The symptoms were those of increasing respiratory distress, pyrexia, cough, and cyanotic attacks. Death was due to bronchopneumonia in the first 24 hours, or later to bronchial obstruction caused by casts consisting mainly of fused necrotic epithelial cells. The bronchial changes were due to inhalation of smoke.

Treatment included oxygen, chemotherapy, cortisone, percussion and postural drainage, and aspiration of mucus from the mouth and nasopharynx. Tracheal aspiration and gastric oxygen were used, but the results were disappointing. The question of possible alternative treatment is discussed.

Among the many who helped us during these babies' illness we would like especially to record our thanks to Dr. B. Schlesinger, Dr. D. Foskett, and Mr. E. Hunt Williams. Acknowledgments are due to Dr. J. A. Hardy, the police surgeon in Reading, who on H.M. Coroner's instructions carried out the post-mortem examinations. In later investigations valuable technical advice was received from Mr. L. C. Nickolls, Director of the Metropolitan Police Laboratory. Valuable help was received in the laboratory investigations from Dr. C. de Courcy and Mrs. A. Hopkins. We are also grateful to Dr. M. Bodian for assistance in the preparation of this paper, and to Mr. Derek Martin, of the Department of Medical Illustration, Great Ormond Street, for the photographs.

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THE SOCIAL AND PSYCHOLOGICAL BACKGROUNDS OF TUBERCULOUS CHILDREN

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One of the projects undertaken by a research team investigating the effects on personality development of separation from the mother in early childhood was a follow-up of children who, because they had tuberculosis, had been separated from their mothers, and in a sanatorium, for a period during their first years of life (Bowlby, Ainsworth, Boston, and Rosenbluth, 1955). This required us to investigate the social background of these children, and the present study is a by-product of the main research. It gives some findings relating to the economic and housing conditions, the extent of family illness and disruption, and some of the psychological attitudes found among members of these families during the year 1950. Although we are aware that what is described will not be new to workers in the field of tuberculosis, our impression is that that knowledge exists in rather a fragmentary form.

The gross sample studied was obtained by extracting from the records of a sanatorium the record of every child admitted between birth and 4 years, between January 1, 1940, and November 30, 1948, inclusive. From this sample were eliminated children whose primary tuberculosis was complicated by bone or abdominal infection, those who had left the county of Middle-

sex, who had gone into the care of other institutions, or who had died, and those who were not yet of school age. The resulting sample consisted of 60 children—41 boys and 19 girls. They had all returned to their homes and were attending schools in the county. The present addresses of the children were traced with the help of the chest clinic and education authority records.

The need to make direct systematic inquiry of the families in which we were interested was recognized by the staffs of chest clinics, and in arranging the interviews it was of great help to be able to state that both the sanatorium and the local chest clinics were co-operating in the research. The warm welcome and readiness to talk which the psychiatric social worker met with in most families are believed to be a tribute to the sanatorium, which most families remembered with gratitude. Lack of co-operation was on each occasion related to reluctance to disclose an especially difficult or disturbed family situation.

The total sample of 60 children came from 57 families. Two families, containing three children, refused altogether to co-operate, and one of two siblings was in a residential school. The total number of families remaining is therefore 55, containing 56 children.

The average length of interviewing time was four to five hours, usually spread over two or three visits. The psychiatric social worker spent a little time at the beginning of the first interview explaining the purpose of the research. Once the family had agreed to co-operate she attempted to guide the interview so as to cover the main points on which information was sought. Where there was reluctance to give information this was not pressed for. On the other hand, the parents often talked at length about their problems, and in many cases revealed their attitudes to tuberculosis and to the tuberculosis service. It was thus, incidentally and unasked for, that much of our material was obtained.

Economic and Housing Conditions

The families were rated for economic and for housing conditions, each on a four-point scale. The rating "A" for economic conditions implies an income on which the family could manage fairly well and afford an annual holiday. The rating "B" implies an economic situation that is fairly adequate. The rating "C" implies a rather poor income, usually only one parent being at work, in an unskilled occupation, and the family finding it difficult to make ends meet; a summer holiday was out of the question, or possible only once in a while and at great sacrifice. The rating "D" implies that the families suffered real economic hardship. These were the families the mothers of which were widows and had to live on widows' pensions supplemented by a little earning of their own or by the National Assistance Board. The distribution of ratings is shown in Table I.

