

# A TRANSKEI MISSION HOSPITAL PRACTICE : INCIDENCE OF DISEASE WITH SPECIAL REFERENCE TO TUBERCULOSIS

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When first envisaged, this paper was intended to be a guide to the incidence of disease in the Transkei, but once figures began to be collected, it became obvious that a far more important problem needed emphasizing, viz. that of tuberculosis.

The article represents a statistical evaluation of the incidence of disease in a Transkei mission hospital in a 6-month period from 22 July 1957 to 21 January 1958. The figures given below are taken from the out-patient and in-patient records of the hospital. As the details are taken during 6 months beginning in midwinter and ending in midsummer, it is felt that this will give a reasonably true reflection of the incidence of disease as a whole.

## *The Hospital*

St. Lucy's Hospital is situated in the north-east Transkei in the Cape Province 34 miles from Umtata, the capital of the Transkei, and 10 miles from the nearest village, at an altitude of approximately 3,000 feet. It was built as a 75-bed hospital but extra accommodation has made the daily quota between 160 and 180 patients including a maternity department. It serves an exclusively African or Bantu population belonging to the Xhosa tribe. Many patients come 30 miles and more on foot or on horseback to get to the hospital, the nearest source of medical attention. It has equipment for most eventualities except a ready supply of donor blood.

Those surgical cases which demanded specialist attention were taken by our ambulance to Umtata, a journey of just over an hour. The Government laboratory at East London was at our service for any special investigation required. Post-mortems were performed at the hospital whenever possible.

## *The Patient*

The average Xhosa patient in this practice lives with his family in a bare earth hut containing only the basic necessities of life. Groups of these huts are dotted all over the Transkei. Each family has a plot of land for cultivation and grazing rights for cattle, sheep and goats. Mealies are the main crop and cattle are kept more for their quantity than their quality. Most of the cows give a very poor milk supply and this is undoubtedly in large part responsible for the prevalence of malnutrition. Although there are many strong running rivers, lands are watered only by rain.

Ignorance of basic hygiene is rife. The man-dog-man cycle for common intestinal parasites flourishes, as the dog's function in this society is to dispose of human excreta. Mothers and grandmothers cough into the faces of their offspring and spit wherever they may be.

The witch doctor still flourishes and many patients visit them initially. But it is noticeable that unless immediate relief is obtained, the patient often seeks our aid the very

next day. Witch doctors will unhesitatingly come for treatment when ill and it does not seem to reflect any deficiency in their powers of healing to other Africans when our treatment is effective.

There is no lasting faith in any practitioner or hospital. If not improved or impressed by the treatment given, the patient will go elsewhere even if this involves a long journey. It is impossible to be certain whether those attending the hospital are unselected from the general population, but it must be emphasized that the practice can be compared with a typical rural general practice rather than with the average hospital practice where patients are referred by practitioners, thus increasing the incidence of the more serious disorders.

#### Material and Method

We have tabulated the diseases encountered under headings conducive to simplicity and brevity. Many of the patients seen could be placed in more than one category, but in all cases they are allotted to the diagnosis considered most important. The one exception is the disregarding of malnutrition when other diseases such as gastro-enteritis, pneumonia or tuberculosis were present. Malnutrition is indeed by far the commonest disease of the African in the Transkei, kwashiorkor in infants and pellagra in adults being the outstanding clinical entities. As it is considered too difficult to assess the part played by malnutrition or minor degrees of it, in the causation and subsequent morbidity of more differentiated diseases, the incidence and influence of malnutrition on these conditions has not been investigated.

Patients coming for repeat examinations for the same disease in the 6-month period are not included for their second or subsequent visits. If they returned with a new disease, this has been included. If the original out-patient diagnosis was shown to be incorrect either on a return visit or after admission to hospital, the records have been altered accordingly. Conditions of interest will be discussed and tuberculosis, the main interest of this paper, will be dealt with in detail. Patients attending for tooth extractions, circumcision and uncomplicated antenatal visits are not included in the out-patient series but will be considered separately.

#### Findings

A total of 2,002 patients were seen during the 6-month period under review. In table I they are classified for age and sex. As a large proportion of the patients had no idea of their age, they are divided into 3 groups as near as possible to their actual ages.

TABLE I. TOTAL OUT-PATIENTS SEEN

Age (years)	Males	Females	Total
0-5	402	384	786
6-29	197	291	488
30 and over	270	458	728
Total	869	1,133	2,002

The preponderance of female patients in the older age groups is due mainly to the fact that many of the men are away from their homes working elsewhere in the Union.

In table II the diseases are listed under well-known headings and subdivisions, in order of frequency of occurrence. It will be seen that 682 (34.1%) of the total out-patients were admitted to hospital for investigation and treatment.

