step-by-step description of the recommended infiltration technique.

Most authors recommend a 0.25–1% solution of a rapid acting (e.g., lidocaine) and a long acting (e.g., bupivacaine) local anaesthetic. Some advocate the addition of epinephrine 1:200,000, which can slow down the uptake from the site of injection and therefore decrease toxicity and prolong activity. Usually 30–40 mL of volume is sufficient for adequate anaesthesia. Maximum dosages must never be exceeded.

In conclusion, the potential benefit of LA for inguinal hernia repair in terms of overall patient satisfaction, complication rate, and cost-effectiveness has not been sufficiently exploited in rural Ghana. All surgeons in resource-poor countries should be encouraged to perform inguinal hernia repair more frequently under LA. Adequate training should be offered in the surgical teaching institutions.

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International health links: an evaluation of partnerships between health-care organizations in the UK and developing countries

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SUMMARY Increasingly, international health links are evolving between UK health-care institutions and those in developing countries, the core aims of which are to seek the transfer of ideas, knowledge, skills and training. This study aimed to evaluate established health links, what constitutes them and how they are supported. Benefits and challenges associated with the links, as perceived both by link coordinators in the UK and their overseas partners, were explored. Fourteen links between health-care organizations in the UK and those in developing countries were identified and interviews were successfully conducted with 22 link coordinators: 13 in the UK and nine in developing countries.

The interviews indicated that health links offer mutual benefits to both partners in terms of shared skills and the promotion of global awareness. Links can act as important catalysts; stimulating increases in institutional capacity for research and training.

They provide opportunities for personal and professional development of staff and promote the development of friendships and supportive networks between diverse communities. Many of the health links showed signs of evolving from uniprofessional links between individual institutions into broader, multidisciplinary community partnerships.

The main challenges facing health links arise from cultural differences, funding problems, communication difficulties and bureaucracy. There was broad agreement that greater recognition of the value and importance of health links by the NHS and closer collaboration between government departments to provide support and resources could promote wider and more effective link partnerships.

Introduction

There are an increasing number of international health exchanges between hospital and primary care

organizations in the UK and those in developing countries. These health links range from the raising of funds to supply basic equipment to regular two-way exchanges of health professionals. While the goals of health links may be varied, their core aims are to seek the transfer of ideas, knowledge, skills and training between rich and poor countries.

Guidance has been developed for those who wish to establish health links.[1–3] Several authorities, including the Department of Health and the Royal College of Nursing, have emphasized the benefits working overseas can have on the personal and professional development of National Health Service (NHS) staff.[4,5] This view is repeated by anecdotal papers[6–8] and supported by case studies of individual links,[9,10] which highlight problem-solving, improved interpersonal skills and reinforced motivation as some of the benefits international work brings to the NHS. Challenges were discussed by some of the case studies, but most related only to the particular situation at the featured link.[9,10] As regards the future of such links there are several proposals. They include calls for the expansion of link partnerships.[11–14] One commentary suggests formalizing partnerships, to be funded by international aid.[15]

There have, however, been no published studies evaluating health links, most likely due, in part, to the extremely varied nature of links and the complexity and expense of objectively assessing their impact. In this study an evaluation was undertaken of established health links, what constitutes them and how they are supported. This was supplemented by an exploration of the perceived benefits and challenges associated with the links, as reported by participants both in the UK and at their partner institutions.

Methodology and methods

For the purposes of this study, a health link was defined as an arrangement between a health-care institution in the UK and one in a country defined as low or lower-middle income by the World Bank Group.[16] An exchange of health professionals between the partner institutions, in either direction, was also a requirement.

In the absence of a comprehensive directory of health links, sampling was conducted by identifying link coordinators in literature and Internet searches, through personal contacts, and 'snowballing,' the process of approaching potential contacts recommended by coordinators already taking part in the study. Link coordinators, defined as a health professional with responsibility for administration of a health link, were approached and appointments were made for interviews. Contact details of overseas link coordinators were requested from the UK link coordinator and interviews arranged in the same manner.

Information was gathered using semistructured interviews, a method selected to provide depth and flexibility to the investigation of a very broad, varied and *hitherto* poorly described subject. This approach grants freedom to the interviewee, allowing them to express the views they believe to be important. Interview questions were based on a structured questionnaire that was piloted and then distributed to participants by email in the week prior to their interview. This allowed respondents to consider and prepare their responses and also provide an opportunity to withdraw from the study if they wished. The interviews covered two sections, corresponding to the main aims of the study:

Section I

- General link information.
- Support and funding.

