

Field Workers' Forum

THE USE OF BICYCLES IN OUT-PATIENT TREATMENT IN MALAŴI

J H ELDON, *LEPRA Control Project, Blantyre, Malaŵi*. Received for publication 22 October 1980

When the LEPRA Control Project started in Malaŵi in 1965, an area of the country with a high population density was chosen. The area embraced four principal towns with Blantyre/Limbe, the commercial centre, on the western perimeter. The intention of the Project was to demonstrate that an efficient domiciliary out-patient treatment service could be established using four-wheeled vehicles. Planning envisaged the vehicle, working on a weekly programme, visiting the same point on the same day at the same time every week with unflinching regularity. By this regularity the confidence of the patient was cultivated and the possibility of regular attendance assured. However, by the very nature of an ideal circuit, there was a gap in the middle of the circuit where a patient could not be reached and to overcome this a Clinic Attendant was employed. A bicycle was carried on the vehicle and, at an arranged point, the Clinic Attendant was put down, together with his bicycle, when he would cycle across the diameter of the circuit, treating patients en route, to be picked up at the other side of the circuit. In addition it soon became apparent that there were areas in the Project which could not be covered by four-wheeled vehicles, particularly in the rainy season, and here again Clinic Attendants were used. In this case they operated on their own and were allotted circuits which they covered independently. Weekly circuits were again used and the Clinic Attendants would cycle up to 30 miles during the day.

With the rapid increase in the cost of vehicles, fuel and spare parts the efficient distribution of out-patient treatment became prohibitive and, if efficient control were to be achieved throughout Malaŵi an alternative method of tablet distribution had to be found. The experience gained in the original Project area in the use of Clinic Attendants riding bicycles taking treatment to the patients suggested that this method could be used throughout Malaŵi. Supervision of the Clinic Attendants could be by Leprosy Control Assistants using motor-cycles, preferably of the trail type, which are economical to run, easily handled and relatively cheap to buy. Initially, as area by area was opened up, Land Rovers with 'LEPRA' painted on the sides were used to make the people aware of our work whilst attracting patients. Once patients were under treatment and confidence gained the Land Rover circuits were analysed and broken down into bicycle circuits. At the same time Clinic Attendants were appointed and trained in their duties.

Ideally the Clinic Attendant should be chosen from the area in which he would be expected to work. A person with some standing in the locality, with some education and neatness in writing is required. His role is the dispensing of tablets and simple dressings to those patients who have been diagnosed and registered by the Clinic Attendant's immediate supervisor, in Malaŵi, a Leprosy Control Assistant, plus the accurate recording of treatment given. Additional qualities sought in the Clinic Attendant are devotion to duty, a willingness to obey instructions, a certain degree of stamina. They have no specific training in the

recognition of leprosy, its complications and treatment, although they are made aware of the necessity to refer any complaints made by the patient to the Leprosy Control Assistant. Supervision of the Clinic Attendant is undertaken by a Leprosy Control Assistant who should have not more than four Clinic Attendants under his control; three is a much more convenient number for this allows the supervisor to have 1 week during the lunar calendar for non-specific duties such as compilation of records, visits to persistent absentees, propaganda work and school surveys.

The appointment of a Clinic Attendant who lives in the area overcomes the necessity for him to find accommodation and he should come from roughly the centre of the area in which he will operate. In Malaŵi we would not expect the Clinic Attendant to cycle more than 30 miles in a day and his case load should not exceed 400 patients during the week (there are some dealing with up to 600 but it is hoped that this number will reduce through discharges and reorganization of circuits). In order to allow time for bicycle maintenance, collection of drugs and the completing of returns, circuits should be arranged for the 5 days, Monday to Friday, leaving Saturday free for these tasks. When planning bicycle circuits it is important to have the days' runs going near concentrations of patients but the need to travel on motorable roads is not there. In most cases in Malaŵi where a bicycle can go a motor-cycle can also. It is well to study proposed circuits on the map as well as on the ground; the writer was guilty of planning a circuit which rose 1,000ft in 5 miles, much to the consternation of the Clinic Attendant, and more so to the writer when he accompanied the Clinic Attendant on this journey. After that the circuit was reversed. In some cases it is not necessary for the Clinic Attendants to return to his base at night, for it may be more convenient for him to stay out one night and complete the circuit the next day. So much depends on the terrain, distance and the case load.

