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**Andrew James Paterson**

# International Healthcare Volunteering:

## Lessons learned from efforts to put a sustainable model for emergency dentistry and oral health education into rural Tanzania

International healthcare volunteering is becoming increasingly popular.[1] Many dental professionals and students from developed world countries volunteer for a legion of programmes predominantly in the developing world. Individual volunteers' motives are varied and include social responsibility,[2] a wish 'to help others',[3] to experience a sense of adventure,[4] religious motivations[5] and career-based motivations.[6]

Whilst many volunteer programmes aspire to help and provide sustainable benefits for the communities they seek to serve, concern has been expressed that some programmes may cause unintended harm. Certainly the response to volunteering in host communities is sometimes mixed.[7] Sadly, often due to inadequate knowledge and understanding, some projects have the potential to cause harm by being paternalistic, diminishing confidence in local health systems, failing to maintain patient safety, causing economic harm to local providers and being more about volunteers than local communities.[8] In consequence, there is a need for dental professionals involved in volunteering to understand the concept better.

Some 15 years ago, Ian and Andie Wilson, the founders of the UK charity and Tanzanian Non-Governmental Organization (NGO) Bridge2Aid, set up and commenced the first Dental Volunteer Programme (DVP) in Mwanza region, Tanzania. The programme's objective was to train rural Clinical Officers (COs) in emergency dentistry to start to address the acute shortage of trained oral health workers in rural areas, so that they could provide much needed services for their communities. Despite many problems and logistic hurdles, the DVP has persisted and evolved due to the efforts and support of many within and outside dentistry in the UK and Tanzania. It has become a unique Dental Training Programme (DTP), with increased emphasis on prevention and Oral Health Education (OHE), using modern teaching and assessment methods, whilst retaining its core commitment to training in emergency dentistry. At the end of 2018, there had been 96 DTPs operated in 39 Districts and 13 Regions of Tanzania. As a result, 550 Clinical Officers have been trained and 92% of those deemed competent enough to be 'task-shifted' to give potential access to basic emergency dental care and OHE for an estimated 5.5 million rural Tanzanians. In addition, 54,000 people have been treated during the programmes.

This paper aims to triangulate experiences of the DTP by reflecting on it from four different perspectives. Firstly, the volunteer perspective, secondly the thoughts of a Tanzanian dentist, thirdly the perspective of someone visiting the DTP and finally the reflections of a DTP Site Clinical Lead (SCL).

It is hoped that the Bridge2Aid experiences are helpful to other volunteering organizations and individuals who are involved in dental volunteering when considering the ethics and suitability of purpose of the variety of programmes available. In essence, it poses the question 'how can you do good better?' Additionally, it is hoped that the reader is able to recognize and benchmark more easily the features of beneficial sustainable volunteer programmes.

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## The volunteer (John Milne)

I came late to dental volunteering although I had been considering it for several years. My awareness of Bridge2Aid grew during my time as Chair of the General Dental Practice Committee of the British Dental Association and I was impressed that their programmes appeared to have at their heart the principle of sustainable aid. In particular, I liked the idea of a short-term training programme whereby local health workers could learn skills to enable them to provide emergency dentistry. This seemed to me to be very positive with potential long-term benefits given the lack of dentists in Tanzania.

Bridge2Aid provides training and induction for all volunteers, both dentists and Dental Care Professionals (DCPs). The DCPs train the COs in delivering oral health education, as well as the practical aspects of decontamination and sterilization of instruments whilst processing instruments throughout the day to keep the DTP running. For volunteer dentists, their role in training aims to teach basic skills of history-taking, diagnosis, triage, management and referral of acute dental emergencies. Given that simple restorative care is unavailable in most rural areas, this means teaching the COs to become competent and safe at tooth extraction using a limited range of instruments, usually in health centres without running water or electricity.

