Despite a steadily declining death rate and increasingly greater success in treating the disease, much remains to be done before tuberculosis can be brought under complete control. This disease is still the greatest destroyer of young adult life and its incidence remains sufficiently high as to constitute a burden on the national economy.

Prerequisites to more effective control are (1) betterment of economic and environmental conditions among the underprivileged and (2) more efficient case-finding, with emphasis on early diagnosis.

Studies have revealed that a substantial percentage of the population is at present living under unsatisfactory conditions. It is generally accepted that substandard living conditions contribute greatly to the morbidity and mortality of tuberculosis. Little improvement in the tuberculosis index among these underprivileged can be expected until this situation is materially bettered. This problem is, of course, primarily one for economists and sociologists to ponder on.

The question of more efficient case-finding, however, concerns the medical profession. Surveys show that most patients have advanced disease when first diagnosed. Up to 80 per cent of the yearly admissions to the sanatoria of the country have greater than minimal lesions. Furthermore, in spite of the intensive anti-tuberculosis campaigns of recent decades, the ratio of minimal to advanced cases has not improved appreciably. Undoubtedly, this shortcoming in early diagnosis has been a considerable handicap to more effective control. Not only are chances of dissemination to others improved by delayed diagnosis, but the prognosis, resultant disability and cost of treatment are also influenced by the extent of the disease.

A weakness in our anti-tuberculosis structure has been the failure of general practitioners to take a more prominent role in the fight against the disease. This statement must in no sense be construed as being an indictment, but rather as a plea for greater cooperation. The sincerity and desire of the family doctor to see tuberculosis subdued cannot be questioned. Yet this structural fault exists and must be corrected before the case-finding machinery can function with maximum efficiency. Despite the intense specialization of recent years, the practitioner remains the central figure in the practice of medicine. It is he who is first consulted by the patient and, without his intelligent cooperation, highly specialized agencies for diagnosis and treatment are greatly handicapped.

A specific cure for tuberculosis has yet to be discovered. Nevertheless, there is a feeling shared by many that the weapons are now available with which to completely eliminate the disease or else reduce it to a point of relative unimportance. This aim could be fulfilled if all cases were discovered early and promptly isolated. Because of the diversified nature of tuberculosis the only adequate proposal that could be offered is that of periodic x-ray examination of the general population. Under present conditions it is questionable whether this would be practical. Yet much could be accomplished if efforts were concentrated on those groups that show the highest incidence rates such as family and other intimate contacts of known cases, particularly those between 15 and 28 years of age. It has been shown that the onset of secondary or re-infection tuberculosis is most frequent in this period of life.

Routine examinations of such groups will frequently bring to light previously unsuspected advanced cases as well as many with early disease. These observations must be made without regard to the presence or absence of symptoms. Early tuberculosis is frequently without symptoms and to await their appearance is to invite disaster because of the progressive tendency of the disease if untreated. Often by the time symptoms are manifested the lesion is found to have progressed to an advanced stage. In a survey...
of 51 patients with minimal pulmonary tuberculosis currently in the Rhode Island State Sanatorium, 21 or 42 per cent had either no symptoms or else such slight symptoms as to arouse no anxiety on the part of the patient. Diagnosis in each case was made by means of routine x-ray examination because of previous exposure. Undoubtedly, some of these would have progressed to a more advanced stage had examination been delayed until the appearance of symptoms. Similar figures have been reported from other institutions.

These routine examinations should include a tuberculin test and chest x-ray of all positive reactors. Considered from a practical standpoint, tuberculin testing can well be dispensed with in adult contacts in those areas where there is a high percentage of positive reactors among this group. However, in no case except where the tuberculin test is negative should x-ray examination be omitted. If the test is negative, it is wise to repeat it after an interval of a month or two in order to avoid passing up any recently infected individual in whom tuberculin sensitivity had not yet developed. Those definitely tuberculin negative, indicating freedom from infection, can be eliminated from further observation—providing contact has been broken.

One or two negative x-rays give no assurance of continued later freedom from tuberculosis. For the sake of consistency, x-rays should be taken periodically until the end of the period of greatest danger or until the age of 28. The usual interval between examinations is one year. With unbroken contact, however, it should not be greater than 3 to 6 months. In contacts older than 28, observations need not extend beyond a two-year period after exposure ceases.

Tuberculosis follows no typical or uniform clinical pattern. Because of this its diagnosis in the course of routine medical practice is often difficult. Accordingly, it is frequently misdiagnosed. The best insurance against erroneous diagnosis is a tuberculosis consciousness. The disease recognises no social, economic or racial barriers and hence no one can be considered as being above suspicion.