The employment of somebody from the area means he is familiar with all the villages to be covered and, if a man of good repute, he will be known to most of the patients he will treat. He will also rapidly know where the patients live making the task of contacting absentees that much easier. We have found in Malaŵi that an excellent rapport develops between patient and Clinic Attendant thus ensuring a high percentage rate of attendance.

As in most countries the cost of providing bicycles for this type of work has increased considerably but not as much as the cost of four-wheeled vehicles. In Malaŵi the current cost of a bicycle is in the region of K170 (US \$180). This would be of a standard type bicycle with 26 or 28 inch wheels. If a wheel taking a 1 $\frac{3}{4}$ inch tyre is available, such as is fitted to a messenger-type machine, these are to be preferred for they make riding on sandy tracks that much more comfortable. Carriers on the rear of the bicycles have been avoided for they have been used to carry heavy personal loads thus causing damage to the bicycle. In this connection it has been found, in recent years, that the quality of tubing used in the construction of the bicycles has deteriorated and frequent fractures of the frame, at the handlebar stock, and of the front forks, at the neck of the forks, have occurred.

There should be at least one spare bicycle for every three in daily use thus ensuring continuity of treatment should a breakdown occur.

Each Clinic Attendant is instructed to maintain his bicycle and is issued with a tin of lubricating oil to enable him to oil the moving parts. Inevitably repairs are necessary, however, from time to time and this work has to be undertaken at the Project Headquarters, or if the Clinic Attendant is far away, by the local bicycle repairer. During 1979 one Project spent K800 (US \$820) on spares for bicycles used by the twelve Clinic Attendants in that Project. Major items supplied were new frames, handlebars, chains, pedals, saddles, front forks, wheel hubs and tyres and tubes. It is important that Project centres carry a comprehensive stock of the more frequently called for spares and the list above, together with spokes, ball-bearings for wheel hubs and pedal spindle, cotter pins and brake rubbers are essential.

There are disadvantages to this method of taking treatment to the patient, such as the inability of the expert staff to see the patient weekly, the difficulty of conveying the patient to a hospital should hospitalization be necessary, only a limited quantity of drugs being readily available; but these are far outweighed by the advantages. The Clinic Attendant is far more accessible to the patient who, by the case load given to him, is able to see patients far more easily than where the case load is high and the feeling of 'the need to get on' is present. He is able to establish, by this ready contact, a much more personal relationship. The Leprosy Control Assistant, on his motor-cycle, is able to devote more time to the examination of suspected leprosy cases (referred to him by the Clinic Attendant) on his monthly supervisory visit and the review of patients, in addition to the routine checks on the Clinic Attendant's work. Routine slit skin smears can easily be taken every 6 months too. The cost of the service is so much smaller than when using four-wheeled transport; approximately 3.5 tambala (4 US cents) per patient per week, that it must, of necessity, be considered seriously as the method of choice when out-patient control is discussed. Supervision is also relatively cheap for the two-stroke trail type motor-cycles used in Malaŵi are economical in petrol consumption, 80–100 m.p.g., and if standardization of the motor-cycle in use is achieved, spare parts can easily be carried at the Project centres. Again to ensure continuity of supervision, one spare motor-cycle for two in use is a desirable ratio to achieve.

By adopting this method of taking treatment to the patient a high attendance rate is achieved. In Malaŵi, where all the Projects employ Clinic Attendants at the ground level with a pyramid of Leprosy Control Assistants supervising them, who are, in turn supervised by the Project Centre, the attendance rate is over 70%. In addition, when modifications or alternatives to circuits are needed these can be made with the minimum of disturbance to the other adjacent work.