TABLE II. CLASSIFICATION OF DISEASES

Group	No.	Sub-group	No.	Admitted
1. Tuberculosis: (new cases) (previously diagnosed)	394	(See Table III)		245
2. No diagnosis made	69			32
3. Pneumonia	196			101
4. Gastro-enteritis (non-specific)	196			21
5. Upper respiratory infections	167	Asian influenza	95	3
		Bronchitis	43	—
		Non-specific	29	—
6. Traumatic and local infective diseases	144	Assaults and injuries	54	27
		Fractures	34	22
		Abscesses and localized infections	32	21
		Burns	24	20
7. Ear, nose and throat	113	Otitis media	64	7
		Tonsillitis	22	2
		Quinsy	15	6
		Miscellaneous	12	6
8. Malnutrition	107			29
9. Gynaecology	83	Salpingitis	34	12
		Abortions	15	12
		Puerperal sepsis	8	8
		Fibromyoma	6	2
		Miscellaneous	20	9
10. Skin diseases	42			16
11. Cardiology	35	Rheumatic heart disease	17	10
		Hypertension	11	3
		Cardiomegaly of unknown aetiology	3	3
		Miscellaneous	4	3
12. Infectious fevers	26	Chicken-pox	10	—
		Mumps	11	—
		Whooping cough (2)		
		Poliomyelitis (2)		
		Scarlet fever (1)	5	2
13. Eye diseases	17	Conjunctivitis (13)		
		Miscellaneous (4)	17	6
14. Urinary tract infections	11			4
15. Typhoid	11			11
16. Malignant growths	8	Carcinoma of cervix	3	—
		Epithelioma of leg (1)		
		Chorionepithelioma (1)		
		Carcinomata of liver (1)		
		Thyroid (1) and oesophagus (1)	5	4
17. Other conditions	74			35
Total	2,002			682

#### DISCUSSION

The second largest group consisted of 309 patients (15.4%) in whom no diagnosis was made and who were treated symptomatically. Functional disorders, aches and pains were responsible for many of these. They also included 94 cases of 'suspected tuberculosis', most of which were thus designated because of cough of long duration, where either the X-rays were considered inconclusive or none were taken for one reason or another. Of these 94 cases 32 were admitted without additional information being obtained.

Lobar pneumonia and bronchopneumonia accounted for 9.8% of the out-patients and 14.8% of the in-patients. Many patients contracted pneumonia after an attack of what appeared to be Asian influenza. The pneumonia was not

confined to the winter months; 58 of the cases occurred in the 2 months ended 21 January.

The 196 cases (9.8%) of gastro-enteritis were seen largely in the latter half of the period. The fact that only 21 were admitted is in part indicative of the average mildness of the cases; the state of hydration was usually good. A mild wet summer helped contain the incidence and severity.

'Assaults and injuries' conformed to the usual pattern. An unusual lesion encountered was human bites of lip and nose. These were the results of fighting amongst females. The commonest fracture was of radius and ulna and the next most frequent was fracture of the skull. Of the latter 6 out of a total of 8 required craniotomy to relieve intracranial pressure. Amongst localized infections were 2 septic circumcision wounds. The Xhosa male is circumcised at a ceremonial according to tribal custom shortly before entering manhood. At the popular time of the year for these rites (May and June) many septic wounds are admitted.

In group 8 the 107 cases of malnutrition represent only these in whom no other condition was found.

Salpingitis in group 9 comprised the main gynaecological problem. Tuberculous pelvic infection was not diagnosed during this series although we were on the look-out for it. It is surprising that the incidence of puerperal sepsis was so low, especially after one has witnessed a delivery in an African hut.

In group 10, the 69 cases represent those patients previously diagnosed as tuberculous, who, for one reason or another sought re-examination and in whom no further disability apart from their tuberculosis was found.

Rheumatic heart disease (group 11) is relatively common in the Transkei. Pure mitral stenosis, however, is uncommon and the prominent lesion in most cases is mitral incompetence. Of the 11 cases of hypertension seen, in only 3 did symptoms warrant admission, one because of cardiac failure and 2 on account of malignant changes. Cardiopathies of unknown aetiology in Africa are proving a fertile source for investigation at the present time. We were unable to place the 3 cases in any of the new recognized groups.

Amongst the patients with malignancies in group 16, only one went home well. He had a leg amputated for an epithelioma. The diagnosis of carcinoma of the cervix presents no problems; they invariably appear for treatment at stage III or IV and are grossly infected. Thyroid enlargements, mostly diffuse goitres, are extremely common in the female Xhosa but only one carcinoma was encountered.

