Delivering a neonatal and child health teaching programme in sub-Saharan Africa

This article discusses the particular needs and challenges when teaching in a resource poor country. Although the focus is on one particular School of Nursing in rural Uganda it is hoped the account of the experiences will encourage other colleagues to consider undertaking similar projects as part of their career trajectory. More specifically it discusses and reflects upon the development and delivery of the teaching package, from inception to completion.

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Key points

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1. Nurses and midwives worldwide have a moral obligation to learn from each other.
2. Maternal and infant mortality rates are very high in sub-Saharan Africa.
3. One in eight children die before they reach their fifth birthday.
4. Education and training is one way to address MDG targets and improve maternal and infant mortality rate.

While in Uganda in September 2007 one of the authors, Liz Crathern, had an opportunity to visit Karoli Lwanga School of Nursing at Nyakabale hospital in Rukungiri, about eight hours south of the capital Kampala and about 60 miles from the border with Rwanda. One of the main aims of that trip was to create links with the School of Nursing and identify their needs, if any, that could be supported through teaching and training. It quickly became clear that the school had no neonatal/paediatric teacher. The students were expected to care for sick and preterm neonates in a very busy maternity unit and also care for young children in general medical wards. The special care nursery was very under resourced and there was a need to educate carers on the care of sick and/or preterm infants[1]. It was agreed with the senior tutor and hospital management team that a programme of neonatal and child health teaching could be delivered the following summer by two nurse teachers. Denise Evans was recruited following a presentation to neonatal nurses in Yorkshire on the outcomes of the first trip.

FIGURE 1 Denise teaching resuscitation skills.

FIGURE 2 Practising resuscitation with a preterm manikin.

Why did we do it?

First and foremost Karoli Lwanga School of Nursing had identified a lack of specific expertise in the delivery of teaching on neonatal and child health and a desire to provide learning that could potentially improve the quality of care for the infants and children in the hospital.

As nurse teachers with many years of expertise in this field there was also a personal desire both to share our knowledge, skills and expertise and importantly learn about the challenges of delivering health care in a resource-poor country. Equally the authors believe that nurses and midwives worldwide should have a moral obligation to support and learn from each other. However, it is also hard to ignore the facts. Maternal and infant/child mortality rates are very high in sub Saharan Africa. One in eight children will die before their fifth birthday[2-6]. The WHO Millennium Development Goals targets include reducing infant mortality and improving maternal health care in developing countries[2]. It is clear education and training is one way of improving these figures.

FIGURE 3 Denise giving tetanus shots to pregnant women in a village clinic.

The statistics are staggering, of 130 million newborn infants born each year globally, about four million die in the first four weeks of life. More importantly, 99% of neonatal deaths are in low-middle income countries and over half occur at home. Newborn deaths constitute over 40% of all deaths of children less than five years of age. Importantly, according to the WHO, 4-9 million infants suffer from birth asphyxia each year. Of those at least 1.2 million die and the same number are left with major handicaps[6]. All this in counties with very poor infrastructure to support disabled children and their families.

Who were we teaching?

Initially we had agreed to teach the 60 second year pupil nurse midwives (EM) and any hospital and school staff who could attend the sessions. As the content of the programme developed the school decided to include the 60 first year pupil enrolled nurse comprehensive nursing students (ENC) who would be completing their PTS (six week probationary training), increasing the number to 120 students for a two week programme. This meant that we had two types of learners to consider in terms of their experience and underpinning knowledge. It was agreed we would teach the less experienced 60 first year pupils (ENC) in the mornings and repeat the teaching for the more experienced 60 second year pupils (EM) in the afternoons.

How we planned the programme of teaching and learning

We maintained our contact with the school via email. As the weeks and then months passed by, it became obvious we would not be able to deliver all that they needed in the short time we had available – this concentrated our minds and helped us to become more focused. A work colleague directed us to a text: *Where there is no doctor – a village health care handbook for Africa*[7]. This was invaluable in helping to set the learning in context. The first author's previous experience of the poorly resourced nursery also helped fine tune content. Once in the country, we spent our first few days in the hospital, meeting with teaching and hospital staff and going on field trips to observe maternal and child health delivery in rural clinics. This also helped us contextualise care delivery locally and relate our teaching to the Ugandan healthcare system. This meant we continually reviewed our power points developed in the UK to ensure they had resonance with local experiences of health care.

