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Leprosy Control in South Africa*

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INTRODUCTION

When leprosy was found to be increasing in South Africa in the latter part of the 19th and early half of the present century, measures were introduced to isolate patients in institutions. Today, patients who are bacteriologically positive and with active disease are still treated in institutions. The annual numbers of new cases and of patients in the institutions have both declined steadily. In 1968 the number of new cases was 2.0 per 100,000 and the estimated number of active cases in the country 14.5 per 100,000.

HISTORY

Leprosy is thought to have spread to the southernmost parts of Africa from the north before the Cape was colonized by Europeans in the latter half of the 17th century. The Hottentont tribes were particularly affected and the Bantu to a lesser extent. The number of cases was subsequently augmented by trade with the West and East Indies (Impey, 1895). Leprosy was first mentioned in the Cape archives in 1756, when 2 white farmers were found to be suffering from the disease; they and their families were isolated in their homes. By 1817 the number of cases had increased to such an extent that a proclamation was issued directing all "lepers" to be removed to a settlement in the Caledon district, where detention, however, was voluntary. In 1845 the patients were removed to Robben Island. Only patients who were unable to care for themselves were accommodated and they could leave when they wished (Impey, 1895). In 1883 a Leprosy Commission concluded that the disease was spreading steadily among both the white and coloured races and that segregation was necessary to stamp out the disease. A Leprosy Repression Act was passed in 1884 but was not promulgated until 1892, after a Select Committee appointed by Parliament had reported a further increase in the disease which necessitated the provision of additional accommodation at Robben Island. In the meantime leprosy had been found to be increasing in Natal, the Orange Free State, and the Transvaal. Measures were gradually introduced to control further spread. Coloured patients from the Orange Free State were sent to Robben Island and Whites were segregated within the territory. In the Transvaal, Westfort Institution was completed by 1898. In 1903 a segregation camp was set up in Natal on the Zululand coast. Subsequently additional leprosy institutions were established in Pondoland and in Tembuland in the Transkei and also in the Northern Transvaal.

Legislation for the control of leprosy was first promulgated in Natal in 1901, in the Transvaal in 1904, and in the Orange Free State in 1909. After Union of the 4 provinces in 1910, leprosy control was administered by the Department of the Interior. In the Public Health Act of 1919 leprosy was declared a notifiable disease for which compulsory institutional treatment could be enforced. Before 1923, patients who were committed to leprosy institutions were confined there for the rest of their lives. In that year leprosy was taken over

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by the Department of Health and large numbers of patients in whom the disease was arrested were discharged from the institutions. In 1932 all patients from Robben Island were transferred to the institutions on the mainland. Up to 1944 the numbers of patients admitted to the institutions increased. Thereafter there was a sustained decrease in the number of admissions and in 1952 the total number of patients had decreased to such an extent that it was found possible to utilize half of the available accommodation in 3 of the leprosy institutions for patients with tuberculosis and later to close the institution in the Northern Transvaal. In 1968 the cost to the Government of maintaining the 4 institutions (including accommodation for 340 tuberculosis patients) was R258,000.

PRESENT POLICY

Since leprosy is a notifiable communicable disease in the Republic of South Africa, persons found to be suffering from it must be admitted to one of the 4 existing institutions for treatment until the disease has become "arrested" and the patient considered non-infectious. Patients who are bacteriologically positive are kept in the institutions until smears have been negative for 12 consecutive months, while those already bacteriologically negative are kept in the institutions until clinical activity has ceased. Discharged patients are required to return to the institution for follow-up examinations at 2 years and 6 years respectively after their discharge. Formerly these examinations were undertaken by the district surgeons (Government medical officers) of the magisterial district in which the patient resided. Patients are notified by the institutions when they are due for re-examination and are provided with free transport to the institutions. It has been found that about 60% of discharged patients return for the first follow-up examination, but only 20% for the second. All patients, particularly those with lepromatous leprosy, are advised to continue taking dapsone, which is supplied by the institution, for the rest of their lives. The average duration of stay in Westfort Institution of patients discharged in 1968 was 4 years 8 months for lepromatous cases, $2\frac{1}{2}$ years for borderline cases, $10\frac{1}{2}$ months for tuberculoid cases, and $8\frac{1}{2}$ months for indeterminate cases.

