

Personal View

My interest in appropriate technology has developed from my affiliation with Serabu Hospital, a mission hospital in a small village of 2500 inhabitants in the southern province of Sierra Leone in West Africa. This country, with a population of 3·5 million scattered over an area roughly a third of the size of England, faces problems in the delivery of health care that are similar to those of many other Third World countries: 80% of the people live in rural areas; 40% are under the age of 15; resources are scarce; communication is poor; malnutrition and communicable diseases are common; and most people have no access to unpolluted sources of drinking water.

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Over the past 10 years I have had plenty of opportunity to learn, at first hand, of some of the problems of providing health care, and certain events have left vivid impressions. Among these perhaps the most memorable was on the day when I was introduced to a patient with a bleeding duodenal ulcer and a haemoglobin concentration of 3 g/dl. Fortunately for her we both had the same blood group, and before long I was persuaded to give her a unit of blood. Two hours later, once she was successfully resuscitated, I was asked to perform her operation. Blood loss was, of course, kept to a minimum for I reckoned that I could ill afford to donate any more of my own blood. It was particularly gratifying for me that we both made a complete recovery from our respective ordeals.

To appreciate the problems which a hospital like Serabu faces it is important to emphasise that it is the only stable medical centre for a chiefdom of about 30 000 people. Thus patients must travel a long way to seek medical help and it is not unusual for patients to travel several hundred miles from neighbouring provinces, and even from other west African countries. The hospital started in 1948 as a maternity clinic with eight beds and has since developed into a 130 bed general hospital with integrated preventive, curative, and educational services. The buildings are modern and well ventilated and the hospital has a new operating theatre suite and a nursing school with an active training programme. The work of each department is evaluated regularly, and the hospital publishes an annual progress report.

It has always been necessary to apply the principles of appropriate technology because facilities and equipment are limited. The anaesthetic department, for example, has no piped gases and opiate analgesics are often in short supply. Thus most operations on the abdomen, below the umbilicus, are performed under spinal or, occasionally, epidural anaesthesia. Operations on the limbs or the trunk, where muscular relaxation is not essential, are carried out after the administration of intravenous ketamine. The surgeon in charge usually doubles as the anaesthetist, although full use is made of medical attendants—nurses who have specialised in working in operating theatres. Inhalation anaesthesia is provided with ether delivered from the Oxford miniature vaporiser. For procedures in the thorax or upper abdomen, and for operations where muscular relaxation is required, the bellows on the vaporiser are operated manually.

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I have observed that inpatient care in Serabu hospital has been of a consistently high standard. In 1974, for example, there were 392 admissions to the maternity unit, and of these 270 were for

deliveries. Fifteen per cent of the women delivered had haemoglobin concentrations of less than 5 g/dl, a half had had five previous pregnancies, 6% had multiple pregnancies, and 20% required caesarean section. Yet, in spite of these adverse factors there were only three maternal deaths, and avoidable maternal and fetal complications were remarkably low. The infection rate for all surgical wounds was about 4%, and postoperative mortality was less than 3%. (These figures are based on operations on 845 patients, many of whom were severely dehydrated, malnourished, and anaemic.)

Collection of data has long been an important aspect of the work of the hospital, and the epidemiological and demographic information that they obtain is more accurate than that available from anywhere else in the country. Reference to 1974 data showed that many of the diseases that were treated in hospital were preventable—for example, many children were succumbing to measles and tetanus, many women were brought to hospital in the late stages of childbirth, and it was common to admit patients with strangulated hernias. In an attempt to tackle some of these problems the hospital stepped up its primary health care programme. This has undoubtedly had beneficial results, and more children are now being immunised, the training for traditional birth attendants has been improved, and several wells have been built to provide safe drinking water. These measures have had a demonstrably good effect on the health of the local community and there has been a dramatic fall in the number of patients presenting with preventable disorders.

One of the reasons for the success of the primary health programme has been the attitude among the hospital staff, who now recognise that the hospital is geared first and foremost to providing sound primary and preventive care. The curative service, in spite of its impressive results, has achieved relatively little in promoting health, although it has provided a powerful base from which primary care has been delivered, and the relatively high standard of care that it provides has helped to convince the local community: thus such cases as the successful resuscitation of a baby dehydrated from gastroenteritis, or a patient in a diabetic coma, have been important in convincing local people that western medicine is effective and that certain diseases can be prevented. The educational service that the hospital provides has helped to integrate the inpatient and primary care programmes and the nurses' curriculum is geared to meet the health care needs of the community.

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My observations in Serabu have convinced me that successful primary health care depends on bringing about two important changes: firstly, a change in the traditional belief that illness comes from mystical agents such as evil spirits; and, secondly, a change in the attitudes of the health care professionals who have come to believe that health is dispensed by them. I have also come to the conclusion that primary health care has a vital part to play in medicine all over the world. It is sad to reflect that in Britain today huge resources are spent treating such preventable disorders as coronary heart disease, unwanted effects of drugs, and bronchogenic carcinoma.

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