Section II

- Benefits of the link.
- Challenges encountered/negative impacts.
- Suggestions for additional support.

Responses were recorded into a standard response form. Key themes from Section II were identified and ranked by frequency across the 14 links.

Results

Six coordinators who had published material regarding their links were identified following a search of the Medline database. Up-to-date contact details of potential coordinators identified in this way were obtained from [http://www.specialistinfo.com]. Personal contacts yielded four coordinators, and snowballing provided an additional four.

Fourteen UK link coordinators were identified. Thirteen provided appropriate contact details for their partner. One UK coordinator chose to withdraw from the study, leaving 13. Three contacts in eastern sub-Saharan Africa and one in Ghana proved impossible to reach by telephone and were not interviewed. In total, 13 UK coordinators, based at institutions across the UK, and nine overseas partners in Ethiopia (2), Bangladesh, Botswana, Guyana, Nepal, Tanzania, Thailand and Uganda were successfully interviewed. In total, 14 individual links were represented by the coordinators sampled, as one UK coordinator was involved in work in two different countries. Of these, coordinators in both countries were interviewed in nine instances, while, due to communication difficulties, only the UK coordinator was interviewed in the remaining five. Interviews were conducted in May and June 2004, and lasted between 20 and 60 min.

Background

Most (9) of the links were initially established through personal contacts. An independent health charity approached the UK coordinator and proposed the establishment of the link in the remaining five.

Some (5) of the partner institutions studied were located in Latin America and Asia, but the majority (9) of links were between the UK and sub-Saharan Africa (Figure 1).

The links studied had been running for between 2 and 20 years, and ranged in magnitude from single hospital departments to large, multidisciplinary, institutional links currently involving over 100 people. The largest link aimed to improve delivery of care for HIV patients in all health institutions in the partner country.

The general trend towards multidisciplinary health care is reflected by the fact that the vast majority of links involve more than one health profession, with only one link restricting participation to doctors. Professions represented included anaesthetics, general practice, health education, laboratory science, management, medical

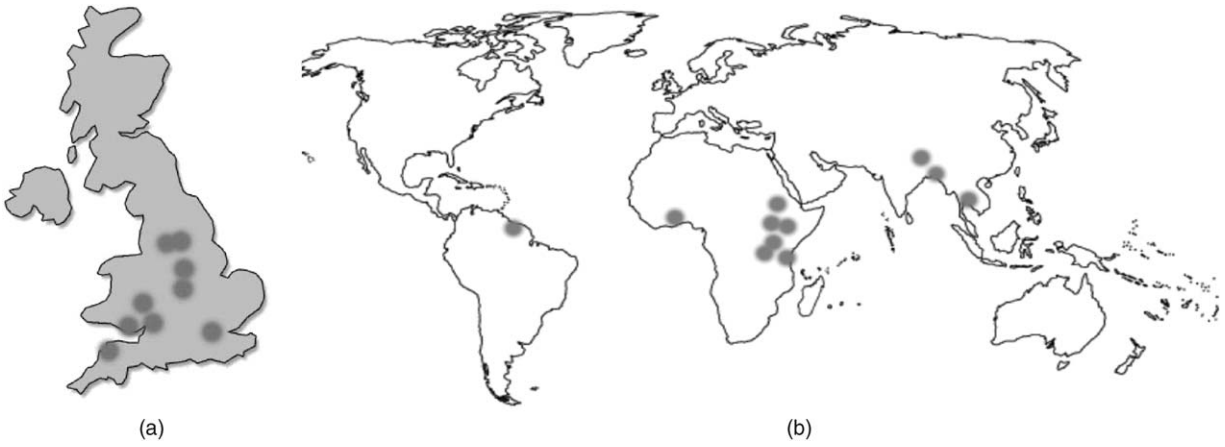

Figure 1 Maps showing distribution of links between (a) health institutions in the UK and (b) the institutions of the overseas partners from which the UK coordinator, the overseas coordinator, or both, were interviewed

specialties, midwifery, nursing, pharmacy, physiotherapy, public health, site maintenance, speech therapy and surgery. Many staff participate in exchanges as visiting multidisciplinary teams, providing overseas partners with training in how such units operate, as well as enhancing their own cooperation and communication skills.

All of the links studied involved some element of educational exchange, with clinical and management training in various specialties provided to the overseas partners. In most (12) links, the overseas partner received some form of material benefit. This came in the form of equipment and pharmaceutical donation or the provision of funds for improving/establishing facilities. Research collaboration was a feature of four links.

