same time allays the anxiety of the patient. Here again it may be said that the example given was a relatively simple one, and that often the problems in the family become much more complex and, therefore, much more difficult to handle. Often a mate or even a relative may become rejecting because of the patient’s disease. If such a person is willing to talk it through with the social case worker, he or she may be helped to develop less threatening attitudes toward the patient. In some instances the patient has been a client of some welfare agency that has taken responsibility for him. As he develops economic needs or shows other problems that are in the province of that agency,
the hospital social worker interprets such problems to that organization. The problems requiring contact with agencies are too numerous to mention. To emphasize then, the social worker serves as a liaison between the patient in the hospital and the community, which has the effect of reducing the anxiety of the patient and preserving to a great extent his sense of still belonging in the world around him.

A great deal has been said about the many problems that a patient has in the hospital. Experience has shown that many patients have deeply rooted anxieties which need alleviation. The social worker is part of a team working in conjunction with the doctor, the psychiatrist, the vocational counsellor, the occupational therapist and other auxiliary workers. The responsibility for helping patients with emotional difficulties is that of the total hospital. Therefore, the attending physician as the authoritative figure in the hospital setting, has the total responsibility for the patient. If this physician has sufficient time to spend with the patients, and if he has received some psychiatric training and had done work in social science, then theoretically, he would be able to work with the patients along the lines needed. With this background he should then be able to refer patients to social agencies. The reality, however, is that a physician is not equipped to do social work because of his lack of training. While the doctor has the responsibility of developing relationships with the patients which will help them in their anxiety about their illness, he has to accept the specialized services of social work.

On the other hand, the social worker has rather a key position insofar as he does not symbolize the authority or power of the physician. This relative absence of administrative power gives many patients more freedom to discuss openly their complaints, anxieties and hostile feelings about the hospital, its treatment and staff. It is well known that a patient must be able to bring out into the open some of his simmering hostilities if he is to get help with his difficulties. In some cases a psychiatrist will do the treatment as the problems have to be dealt with in terms of their unconscious derivation. In the majority of cases, however, the social caseworker is equipped by technique, training and ability to conduct the kind of interview that will be helpful to the patient. It must be borne in mind that the social worker has definite and concrete goals when he works with a patient's feelings. The case presented later in the paper illustrates this form of activity.

There are some critical situations in a patient's life in the hospital. The whole problem of surgery is a complex one fraught with considerable anxiety for the average patient. Collapse therapy often represents mutilation, disfigurement and the removing of
essential parts of the body. Patients react to the prospect of this surgery with varying degrees of anxiety depending on their personal makeup. Some patients are so distraught that they are ready to leave the hospital rather than undergo such a procedure. Verbal reassurances such as “Don’t worry. You’ll be all right,” and many other statements aimed at alleviating the patient’s feeling usually fail. The patient must be given a chance to talk about his anxieties concerning treatment. The psychiatric literature is replete with well documented cases of unconscious death wishes. It can readily be seen that such individuals may unconsciously look forward to surgical procedures as the attainment of such desires. The social worker can give the necessary time in one or a number of interviews to explore with the patient his feelings about this treatment. Some patients will be better able to understand their resistance as part of their vanity about their bodily appearance. Others will obtain relief from just ventilating their anxiety about pain, mutilation and death. It has been noted that repression of fear often brings about unfortunate results after surgery.

The social worker has a stake in the rehabilitation of the patient. Since rehabilitation is not only concerned with vocational training but rather with the social, economic and emotional adjustment to the post-sanatorium life it is important to understand the patient’s personality, his fears and his dependency needs. The social caseworker has had training in the field of mental hygiene as well as practical experience in interviewing patients so that he is able to arrive at an understanding of the individual. In our experience we have found that a discussion of vocational training often leads to a definition of personality problems. Thus some of the patients who ask for re-training are helped to see that their basic difficulty was not the kind of work that they did, but rather their inability to cope with their employers or colleagues because of certain emotional difficulties. In other instances it was noted that the patients expressed need for a new vocation arose out of his anxiety about leaving the protective atmosphere of the hospital. The social worker can make a real contribution in the planning for vocational re-training by working closely with the vocational counsellor so that there is a true understanding of the patient’s total needs.

