My Student Elective

Poliomyelitis in Sierra Leone

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At the end of my fourth year at Sheffield Medical School I spent my three-month elective period in Sierra Leone. The object of my visit as defined by the sponsors Smith, Kline, and French was quite simply to find out the true incidence of paralytic poliomyelitis in that country.

The study was to be based on the survey of Nicholas *et al*¹ in which the number of cases of lameness attributable to polio were detected among a representative sample of Ghanaian primary school children.

The company clearly wanted to know the real need for polio immunisation in Sierra Leone. I also hoped to find out whether or not there were any areas or age groups at particular risk.

Arrival in Freetown

As I had been unable to arrange accommodation in Sierra Leone before leaving England, this was my first priority on arrival in Freetown. In sweltering heat and torrential rain I was sent from one organisation to another, was swindled by taxi drivers, and was accosted by numerous Lebanese traders. At the end of the day the only accommodation I had found was in a cockroach-infested dilapidated hotel such as that described by Graham Greene in *The Heart of the Matter*, and well known to the large population of Freetown thieves. As a last hope I asked the help of a Canadian member of staff at the community medicine department of Freetown University. To my great relief he and his wife came to my rescue and found me accommodation.

My first three weeks were spent in the government Connaught Hospital, which sadly appeared to live up to its reputation as "a place in which to die." The wards were overcrowded and filthy, no sheets were provided, and in the absence of adequate facilities patients were left bathing in their excreta. In such circumstances medical examinations were inadequate and the patients were rarely touched for fear of contamination. The hospital pharmacy could supply little besides aspirin and antimalarials—and relatives if they could afford to do so purchased any further medication from the pharmacies in the town (during opening hours).

A daunting task

It was during the first three weeks that I began to realise the real difficulties of what now appeared to be a daunting task. Firstly, I wanted to know the existing information about the

incidence of poliomyelitis in Sierra Leone. I was pleasantly surprised to find a Ministry of Health Statistics Unit, but very sceptical when after much searching I was told that there had been only three cases of acute poliomyelitis in Sierra Leone in the past three years. My doubts were confirmed when I found that more cases had been admitted to the hospitals in Freetown alone than the records showed for the whole country.

There was clearly a real need to find out more about poliomyelitis in Sierra Leone. The proposed survey method simply could not be applied to the rural areas (75% of the population) where under 10% of children attend school. The country is

Sierra Leone and its position in West Africa.

divided into Southern, Eastern, and Northern provinces (figure); these are then subdivided into chiefdoms, each ruled by a paramount chief. Within each chiefdom are numerous small villages, each with its individual chief. My initial intention had been to survey a chiefdom, obtaining information about the disabled from the chiefs of the villages.

Support for this survey was obtained from several sources including the World Health Organisation and the Sierra Leone Ministry of Health. I was offered the use of a Land-Rover, with driver and driver's mate, plus three Ministry of Health employees from the Endemic Disease Control Unit in the Southern Province. The unit was standing idle, being unable to afford the running costs of their Land-Rovers. I was fortunate to be invited to stay at the Serabu Mission Hospital, which was conveniently close to the Endemic Disease Control Unit. This became my survey base—and the Bumpie chiefdom in which the mission was situated the survey area.

The hospital kindly offered the help of some public health nurses to supplement the Ministry of Health team.

Contrary to all expectations the Land-Rover with my assistants arrived on the agreed day and within reasonable time. The start of the work, however, was delayed until terms had been negotiated. Unfortunately, my assistants had previously worked for an American organisation from whom they had

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received payment far in excess of their normal wages. Consequently, they anticipated similar rewards for their work with me. As I had to provide petrol and other running costs of the Land-Rover out of my limited budget this was quite impossible. I was able, however, to provide a substantial supplement to their wages but nevertheless this remained a point of contention.

Bumpe chieftdom

The Bumpe chieftdom had a population of about 30 000 and covered 30 sq miles (78 sq km). I considered that 30 villages (about half of the population) was the maximum that we could survey in the three weeks available.

The chiefs of the villages had to be notified about date and time of our intended visit, and as there was no postal service this information had to be delivered by hand.

Most villages were accessible by latterite roads, but as it was the wet season many of these were rutted and waterlogged. Bridges across streams and rivers were often no more than a few precariously and widely spaced tree trunks. To reach some villages it was necessary to walk distances up to five miles (8 km), often through swamps. As a result there was much resistance from my Ministry of Health team, who were obviously unaccustomed to such hardships. As the leader it was certainly my task to carry most of the load and to lead the way through the swamps and undergrowth. Looking back, I was helped by my somewhat inadequate knowledge of snakes, crocodiles, and schistosomes, etc, which I later realised presented real dangers. One village thoughtfully constructed a bridge in my honour. This was difficult to cross as it consisted of two slim, slippery trunks, but nevertheless it enabled me to avoid wading through a deep swamp.

