Where we stand

We believe that there is no substantive controversy. Davey Smith and Egger agree with us that lowering serum cholesterol in Western populations is beneficial and safe, and we agree on the clinical and public health strategies needed to reduce mortality from ischaemic heart disease.

Patients with existing cardiovascular disease are candidates for cholesterol lowering drugs, and people in the general population should adopt healthier diets that would lower their serum cholesterol concentrations.

We also largely agree over the quantitative estimates of the association between serum cholesterol concentration and ischaemic heart disease and of the benefits that will accrue from lowering cholesterol concentration. These issues should no longer be regarded as controversial.

1 Law MR, Wald NJ, Wu T, Hackshaw A, Bailey A. Systematic underestimation of association between serum cholesterol concentration and ischaemic heart disease in observational studies: data from the BUPA study. *BMJ* 1994;308: 363-6.

2 Law MR, Wald NJ, Thompson SG. By how much and how quickly does reduction in serum cholesterol concentration lower risk of ischaemic heart disease? *BMJ* 1994;308:367-72.

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4 Wald NJ, Law M, Watt HC, Wu T, Bailey A, Johnson AM, *et al.* Apolipoproteins and ischaemic heart disease: implications for screening. *Lancet* 1994;343:75-9.

5 MacMahon S, Peto R, Cutler J, Collins R, Sorlie P, Neaton J, *et al.* Blood pressure, stroke, and coronary heart disease. I. Prolonged differences in blood pressure: prospective observational studies corrected for the regression dilution bias. *Lancet* 1990;335:765-74.

6 Davey Smith G, Song F, Sheldon TA. Cholesterol lowering and mortality: the importance of considering initial level of risk. *BMJ* 1993;306:1367-73.

Hands across the equator: the Hereford-Muheza link eight years on

John B Wood, Elizabeth Hills, Filemon J K Keto

Short elective sabbatical visits have been arranged between Herefordshire Health Authority in England and Muheza Health District in Tanzania over the past eight years. Any employee can apply, and the 64 who have participated include midwives, physiotherapists, engineers, and nurse tutors. The possibility of being chosen adds to the attractiveness of working in both districts, and costs have been small. The visits are believed to have led to new ideas and a willingness and confidence to consider change.

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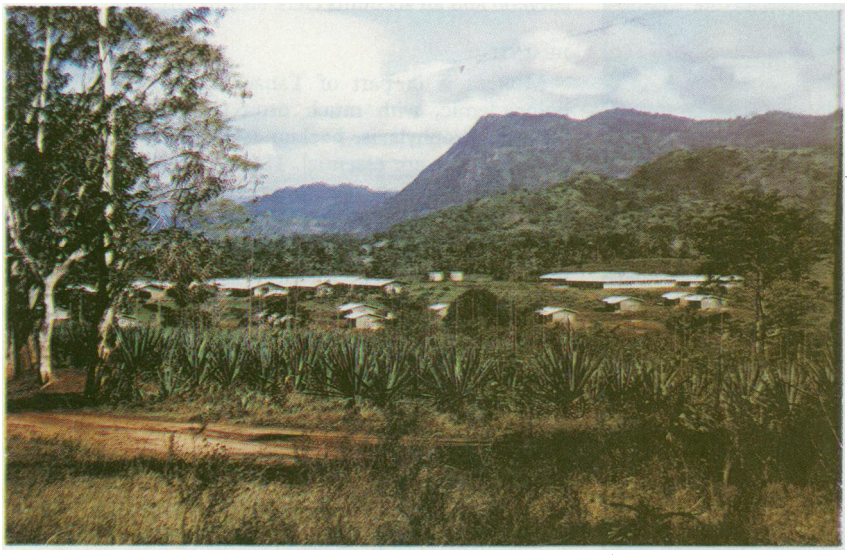
BMJ 1994;308:1029-32

After 64 visits between Hereford in England and Muheza in Tanzania by a wide variety of health workers, contacts and friendships have extended into both communities to form new school, college, church, and local authority links. The beginnings, eight years ago, of this relationship between the Herefordshire Health Authority and Muheza Health District have been described[1]; we now evaluate the link, its effects, and the changes which have occurred.

The two communities

Muheza district is in northeastern Tanzania, just south of the Kenyan border, 50 km from the Indian Ocean; it is fertile and usually well watered. Drought has not affected it as seriously as much of sub-Saharan Africa. Recent rains have been satisfactory, and there has been a gradual improvement in living standards despite very severe inflation. Almost everyone cultivates a garden (shamba) to supplement wages. Malaria remains by far the most serious medical problem, but infection with HIV is increasing. Hospitali Teule serves about 250 000 people. It is a joint government-mission organisation. There are 260 beds and often many more inpatients than beds.