It was stated earlier that the social worker is concerned with the post-sanatorium existence of the patient. Where the hospital social worker is unable to see ex-patients because of the time and geographical factors, some interpretation should be made to an agency and community to which the patient could turn for help. The National Jewish Hospital has recognized the need for continuing care and therefore, has set up social work departments in two major cities. The social workers within the hospital maintain
close contact with the social agencies throughout the country. Before a patient is ready to leave the social worker interprets to the agency in his community the rehabilitation and other needs that he presents, and discusses with the patient what is available to him in his community.

The social worker plays an important role in helping the patient plan for discharge. It is erroneous to think that all patients will eagerly accept the prospect of leaving the sanatorium. Many patients, after a long period of hospitalization, have learned to accept their dependency and concurrently have developed many fears about resuming normal living. Some patients even give up former relationships such as husband and wife because they have substituted for this relationship the strong parental figure of the hospital. These people and many others will balk at plans for physical and other kinds of rehabilitation. The trained social worker can help the patient to bring out into the open what his real anxieties are and in some cases the patient develops enough insight to go on with a plan for rehabilitation. Thus we find the patient who has considerable difficulty about making up his mind about what kind of training to take finally admit that he is blocked by his unwillingness to sally forth from the hospital into a competitive world.

The following is a presentation of a case which illustrates the role of the case worker in the total treatment of a rather difficult patient: Lucille had been curing tuberculosis for four years and would be ready to leave the hospital in a few months if all went well. Everybody in the hospital knew Lucille. Most of the medical staff groaned with a fair amount of good nature when her name was mentioned. Patients shook their heads over her behavior but on the whole they were sympathetic and friendly toward her. There had been ups and downs throughout her hospitalization, however, as the time of her discharge approached, she seemed to have more severe upsets and to be under tension most of the time. She became outspoken, abusive and demanding toward those in authority when the tension spilled over. She complained continuously and as soon as one demand was met she countered with another. She would test the patience and tolerance of doctors and nurses over and over again. Although she was able to reason with astute accuracy about the causes of her actions and to recognize that her behavior was defeating the goal for which she was fighting by provoking an immediate discharge, she did not seem to be able to mobilize enough strength to do anything about it. Her appetite became ravenous and she violated her diet in spite of her recognition of the dire consequences to herself. Her attitude was, “I am as I am because of the things that have been...
done to me. I am not responsible for my behavior and therefore you must not blame or punish me."

Lucille was a young woman 26 years old, dark complexioned with deep set blue eyes, of medium stature and inclined to be plump. In periods of upset she gave the impression of being a dumpy disheveled little girl. She expressed herself unusually well and had a nice sense of humor. The wall of sophistication, however, was brittle and broke with the slightest pressure. She was in constant search of praise and had need of immediate tangible rewards.

Lucille was born and reared in Texas. Her mother died of tuberculosis when she was four. She had been placed with relatives even before her mother’s death because her mother had been too ill to care for her. She was the youngest, by seven years, of seven children. Her mother was in her forties and her father was in his late fifties when she was born. There would seem to be serious question that she was a wanted child. Although her father did not die until years later, he paid little attention to her after her mother’s death and she spoke of his having deserted her. At first, after her mother’s death, Lucille lived with various relatives. They felt that she was a difficult child and by the time she was six, she was placed in an orphanage. From there she was placed in a foster home. She remained in this home for eight years and then had to leave because the home was broken following the foster father’s death. She was placed in a second foster home and lived there until she became ill with tuberculosis. When her foster parents learned that she had tuberculosis they were unwilling for her to return to their home. This repetition of family rejection and feeling of being unwanted was a devastating experience, reactivating all the unhappiness and loneliness of her childhood. For some time after her hospitalization she was depressed, she felt deserted and that she had little reason to get well. In addition to the economic and emotional deprivations, Lucille had to cope with serious health problems all of her life. She had surgery at six months for obstruction in the esophagus and feeding was difficult from the beginning in terms of this condition. It was learned that she had diabetes when she was six.

Intensive casework service was begun at the time the patient’s conflicts with administrative and medical authority became acute and immediate discharge was being considered. Regular weekly hour interviews were scheduled with the social worker and in addition, Lucille was invited to consult with her social worker whenever she felt the need to do so between these interviews. A positive relationship between Lucille and her social worker was established rather quickly in terms of her extreme need for sup-
port. She was at the same time suspicious of her social worker and tested the worker's acceptance of her repeatedly.