The family and past personal histories should be painstakingly inquired into. A definite history of familial tuberculosis is significant. A statement that some member of the family succumbed to a supposedly acute respiratory infection should not be accepted at face value. Further questioning often brings out the fact that the terminal illness was of many months' duration, a finding more in keeping with tuberculosis than with an acute infection. Information should also be elicited regarding the presence of suggestive symptoms among living members of the family.

Important facts in the patient's past history are chest pain or pleurisy, particularly pleurisy with effusion, rectal abscess and repeated attacks of chest cold, grippe or pneumonia, especially if these illnesses have been associated with unduly prolonged periods of convalescence. A so-called "cigarette cough" calls for investigation because it is often associated with tuberculosis. The nature of the patient's work should be noted. Certain occupations such as sand-blasting and stone-cutting, which expose the worker to silicosis, bear a definite relationship to the incidence of the disease.

In considering the patient's complaints it is well to bear in mind the variety of ways in which pulmonary tuberculosis may manifest itself. At times the onset is most insidious while, occasionally, it may begin with an abruptness suggestive of acute lobar pneumonia. The course often is intermittent, there being periods during which slight symptoms can be noted alternating with symptomless periods when the patient may feel quite well. Frequently, tuberculosis is ushered in by what may appear to be an ordinary attack of grippe or bronchitis. The symptoms are usually most marked during the first week or two after which some improvement may be noted, but complete recovery does not follow. Occasionally the first warning sign will be a sudden frank hemoptysis. It is well to remember that the size and frequency of hemoptysis is no indication of the extent or character of the underlying pathology. In any event, thorough investigation is indicated because this symptom is usually of serious significance.

Fatigue is the most frequent early symptom of insidious tuberculosis. At first this may be noted by the patient only toward the end of the day's work and may be manifested by a loss of interest in evening social activi-
ties. The patient becomes nervous and irritable and the pulse accelerates more readily. The appetite loses its edge and a slow loss of weight follows. Cough may or may not be present at this stage, but when it first appears is often of a dry and hacking nature. Expectoration is usually a somewhat later symptom. The sputum at first is small in amount and may be present only in the morning. Later, if the disease goes on to cavity formation, both cough and expectoration may increase considerably. Fever, malaise, night-sweats, flushes and noticeable loss of strength are usually late manifestations of active tuberculosis. It should be pointed out that the absence of these late symptoms does not rule out activity. Other common symptoms are hoarseness or even aphonia and chest pain.

Whenever a suspicion of tuberculosis arises, an x-ray examination of the lungs is indicated. Valuable as physical examination is, its limitations in the diagnosis of this disease should be fully realized. Even in the hands of experts the stethoscope will fail to reveal significant findings in many cases of minimal tuberculosis and it is often misleading in more advanced lesions. While the x-ray film does not give absolute proof, it does offer the best available presumptive evidence of tuberculosis. Also, it is the only means we have of accurately estimating the extent and nature of the lesion. In the face of strongly suggestive symptoms an initial negative x-ray should not be considered conclusive. In such a situation it is best to keep the patient under observation and to repeat the x-ray at a later date.

The only absolute proof that a lesion is tuberculous is the finding of tubercle bacilli in the sputum. Yet in spite of the significance of a positive sputum examination, this important detail is often neglected. This is all the more surprising in view of the fact that in practically every community in this country facilities are available for sputum examination at little or no cost. The sputum should be examined if only to supply corroborative evidence. At the same time, it must be borne in mind that a negative sputum does not rule out the disease. This is especially true in early, non-cavernous tuberculosis.

Very occasionally a case may be encountered so unusual as to stump for a time even the best clinical minds. In such instances, a period of observation in a sanatorium is indicated.

The Value of Sanatorium Treatment from the Standpoint of the County Health Department*

R. ALEC BROWN, M.D.*
New Orleans, Louisiana

A DISCUSSION of the value of sanatorium treatment from the standpoint of the county health department should include a consideration of the mutual benefits to be derived from proper co-ordination of the activities of these two agencies. The marked expansion and improvement in county health work made possible by social security funds has intensified all health work, including tuberculosis control measures. Without the assistance and leadership of well conducted sanatoria, however, county health depart-

ments cannot obtain the best results from their tuberculosis efforts. By enumerating the various activities of a well planned county tuberculosis program we may see what influence the sanatorium has or could have on each activity.

The reporting of tuberculosis by physicians is mandatory in most states, but for various reasons we find that such reporting is incomplete. County health departments try in every way to improve reportation of tuberculosis, as well as all other communicable diseases. Offering home nursing service and state x-ray consultation work has induced many physicians to list their cases and contacts with