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Global health: A lasting partnership in paediatric surgery

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ABSTRACT

Background: To emphasise the value of on-going commitment in Global Health Partnerships. **Materials and Methods:** A hospital link, by invitation, was set up between United Kingdom and Tanzania since 2002. The project involved annual visits with activities ranging from exchange of skill to training health professionals. Furthermore, the programme attracted teaching and research activities. For continuity, there was electronic communication between visits. **Results:** Six paediatric surgeons are now fully trained with three further in training in Africa. Paediatric surgery services are now separate from adult services. Seven trainee exchanges have taken place with four awarded fellowships/scholarships. Twenty-three clinical projects have been presented internationally resulting in eight international publications. The programme has attracted other health professionals, especially nursing and engineering. The Tropical Health and Education Trust prize was recently achieved for nursing and radiography. National Health Service has benefited from volunteering staff bringing new cost-effective ideas. A fully funded medical student elective programme has been achieved since 2008. **Conclusion:** Global Health Partnerships are an excellent initiative in establishing specialist services in countries with limited resources. In the future, this will translate into improved patient care as long as it is sustained and valued by long term commitment.

Key words: Global health, global paediatric surgery, paediatric surgery

INTRODUCTION

The imbalance in global heath has stimulated interest for a long time amongst health professionals from high income countries to volunteer in low to middle income countries to fill the gap. The volunteering may be in form of crisis management such as those organised by humanitarian organisations namely "Medecins Sans Frontieres" and the "International Red Cross", decreasing the surgical workload such as "Mercy Ship" and "Smile Train" or forming mutually beneficial partnerships in the form of health links such as the Ethiopia Health Link[1] and many more. Recent surveys across the African continent on paediatric surgery services and manpower has identified the need for collaboration and volunteering from well-resourced countries to assist with training and services.[2,3] Volunteering requires a time commitment for at least 3-6 months and funding to sustain the projects is also required. For most health professionals in full time employment with family commitments, volunteering becomes almost impossible if work-life balance is to be achieved. Furthermore funding for children's surgery in global health is much more difficult to achieve than paediatric medical disease such as malaria and HIV, despite the similarity in the incidence of children's surgical and medical diseases.[4]

In the absence of funding and with time constraints this study aims to emphasise the value of on-going commitment in Global Health Partnership in paediatric surgery.

MATERIALS AND METHODS

In 2002, a United Kingdom teaching hospital received an invitation to develop paediatric surgery in a hospital attached to a newly opened medical school in Tanzania. The vision was to develop specialist services for the hospital. The first visit involved information gathering to assess the feasibility of the project. The institution had four fully qualified general surgeons with two interested in children's surgery. There were no dedicated paediatric surgical wards, theatre list or nursing as this was all combined

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with adult surgical facilities. Intensive care did not exist for children or neonates though a dedicated neonatal nursery was fully operational with limited staff and facilities. The general ethos in the hospital was enriching with the hospital providing meals for patients from farming on the hospital site, using self-designed low energy newborn incubators and the development of low cost limb prosthesis which further developed into opening a training centre for limb prosthesis in Africa.

The project commenced in 2002 and is ongoing to date with annual visits over a fortnight during self-funded annual leave. The work involved working closely with local fully qualified surgeons to develop paediatric surgical techniques and procedures and collaborate with other partners. The ethos was to work as a second surgeon in a training and supervisory capacity in the local environment using local facilities. All equipment available was rationalised, and small donated equipment (e.g., rectal suction biopsy, Pena stimulator) or instruments that would fit into the local facility without impacting on energy supply was used and accepted.

Activities included: Exchange of skills, targeted procedures (such as anorectal malformation, Hirschprung's disease, Kasai procedure), case discussions, training of trainers and trainees, student and clinical officer teaching and themed workshops (resuscitation, World Health Organization [WHO] checklist, infection control) for the health team and most importantly training nurses and junior staff in perioperative care.

In time, further activity involved academic input in assisting with MMed thesis, clinical research, audits, publications, presentations, governance and servicing the library.