I joined my colleagues, seven dentists of varying ages and experience and three DCPs, at Heathrow for the long journey to Mwanza, where we stayed overnight before travelling to Chato District the next day with two Tanzanian support staff. We worked in two village clinics each for four days. The structured training programme was 1:1 and progressed rapidly from history-taking and diagnosis through to administering local anaesthetic on day one whilst demonstrating safe extractions. The COs built on their experience each day and progressively gained confidence and competences until they could extract most teeth independently. Inevitably, some extractions proved difficult, and an essential element of the training was recognition of when to seek help. Help was in the form of the District Dental Officer (DDO) who expertly removed broken roots and impacted third molars with minimal facilities. The DDO continues to support the COs once they are practising independently, acting as both a mentor and someone to whom they can refer difficult cases.

Integral to the programme was that the team met each evening to discuss the COs' progress, to debrief on the day's events and to discuss any specific areas of development that needed to be addressed the next day. After that we enjoyed a drink and dinner together. The team quickly bonded with a healthy disregard of hierarchies. Good humour and fun made for a great sense of camaraderie. New friendships were made that will last far beyond the DTP.

On our programme, all six COs met required assessment standards and became competent clinically by the end of the programme. It was a joy to see their faces light up when they were informed by their DDO that they had passed and knew that they would be able to use their new skills in their own communities. It was satisfying to me to know that I had been involved in the training of these highly motivated people who can look forward to relieving pain and infection for their patients in the future.

The benefits were not confined to the COs. The volunteers, particularly those coming to Tanzania for the first time like me, were brought face to face with levels of oral disease and poverty unheard of in the UK. To build skills in others was both humbling and immensely gratifying, and we all learned life lessons and clinical skills from each other as we worked together towards a common purpose in very basic conditions. There was no dental chair to recline, inadequate lighting in the clinics and no radiography to identify curved roots or facilitate diagnosis. Our DCPs were inspirational, keeping up a rapid throughput of clean, sterile instruments in cramped and difficult conditions whilst also sharing skills with the COs……. Would I go back? Like a shot!

## The Tanzanian dentist (Joseph Kazimoto)

Tanzania's Strategic Oral Health Plan,[9] for the first time, put into place as Government policy the principle of empowering non-dentally trained health workers to assist with the delivery of vital emergency dental services in rural communities where there were no, or limited, oral health services. Unfortunately, despite the plan being put in place, implementation by district and regional authorities was slow, which can be attributed to an inadequate budget to conduct training programmes in local annual plans, given competing demands and priorities on health services in Tanzania. Since Bridge2Aid engaged in partnership with the Tanzanian Government and communities, the DTP has been of great importance in progressing the primary goal of the Plan.

Over many years, Bridge2Aid has worked in close collaboration with the Ministry of Health, being mindful of the Ministry's role to create, supervise, and reinforce health policy and guidelines. This close relationship has meant that DTPs are aligned with Tanzanian health policies and guidelines, particularly with respect to Infection Prevention and Control. This ensures that programmes run safely, with Government approval and for the benefit of needy communities.

Additionally, Bridge2Aid has worked in partnership with the President's Office for Regional Administration and Local Government (PORALG), which has been very supportive in making sure that the DTPs have practical and logistic support from regional and district authorities, so that the programmes run as smoothly as possible. PORALG staff work with Bridge2Aid to decide together a fair and equitable distribution of DTPs to districts and regions where there is greatest need. This positive relationship ensures supportive supervision of trained COs by their DDO and appropriate care and maintenance of valuable donated instruments and equipment.

As well as strong relationships with Government and communities, Bridge2Aid collaborates closely with the Tanzania Dental Association (TDA) and the Tanzanian Chief Dental Officer (CDO). Over the years, Bridge2Aid has sought advice from the TDA and the CDO so that up-skilling rural COs goes alongside efforts to cascade training of professional cadres like dental therapists and dentists. There are higher numbers of dentists in training and a new dental therapist college in southern Tanzania has recently opened. As part of their learning, college students are actively encouraged to serve needy people. In addition to training students, resources are being directed towards more effective utilization of existing resources to increase retention of dental therapists in rural areas by improving motivation and equipment. For some years I was the DDO and only trained dental professional in Musoma rural district, serving a population of more than 300,000. Out of the blue, the District was approached by Bridge2Aid regarding the possible introduction of a DTP. At first I was unsure and rather sceptical that such a programme

could work. However, I was proved wrong and I have great memories of being involved in and witnessing how quickly the COs picked up their new skills from their trainers. I was impressed with how professional the COs were in giving oral health advice as well as dealing with dental emergencies.

