

## **The Treatment of Pulmonary Tuberculosis Amongst Africans in Bulawayo**

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### PART III

#### CRITERIA OF SELECTION FOR OUT-PATIENT STATUS

The usual procedure was to keep a list of potential out-patients, and as the beds were needed for new cases admitted, the potential out-patient was discharged.

To qualify for addition to this potential out-patient list a patient had to be sputum negative—that is, negative for three consecutive months on three stained Ziehl-Neelsen smears each month. This was the normal requirement. At the other end of the scale the requirement was that the patient should be quiescent—that is, radiologically improved to a stationary phase in addition to a negative sputum. At first only quiescent patients were discharged to out-patient treatment, but as confidence grew it was realised that sputum negativity only was the essential guide. By the time that a patient had achieved sputum conversion he was inevitably well in himself and physically fit to attend daily for treatment. Automatically it meant that radiologically he was responding to treatment and, drug resistance apart, he would continue to improve to a quiescent stage and ultimately to the arrested stage in just the same way as he would if he had remained an in-patient throughout.

The whole system was of necessity very elastic, however. At times, when the pressure on beds was great and all the three-month sputum negative patients had been discharged, then patients with two months negative and then one month negative would be discharged to out-patient treatment. Luckily we were never compelled to discharge sputum positive cases to out-patient treatment.

#### INSTITUTIONS INVOLVED IN THE OUT-PATIENT SYSTEM

At first only the Mpilo chest hospital acted as an out-patient treatment centre. In 1958 farming out of out-patients was developed. The municipality opened a number of new clinics in the different Bulawayo locations, and the T.B. out-patients living near these clinics were instructed to attend there for treatment. By a similar arrangement with the Rhodesia Railways and with R.A.P.T., eventually most of the African residential area of Bulawayo was covered by a chain of these distribution centres.

The patient remained under the medical care of the parent unit at Mpilo and continued to attend there monthly for medical and laboratory examinations, but attended daily to receive his treatment at the nearest centre. By a system of certification and notification between centres an accurate check was kept on each patient to ensure that he did, in fact, attend daily for treatment.

In addition to these medical institutions concerned in distributing tuberculosis drugs to patients on a daily basis, a further system gradually evolved of issuing weekly supplies of drugs to employers, who in turn issued the drugs daily to their employees. The main demand here was at first by employers of domestic labour who lived on the employer's premises and not in the locations. The employer was "vetted" and thoroughly instructed as to dosage and so on, and invariably carried out his self-imposed task most conscientiously. Later on factories were brought into the scheme, usually at their own request, and weekly supplies would be issued to some person in authority in the factory. This, together with the fact that out-patient treatment by arrangement could be received at any hour of the day or night at Mpilo and at most of the clinics, ensured that there was a minimum of inconvenience to employers of out-patients under treatment.

#### OUT-PATIENTS AND WORK

Gradually, as confidence grew in the effectiveness of out-patient treatment, more and more

out-patients were allowed to resume work whilst remaining under treatment. At first only those patients with a quiescent lesion were judged as fit to work. Later, fitness for work became synonymous with fitness to receive treatment as an out-patient as defined above on sputum negativity, except that a gap of one month between discharge from hospital and resumption of work would be retained.

This gap was looked upon as a training period to cover the change from hospital to full ambulation. Against this was the fact that it meant another month without earnings. One tended to cancel out the other, and during 1959 the tendency was to discharge the patient direct to work from hospital, a policy justified by results.

#### DURATION OF TREATMENT OF OUT-PATIENTS

An analysis of one out-patient register which was opened in May, 1958, and closed in February, 1959, revealed that there were 213 out-patients in this particular book. These patients had, on the average, spent 5.3 months each receiving treatment as an in-patient, followed by 12 months each as an out-patient, totalling 17.3 months each.

This figure of 17.3 months' total treatment is a little less than the average treatment of all patients because it is weighted by many asymptomatic non-infectious minimal lesions picked up on routine X-ray which required much less treatment than the more advanced case presenting for treatment.

From these 213 out-patients nine cases relapsed whilst under treatment and were readmitted to hospital. "Relapse" in this case included any retrogression on X-ray, and some turned out to be non-tubercular episodes of superadded secondary infections. Others were admitted merely because of warning signs, such as a sustained loss in weight or raised B.S.R. Two of these nine cases (0.9 per cent.) progressed to a clinically drug-resistant state.