Electronic communication continued between visits for case discussion, teaching, collaboration and friendship. As the need arouse the project expanded to other medical and allied health departments [Table 1].

RESULTS

Six paediatric surgeons are fully trained providing specialist paediatric surgical services in different parts of Tanzania [Figure 1]. One paediatric surgeon died of medical illness in 2007. Three further surgeons are trained in non-neonatal paediatric surgical conditions which include Hirschprung's diseases and second stages of the anorectal malformation in their local hospital [Figure 1].

Each surgeon has further identified and trained paediatric surgeons for their institution. Through this project further training has been arranged for three surgeons to train in other centres in Africa: One in Kenya part funded by the Kenya institution in Kijabe and two in Egypt fully funded by the Egyptian institute in Alexandria. A paediatric surgery ward, dedicated paediatric theatre list and paediatric nursing is now established.

Seven trainee exchanges have taken place; four from Tanzania for targeted training in neonatal surgical

Table 1: Medical and allied health departments with the project

Speciality	Year	Present status
Paediatric surgery	2002	On-going
Paediatric specialities	2003-2008	One per year and completed
Urology	2002	On-going
Theatre nursing	2004	On-going
Paediatric nursing	2006	On-going
Engineering	2006	On-going
Radiology	2005	On-going
Radiography	2006	On-going
General surgery	2002 and 2009	2 targeted visits
Intensive care nursing	2008	1 targeted visit
Dentistry	2007-2010	Moved to community dentistry
ENT and audiology	2002-2012	Moved to deafness in schools
Anaesthetics	2005, 2008 and 2010	Resuscitation
Midwifery	2010	On-going
Medical physics	2006	Targeted visit



Figure 1: Distribution of surgeons trained in paediatric surgery from a single centre in Tanzania

perioperative care, laparoscopic surgery and oncology surgery in the UK over a 6-8 week period and three trainees from the UK have accompanied the UK surgeon over time for experience of working in a low income country.

Through this project four Tanzanian trainees have been awarded fellowships from British Association of Paediatric Surgeons, European Association of Paediatric Surgeons and World Federation of Association of Paediatric Surgeons. Twenty three clinical projects by Tanzanian surgeons have been presented at international paediatric surgical meetings. There are eight publications by Tanzanian surgeons published in international journals and three chapters in a paediatric surgery textbook.

Of the many other medical and allied health professionals who joined the project just a few are highlighted. Theatre nursing staff improved shelf life of sterile theatre equipment from 2 weeks to 3 months by collaborating with a local microbiologist and further won the Tropical Health and Education Trust (THET) prize for innovation in 2009. Paediatric nursing on the ward was consolidated and a programme for catheter care in spina bifida patients was commenced in the community. The radiographers introduced daylight X-ray processing and developed a course in radiography, which henceforth won the THET prize for training in 2010. Subsequently funding was secured from the British Council to set up a much needed School of Radiography on site.

The National Health Service (NHS) in the UK has benefited from volunteering staff from this collaboration that learnt new cost-effective techniques, learnt to work in a poorly resourced environment and became stimulated within their profession resulting in staff retention.

Through this project, The University of Oxford has fully funds two Tanzanian students to do their electives in Oxford since 2008. Furthermore, the project has attracted a senior paediatric surgeon to spend 30 weeks/year at this institution.

The project has been challenged by political redistribution of trained staff (2006), natural disasters such as drought (2007), death of colleagues and trained allied workers from road traffic accidents (2007) and illness (2008), enticement of trained staff away from hospital service delivery to research projects by global funding bodies (2009-2010), unqualified short term volunteers arriving from unverified institutions (2004) and the constant donation of expired and inappropriate equipment from high income countries.

DISCUSSION

Global health crisis and the need to address this in low income countries is widely known and well documented. Volunteering through health links might fill some of the gaps in the health crisis as outlined by Leather *et al*.[5] This manuscript outlines the benefit of long term volunteering and commitment towards improving health services. The key to the success of such projects is the need for the host country to extend an invitation, followed by a mutually agreed working plan resulting in exchange of skills and consolidation with mutual trust and friendship.