TABLE I.—*Economic Circumstances of 55 Families*

Rating	No. of Families
A: Comfortable	6
B: Fairly adequate	20
C: Poor	16
D: Economic hardship	13

Not infrequently the psychiatric social worker heard accounts of severe economic hardship in the parent's own childhood, and also during the pre-war or early war years, when the sample child was an infant. But with the great majority of the families the economic situation had taken a marked turn for the better in the post-war years. At the time of the inquiry the black spot was the 13 families rated "D"

which constitute one-quarter of the families concerned, and which were living on a bare subsistence level. Twelve of these families were existing on widows' pensions, and in the other the father had been ill for the past two years and the family lived on National Assistance money. It seemed that they could not afford all the food they should have, and the psychiatric social worker heard stories of children having to stay away from school on rainy days because they did not possess adequate clothing.

Most of the families lived in good, usually small, semi-detached suburban houses, often on council estates. The rating "A" for housing conditions indicates that the house was very good and there were sufficient rooms for the children to have their own bedrooms; rating "B" also implies good housing, but with the need for some sharing of bedrooms; rating "C" was given either where the house was in a poor condition or where, although the house was a reasonably good one, it was not large enough for the family; rating "D" implied that the house was in a poor condition and there was inadequate space. The distribution of ratings is shown in Table II.

TABLE II.—*Ratings of Housing Committee*

Rating	No. of Families
A: Very good	10
B: Good	24
C: Poor	15
D: Inadequate	6
	55

Of the six families living in inadequate housing conditions, one lived in a condemned house, three had only part of a house each with quite insufficient room for the family, and the two others lived in old-fashioned small houses where there was gross overcrowding.

Family Illness and Disruption

The extent to which there had been illness in the family with consequent disruption was very great. In the 55 families, only the children of 29 were living with both their parents in an intact family. The remaining 26 families (containing 27 children) were all disrupted, either through the death of one or other of the parents (in 22 families) or because the parents were separated (in 4 families).

In the great majority of cases this disruption was due to tuberculosis, either in the past or in the present. Nineteen parents and 8 siblings had died from the disease. Altogether infection or death from the illness had occurred in a parent or sibling in 33 of the families, leaving only 22 families in which the child studied was the only case. Table III presents the incidence of cases of tuberculosis in the families

TABLE III.—*Extent of Tuberculous Illness in the 55 Families*

	Both Parents	Father Only	Mother Only	One Sibling	More than one Sibling
Past tuberculosis ..	1	16	11	11	5
Death from tuberculosis ..	1	16	1	6	1
Present tuberculosis ..	—	—	9	2	—

other than the sample child. In addition to the deaths shown in this table, two fathers and three mothers had died of other causes.

Table IV shows the presumed source of the child's infection. It will be seen that about half the children were believed to have been infected by one of their parents.

TABLE IV.—*Contact Through Whom Child was Thought to Have Been Infected*

Contact	No. of Children
Father	18
Mother	11
Grandparents, uncle, or aunt ..	10
Neighbour	4
Contact unknown	13
	56

In addition to the 22 families which had been disrupted by death, four were not intact for reasons of illegitimacy (1), divorce (2), and separation (1).

Even among the 29 children who were living with both parents family life was not always normal. In two cases the parents had, since the child's birth, separated for a while, but had later decided to live together again. In one of these the ostensible cause for the separation had been father's dread of mother's tuberculous illness. There were four families in which the mother was ill with tuberculosis at the time of inquiry, and in several other cases the mothers were very preoccupied with their own health and worried in case they had tuberculosis. In two more families the fathers were ill, but the nature of the illness was not known to the psychiatric social worker. In a further eight families father, mother, or a sibling had had tuberculosis at one time or another, and family life had therefore been upset owing to the absence of a member in a sanatorium, with consequent anxiety about the health of other members of the family. This leaves a balance of only 13 families whose family life had been relatively undisturbed.