The Government assumes all financial responsibility for leprosy. Paid employment is available for all patients who are able and wish to work, while those unable to work are given an allowance. If a patient is a breadwinner his dependants receive a maintenance grant. Relatives of patients are provided with free transport, food and accommodation while visiting the institutions. Children born to lepromatous mothers are cared for in a crèche until suitable arrangements can be made for them to be looked after by relatives or foster parents.

All contacts of patients are statutorily required to be examined by a district surgeon or other Government medical officer. After the initial examination they are required to be re-examined 2 and 5 years later. Registers of contacts previously maintained by the magistrates of each district are now kept by the leprosy institutions. At present the Regional Directors of the State Health Services in the 6 health regions into which the Republic is divided, assist the district surgeons in their tracing of contacts by providing the services of technical field-workers. These field-workers attend courses in leprosy in order to be able to recognize suspected cases. This arrangement has been operating since May 1967, is working successfully in the Southern Transvaal, and is being extended to all the other regions. Since May, 1967, 7% of contacts of patients admitted to Westfort since that time have been found to be infected.

Increasing use is being made of BCG vaccination for tuberculosis control. It is hoped that this will prove to be a value in leprosy control as well. All child contacts of leprosy patients are given BCG vaccination.

At the largest institution—Westfort—lectures and demonstrations are given for undergraduate and postgraduate medical students, mission doctors, district surgeons and nurses.

PREVALENCE OF LEPROSY IN SOUTH AFRICA

Between the years 1845 and 1891, a total number of 1059 patients were admitted to Robben Island, the highest annual number being 52. In the following 2 years the total number of admissions exceeded 700 (Impey, 1895, 1896). In 1897 Impey reported at the First International Leprosy Congress, held in Berlin, that the total number of patients in the territories now comprising the Republic of South Africa was 1917 (Jeanselme, 1934). Thereafter the number of known patients rose steadily, and in 1908 the total number of patients in the country was estimated to be 2790 (Mackay, 1908). After formation of the Union in 910 the number of cases in the institutions totalled 1805 (Rogers and Muir, 1940). The annual number of new cases admitted and total number of patients in the institutions at 4-yearly intervals from 1912 to 1968 are shown in Table 1. Up to 1957 the figures available for the total number of admissions to the institutions included a small proportion of patients with inactive disease and even some non-leprosy patients. From 1957 onwards the figures are in respect of new active cases only. In the decade 1959 to 1968 the average number of active cases admitted annually was 478. In the same period the total number of patients in the institutions declined from 1551 to 1115. It is evident that in spite of an increase in the population of South Africa, the total number of active cases and of patients under treatment in the institutions declined.

TABLE 1

New cases and total number of leprosy patients in institutions in South Africa

Year	*No. of population*	*No. of new cases*	*Total no. in institutions*
1912	6103	528	2226
1916	6547	478	2286
1920	6838	389	2250
1924	7489	448	2141
1928	8190	537	2405
1932	8898	590	2208
1936	9618	704	2218
1940	10,353	695	2347
1944	11,081	680	2398
1948	11,957	574	2114
1952	13,058	632	1994
1956	14,421	617	1715
1960	15,925	538	1412
1964	17,457	509	1330
1968	19,167	383	1115

Figure 1 shows the number of new cases per 100,000 of the population from 1928 to 1968. It will be seen that the number of new cases declined from 6.6 per 100,000 in 1928 to 2.0 per 100,000 in 1968. In estimating the number of cases of active leprosy in the Republic we have multiplied the number of patients in the institutions by 150%, on the assumption that the results of our case finding programmes are "fair" (Bechelli and Martinez Dominguez, 1966). The total number of patients in the institutions does not reflect the true number of active cases under treatment as it includes burnt-out cases kept in the institutions on humanitarian grounds and also patients admitted for treatment of ulcers, etc. It will be seen in Fig. 1 that the estimated number of patients with active leprosy per 100,000 of the total popluation declined from 73.4 in 1928 to 14.5 in 1968. For each population group the figures in 1968 were 20.5, 3 9, 1.7 and 0.8 for the Bantu, Coloured, Asiatics and Whites respectively.

TIME BETWEEN ONSET AND DETECTION OF LEPROSY

The Annual Report of the Department of Health for 1924 stated that in the previous 15 years the average period of time elapsing between onset of leprosy and the patients' isolation had been about $6\frac{1}{2}$ years. For patients admitted to Westfort Institution the average duration between onset and diagnosis was $4\frac{3}{4}$ years in 1938, 2 years in 1948 and 1958, and $1\frac{1}{2}$ years in 1968.