The time allocated by coordinators to link administration varied considerably, with some spending as little as 20 min, and others up to 1 day per week. Coordinators were paid for their time at three of the links, one of which also employed a paid fundraiser for 1 day a week.

Regarding projections for the future, most (11) links had immediate plans to expand the link into new areas.

Support and funding

All links enjoyed some degree of support from senior management at their institution. An important manifestation of this was leave arrangements, with the vast majority of staff able to take professional leave in order to participate in exchanges. Some participating staff chose to extend their period at the partner institution by using some of their holidays. NHS staff on some (3) of the links were paid their full salary, as link visits constituted part of their research commitments.

Links received funding from a variety of sources, including charitable organizations, the Department for International Development, professional associations, research grants and private fundraising. One link received funding directly from the hospital trust to which it is affiliated. Annual administration costs for the running of links ranged from £6000 to £70,000.

Benefits of health links for staff in developing countries

A variety of benefits were described by respondents (Table 1). All (9) overseas coordinators and a large majority (12) of their UK counterparts stated that one of the most important benefits was the education and training of health professionals and managers received by the overseas partners.

The majority of overseas coordinators stated that the existence of the link promoted the building of institutional capacity. This was in a variety of forms. Postgraduate medical training at some hospitals in the developing world exists only as a result of health links, the role of which included involvement in curriculum design and examination at partner institutions. One overseas coordinator stated that the link went some way towards 'filling the [national] void in post-graduate training.'

Research collaboration was a focus of several links. This support is seen as important in developing research applicable to local clinical contexts.[13] Several (3) of the overseas partners had little or no research capacity before the link, and are now regularly contributing to a variety of publications. As a result of investment by UK link partners, institutional capacity was also enhanced at a number of overseas institutions in the form of new departments and health initiatives. Most (6) overseas coordinators emphasized the role of increased institutional capacity as a powerful staff recruitment and retention tool, enabling gifted staff to further their careers without migrating out of the country. However, it was suggested by one UK coordinator that increased institutional capacity as a result of links was liable to create a

Table 1 Benefits of international health links

Top five benefits for link partners in the developing world, as suggested by (a) UK coordinators and (b) their link partners

	UK coordinators (a)	*Overseas coordinators (b)*
1.	Clinical education and training	Clinical education and training
2.	Material benefits	Builds institutional capacity
3.	Support and friendship	Material benefits
4.	Builds institutional capacity	Encourages sustainability
5.	New perspectives on patient-centred care	Support and friendship
	Other identified benefits	*Other identified benefits*
	Experience of different cultures	New perspectives on patient-centred care
	Hospital management training	Experience of British culture
	Encourages sustainability	Hospital management training
	Raises profile of link country in the UK	Link attracts potential staff

Table 2 Benefits for National Health Service (NHS) staff involved in links

Top five benefits for NHS staff involved in links as suggested by link coordinators	
1.	Puts NHS problems in perspective
2.	Develop clinical skills in a low resource environment
3.	Global awareness
4.	Personal satisfaction
=5.	Experience of unfamiliar pathologies
=5.	Motivation and morale improvement
	Other identified benefits
	Staff value NHS more
	Improves problem solving
	Improves leadership
	Management experience
	Research opportunities
	Exposes junior staff to extra responsibilities
	Improves creative thinking
	Link attracts potential staff
	Returning staff are more open to new ideas

Table 3 Challenges facing international health links

Top five challenges suggested by link coordinators	
1.	Difficulties arising from cultural differences
2.	Unreliable funding
=3.	Communication difficulties
=3.	Training received by overseas partners not used to benefit intended community
5.	Registration/bureaucratic difficulties
	Other identified challenges
	Disillusionment resulting from unrealistic expectations
	Logistical problems
	Link is time consuming
	Creation of health-care disparity in partner country
	Post-conflict security
	UK staff only able to visit for a short time
	Fear of dependence on link
	Unfulfilled promises
	Low morale in overseas hospital
	Link overly reliant on key individuals

national disparity of resources in the partner country, as one institution receives international support and others do not.

Material benefits received by the overseas partner were acknowledged as important by coordinators at both ends of links. However, there was a consensus among coordinators that the nature of these material donations had moved away from bulk donations of surplus medical supplies. The few links that still donated unwanted supplies were starting to face difficulties as the governments of some developing countries begin to impose more stringent regulations on the importing of out-of-date supplies, with one overseas coordinator describing this as 'no bad thing.'