Attitudes and Feelings

In the course of the inquiry it became apparent what far-reaching and complex psychological repercussions were aroused by the existence of a tuberculous illness in a member of a family. Many parents spent a considerable time in discussing with us their fears for their own or their children's future health, or whether or not to tell the child about his having had tuberculosis in early childhood. As a result, much incidental light was thrown on the attitudes to the illness and on the ways these had influenced their relationship to their children and their neighbours. As these attitudes to tuberculosis were not the focus of interest, they were not systematically investigated and therefore there are gaps in our information. In the description which follows it is thus not possible to give accurate figures of the numbers of families concerned.

Fear of Tuberculosis

As was only to be expected in view of the extent of the illness and the number of deaths among these families, a conscious fear of it and its implications was very widespread. In a surprising number of cases (about one-fifth), however, the parents dealt with these anxieties by attempting to deny that there had been any tuberculous illness at all. The most striking was where a father, whose wife and son had both been in the sanatorium for considerable lengths of time, attempted to convince the psychiatric social worker that he had x-ray plates to prove that neither of them had had tuberculosis at all. He felt that there had been some plot to take his family away from him. (His wife had been infected by her mother, whom she had nursed until the mother had died of tuberculosis.) This man does not approve of his son going to the chest clinic now. He was clearly very paranoid, extremely suspicious, and willing to co-operate in the research only after the psychiatric social worker had explained that we were not really concerned with the reasons for the child's having had to go to hospital but only with his subsequent development.

Although this man's reactions were exceptional, similar attitudes in lesser degrees were present in quite a number of parents. There were cases where a mother or father had in the past refused to go to a doctor or into a sanatorium after the diagnosis had been made, staunchly denying that there was anything wrong with them. Some of them had died at home, and before doing so had infected their young child. One woman told the psychiatric social worker that it was almost a relief to her when her husband died, as she felt that that had saved the child's life, because he had refused to let the child be seen by a doctor. The father of one family and the mother in another were ill at home at the time of the investigation, afraid that they might

have tuberculosis, but protesting that there was nothing really wrong and that they did not think it was necessary to consult a doctor.

Several parents maintained that they did not know why their children had had to go to the sanatorium. Even where the hospital stay had been a very long one they insisted that it had probably been only for observation, not because the child had really been ill. This attempt to deny the illness was clearly bound up with a tremendous fear of it; in some cases both attitudes existed quite consciously side by side. One mother, who had herself on two occasions been in a sanatorium, and whose child had had tuberculosis too, was in a continuing and constant panic about this illness. She remarked several times during the interview, however, that she did not think that either she or her child had really been ill, and clung to the belief that no doctor had ever told her in so many words that either of them had actually had tuberculosis. At another time she said, however, that she did not suppose they would have been kept in hospital so long if they had not been ill.

The attempt to deny the illness because of so overwhelming a fear of it thus led, in a number of families, to a failure to take proper measures for prevention and treatment. These findings are consistent with those of Gore and Hartston (1953), who, reporting on the results of questioning more than a thousand mothers of young children, found that 69% of them thought that there are many people who are afraid to be examined in case they have tuberculosis.

In a number of families (again about one-fifth) the reaction was the opposite to denial, and took the form of constant hypochondriacal fears for the families' health even in the face of frequent reassurance by their doctors that there was now nothing wrong; their lives appeared to be permanently overshadowed by fears for the children's health. Some mothers were so worried about their own health that it was difficult to get them to talk about anything else. One woman in particular described in detail all the symptoms from which she was suffering, which were identical to the symptoms which her own mother had had just before she had died of tuberculosis. Her doctor had assured her that there was in fact nothing wrong with her, but she was still very afraid that she was ill, and was also constantly watching her children's health for the slightest signs of indisposition. She said that she would be reassured only if she had an x-ray examination, but that her doctor would not give her a letter for an examination at the chest clinic, and without it the chest clinic would not see her.

In some cases the children had caught their parents' fears. One 13-year-old girl was said to be constantly preoccupied with her health and was always weighing herself. This girl was afraid to go to bed at night and always found one excuse after another to put it off for as long as she could. Frequently, when her mother finally said she must be tired now, she would reply, "Who wants to go to bed? People die in bed." She was said to grind her teeth, to sleep-walk, and often to talk and shout out in her sleep. Another young girl was described as a "proper old woman" by her mother, always fussing about her health and demanding aspirins.