[This valuable contribution from John Eldon could profitably be read in conjunction with a publication in the *International Journal of Health Services* (1978) 8/4 (633–51) entitled 'Alternative forms of transport and their use in the health services of developing countries', by Gish, O and Walker, G of the London School of Hygiene and Tropical Medicine. *Editor.*]

THE CARE OF THE EYE

By Margaret Brand, Chief, Ophthalmology Department, USPHS Hospital, Carville, Louisiana 70721, USA

This 15 page reprint, A4 format, has been issued by *The Star* from Carville and is written by an expert with great experience of leprosy in the eye. Typical of the high standard of educational and instructional material which is presented by *The Star*, this one is full of practical advice, clearly illustrated with diagrams, and provided with an excellent glossary of all the relevant terms. The main subject headings are:

Common problems in Hansen's Disease

Damage to structures neighbouring the eyeball

madarosis; trichiasis; the dry eye; the tear drainage system; dacryocystitis; and its management.

Eyelid muscles

anatomy of; paralysis of; signs and symptoms of orbicularis weakness; evaluation; and management; management of weakness coincidental with corneal hypesthesia.

Infiltrative lesions of the eyeball

pathology; corneal lesions and pearls; pannus; iris lesions; nodules; examination of eye, technique; management of infiltration.

Inflammation

pathology; course and prognosis; clinical symptoms and signs; differential diagnosis of 'red eye' table; and additional comments on the table; management of inflammation; general measures; mydriatic agents; anti-inflammatory agents; steroids; adverse effects of steroids; cataracts.

Glaucoma secondary to inflammation

estimation of intraocular pressure; management of abnormal pressure in acute inflammation; management of condition secondary to blocked pupil; management of condition secondary to anterior angle block.

Summary

Glossary of terms

A particularly valuable table entitled 'The Red Eye' is 'a guide to locating the site of the problem' – and a reminder that not all conjunctivitis, especially in leprosy endemic areas, is due to leprosy; in many parts of the world, it should in fact be kept in mind that conditions other than leprosy may account for a high percentage of all ocular problems—ophthalmological problems. A careful study of Margaret Brand's monograph will contribute enormously to diagnostic accuracy and the correct management of patients with eye involvement.

WHO FORM FOR RECORDING DISABILITIES FROM LEPROSY

Prompted by the 'Editorial' in this number, together with the original article by Nittin Verma on the eye and the above monograph, we reproduce below, with acknowledgements to WHO and the *Guide to Leprosy Control* (1980), the standard 'Form for Recording Disabilities from Leprosy'.

FORM FOR RECORDING DISABILITIES FROM LEPROSY

Grades	Hand			Foot			Eye			Involvement of larynx <input type="checkbox"/> Yes <input type="checkbox"/> No
	Sign	L	R	Sign	L	R	Sign	L	R	
Grade 1	Insensitivity			Insensitivity			Conjunctivitis			<input type="checkbox"/> Yes <input type="checkbox"/> No
Grade 2	Ulcers and injuries			Trophic ulcer			Lagophthalmos			Collapse of nose <input type="checkbox"/> Yes <input type="checkbox"/> No
	Mobile claw hand			Clawed toes			Iritis or keratitis			
	Slight absorption			Foot drop			Blurring of vision			
Grade 3	Slight absorption			Slight absorption			Severe loss of vision			Facial paralysis <input type="checkbox"/> Yes <input type="checkbox"/> No
	Wrist drop			Contracture			Blindness			
	Stiff joints			Severe absorption						
Maximum grade										

Reproduced with acknowledgements to the World Health Organization. This form appears on page 81 of their *Guide to Leprosy Control* (1980).

Readers will see that an entire column is devoted to the eye, with disabilities ranging from conjunctivitis to blindness. In view of the influence which such eye disabilities may have on the disability rate for the country as a whole, taken with the fact that clinical assessment of the eye is more difficult (and less practiced) than for the hand and foot, we would welcome letters and contributions from field workers who have actually used this form and paid attention to the eyes. Is it possible that there is an area of confusion between leprosy and other (unrelated) conditions causing conjunctivitis, iritis, keratitis, blurring of vision, loss of vision and blindness? How disabling, in practice, and in a leprosy endemic area, is blindness in *one* eye only?