The 30-hour programme of content was delivered in the mornings to the first year pupil nurses on the ENC programme; these students are trained to work in rural health clinics and manage patients of all ages from birth onwards, including midwifery care. In the afternoons we taught the second year midwifery EM pupils, they are trained to work as midwives in the hospitals. Week one focused on neonatal content and week two was child health related (**TABLE 1**), although some teaching overlapped to ensure continuity of knowledge. We used a team-teaching approach to draw upon each other's strengths, enabling us to teach from a midwifery, neonatal and child approach with confidence, thus delivering a comprehensive programme of learning.

How did we do it?

Before leaving the UK we ascertained what the resources would be like for teaching. The school had a large classroom with access to a data projector and a rather unreliable supply of electricity. We were assured the hospital had its own generator that would turn on if the electricity cut out. There was also a blackboard and chalk. We both brought a computer lap top and back up USBs with all the teaching content on them, including two manikins for NLS and infant BLS training. As students have very limited resources and paper is a scarce commodity, we decided to create a work book with all the taught

Neonatal content

- Adaptation to extra uterine life
- Neonatal asphyxia
- Neonatal life support
- Normal newborn behaviour
- Examination of the newborn
- Observing the well and sick newborn – vital signs monitoring
- The premature infant
- Neonatal problems and when to refer
- Neonatal quiz

Paediatric content

- Child health assessment and vital signs monitoring – normal parameters
- Normal growth and development – Tropical neonatology: IUGR and preterm infant – minimum midwifery and neonatal care packages required to deliver optimum care and improve outcome
- Assessing the sick child – when to refer to hospital
- Paediatric basic life support
- Shock in children – malaria – meningitis
- General paediatric problems – seen in health clinics – sore throat; malaria; diarrhoea; ear and eye infection; dermatology – malnutrition; infectious diseases

TABLE 1 Content of the teaching programme.

FIGURE 4 Liz giving vitamin drops as part of the immunisation programme.

content needed for lectures and group work, including key references. Our weight allowance did not permit us to take 120 copies with us, so resources were put aside by the school to enable a copy to be provided for each pupil. Other staff were charged a nominal fee if they wanted a booklet. This meant time was not taken up during lectures for note taking.

We had approximately 60 students at each two hour session, including some clinical staff and provided a mixture of clinical skills teaching with lectures, discussions and quizzes. The quizzes at the end of each week were well received by the students with evidence of learning taking place. They told us it was a fun way to assess their developing knowledge and understanding. Interestingly the students got very animated and competitive during the quizzes, especially the men. Although the students had taken part in the quizzes and group work, the tutors also requested we compile an exam paper for when we had left. Testing knowledge by examination is a very traditional mode of assessing learning in Ugandan schools and this seems to be a preferred mode of assessment in the School of Nursing.

What else did we do?

We attended three full days of immunisation programmes and maternal care at the rural health clinics. These provided an opportunity to observe how the clinics were managed and care delivered. This was interesting as we managed to organise one of the clinic sessions so that we attended to 70 pregnant women for tetanus injections in less than an hour. Normally the women would be sitting around for hours in the strong heat or torrential rain waiting to be attended to, and only after the 90 babies who attend with their mothers would they have been immunised. I think the women were rather pleased, as shortly after they left we experienced a torrential rain fall. We then had a discussion about how best to organise and prioritise work. Word about our rural activities got around the students, and they then wanted us to attend all rural trips with them in the third week and were disappointed when we had teaching commitments! Saying good bye was emotional as we had got to know the students and staff really well in such a short time and they wanted us to return soon.

What did we learn from this experience?

The nurse training system reminded us of the rather regimented medical model of hospital-based training in the 1970s in the UK. We were shocked to find that between lessons the pupil nurses had a cleaning rota to complete every day in the School of Nursing. Men are better represented among students than in the UK and some young men see nursing as a route to a clinical officer post, similar to an advanced nurse practitioner role in primary care in the UK. This post carries a lot of status. Students wore a very smart uniform to class and took pride in achieving their six week PTS training. They were all very proud to become nurses and midwives.

The school teaching team worked very hard with limited resources. They had some computers but they took up space in the very small library. The library was stocked with very old nursing texts dating back to the 1970s alongside some newer texts. Nothing is thrown out! The library cabinets are locked as there is limited manpower to source it, meaning students have very restricted access to the library books. We had limited flip chart paper and pens to work with and also chalk was in small supply. Every inch of the flip chart paper is used up before it is discarded. Students use this for backing their note books.