Parents' Feeling of Guilt

Even where there were no great fears for their own or their children's health a certain pampering and over-protectiveness towards the child who had been ill was fairly general. Although this attitude is a very natural and understandable one after the child's return from the sanatorium, it frequently continued and was still very pronounced at the time of the investigation, years after the child's complete restoration to health. In these cases it seemed connected with the mother's feeling of guilt and assumption of personal responsibility that the child should have been ill at all. In some few cases there might have been legitimate grounds for the mother's feelings that had she taken greater precautions the child might not have been

infected. One woman, for instance, said that she was entirely to blame for the child's illness because, when he was a toddler and his father was ill at home, she was on one occasion not quick enough in removing the father's eating utensils and found the child with the father's spoon in his mouth.

Even where there was no reason whatsoever to think that the parents were in fact responsible for the child's illness through any lack of precaution—for instance, where the contact through whom the child was infected was unknown—some mothers said that they somehow felt guilty that their child should have been ill. In other cases it appeared to the psychiatric social worker that the parents protested too much that the blame for the illness lay elsewhere (with the grandparents, neighbours, etc.), and it seemed that unconsciously they also felt it was their own fault.

This widespread feeling of guilt no doubt played its part in leading a majority of the mothers to an initial over-anxiety and overprotection of the child. However, such attitudes are almost inevitable in a mother after her child has been away from her for a long time and especially if he shows some of the emotional disturbances which commonly follow such separations. In consequence, in considering the subsequent relations of mother and child, it is not easy to determine how much is due to the mother's sense of guilt and how much to the child's disturbance following separation and to the mother's attempts to meet the disturbance.

Attitude of Overprotection

It seemed that some of the mothers soon realized that it was important that their child should be treated the same as his siblings and so should not feel that he was a special case. Other mothers said that only after a while did they realize, through bitter experience, that the child was harmed by this attitude of overprotection, of constant watchfulness and anxiety about his health. In these cases the children had reacted by considering themselves special cases, or else had rebelled and become difficult to manage. Some of these mothers were able gradually to relax and allow their children more independence, but in some cases difficulties persisted; the children continued to insist that they must have special treatment because they had been ill. Other parents were quite unable to overcome their constant over-anxiety, and seemed to be unaware that they might be harming the child by it.

Although the knowledge that tuberculosis is an infectious illness was general among the 55 families, there quite often persisted side by side with it the belief that it is a hereditary disease. In several families there was some discussion and a wish for reassurance that the children, who are at present all well and not in contact with any tuberculous person, would grow up healthy; in particular, anxiety was expressed that, because there had been tuberculosis in the father or mother's family, the children were likely later to fall ill too. No doubt because of the great frequency of cross-infection in families the belief that tuberculosis is hereditary dies hard. Gore and Hartston (1953) found it expressed by 43% of the mothers questioned.

Should Parents Tell ?

At the same time, much more surprisingly, it seemed to be taken almost for granted among many families that psychological factors influence both the incidence and the course of the illness. In those cases where the parents raised the problem whether or not to tell their children that they had been ill in early childhood, one of the main arguments against it was that the child might later worry and thus again develop tuberculosis. One woman said of her husband that when he fell ill she felt that he did not stand much chance of recovery as he was such a worrier. Another family agreed to co-operate in the research only when they were reassured that the child would not, through the psychiatric worker, get to know that he had ever been

in a sanatorium; they were determined never to tell him, as if he were to know about it he would worry and therefore fall ill again. Another woman said that her sister had announced that, should she ever have tuberculosis, she would not be ill long; when subsequently she did fall ill she died within a few months. This same woman was also determined never to tell her daughter that she had been ill, again for fear that the girl might worry and thus inevitably fall ill again. Many similar remarks showed that there was a very general belief that there is a close interaction between psychological attitudes and the course of the illness.