Benefits of health links for NHS staff (Table 2)

A radically different working environment led to the development of new clinical skills and the practice of neglected ones. In particular, UK doctors 'honed' their clinical diagnoses when laboratory confirmation was not available. Furthermore, diseases such as dengue fever, malaria and tuberculosis are becoming more common in returning travellers and migrants to the UK.[17,18] Participation in health links provides in depth experience of these increasingly global pathologies.

> A senior consultant on an exchange had never seen a case of rheumatic fever before … he made a video to use as a training aid back home. (Overseas link coordinator)

It was reported that UK staff visiting the partner institution received an array of benefits in terms of personal and professional development, supporting the consensus in the literature that overseas work can benefit national health services.

Staff returned motivated and with a new sense of perspective. Coordinators put forward increased morale, enthusiasm and resourcefulness as particular benefits gained. The experience of clinical practice in a low-resource environment stimulated lateral thinking and discouraged wastefulness.

> Benefits [for UK staff] are enormous. Staff taking part in the exchanges value the NHS more and are more motivated. (UK link coordinator)

Global awareness, identified by recent research as the number one skill acquired through international volunteering,[19] was a benefit cited by many interviewees. Seeing global health inequalities first-hand gives exchange participants a deeper understanding of the issues. At one link, the overseas partner was located in a region from which many of the local minority community originated. The staff on exchanges returning to the UK had an increased cultural awareness that they could immediately apply to clinical encounters with their patients. The link coordinator referred to this as a 'good icebreaker' and found that patients built up a good rapport with these health professionals as a result.

> Staff here on exchange definitely develop a broader understanding of the world. (Overseas link coordinator)

A benefit of links noted by coordinators on both sides was the support and friendship forged between the UK institutions and their partners, many of whom were located in isolated, rural areas of developing countries.

> [The country] has been really isolated since the war. The interaction with foreign health professionals is very stimulating. It boosts morale. (UK link coordinator)

Participants on both sides of exchanges benefited from immersion in a health system and culture previously unknown to them.

Challenges facing international health links (Table 3)

Initial culture shock and misunderstandings were identified as challenges. Adjustment to a new pace and a steep cultural learning curve can prove difficult for unprepared staff. It was reported that some overseas staff are wary of offering constructive criticism, not wishing to appear ungrateful. There is a move among many links to address this problem through structured appraisal and evaluation for each visit. One had begun to use anonymous feedback forms to learn from visits and improve the quality and effectiveness of health links.

> Some of the doctors who visit are not teaching appropriate material – they teach for the British MRCP exams, not the realities we face here. We don't invite them back … [we only] … invite back the good ones. (Overseas link coordinator)

The difficulties in securing dependable funding was the most frequently voiced concern by coordinators at both ends of the links. The erratic nature of charitable

donations and other funding in the UK, coupled with equally unpredictable resources at the partner institution, sometimes led to frustration and disillusionment.

> A modest financial contribution from the government would make an enormous difference to what links can achieve. (UK link coordinator)

There was some concern at one health link that staff in receipt of the link's specialist training might use it exclusively in private practice, affording little or no benefit to the communities targeted by the link. Some link coordinators also worried that trained staff may opt to use that training in another part of the country or abroad. There was additional concern in more rural areas, where it was feared that such staff might be attracted to the capital city by higher pay and better living conditions.

It was reported by UK coordinators at two links that staff from the partner institution on link-funded exchanges had failed to return to their departments, choosing instead to remain in the UK. Despite the fact that this occurred in very few cases, it is worthy of consideration, as it is capable of undermining the positive aims of health links. Efforts had been made to counter this by 'favouring exchange applications from people with families.'

Health professionals visiting the UK from most developing countries are at present not eligible for temporary registration with the relevant professional bodies, and therefore their role in UK-based training is reduced to that of observers. UK staff reciprocating the exchanges face no such obstacles, and when necessary, temporary registration is relatively straightforward.

> Doctors [from a developing country] are not permitted to carry out any clinical work in the UK, which restricts training opportunities, although this does not detract completely from the programmes – practical and theoretical training is still worth it. (UK link coordinator)

Suggestions for additional support

Every individual interviewed as part of the research agreed that there needed to be some form of additional support for health links. It was clear from the interviews that the vast majority of health links owed their continued existence to the enthusiasm and hard work of core individuals in the UK. Some coordinators perceived the danger that links between institutions may fade as these key individuals change institution or enter into retirement.