In the miscellaneous group (group 17) the following may be selected for mention: 3 cases of purulent meningitis; 3 patients with abdominal emergencies all of whom died, 2 after being transferred to Umtata for intestinal obstruction and 1 a few hours after admission for general peritonitis; 2 cases of ainhum; 1 case of diabetes presenting in coma; 1 case of leprosy; and cases of epilepsy, congenital abnormalities and amoebiasis. Syphilis, from all accounts, is a fast disappearing disease in the Transkei; only 1 case, that of perforation of the palate, was seen. Blood for Wassermann tests was taken as a routine measure from all patients attending the antenatal clinic and only 4 were found to be positive; none of these had stigmata of syphilis.

Of the 682 patients admitted, 33 died in hospital—15 in the 0-5 age-group, 6 in the 6-29 group, and 12 in the over-30 age-group. This in no way reflects the actual mortality

from disease. If it was at all possible for relations to care for the chronically sick and those about to die, patients were sent home. Many others were refused admission when advanced or untreatable disease was diagnosed.

Also of considerable interest to those who have never worked in an exclusively African practice is the notable absence of diseases so common in a European practice. Coronary thrombosis, peptic ulceration, obliterative arterial disease, varicose veins, and ano-rectal disorders, are some of the conditions seldom encountered in the years of experience of one of us (v. d. W.). It is also surprising that, apart from mild degrees of nutritional anaemia and those who had lost blood from trauma, there were no cases of anaemia warranting treatment.

*Patients Excluded from Series.* Brief mention should be made of patients treated at the hospital but not included in the series: 104 presented for tooth extractions, 50 adults were circumcised, and 8 were examined for medical certificates. There were also 117 confinements, 108 being normal uncomplicated deliveries. Of the remaining 9, 4 were delivered by Caesarean section and 3 by forceps; there were 2 breech deliveries. Some of these patients were delivered while on treatment for other conditions and are included in the general series.

#### TUBERCULOSIS

As seen from Table II, there were 394 cases of tuberculosis diagnosed who, to the best of our knowledge, had not been diagnosed or treated before, in addition to 69 patients previously diagnosed as cases of tuberculosis who for one reason or another sought re-examination and in whom no further disability apart from their tuberculosis was found.

Details concerning the 'new cases' and the total cases of tuberculosis admitted will be found in Table III. The

TABLE III. DETAILS CONCERNING NEW CASES OF TUBERCULOSIS AND ADMISSIONS

	Age			Total	'Known Cases'	Admitted
	0-5	6-29	30 and over			
Pulmonary and neck glands	118 <sup>1</sup>	60 <sup>2</sup>	165 <sup>1,3</sup>	343	69 <sup>5</sup>	206
Peritonitis	—	4	6	10		10
Meningitis	5	2	3	10		7
Spine	6	2	2	10		10
Hip and knee	—	1	8	9		10
Pericarditis	—	3 <sup>4</sup>	5	8	8	
Liver and spleen	—	—	4	4	4	
Total	129	71	194	394		245

(1) 4 patients with tuberculous bone lesions as well. (2) 2 with pregnancy. (3) 5 with pregnancy, 5 with congestive cardiac failure of unknown aetiology, and 1 each with nephritis, pyelonephritis and Addisonian crisis. (4) 2 with pregnancy. (5) 5 with superimposed pneumonia.

maximum incidence of the disease was seen in young children and in the age-group over 30 years. 87% of the cases of tuberculosis had the pulmonary form of the disease. Of the 463 patients (including known cases) 52.9% were admitted, and this number represents 35.9% of the total admissions. As they remained longer in hospital than other patients, approximately 100-110 (60%) of the beds were occupied by patients with tuberculosis at any given time.

*The real object of collecting these figures, is to show that of a total of 2,002 out-patients seen, 19.6% were found to have tuberculosis.* This is an alarmingly high figure in an age when tuberculosis in most countries is on the decline, and is especially so when it is considered that this practice

would be very much the same if no hospital existed and general practitioners served the community. It would be interesting to compare our incidence with other hospitals in the Transkei.

#### *Diagnosis*

All cases of pulmonary tuberculosis, apart from a few cases in the under-2-years age-group, were X-rayed. In the vast majority there was no doubt at all that the X-rays showed tuberculosis. The gross pathology encountered so often was remarkable for the degree of lung involvement. There were very few adult cases in whom the diagnosis could not be made in the course of a routine chest examination and the physical signs observed would have delighted an undergraduate clinical tutor. One of the main reasons for the advanced state of the disease was the time patients waited after onset of symptoms before making their first visit.