On entering a village, there was often a large reception party awaiting us, and I first had to seek out the chief, bow, as an expression of appropriate humility, and also obtain his co-operation. I went to Sierra Leone believing that the country was English speaking but the majority speak tribal languages, and the work could not have been done without relying on my workers as interpreters. Fortunately, Serabu Hospital had a good reputation in the chieftdom, and introducing ourselves as representatives helped our cause. Also we were able to inform them that Dutch orthopaedic surgeons came to Serabu Hospital yearly to operate on the most severely crippled in the region.

In particular I needed the support of the Paramount Chief. On one occasion, with this in mind, I even agreed to take a goat thief (a very serious crime in Sierra Leone) to the nearby jail. This criminal had been led through the streets, by means of a lasso round his waist, carrying the remains of the goat.

Gathering information

RURAL SURVEY

The chiefs were either unable or unwilling to give an account of the disabled in their villages. We had, therefore, to carry out a house-to-house survey. All work had to be done in the early morning or late evening as it was the bird-scaring season, when all villagers were at their distant fields during most of the day.

At each house we obtained census information, and the head of the house was asked whether there were any disabled people in his family. For each case identified the cause was investigated by means of a questionnaire dealing with clinical aspects and by a neurological examination (carried out on the earth floor of the mud and wattle huts, often in the presence of large groups of interested onlookers). Some of the children were coated from head to toe with dried mud, the witch doctors' remedy for paralysis. Bush lamps and torches provided the only illumination. Obtaining census information and age of onset of disability proved difficult because the villagers did not regard time and age as matters of great importance. The Ministry of Health workers,

however, were familiar with the native calendar and this at least helped to reduce the inevitable inaccuracies.

As a medical worker I was also expected to advise on and treat all illnesses in the villages. On several occasions we were able to take seriously ill villagers to hospital. Decisions that to us were in the best interests of the patient and community were not automatically accepted. Thus in order to persuade one village to allow a young girl with disseminated tuberculosis to come to hospital we had to threaten to report the chief of the village to the Paramount Chief, who was well known to impose large fines for small offences.

In retrospect I realise that I expected a great deal from my assistants and at times this was clearly resented. After all, they would, without doubt, have been far more comfortable at the Endemic Disease Control Unit. They lacked self-motivation and initiative and to get the work done I had to maintain an authoritarian attitude throughout (quite out of character). On one occasion the whole team declared that they were ill and that I was responsible. This even included a young man with gonorrhoea—for it was well known that this could be brought on by being overworked! Nevertheless, against all odds the survey was not only carried out thoroughly but completed in the time available.

It was, therefore, with some regrets that I left the Bumpe chieftdom to return to Freetown, but I was now eager to extend my research to an urban area.

URBAN SURVEY

As 90% of children in Freetown attend school it was possible to apply the survey method of Nicholas *et al.*¹ Accustomed by now to the help of the official services I requested and obtained the help of an inspector from the Ministry of Education. With this invaluable help I visited 28 schools in which 14 491 children were enrolled and identified those who were disabled by asking all children to parade in front of us. The probable cause of any disabilities was investigated in the same way as in the rural survey.

My work has shown that official statistics relating to poliomyelitis in Sierra Leone are limited and of questionable validity. The field studies aimed to give a better indication of the effects of poliomyelitis in Sierra Leone. The observed prevalences of paralytic poliomyelitis in rural and urban areas were 3.1/1000 total population and 3.9/1000 5-15-year-olds respectively. Moreover, 77% of those affected in the rural area and 63% in the urban area had a major disability.

Conclusion

At the end of my project I left West Africa with a greater insight into the problems of the country and the feeling that despite all adversity we had been able to contribute considerably to ensuring a better knowledge of poliomyelitis in Sierra Leone. If this can be followed up by an energetic immunisation programme with effective vaccine many children will be spared severe disability.

I am grateful to Smith, Kline, and French for the original grant and for suggesting this investigation. I also thank the many friends and helpers in Sierra Leone without whom no progress could have been made.

More detailed findings may be obtained from the author.

References

- ¹ Nicholas DD, Kratzer JH, Ofosu-Amaah S, Belcher DW. Is poliomyelitis a serious problem in developing countries?—The Danfa experience. *Br Med J* 1977; *i*:1009-12.

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