DISCUSSION

If the early reports can be believed, leprosy spread quite rapidly in Cape Colony before isolation measures were introduced. This apparent spread may have been due to improved case finding and increased public awareness of the disease. In the early days institutional

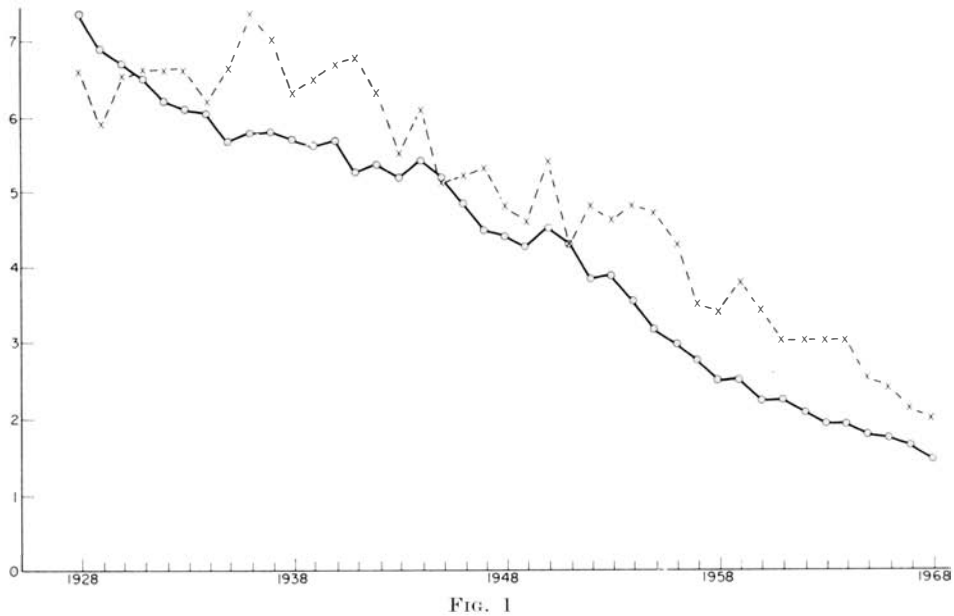

FIG. 1

Incidence and prevalence of leprosy in South Africa, 1928-68. o—o—o, Estimated no. of cases of active leprosy per 1,000,000 population; x—x—x, no. of new cases per 1,000,000 population.

accommodation was inadequate, and isolation of patients was strictly applied only from 1923 onwards. Following a visit to South Africa in 1939, Muir (1940) said that it could be stated with some degree of certainty that the numbers of patients with leprosy outside the institutions had decreased considerably during the period 1918 to 1938. He stated: "There seems little doubt that if the present system is persisted with it will succeed in the end."

In spite of the fact that all patients with active and bacillary-positive leprosy are institutionalized, it is found that a large number of sufferers present themselves voluntarily for treatment. In fact, it is not uncommon for ex-patients to bring relatives and friends suffering from the disease for admission because they realize that leprosy is curable today.

The steady decrease in the time between onset of the disease and admission is attributable to improved case-finding procedures. In spite of increased case-finding measures, since May, 1967, the incidence of new cases has continued to decline.

Although we consider our case finding is fairly good and the treatment of patients in institutions is good, the follow-up of patients and contacts could be greatly improved. This could best be done by employing mobile teams to visit discharged patients and contacts in their homes at regular intervals. The acute shortage of doctors in South Africa is likely to continue for at least another 10 years or more, until such time as the proposed new medical faculties have been established. Until an adequate service whereby patients can be visited in their homes is available, it would be inadvisable to shorten the stay of the patients in the institutions, as most of them cannot be relied upon to continue treatment at home.

In view of the declining prevalence of the disease even before the introduction of sulphones, one may conclude that the isolation of patients as practised in South Africa has played an important part in controlling the disease, although improvements in standards of living must also play a role. In South Africa it has been possible, because of favourable economic circumstances and the small number of cases, to carry out a humane policy of compulsory

isolation. The institutionalization of all patients with active leprosy, apart from controlling the spread of the disease, also insures that patients receive adequate treatment.

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