There was a consultation between the psychiatrist and the social worker soon after intensive casework service was begun for the purpose of (1) securing a diagnostic personality evaluation on the basis of the information available and the patient's presenting behavior; (2) establishing the goal of treatment; and, (3) deciding the type of casework service the patient could use effectively. It was recommended by the psychiatrist that the worker should assume the role of a mother figure, i.e., a warm, giving person. Patient's behavior was an acting out of her wish to be treated as a child, to be loved and cared for. Such a relationship is necessary to such a dependent person in order to reenforce her in difficult spots. It was felt that the goal of casework service could not go much beyond this in terms of the retardation of emotional development because of earlier deprivations. It was felt at this time that continuation of some supporting figure would be necessary after her return to the community.

In addition to the psychiatric consultation between the social worker and the psychiatrist, this case was discussed in the regular psychosomatic conferences with the medical and other interested administrative staff. The discussion was lead by the psychiatrist. Members of the staff having direct contact and responsibility for patient's care presented material for the discussion. The social worker presented a psychiatrically oriented social history material and a review of the problems. The doctor having direct responsibility for her care then presented the medical history and administrative problems arising in terms of behavior in the hospital. He raised questions concerning management. Other doctors volunteered information on the basis of their contacts and observations. The dietitian gave a review of her difficulties with the patient in relation to diet violations and special demands. The purpose of the conference was to further the understanding of the underlying dynamics responsible for the presenting disturbing behavior in the patient which might result in more understanding management. This was accomplished up to a point, however, it would not be logical to assume that there would be sufficient carry over from a single conference of this kind to create a sustaining attitude which could offset the irritations created in the day to day stress of handling her behavior. Individual conferences between the social worker and the physician followed to discuss further the psychological implications of her behavior and an attempt to enlist a more positive identification with her. There were conferences also from time to time between the social worker and dietician who decided that dietary problems might be resolved
more easily if there were fewer restrictions imposed and more responsibility was given to Lucille in handling the situation. She responded positively to the change.

Lucille did lean heavily on the social worker during this period. She used the interviews to discuss her plans for work following her discharge from the hospital and to express her anxiety around having to leave. She gradually recognized that she could express her feelings of resentment against the hospital, her doctors, and the world in general to the social worker without fear of retaliation or criticism. Thus some of the tension and anxiety was reduced. This support, reenforced by a modified handling by her physician, rather quickly brought about a noticeable change in her behavior.

The last major upset occurred about two months after intensive casework service started. Lucille became very anxious when she was moved to the ward from which patients are discharged. She voiced many complaints, stating that she had been moved ahead of other patients that should have gone before her, that there were mice in her room, that the room was so damp she was having arthritis. She finally became ill and took to her bed, she complained of severe pain in her shoulder and lower back. When the social worker saw her she insisted that nothing was being done for her pain, that she was being treated as if she were a mental case. She was refusing to go to meals saying that she was too ill. Later the social worker conferred with her physician who expressed considerable irritation over her demanding attitude, "she feels she is the only patient I have. When I ask her in fairness to consider the welfare of other patients, she becomes abusive." Her background was reviewed with him, her present needs and attitudes were discussed particularly as they related to authority and authoritative father persons. When he saw her the next time he spent some time discussing her work plans following discharge, commenting on the excellent report he had heard about the results of her vocational test and so on. The effects of this interest were spectacular. There were continued upsets but they were of shorter duration and less intense.

In working through plans for work following discharge there was a real opportunity for strengthening Lucille's confidence and building morale inasmuch as she had demonstrated ability to do competent work and had shown responsibility on the job prior to her illness. She had worked steadily after completing business training. The vocational aptitude tests given in the hospital vocational rehabilitation process indicated that her skill was above average in the clerical field. This strength was utilized in her general rehabilitation in the hospital by providing opportunity, through the hospital bulletin, for recognition of her ability. And
later, as her work tolerance advanced, she was given work in the
hospital medical office. About this she commented, “I feel as if
I am among the living again and I can hold my head high.”