Hospital Teule has 260 beds, an annual budget of £100 000, and serves 250 000 people

Herefordshire in the west of England is also fertile, beautiful, and well watered, but it is much less dependent on a rural economy. The population of about 170 000 is increasing and growing older, and many people retire to the county. Diseases of prosperity, degeneration, and old age are common. The main acute hospitals in the district have about 420 beds.

Nature of the link

This link has concentrated on educational visits in the hope that staff visiting different cultures with different diseases and facilities will take home new ideas and perspectives which may lead to better techniques, better practices, and even better economy. Administration in Hereford is by the Link Society, many of whose members have been to Muheza.

Selection

In Hereford we try to select staff who will be able to cope with a hot climate, difficult travel, and simple living conditions. They must mix well, make good ambassadors, and be able to study and perhaps teach. We prefer candidates with planned projects, and a committee containing previous visitors makes the selection. Interpreters are available in Muheza so the ability to speak Swahili is not essential.

Selection in Muheza is by a panel comprising the medical superintendent, members of the management committee, and a senior church member. Criteria for selection include duration of service, the relevance for the hospital of the proposed programme, whether a previous visit has had a similar programme, the candidate's basic education and ability to communicate, and the expected duration of service after return to

Concrete walkways connect the hospital's wards

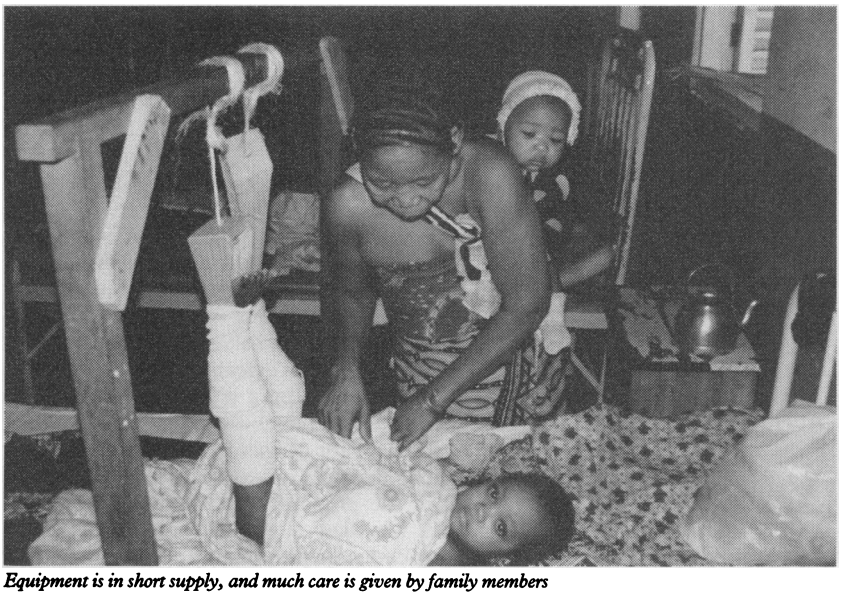
Muheza. Candidates need to be able to express themselves in English.

The authorities in Tanzania have readily granted study leave to visit Hereford, but some Hereford staff have had to take unpaid leave or use their holiday allocation. Muheza has staff employed in different ways—as employees of the diocese, of central government, or of the district council. Government employees have obtained a clothes allowance and in some cases a subsistence allowance for the visit.

SKILLS OF VISITORS

The table shows the range and variety of professions of visitors. From Hereford there have been almost the same number of visits by men (17) and women (15), but most visitors from Muheza have been men (24 of 32).

Hereford staff have included nurses, a health visitor, paramedical staff, and five consultants. In addition engineers, a plumber, a secretary, and a health education officer have been selected, as well as two chaplains. Two people have travelled to Muheza twice—a plumber, who returned to lay new pipes in the children's isolation ward, and an accounts assistant, who fed information into a computer which the Commonwealth Foundation has donated as a result of the link. Most visitors from Muheza have been nurses, medical assistants, or doctors, partly because good English is required.



Equipment is in short supply, and much care is given by family members

STUDY AND WORK PROGRAMMES

Communications between Hereford and Muheza are difficult so details of each programme are arranged on arrival. Good programmes include observing or learning techniques which may be useful and relevant and experiences which will stimulate ideas. The amount of clinical experience that can be gained depends on Tanzanian and British licensing regulations. Few of the visitors from Muheza have qualifications recognised in Britain.