If X-rays were considered doubtful, patients were asked to return later for another X-ray. In this way, for example, patients originally treated as pneumonia were found to have tuberculosis. The examination of sputa for acid-fast bacilli was sometimes of help in coming to a diagnosis. Some of the males had worked on the gold mines and the differentiation between silicosis and tuberculosis or a combination of the two was an occasional problem. Carcinoma of the bronchus or malignant adenopathies may have been missed and treated as tuberculosis but the number of such cases is not likely to have been significant. On the other hand we well remember a case presenting with classical features of advanced carcinoma of the oesophagus, including the X-ray appearance of a barium swallow, who derived his clinical picture from pulmonary tuberculosis with extensive mediastinal fibrosis.

In children under 2 years an intradermal tuberculin test with purified protein derivative (P.P.D.) was used by routine. Only in a few cases in children under 2 years was the skin test used exclusively for diagnosis. The average natural conversion age amongst Africans in the Transkei is unknown. A positive reaction at the age of 4 or 5 years was not considered significant unless other manifestations of tuberculosis were present.

Any young child presenting with malnutrition, otitis media, conjunctivitis, impetigo or parotid enlargement, was immediately regarded as highly suspect, for these signs often masked underlying tuberculosis. All cases with tuberculous adenitis were X-rayed and it was rare not to find lung involvement as well.

The diagnosis of tuberculous meningitis was made on clinical grounds and examination of the cerebrospinal fluid. Culture from spinal, pleural or peritoneal aspirates was attempted on a few occasions, with negative results. Tuberculous pericarditis was the special interest of one of us (v. d. W.) and is the subject of a paper at present being prepared. Tuberculous hepatosplenomegaly was diagnosed by a process of exclusion and response to anti-tuberculous drugs. Five cases of cardiac failure (not included in the cardiology group) were of much interest and although subjected to E.C.G., screening, and venous pressure estimations, they remained a mystery to us. They responded to tuberculous therapy and conventional cardiac treatment but no cause could be found for the failure.

#### *Treatment*

With an acute shortage of beds a constant feature of the hospital day, it was imperative to select admissions carefully. The aim was to admit only acute cases and those severe cases who according to our assessment would be cured or much improved by in-patient treatment. We realized that by sending advanced cases away under what amounted to a death sentence, we were subjecting relatives to high doses of active tubercle bacilli. On the other hand, their admission would rapidly turn the hospital into an establishment for the chronically sick where beds for the acutely ill would be at a premium. So patients too ill to come once or twice a week to the streptomycin clinic were given a lecture on how to keep their infectivity at a minimum and sent home. When patients lived too far away for regular injections a 3 months' supply of I.N.H. was given. From Table III it is seen that just under half the cases were not admitted. These, with patients discharged from hospital, came to a clinic held twice a week for streptomycin injections. I.N.H. and vitamin-B-complex tablets were given at the same time. P.A.S. was only used occasionally on in-patients.

It is difficult to impress on the African mind that treatment needs to be uninterrupted and lengthy. The list of non-attenders grew weekly. A bright sunny day brought 200 patients, a rainy day perhaps 5. Some came regularly for the social chat, others came when they felt cough or dyspnoea troubling them and stopped when they felt better. Treatment is thus very unsatisfactory. The distances patients had to travel, the cost of coming by bus, the obligations of a mother at home or a father in the fields, all added up to sporadic and inadequate attendances.

#### *Discussion*

When one is dealing with a combination of poverty, ignorance, bad farming, malnutrition, and the tubercle bacilli acting on a highly susceptible population, the outlook is, to say the least, a cause for concern. Although the anti-tuberculous drugs are a powerful weapon, there seems to be no indication that these drugs are controlling the incidence of the disease. We feel there is an urgent need for a full-scale campaign to be waged against tuberculosis with B.C.G. vaccination of children and public-health demonstrations in elementary hygiene playing a leading part. Furthermore clinics could be established throughout the Transkei, where patients once diagnosed could be offered beds and treatment with a trained nurse in charge. This latter suggestion seems to be the cheapest and most effective means of providing satisfactory treatment for the great numbers unable to gain admission to hospital.

Economically speaking, the whole country must suffer if one of the largest sources of manpower is being rendered incapable of productive work by a chronic and incapacitating disease. It is impossible to estimate the total incidence in the Transkei. We saw only a small portion of the problem. Mass X-ray projects have been in progress for some years but it will be many more before the position can be clarified. In the meantime surely more active steps can be taken to control this pandemic?

#### SUMMARY

The incidence of disease in a Transkei mission hospital over a 6-month period is presented. Some aspects of the diseases encountered are discussed and the prevalence of

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tuberculosis stressed. 19.6% of the patients attending the hospital were found to have tuberculosis. The pulmonary form of the disease was commonest and very often in an

advanced stage. It is suggested that there is an urgent need for the institution of more active measures to control the incidence and spread of tuberculosis in the Transkei.