The most frequently suggested form of additional support was that international health links should be given more official recognition by the NHS. A common argument in favour of this was that the NHS should recognize the potential of links for supplementing the professional development of its staff and invest in them accordingly. Four interviewees further suggested that the NHS has not just a responsibility to support links as a means for staff to develop professionally, but also a moral responsibility to redress some of the damage caused by its encouragement of health worker migration to the UK.

> One of the doctors at [the partner hospital overseas] wanted information about low-cost HIV treatment kits. It took me ages to find it. If there was a pool of information or a contact list of other coordinators, I could have got the information much quicker. (UK link coordinator)

Four UK coordinators stressed that a national network of health links would be beneficial. Suggestions for its role included publication of guidelines for good practice, dissemination of information and attracting funding.

Discussion

The study describes a spectrum of active health links currently operating in the UK. A combination of selection strategies were used to identify health links and it is likely that these are representative of health links in the UK. The main shortcoming of the study is the potential for reporting bias through the reliance on those most involved in the links, although the recruitment of interviewees from both ends of the link aimed to provide as balanced a view as possible. The study was not designed to evaluate the impact of the health links on processes or outcomes of health. While such research would provide valuable evidence of costs and effectiveness of health links, it was unfortunately beyond the scope of the study.

The benefits of health links appear to be varied and wide, but the main favourable outcomes are to increase institutional capacity in training and research, and improve global awareness and personal development. Many of the health links show signs of evolving into broader ventures; individual links are uniting to form networks, and links are expanding from uniprofessional associations to become multidisciplinary partnerships involving communities, universities and schools.

Advocates of these health links stress that partnership at a grass-root level means that local needs can be identified and the best strategy developed to respond to them. There is support for this view in the marked concordance between UK coordinators and their overseas partners about the benefits from the links. This suggests that the majority of links are fostering genuine partnerships, with both sides sharing common goals. The historical model of benign paternalism and donation of out-of-date supplies is being replaced with sustainable programmes of skill sharing and staff development.

Health links face a number of challenges. Some, such as culture shock, can be tackled at a local level through good preparation and orientation. Others require a more coordinated approach. Health links in the past have relied heavily on motivated individuals to set up and develop. Often, challenges confronting one link will have been faced at another, and yet there has been little attempt to support the links at a national level and encourage interdependency. A common theme to emerge from this study is the desire for increased support and recognition for the role of links in the NHS.

The Department of Health has stated that 'the ultimate beneficiaries from UK [health professionals] gaining international experience are NHS patients.'[2] By providing further support and encouragement to health links, the NHS, as the world's third largest employer, could be influential in raising awareness in the UK of global health inequalities, while at the same time benefiting its own patients through the opportunities to develop and motivate staff.

Unintended consequences

One of the consequences of links is to furnish health professionals in the developing world with training and education. In a competitive economy, there is a risk that staff in receipt of training will relocate to areas offering better pay or quality of life.[20,21] This will be detrimental when migration of trained health professionals is away from rural areas where the need for health care is greatest,[15] and it is conceivable that health links may

contribute to this. However, there are two sides to this argument. One of the major benefits of health links is the improvement of institutional capacity they bring, in the form of research facilities, new departments and initiatives. This can improve the ability of institutions to recruit and retain experienced health professionals by providing them with the opportunity to further their careers locally.

Funding

The costs of running health links varied considerably and reflected their varied size and nature. Most health link coordinators expressed the ambition to expand and grow, but were constrained by lack of funding and support.

It would be a difficult political task to divert resources from the NHS to international health when they have been committed to domestic health services. However, as the NHS becomes increasingly reliant on staff from developing countries, and acknowledges the effect of international health inequalities on us, it may be justifiable to support investment. Current arrangements for allowing staff to take professional leave are a demonstration of some NHS Trusts' commitment to global health. Perhaps it is time for the Department of Health and the Department for International Development to strengthen collaboration in order to work together in supporting these grass-root partnerships. Such joined-up government offers great potential and leadership in harnessing the skills and enthusiasm of staff committed to tackling global health inequalities.

Conclusion

There are a wide variety of health links between healthcare organizations in the UK and developing countries. These links appear to offer mutual benefits to both partners in sharing skills and promoting global awareness. There is considerable potential to make greater use of the skills and enthusiasm of health professionals involved in health links through more systematic support and better coordination. Greater recognition of the value and importance of health links in the NHS and closer collaboration between government departments in providing support and resources could promote wider and more effective partnerships between health communities in rich and poor countries. Further research is required to measure the impact of health links on processes and outcomes of health care.

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