Hereford's hospitals provide a district service, like Muheza's hospital, but with many more resources. Some visitors to Hereford have been able to visit hospitals with more specialised services. For example, a haematology technician appreciated visiting the regional blood transfusion centre and the radiographic auxiliary attended a two week course in Coventry. Visitors to Muheza have had an oppportunity to visit regional and national centres and to go with "outreach teams" to take immunisation to the villages. Hereford doctors and a dentist have obtained temporary Tanzanian registration and have been able to share in clinical work.

Visits arranged by the link

	To Hereford	To Muheza
Doctors	6	5
Nurses	7	5
Nurse tutors	3	1
Medical assistants*	6	
Midwives	3	
Laboratory workers	1	2
Engineers		4
Chaplains		2
Accountants	1	2
Physiotherapists	1	2
Pharmacists	1	1
Dentists	1	1
Radiographers	1	1
AIDS counsellors	1	
Operating department assistants		1
Health visitors		1
Occupational therapists		1
Secretary/librarians		1
Health education officers		1
Ambulance staff		1

*Provide primary medical services; no British equivalent.

A report is required after each visit. Sometimes these reports provide a novel view: "In England a dental waiting room is a silent class—it is also a comfortable place for the mind" (T Gershon, dental assistant). Some observations have been published,[2 3] and in 1987 Central Television showed a prize winning film, *An African Tale*, which told the story of an ophthalmic surgeon and an accounts clerk visiting Muheza.

HEALTH

Muheza is in part of Tanzania where malaria is holoendemic, with much drug resistant falciparum malaria. Prophylaxis, backup treatment, and a good mosquito net are essential. Hepatitis B, tuberculosis, and HIV infection are common, and visitors must take sensible precautions. A pack containing drugs, syringes, and drip set (box) is sent with each traveller from Hereford. This is partly to ensure that equipment is sterile, and also to avoid adding to the severe shortage of drugs in the hospital if the visitor becomes ill. The pack is left behind on return. Treatment in Tanzania is free (the Tanzanian government introduced cost sharing in July 1993) so medical insurance is unnecessary except for the possibility of repatriation. One link visitor returned from Muheza with hepatitis B.

Visitors from Muheza find Hereford cold even in the summer, and respiratory tract infections occur. A supply of warm clothes is kept.

Contents of the medicine chest taken by staff travelling to Muheza for six week visits

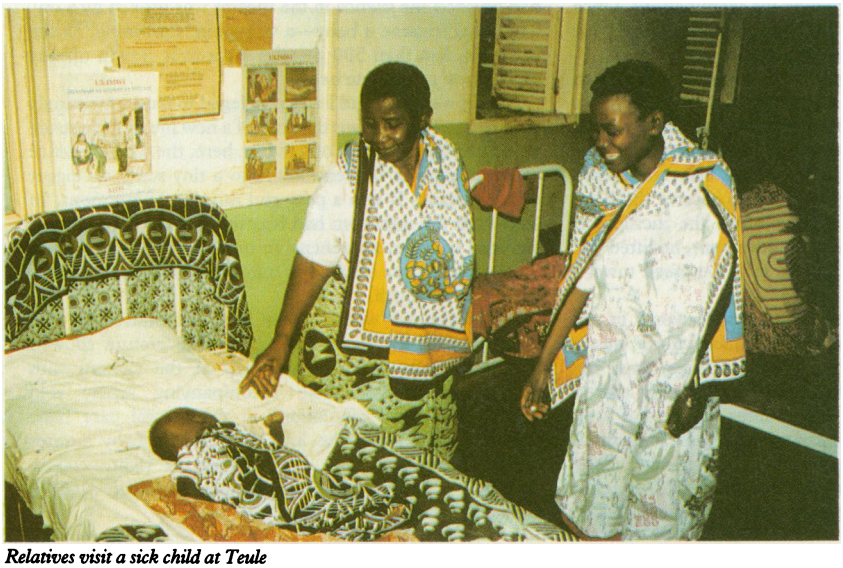
Chlorquine phosphate tabs 250 mg—2 each week starting 1 week before and continuing for 4 weeks after
Proguanil tabs 100 mg—2 daily for the same duration as chloroquine
Quinine sulphate tabs 300 mgs—30
Fansidar tabs—3
Erythromycin stearate tabs 250 mg—56
Betadine ointment
Loperamide caps 2 mg—40
Chlorpheniramine tabs 4 mg—25
Hydrocortisone cream
Anthisan cream
Haemaccel—1 unit
Giving set, syringes, needles

accommodation and hospitality

Visitors to Hereford live in the district general hospital (the county hospital). They usually have rooms which otherwise are used for staff on duty overnight. There is a kitchen, and meals can be bought in the hospital canteen. Members of the Link Society and previous visitors to Muheza take visitors out in the evenings and at weekends. Most Tanzanian visitors spend a weekend in London as the guests of Dr J Meadway and her husband, who are the main administrators for the charity Medicines for Muheza. There they meet fundraisers and see the London sights.