Importantly, a few months after the DTP, I experienced a significant drop in numbers of extractions at my District health facility and I began to receive referrals of patients with different needs, like fillings and prompt referrals of swellings, from rural parts of the District. This meant that I could now concentrate my limited time and resources to other important priorities, like involvement with District oral health planning and effective management of more advanced and serious cases. Prior to that DTP, my role had predominantly been dealing with high numbers of extractions.

One of the major problems of dentistry in Tanzania is poor oral health knowledge, especially in rural areas. Even in these areas there is some knowledge of common diseases like malaria, HIV-AIDS and tuberculosis but virtually no knowledge of oral health. I was fortunate to become the Clinical Director for Bridge2Aid for 4 years and, over that time, I observed various positive modifications of the DTP. Better incorporation of Oral Health Education in the DTP has enhanced the programme as it gives simple preventive knowledge to rural communities, which will hopefully change attitudes and behaviours to oral health in time. The volunteer DCPs train the COs so that they are able to deliver oral health messages to individuals, village meetings, schools, ante-natal and child health clinics, and to provide vaccinations and conduct other health outreach campaigns.

Recently, I have experienced another aspect of the DTP which was the engagement of Regional Dental Officers (RDOs) and DDOs by actively involving them in the DTP as training dentists. This has been well received by RDOs and DDOs and, in time, the hope is that this will empower Tanzanian RDOs and DDOs to train their own COs. This would make the DTP more sustainable and give more rural Tanzanians access to emergency care and preventive advice sooner, decreasing dependency solely on Bridge2Aid volunteers. This model empowers Tanzanians ultimately to take full charge of oral health care in rural areas.

At the start of 2019, Bridge2Aid commenced working in partnership with a local NGO, 'Education and Health for All' (EH4all), which will be fully involved in logistics and planning of the DTPs. As a director of EH4all, I feel that this is positive as it gives Tanzanians more ownership and input into the DTP and demonstrates the long-term commitment of Bridge2Aid to sustainable oral health improvement in Tanzania.

## The visitor (Jeremy Bagg)

At the invitation of Shaenna Loughnane, Bridge2Aid Chief Executive, I visited a DTP that was underway in Chato in 2018. Chato was a five-hour drive from Mwanza, whilst the site of the DTP was a further 45-minute drive along 27 km of un-metalled rutted track, passing by remote villages and land being tended with hand implements.

Kachwamba Health Centre, the DTP site, was a new, partially completed campus. Early each morning, a queue of patients was already waiting as the volunteers arrived. Once disembarked, well-rehearsed routines swung into action. The volunteer dentists, each paired up with one of the COs for the day, checked over their workstations (a plastic chair and a table) and set the goals for the day with the COs. The DCPs busied themselves in the instrument decontamination area, whilst two Tanzanian Bridge2Aid staff began to organize the waiting patients in an adjoining building. Each day, 120 patients were booked, with potential to add an additional 10 patients when unexpected emergencies arrived.

Under the scrutiny of the trainers, the COs obtained histories, examined the patients and appropriate treatment plans were agreed, usually extractions. The COs administered the local anaesthetic, undertook the extractions and provided post-operative instructions, again under the supervision of the trainers. My visit came towards the end of the DTP, by which time the COs were becoming very proficient and the amount of input required from the dentists was minimal.

A key person, who had been involved from the earliest planning stages of the visit months earlier, was the local DDO – one of only two trained dental professionals for a population of 365,000. He worked closely with the SCL in dealing with very difficult extraction cases and also fully participated in CO training and assessment. A key element was ensuring that the COs recognized the limits of their competence and identified patients that required routine and urgent referral to the DDO.