As time of her discharge approached she struggled against leaving
by making a strong plea to be retained as an employee. She
hoped to have her living quarters there also. Giving recognition
to her continued dependency need in considering plans for re-
habilitation, arrangements were made for her to live in a local
convalescent home with continued supervision from the hospital
medical and social service. When the transfer was first made she
offered many complaints against the home but there were no
serious upsets. This transfer accomplished a physical separation
but she held tenaciously to the hope of being able to continue
her relationship with the hospital by a work placement there.
When the time arrived that she was ready for full time employ-
ment, there were no suitable openings for work in the hospital.
The social worker informed her of the situation with a great deal
of apprehension since her ability to accept this final and complete
separation would be the acid test of her readiness to function
independently. She did not receive this disappointment without
considerable feeling but she did face it without any serious up-
heaval. Two weeks later she was able to tell her social worker that
it had been hard to take and that she had been depressed, “it
seems like an awful kick in the pants now,” she added, “but I
guess it is about time I stop being a parasite and grow up a little.”

This activity of the social worker in conjunction with the staff
demonstrates the various areas in which the case worker functions,
and also the sensitive handling in the interview situation. This
patient was an extremely disturbed individual whose background
of deprivation helps us to understand the dynamics of her per-
sonality. Her inability to make relationships other than those of
a hostile and dependent nature presented a challenge to the
administration. It was difficult for the staff to cope with the bitter
effrontery of this woman. Knowing that the patient’s personality
was determined by a number of factors in her life situation the
total staff accepted the need for her treatment by the doctors
and by the social worker. The latter by her warmth and sensitivity
to the patient’s feeling was able to establish the kind of warm,
amiable relationship that gradually overcame her bitter suspici-
ousness. We could see progress in her attitudes towards the staff
as the casework unfolded. For one thing, her hostility was greatly
lessened and therefore she had less need to violate hospital regu-
lations and in the process destroy herself. Secondly—she was helped
to accept some plan of rehabilitation. The final outcome was some
modification of her dependency so that she could transfer to the
SUMMARY

1) The medical profession has never been able to completely accept social work. It has been able to see social case work only in the manipulative sense but never in the sphere of therapy.

2) The place of social work in a tuberculosis hospital is carefully detailed beginning with its place in the acceptance of the diagnosis, proceeding to hospital admission, and continuing throughout the hospital stay and through vocational rehabilitation and discharge.

3) The patient presents problems at each stage of his hospital stay, and with each must have the help of an understanding hospital staff and especially the social service department.

4) A case is presented to demonstrate the many problems involved and the functioning of the social case worker in the situations presented.

SUMARIO

1) La profesión médica, no ha aceptado completamente todavía, el trabajo social. Se ha observado el trabajo social solamente en el manejo de los casos, pero no como tratamiento.

2) La importancia del trabajo social en un hospital de tuberculosis, está demostrada con la aceptación del diagnóstico, al ingreso al hospital, durante la estadía en el mismo, durante los cursos de vocación y rehabilitación y cuando es dado de alta.

3) Los enfermos presentan problemas en cada etapa de la estadía en el hospital, y en cada uno de ellos es necesario la ayuda intelectiva del personal del hospital y especialmente del servicio social.

4) Para demostrar los múltiples problemas involucrados y el trabajo del auxiliar social, se ha presentado un caso como ejemplo.

CORRECTION

In the article entitled “Factors Influencing the Outcome of Streptomycin Therapy of Pulmonary Tuberculosis” by Dr. William B. Tucker, Minneapolis, Minnesota, published in the December issue of “Diseases of the Chest,” the legend given for Figure 1 (page 722) was incorrect. The following is the correct legend:

“Fig. 1: (J.V.) Young World War II Filipino veteran, pulmonary tuberculosis and tuberculosis of right anterior 4th rib, healed following excision. Denial over right second anterior interspace is of iodized oil injected into sinus tract.—Fig. 1a: January 16, 1947: progressive pulmonary disease just prior to start of streptomycin therapy, classed as “unmixed” acute (see text).—Fig. 1b: June 10, 1947: marked x-ray improvement at end of SM therapy (2 gms./day for 120 days).—Fig. 1c: August 3, 1948: very marked x-ray improvement, 18 months after start of therapy. Sputum negative by culture for over a year. No relapse since.”