Accommodation in the student quarters in Muheza is very spartan, and it is enlivened by a wide variety of tropical insects, animals, and reptiles. There are showers and lavatories and a small communal kitchen. Food can be bought in local shops or the market and cooked in the quarters, or bought in the hospital canteen. Link visitors are warmly welcomed and enjoy much hospitality. We once discussed trying to build a guesthouse at Muhezas' hospital, but those who had visited strongly opposed the idea because living as students led to fellowships with the Tanzanian staff, which might be lost if visitors had better accommodation. Most travellers try to visit the Ngorongoro Crater or one of the other major game reserves.

All staff visiting both centres receive a modest subsistence allowance as well as free travel and expenses—without these the lower paid staff from Hereford and most of the Muheza staff would not be able to take part in the link.



Relatives visit a sick child at Teule

FINANCE

Tanzania has very severe financial problems. The Tanzanian shilling has depreciated more than 20-fold against the pound sterling since the link started in 1985. The annual total budget for Hospital Teule, the district general hospital at Muheza, is about £100 000. Funding for the link therefore has to be found outside Tanzania. The Commonwealth Foundation has played a major part by paying for travel for the first six years, and the Lennox-Boyd Memorial Trust has supported the link throughout. The link treasurer uses a "pocket" of the charitable trust funds of the Herefordshire Health Authority. The acute unit and the community trust make contributions, and members of the Link Society raise funds.

The main expense is paying for visits, but some money is raised for equipment or projects in Muheza. Equipment is usually sent with larger consignments from the London charity Medicines for Muheza. Air freight sent through Equipment to Charity Hospitals Overseas costs about £1.50 a kilo.

ADMINISTRATION

The Link Society in Herefordshire appoints officers for the necessary administration. Many have been to Muheza, and they all give their services free, often subsidising the link as well. A member of the health authority and a senior member of the finance department serve on the Link Society's committee. The society's funds are held as part of the health authority's trust funds and the balance earns interest, against which is set a standard administration charge. At Muheza the medical superintendent provides administrative services and helps arrange visas, passports, and permits.

TRAVEL

Travel is arranged from Hereford. The link benefits from the Reachout scheme, which reduces many air fares, and sometimes airlines allow excess baggage to be taken free.

Over eight years, travel has become easier, but for Tanzanians to obtain passports often requires a lengthy visit to Dar es Salaam, and visas to visit Tanzania should be requested in good time.

Effects of the link

Six weeks are too brief for much development of new skills, but most staff insist that they have learnt a tremendous amount about another culture, other illnesses, and different approaches to medical care. All the benefits that medical students gain by student electives are now available to any employee of the health authority who is selected. Several visitors have requested longer visits.

Some staff have returned to Hereford saying that the experience has changed their lives, and one visitor nearly swept her husband and two children back to Africa immediately. Another is now working in Zambia. In Hereford there has been a growing awareness about the way in which care can be given despite desperate shortages of money and equipment. Knowledge of tropical diseases has increased, and the histopathologists have been particularly pleased to provide a service to Muheza and learn more about tropical specimens and diseases. Many friendships have been forged. We believe that the link encourages Hereford staff to be thrifty, economical, and resourceful and that the possibility of being chosen adds to the attractiveness of working for the health services in both Hereford and Muheza.

Changes in Muheza have included better use of partograms in midwifery and increased use of and lower mortality in the special care baby unit. Paediatric

anaesthesia and postoperative care have improved tremendously. Management of the operating theatres and repair of equipment have improved, and the casualty facilities have been restructured. There are now more counselling skills for AIDS patients and terminally ill patients. Engineers, a plumber, and a qualified electrician from Hereford (who is also a chaplain) have repaired equipment and encouraged local staff to undertake their own repairs and maintenance. While some of these changes could undoubtedly have happened without the link, we believe that the visits have led to new ideas and a willingness and confidence to consider change. Although it is frustrating for staff at Muheza to learn ways of helping patients—only to be unable to get the necessary drugs or equipment—increased knowledge should allow staff to make the best use of limited resources.

SIDE EFFECTS

The main function of this link has been to provide educational visits. From these have come new friendships and interests, and extra contacts between Hereford and Muheza have developed. These include a council link, school links, college links, medical electives, medical trainees who have made their own arrangements to work for several months at Muheza, and parish links.