These attempts to keep the illness a secret from the child were perhaps also another indication of the mother's unconscious feeling of guilt that the child should have been ill at all and of the fear that he would blame her for it. Another important factor, however, was that it was felt that having had tuberculosis was equivalent to "being branded for life," a phrase the psychiatric social worker heard several times. It was felt to imply both a social and a vocational stigma. There were fears whether the child later might have difficulties in finding employment if he knew, and therefore would have to tell, that he had once had tuberculosis. An adoptive mother of one of the children said that she had not disclosed the fact that the child had ever had tuberculosis even to a new general practitioner: "Why should I tell him—let him find out for himself."

Ostracism

In some families the attempt to keep the illness a secret from the neighbourhood had been the response to most painful experiences of ostracism and of consequent loneliness and isolation. The popular feeling that tuberculosis is a result of neglect, poverty, uncleanness, and therefore a very shameful disease, as well as the tremendous fear of infection, resulted in cases of what seem to have been really cruel behaviour. One boy, who was 6 years old on his return from the sanatorium and did not go to school until 18 months later when he was perfectly well, had found that at school no other child would play with him. He was shunned equally by the children in his street. He was told by the mother of a little girl in his school that he must not breathe in her face, and several children, at their parents' request, were not allowed to sit next to him. He also started at a Sunday school at about the same time, but two children told him that if he continued to go to Sunday school they would have to have the windows open all the time. The parents did not send him there after that. On his eighteenth birthday his mother invited some children to tea, but none came. They have not attempted to give parties for him since.

Stories of ostracism of this kind in cases where there was no longer the slightest risk of infection were not infrequent. Whether true or exaggerated, the result had been that some families felt themselves to be outcasts and became determined to keep their past illness a guilty secret. Having themselves experienced such ostracism, too, families often found that they had not the heart to take necessary precautions against the very real risks of infection by a member of their own family. For instance, one woman said that she used to take her small child to see her own ill sister as the latter adored the baby and "it would have been too cruel to keep the baby away from her."

It is perhaps of interest that many of the attitudes and feelings that struck the psychiatric social worker when visiting these families are noted also as the characteristics of children between 6 and 13 years suffering from tuberculosis and in hospital (Dubo, 1950). Dubo noted, among other findings, their intense anxiety and preoccupation with thoughts of death, their attempts at denial, the feeling of being different from other people and stigmatized, and their tendency to take personal responsibility for the illness. She concludes that there is a need for psychotherapy as part of the treatment programme.

Conclusion

Although a tremendous amount has already been achieved in combating it, tuberculosis remains the most important infectious disease at the present time. The close interrelation between adverse socio-economic conditions and incidence and course of the illness has long been recognized, and much has been done in the last decades to improve economic conditions for the tuberculous patient. That a great deal more remains to be done is testified by the enormous case load each welfare officer in a chest clinic still has to carry, these cases being primarily those of families where there is still an urgent need to ameliorate material and economic hardships.

From a psychiatric point of view a number of studies have been made relating tuberculosis to temperament or personality type, either from the point of view of the effects of suffering from tuberculosis on the patient's personality, or of the effects of the patient's personality on the incidence and course of the illness—for example, Wittkower (1949). There appears to be a paucity of studies, however, on the effects of the illness on the patient's social relationships, whether within the family or with the community outside. What struck us so forcibly in this inquiry were the extent of the social and emotional problems resulting from a tuberculous illness in a family, the complexity of the feelings and attitudes aroused, and in particular the tremendous need found in so many of these families to talk about their anxieties. It seemed almost as if this had been their first opportunity for a long time to do so to someone who was prepared to listen at length.

In view of the pressing needs for more preventive work, medical care, sanatorium beds, better housing, and more financial assistance, it may seem premature to ask that help be given to tuberculous families for their emotional and social problems. Yet we believe that these needs will have to be met in future, both for the sake of the families themselves and for that of the community. Not only is there much unhappiness which could be alleviated, but, because of the seriousness of the disease, very strong feelings are aroused which in many cases, instead of leading to wise action, lead the sufferer to behaviour which makes matters worse for himself and others. The more aware health workers of all professions are of such feelings and the greater their skill in handling them, the more effective their work is likely to be as regards both health education and case work with individual families.

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