Infection control and instrument decontamination are major challenges in a busy surgical environment without electricity or water supply! All instrument decontamination took place in a separate room – the Local Decontamination Unit – operated by the three DCPs. This area was divided into 'dirty', 'clean' and 'sterilized' zones. Instruments were all managed within trays, each with a disposable liner. In the clinical area, trays containing used instruments were placed in a safe area on the floor and rapidly collected by one of the DCPs. All instruments were cleaned in detergent with a soft brush, rinsed, checked and then sterilized in pressure cookers over gas-operated burners. They were cooled in sterile water, dried and returned to the instrument pool for use. The World Health Organization has approved this process and I was impressed with the application of all correct principles of modern instrument decontamination in a very challenging environment (Figure 1).

Each evening the team de-briefed. I attended the final one in which the combined assessments of all the COs were reviewed extensively to determine who had achieved the learning outcomes and competences. The team and their DDO agreed that all six had passed, were safe, and would receive their certificates, a set of dental instruments and a pressure cooker.

I am left with two abiding memories from my visit. Firstly, the desperate need for oral health education and access to basic dental treatment in these remote and rural areas. Many had walked long distances to attend and, in addition to adults, many children were brought along by parents for treatment.

Secondly, the effectiveness of the training model developed by Bridge2Aid, which combines delivery of much needed treatment with up-skilling of local COs as its primary goal to embrace a sustainable legacy of the time spent in-country. When this DTP concluded, 1021 patients had been treated, but the COs who participated will treat multiples of this total in the years ahead (Figure 2).

It had been a *tour de force*, by an extraordinary team of volunteers, expertly led and highly organized on the ground.

## The Site Clinical Lead (Andrew Paterson)

At its heart, Bridge2Aid uses a

**Figure 1.** A Local Decontamination Unit used in a rural health clinic on a DTP.

non-hierarchical collegiate team approach to run the DTP. However, volunteering in Tanzania brings a wide range of daily problems, supply issues, increased risks of illness, difficulties of adaptation to the environment, cross-cultural nuances and travel, accommodation and logistic problems, to name but a few. Leadership is essential and the team is led by a SCL, an Assistant Site Clinical Lead (ASCL) and a Tanzanian Site Administrator in partnership with the DDO.

I have been fortunate to experience DTPs as a regular volunteer, ASCL and SCL and have been mentored by others, including inspirational role models, towards the SCL role. Leadership in the context of a DTP is collaborative. However, despite this, ultimately it involves the SCL making difficult calls, such as repatriation of an ill volunteer, or having to leave a centre with untreated patients waiting because the almost impassable road is unsafe in the dark, or failing a CO who has not met the required standard, knowing the effect that will have on his or her local community.

A DTP can be an emotional rollercoaster journey for the most experienced SCL – there's always doubt. How will the team bond? How will we cope if there are too many patients? Will we have enough supplies? If we run out how will we get more in the middle of nowhere? And then there's a pastoral care role. Many areas lack modern communications and without these volunteers can feel lost. Some become deeply affected by the emotions of witnessing extreme poverty, inequality and suffering. It hits nearly every volunteer, new and experienced, at some point on a DTP. Suddenly SCL and ASCL have an urgent immediate pastoral care role to support, empathize, understand and try to get closure.

During a DTP the SCL is always on duty – my light is always on except in a power cut! The role involves daily planning, CO allocations, consultations, meetings with officials and significant programme administration, as the reality is that NGOs need robust and valid monitoring and evaluation tools to prove to funders the outcomes of the programme.

Fortunately, Bridge2Aid staff and volunteers in the UK continually develop and update policies, procedures and processes that support SCLs to high governance standards. All are tailored for Tanzania, in collaboration with Tanzanian authorities, to meet local and national guidelines. Additionally, UK staff help the SCL and volunteers through a wide range of issues that they may encounter, like assisting with appropriate indemnity provision and temporary dental registration in Tanzania, together with practical and pastoral support. No stone is left unturned to try and deliver a safe, effective and sustainable DTP.