Service clubs have provided equipment for Muheza, and Cheltenham Trust Hospital has started a link with Kambi in Sierra Leone partly modelled on the Hereford-Muheza link.

PROBLEMS

The problems have been relatively small, and the worst ones so far have been difficulty in obtaining reports from the travellers, difficulty contacting staff at Muheza by telephone or letter, the near impossibility of restricting visitors to Hereford to their return flight baggage allowance, and disappointment at having failed to obtain funds for those visitors who would benefit from a further professional training course in Britain or elsewhere. As well, one laboratory worker caught hepatitis B.

GIFTS AND EQUIPMENT FOR MUHEZA

A London charity, Medicines for Muheza, and a Bristol group provide drugs and equipment to Muheza to supplement the government supply; the Hereford-Muheza link has concentrated on visits and education rather than gifts. However, equipment in Hereford which is due to be scrapped is salvaged if it can be useful in Muheza. Some items work perfectly well but have been superseded and have almost no value in Britain. Useful equipment is either given to the Link Society or purchased for a nominal sum and then checked, repaired if necessary, and carried to Muheza by hand by visitors or sent with a Medicines for Muheza consignment. Other help has been given by repairing equipment brought from Muheza, by obtaining advice and information, and by helping to obtain drugs in an emergency.

Conclusions

This link has survived and prospered. The enthusiasm of visitors has continued, and the link seems secure while there are good applicants. The prime purpose is education. We have all learnt from each other, and in addition there has been growing friendship and the exchange of gifts and ideas. The financial costs to the health districts have been very small. We have been particularly pleased and encouraged to see the spontaneous growth of a network of other productive contacts between Hereford and Muheza.

We wish to thank the hundreds of individuals in Muheza, Hereford, and elsewhere whose interest, kindness, courtesy, hospitality, and generosity have made the link possible, and particularly to thank the major initial donors—the Commonwealth Foundation and the Lennox Boyd Memorial Trust.

Addresses

ECHO (Equipment to Charity Hospitals Overseas), Joint Mission Hospital Equipment Board Ltd, Ullswater Crescent, Coulsdon, Surrey CR5 2HR (tel 081 660 2220).

Medicines for Muheza, 4 Glebe Avenue, Woodford Green, Essex IG8 9HB (tel 081 504 1958).

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2 Moore B. Obstetrics in Subsaharan Africa. *Lancet* 1987;ii:331.
3 Moore B, Kombe H. Climacteric symptoms in a Tanzanian community. *Maturitas* 1991;13:229-34.

A MEMORABLE PATIENT

A real miracle

Sometimes it is easy as a junior doctor to see life and death as routine, especially through the haze of fatigue from long hours and the distractions of study for examinations. Once in a while, however, something happens to change your perspective and jolt you out of that routine.

One afternoon I was called to an emergency caesarean section on a woman with a severely growth retarded fetus of 31 weeks. All tests indicated that the fetus was in poor shape and would not survive much longer in utero. The chances of survival after delivery were also considered remote. In the theatre I scrubbed up to receive the baby for resuscitation. The obstetrician made the incision as usual, but then, in a sudden swift movement, he lifted out the whole amniotic sac and placed it in the green towel I was holding.

For a moment, I held the fetus's whole world in my hands. Through the sac in my left hand there was a miniature placenta, its blood vessels rippling over the surface. The umbilical cord coiled off to the right and in my right hand lay a tiny curled fetus, quiet and still, unaware of the momentous change that had happened. My mind went back to the specimen fetus in the pathology museum of student days and I was filled with a sense of hopelessness at the impending resuscitation. The obstetrician took a pair of scissors and in one movement split the membrane down the middle. Almost before he had finished the silence in the theatre was broken by a cry. The fetus became a baby—a wriggling, squirming, crying baby girl, less than 500 g—who vigorously fought off any attempts to resuscitate her.

A baby was born and I was privileged to have unwittingly become part of it. It was the start of a new life in the outside world like thousands of others but, here, the whole essence of humanity was concentrated into a tiny scrap no bigger than my hand. It was a powerful mixture of emotions. In an instant the unknown had become known, hopelessness changed to hope, apprehension turned to elation and one blasé senior house officer was jolted back into the reality of the wonder of birth.

The baby did well. A year later she starred on the front page of the local newspaper. The picture showed a chubby baby peering cautiously at the camera with her proud mother. The accompanying article told of her trials and tribulations in the special care baby unit and read along the lines of "miracle baby amazes docs." For once, they were absolutely right.—HELEN GIBSON *is a public health medicine trainee, currently living in Canada*