Infant mortality in the WHO Africa region as compared to the WHO regions in America is 145 per 1000 live births versus 19 per 1000, respectively.[6] In Africa there are only two physicians per 10,000 compared with 32 per 10,000 in Europe.[6] Sub-Saharan Africa has 11% of the world's population and carries 24% of the global burden of disease, yet it has only 3% of the world's health workers.[7] Such alarming statistics usually evoke emotions and encourage volunteering usually in haste and with poor planning. This was clearly demonstrated in the not so recent crisis in Haiti when good intended volunteers arrived uninvited with no structure resulting in a large number of patients receiving medical attention with no follow-up or sustainable plan resulting in medical disasters.[8] This project started by invitation only and at every stage the project developed as per the need seen by the African institution. The request at every stage was reviewed to assess the feasibility and the actual benefit to the paediatric surgical department in the African Institution.

This collaboration commenced in 2002 and evolved over the years with further medical and health professionals joining the team [Table 1]. At the start, working rules were set to avoid potential misunderstanding among the working team as there were no published guidelines to work from. Only in 2005, were guidelines set by THET for volunteers establishing links.[9-11] In March 2009 The British Medical Association produced a guidance document aimed at those in medical education and employment which outlined national policies and gave examples of best practice.[12] More recently surgical volunteering guidelines have been set by the College

of Surgeons of East, Central and Southern Africa.[13] In this link, the memorandum of understanding and guidelines set since 2002 were in keeping with the above published recommendations providing an audit base and governance for this project.

Fund raising for children has an emotive drive, and most global funding is channelled to paediatric medical conditions such as malaria, malnutrition, human immune deficiency disease. Paediatric surgical conditions have the similar incidence[1] and despite global attention to the disparities in surgical burden and evidence for the cost-effectiveness of surgical care, funding for surgical paediatrics remains a challenge.[14-16] The current collaboration was self-funded utilising annual leave and was able to achieve the outcomes outlined.

Training of general surgeons in paediatric surgery is less onerous and for completion of training it is of better to do so in countries with similar facilities and income. Further short term targeted training may be achieved in high income countries. Trainees from Tanzania received further paediatric surgical training in other parts of Africa and learnt specialised targeted skills from Europe and UK via fellowships and scholarships on a short term basis to add value to their training. This concept is a move away from previous experience of providing training solely in high income countries with technical sophistication, which could not be applied in the home country. Trainees from UK who accompanied the lead surgeon gained experience in working in a different environment with basic facilities and shared knowledge and skills with their African counterparts. The management of the burden of disease with a critical shortage of trained staff by their African counterparts is a humbling experience for UK trainees who are bound by the European Working Time Directive.[17]

Team working as an essential component in medicine is highlighted in this project whereby an invitation to a surgical team has attracted other specialities as per need and has enhanced the outcome of the project. The NHS has also benefited by volunteering staff exposed to basic facilities, becoming resourceful, cost conscious and returning home stimulated and enriched both personally and professionally.

The project has also engaged the university to provide fully funded elective places for African medical students on an annual basis. This has further paved the way for UK students to take an elective placement at the link institution with further development of a charity to fund the medical careers of some of the needy students in Africa.

Long-term projects allows for academic activity such as publications, presentations and chapters, which attracts interest in the speciality and allows for career progression. Furthermore, audits and governance are feasible due to continuity in the partnership.

Partnerships and links are not without challenges whereby the political climate, change in management, natural disasters, loss of colleagues from accidents and illness, external influence, inappropriate research activity and donations, will impact negatively on the intended activities. With long-term partnerships these challenges are better understood and addressed.

CONCLUSION

Global Health Partnerships are an excellent initiative in establishing specialist services in countries with limited resources. In the future, this will translate into improved patient care as long as it is sustained and valued by long term commitment.

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