Defaulters from out-patient treatment amongst these 213 patients were 19 at one time and another. The majority of them were eventually traced, mainly by the City Health Department, and resumed treatment after a variable period of absence ranging from two weeks to two months. As action was taken after one week of non-attendance, most defaulters resumed treatment in about the third week.

A further study of the out-patient registers covering the period January, 1959, to October, 1959, revealed that out of an average monthly

number of 300 out-patients on daily treatment, 11 cases relapsed, giving a relapse rate of 3.7 per cent. over nine months. "Relapse" again meant re-admission to hospital for any medical reason. Corrected for 12 months, this gives 15 cases admitted out of 300, or a relapse rate of 5 per cent.

#### CONCLUSION

The predominant lesson learned from the above experience is that tuberculosis in the African is basically a disease with a good prognosis. It is essentially a pneumonia which, given adequate treatment, will resolve.

In some cases a degree of structural damage might remain, but with continuous drug treatment in adequate doses over a sufficiently long period, the residual damaged lung tissue will be sterilised and relapse will not occur.<sup>6</sup>

The treatment of tuberculosis of the lung thus becomes mainly an administrative problem of how to ensure that patients are not only issued with medicines, but that they actually swallow them. Interruptions to the continuity of treatment must be resisted, and patients who abscond should be traced and returned.

Failure to enforce the simple rules of drug treatment in turn produces treatment failures—that is, cases of drug resistance. A good prognosis is turned into an almost hopeless one. It seems that in the treatment of tuberculosis you are given one good chance, but lose that chance and you are rarely given a second one.

However, tremendous faith has been acquired in the effectiveness of these primary drugs (streptomycin, P.A.S., I.N.H.) when used properly. So often one sees patients respond and return to their previous normal self, yet while so doing they are living as out-patients at very low economic levels. Obviously the anti-tuberculous action of these drugs far outweighs the pro-tuberculous effect of the adverse social conditions.

The predominantly medical approach to control of the disease amongst the African population would thus appear to be the right one initially. Intensive case-finding followed by adequate treatment of all cases found, supported by a B.C.G. programme aimed at the vaccination of all susceptibles from birth upwards, will probably achieve control within the next decade.

Then, as the social approach with its emphasis on improved living standards gains momentum and leads to a higher level of resistance to the disease amongst the population, so may eventual elimination of the disease be contemplated.

#### SUMMARY

Since 1954 the treatment of African cases of tuberculosis centred on Bulawayo was in one integrated curative service consisting of the Government Mpilo hospitals (190 T.B. beds), the municipality infectious diseases hospital (82 T.B. beds) and the R.A.P.T. centre (108 T.B. beds) and 12 out-patient clinics.

An analysis in early 1956 of the patients' personal particulars revealed, amongst other things, that the married patients had on the average 4.5 dependants each.

An analysis of the extent of the lung lesion on admission in these patients in 1956 revealed that the disease was extensive, occupying the equivalent of one whole lung in each case.

Antituberculous drug treatment consisted at first of continuous treatment with two of the three primary drugs (I.N.H., P.A.S., streptomycin) rotated three-monthly, but over the years there was a shift to continuous treatment with I.N.H. and P.A.S. following initial treatment with all three drugs. Duration of treatment grew from approximately three months in 1954 to 18 months each in 1958.

Bed rest was strictly enforced in 1954, but relaxed later, and similarly pneumoperitoneum and a phrenic crush, which was almost a routine on all patients in 1954, was abandoned later except in drug-resistant cases and in the control of persistent haemoptysis. With the advent of surgery in 1956 the indications for an artificial pneumothorax also fell away. Surgery was not acceptable to the patient in general. These changes in treatment were due to the demonstration of the therapeutic efficiency of the primary drugs. Given sensitivity to the drugs, then other forms of treatment, including surgical, appeared to be superfluous in most cases.

Urban cases can be treated as out-patients as soon as their sputum converts to negativity, or from the beginning if their sputum is negative on initial diagnosis. The total re-admission rate of out-patients from all causes, including true relapse, was 5 per cent. Out of 306 patients on daily treatment in August, 1959, 117 were men, of whom 74 were in full-time work.

The end result of adequate drug treatment is thus very satisfactory, but only if drugs are given continuously in adequate amounts over a sufficiently long period of time.

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