Despite the responsibility and stress of volunteering as a SCL, it is a true privilege to have this role. For many volunteers, myself included, it is life enhancing, providing many transferable skills that you thought impossible by taking you beyond your comfort zone.

## Discussion

The reflections in this paper give some insight into one volunteering NGO's efforts at trying to address health inequality in one small part of the developing world. Sadly, the need for basic oral care in the developing world is overwhelming. This is unsurprising with regions like sub-Saharan Africa carrying 25% of global disease burden but with only 2% of global healthcare workers to meet that need.[10] The Bridge2Aid story so far has been the sum of the efforts of many like-minded people, each a small piece in a jigsaw trying to make a difference, slowly adding pieces to the jigsaw, which as yet is incomplete. So what can others learn from the Bridge2Aid experience?

Volunteering was criticized by the Academy of Medical Royal Colleges as being small-scale, piecemeal, underfunded and unsystematic.[11] Undoubtedly, there is much truth in this but an organization has to start somewhere and this is inevitably small-scale. It requires that an innovative idea is matched with action, persistence and resilience to grow and bring others into the embryonic organization. In Ian and Andie Wilson, Bridge2Aid was lucky to have the right people in the right place at the right time with the right skills and attributes to bring others on board. Funding remains a major issue for all NGOs and Bridge2Aid is no exception. The limited financial grants available are in huge demand and competition from other worthy causes is ever present.

As Bridge2Aid has grown it has used the skills and talents of many to problem solve parts of the jigsaw that is volunteering. This is essential, as no one individual has the time or talents to deal with the complexities of volunteering, so it comes down to teamwork.

Teamwork for Bridge2Aid goes beyond the DTP. In the reflections in this editorial, we have demonstrated that the 'team' is broader than the DTP itself. The engagement of host governments, communities and professionals is pivotal to volunteering success. Indeed, the UK

**Figure 2.** These COs have successfully completed their training in emergency dentistry and oral health education.

Department of Health recognizes that volunteering is best driven and led by host countries' needs, which is furthermore aligned to their health policies and priorities, co-ordinated, sustainable and evaluated.[12]

As is seen in the reflections, an ethical NGO needs to meet regulatory requirements and ensure that volunteers are safe in an environment where risk is different and often higher than in the UK. The volunteer dental professional has to operate under two ethical and regulatory codes, those of host and donor country. It is through good teamwork and communication that Bridge2Aid has improved over 15 years in negotiating the sometimes labyrinthine and changing regulatory environment.

Of course, successful volunteering is dependent on following good practice guidance. There is, however, only a limited amount of guidance in volunteering to 'help them to do good better'.[13,14] Bridge2Aid strives to follow the general principles of the available guidance. This includes having evidence-based programme goals; placing community needs and priorities as paramount whilst establishing long-term relationships with communities, governments and other stakeholders; selecting teams that have appropriate skills for individual programmes which have good leadership; having good governance; actively seeking feedback to improve and giving training to team members and others prior to any programme. These principles can be seen in the reflections in this editorial.

Volunteering with organizations like Bridge2Aid is not just about benefits to the developing world. As the reflections indicate, there are many spin-off benefits for volunteers and donor countries. Volunteers gain a unique cross-cultural experience, involvement in a multidisciplinary team and use problem-solving skills which are of great benefit to developed world health services like the National Health Service.[15]

So where does Bridge2Aid's future lie? In Tanzania there remains much work to be done. There are many regions that remain inaccessible to volunteers and efforts to increase sustainability, by encouraging and facilitating Tanzanian RDOs and DDOs to train their own COs more effectively, is undoubtedly a longer term goal. Inevitably, the question must be asked if this unique model is transferable to another country, something that Bridge2Aid is actively considering in collaboration with other NGOs, governments and communities.

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**Conflicts of Interest**

Andrew Paterson and John Milne are volunteers and trustees of Bridge2Aid. Joseph Kazimoto is the former clinical director of Bridge2Aid Tanzania and currently is a director of EH4all, Bridge2Aid's local partner.

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