

# Surgery and task shifting in the rainforest

Task shifting is a topic not only in Norway. In Africa, training of other groups of health personnel to perform tasks that are traditionally within the purview of the medical profession represents an important contribution to the provision of health services for the population. The aid organisation CapaCare was founded to undertake capacity-building and training of health personnel in areas where health services are in short supply.

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Task shifting is not a new concept in Africa. Antiretroviral treatment of HIV positive patients has largely been undertaken by nurses and assistant nurses, and a large proportion of the surgical and obstetric activity in district hospitals in East Africa has been handled by non-doctors. West Africa does not have a similar tradition, although the problems in providing health services to the population are no less pressing.

Sub-Saharan Africa is still marked by the colonialist legacy, and this applies to the health services as well. In the colonial era, health services were primarily established with a view to catering to the needs of the colonial masters. Gradually, the local population was also included to safeguard the workforce, but also to improve public health in general. Research projects were established and vaccination programmes were implemented (1).

After independence, the new countries took over the systems that the colonial powers had established, including the health services. Many countries witnessed a temporary improvement in the supply of health services, but the economic downturn in the late 1970s led to a considerable brain-drain among health personnel, giving rise to significant capacity shortfalls (2). Currently, approximately 9–10 000 doctors are trained in Africa annually, and the capacity remains very low. In comparison, more than 170 000 doctors graduate in Europe each year (3). Many African countries have exported doctors and nurses to the West. In many countries, social unrest and war have exacerbated the problems in establishing health services. As a result of all this, countries such as Mozambique and Sierra Leone were found at the bottom of all health rankings at the start of this millennium (4). In addition to the fact that a primary health service had never existed, the

institutional health services that had been inherited from the colonial masters had disintegrated. Today, the 821 million people living in Sub-Saharan Africa are served by 145 000 doctors. This is less than 5 % of the corresponding figures for Europe, where 100 million fewer inhabitants have 2 877 000 doctors at their disposal (5).

## Surgical services in short supply

Now, however, the situation in Sub-Saharan Africa is changing. Throughout the past few decades, a large amount of aid has targeted the primary health services, public health and infectious diseases in particular. The AIDS epidemic has been successfully handled, the malaria problem is being reduced, and child mortality rates have never been lower. All this helped the population of Africa surpass the one-billion mark for the first time in 2012. Numerous challenges remain, however. Establishment of adequate surgical services has been overshadowed by large programmes for combating infectious diseases. The lack of surgical competence mainly affects young adults with regard to childbirth and traumas. Surgical treatment is provided in only a few countries, and most often only in the cities and to those who can pay for it. In 2008, the World Health Organization (WHO) concluded that priority should be given to training of health personnel adapted to the needs of the general population. Non-doctors should be trained in diagnostics and therapy, and the provision of health services should be decentralised (6). In 2012, this was followed up by more specific recommendations for task shifting in the field of maternal and perinatal medicine. One of the recommendations states that consideration should be given to training non-doctors to perform Caesarean sections in areas where there is a serious shortage of doctors (7).

## CapaCare

Those of us who took the initiative to launch CapaCare (8) had previous experience of emergency aid through large organisations such as the Red Cross and Médecins Sans Frontières. These organisations function well during emergencies and crises, and they also



try to help achieve a lasting improvement in the supply of health services in the recipient country. We saw a need for starting a programme that should primarily seek to enhance local capacities for treatment. Sierra Leone in 2008 seemed an appropriate location for such a programme. The country had endured a brutal civil war that had ended in 2002. The population was among the world's poorest, but motivated to avoid further wars and willing to attempt to escape from poverty, corruption and a dysfunctional social order. Crime was at a manageable level, and the government was in favour of reform (9).

We established cooperation with a Danish organisation, Friends of Masanga, which operated the Masanga hospital in the rainforest in the interior of the country. This was an old leprosy hospital, which had been founded by Scandinavian and English Adventists and was located far from the population centres. This isolation provided us with a certain amount of control of the security situation. The programme was also based on some further facts: In 2007, Sierra Leone had ten licensed surgeons. Over a five-month period in the same year, a total



Both photos: Håkon Bolkan

of 724 surgical and birth-related interventions were recorded in the ten largest public hospitals (10). Life expectancy remains below 50 years, child mortality (under the age of five) is 20 % and maternal mortality is 970 per 100 000 (11).

In 2012, a total of 32 doctors graduated in Sierra Leone, which is the highest figure in recent history. Many of them leave the country. Now in 2013, only four of the surgeons in the public sector hail from Sierra Leone, whereof one is younger than fifty (Dr. Bash-Taqi, Director of Postgraduate Training, Ministry of Health and Sanitation, Sierra Leone, personal communication). To specialise they have to go abroad, most commonly to Ghana or Nigeria. Training a sufficient number of doctors to cover the country's needs will take many years. In the country, there is a group of health workers referred to as Community Health Workers (CHO). These practitioners receive three years of training qualifying them for primary practice in outlying areas, but they are not permitted to undertake surgery. A similar group of health workers in East Africa have undertaken surgery for many years, with acceptable results (12). In the short term it appeared that training the Community Health Officers to perform surgery would be the only available option.

We wished to formalise this training and give it an established position in the country's health services. We encountered a fair amount of opposition from doctors, but with the support of the Ministry of Health we succeeded in obtaining permission for Community Health Officers to practice surgery. On this basis we have initiated a two-year training programme into which eight students are enrolled annually. The programme is funded by the Kavli Foundation, Lion's Club district 104B and other priva-

tely raised funds. From its outset in January 2011 up to April 2013, a total of 17 students have participated in 5 511 surgical operations. The project has a preliminary time-frame to 2017.

The activity is mainly based at the Masanga Hospital, in cooperation with eight other hospitals operated by international aid organisations and staffed with European surgeons or gynaecologists. The establishment of this network enables us to make use of the surgical and obstetric competence available in the country for systematic teaching, by sending the candidates on a six-month rotation schedule to our partners. The theoretical training is provided by doctors and nurses from Europe, preferably surgeons, gynaecologists, anaesthesiologists and radiologists. These lecturers arrive on short-term stays lasting 3–6 weeks to teach the candidates at the Masanga Hospital. The curriculum is based on WHO's *Integrated Management for Emergency and Essential Surgical Care (IMEESC) toolkit* (13). In addition, we arrange an annual course in surgery where pigs are used as models, supervised by Herman Lonnee, who works as an anaesthesiologist at St. Olavs Hospital. Furthermore, we arrange annual courses in ultrasound diagnostics, which are open to young doctors from the public sector as well.

### The road ahead

The first two candidates have recently passed their written and oral examinations and are about to start their internship in public hospitals in the capital city of Freetown. They will not necessarily be received with open arms, since many doctors are still opposed to the project. During their training, the candidates have accumulated considerable surgical experience. During his two-year period, one of them has operated on 128

hernias and performed 55 Caesarean sections and 13 hysterectomies, alone or with assistance from a surgeon or a gynaecologist. Current plans include training of 30 Community Health Officers. With all these working at full capacity, it will be possible to operate on 15 000 patients each year, according to estimates based on experience from East Africa (14). Nobody knows exactly how many patients are operated on annually in Sierra Leone, but Håkon Bolkan is in the process of clarifying this as part of his PhD project. This will hopefully provide a basis for assessing the effect that a national task-shifting project may have on surgical activity in a taxing African setting. We believe that this project could have a major impact, not only by increasing the supply of surgical services in Sierra Leone, but also by demonstrating that surgery can be made available to ordinary men and women outside the large urban centres.

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