Initially the students were very shy. They did not want to answer any questions and laughed quietly when someone in the group attempted to. Sometimes they did not understand our question or our accents and would request quietly 'come again?' We soon got used to this request! In Ugandan culture it is rude to question an elder and this can hamper open dialogue and debate – when students did engage they were initially very quiet. The students were used to being taught in a didactic style and our approach to teaching was something they had to be given time to adapt to. We had to understand local culture, for example if a Ugandan is agreeing with you they will sometimes raise their eyebrows very slightly, rather than speak, again we got used to this over time.

It was obvious from their ability to answer questions during the quizzes that they had taken their work books to their dormitories and revised for the next day. This was really rewarding to see as these students worked long hours with little personal time and little to eat during the day. The students are to be admired for their commitment to improve their practice as some of them were visibly tired and weak looking – one girl had a troublesome cough and said her malaria was returning, yet she attended every session. However tiredness was also to do with the time of day the second session was delivered. It was during the hottest part of the day, the school does not have air

conditioning and we certainly could feel the effects of tropical lethargy after a few days. This is something we will remember when planning our next visit.

The use of the NLS and premature manikins for resuscitation training was well received and after each session we had a small group of keen students eager to try out their newly acquired skills. We hope to bring some resuscitation manikins back with us next time. A fear of HIV transmission meant that we had to adapt the discussion on BLS and mouth-to-mouth breathing. A huge debate about whether or not to suction at delivery was again centred on the fear of them getting an infection from transmission of viruses from bodily fluids, in particular HIV.

Discussion about maternal morbidity, spacing of pregnancies, and the effect on the fetus identified deep held views about contraception with one student stating subsequent babies would be born deformed. Management of the preterm infant centred on the basics: providing fundamental care such as observations; warmth and feeding. Assessing vital signs concentrated on learning clinical assessment and less on the role of equipment in supporting this. Students would come to us at the end of a session and tell us about a conversation they had had with the doctor based on what they had learnt the previous day. We saw one student in the delivery room teaching the anaesthetist how to give five rescue breaths with an ambubag.

Importantly we learnt a lot about ourselves on that trip. The need to be adaptable and think quickly, to manage teaching with limited resources, to facilitate group work with 60 students, the benefits of team teaching and to listen to each other and give each other space when we got tired, to live with limited resources and the need to reflect and debrief with each other on an evening, particularly when we met with nursing challenges in the clinical area. Most importantly we learnt that we both enjoyed working with our Ugandan colleagues and that we wanted to develop this link further.

How will the project move forward?

We want to continue our work with the school and hospital, indeed the students and the tutors want us to return. This has been a very important part of our own learning curve and a challenge to how we might sustain it. Our desire to continue the education and training support is a natural progression of international work that needs to be sustainable with capacity and capability training built in. In other words it is no good just training the students, if you really want to impact and change practice then you need to support and train the teachers and the hospital staff. This requires a commitment to return to the country and repeat training sessions such as NLS and BLS, alongside working with hospital managers and administrators on capacity and capability work. This is similar to what more experienced international practitioners would advise. For example, the charity Child Health Advocacy International[8] recommends that it is essential to establish a sustainable training programme for healthcare professionals and community workers in the emergency care of mothers, neonates and young children in resource poor countries. However, they also recognise this cannot happen alone, it must happen alongside improvement of facilities and resources. This does not mean you need to build a new ward or hospital but you need to convince staff it is possible to improve facilities already there with limited monetary funding.

FIGURE 5 Uganda's future – the children from the local primary school.

We decided to talk with the senior tutor and asked her to begin negotiations with the senior management team. We submitted a proposal and donation of monetary funds for the improvement of the special care nursery environment. This was accepted and we have been informed the hospital management team have allocated a bigger room for the development and improvement of the facilities for sick and preterm infants at Nyakabale hospital. This project is in the early stages and we will be able to find out more about resource needs when we return in April 2009.

To conclude, overseas voluntary work is not suited to everyone. The living conditions can be simple and basic with limited amenities such as electricity and a lack of running water. Food is also simple and lacks variety. You have to learn to live alongside insects and respect the mosquito! You have to cope with the daily sights in the hospital and in the clinics. At times you feel helpless and overwhelmed. It takes someone who can be very adaptable, is very patient and mindful of living in another culture and attends to those differences in a sensitive manner. It is not about telling practitioners what you think they should know but ascertaining from them what it is they need to know and want to know. Importantly, it is about helping them to move towards achieving some of the WHO targets for health. Finally it is about building medical and nursing relationships globally, and friendships locally. It is about having the vision, however small, to make a difference.

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