

# **Proposal to roll out a hospital-based, task-shifting approach to strengthen maternal and neonatal care**

## **The problem**

One of the main problems in the provision of hospital care for pregnant women and newborn infants in low-income countries, particularly those in sub-Saharan Africa, is a lack of appropriately trained doctors who can care for patients most at risk of death or serious long-term harmful complications. Such complications include obstetric fistulae in women and adolescent girls who have experienced obstructed labour without access to immediate Caesarean section, and permanent, but preventable, cerebral palsy in infants where newborn care has been delayed, or performed incorrectly.

Emergency hospital obstetric and neonatal care frequently involves long periods overnight where doctors have to work extremely hard without sleep and where mistakes due to tiredness, can be fatal. Such pressures can usually be endured where there are sufficient numbers of well-trained doctors to provide adequate care, but in situations where doctors are scarce, the rotas required to provide life-saving care 24 hours a day, 7 days a week, are difficult to fulfill and many doctors become “burnt out” as a result. This situation often leads to doctors leaving the country, working only in well-resourced hospitals in cities rather than in rural hospitals, or undertaking private health work where overnight, front-line clinical care is minimal. Some doctors may also decide to accept offers of desk-based jobs from international organisations. The loss of doctors from front-line clinical care progressively makes the situation worse. It leads not only to a lack of quality care for patients, but reduced opportunities for junior doctors to become trained by senior experienced specialists in advanced obstetric and neonatal care. There is little doubt that this human resource problem is one of the most serious root causes of maternal and neonatal mortality in low-income settings.

Table 1 shows information relevant to maternal mortality in the 10 countries with the smallest number of doctors for the population and compares these with two well-resourced countries, the United Kingdom and the United States of America. Accepting that the relationship between a paucity of doctors and maternal mortality is not absolutely causal, it would seem appropriate to address the strong possibility that a lack of doctors is a major contributing factor (especially regarding hospital care) to maternal mortality and seek a possible solution to address this problem.

**Table 1 WHO Global Health Observatory data repository on number of doctors per country in the world: showing the 10 countries with the lowest number plus information on two well-resourced countries (UK and USA)**

Maternal mortality data from State of the World's Children 2016

Country	Number of persons per 1 doctor	MMR Maternal deaths /100,000 live births	Population (millions)	Annual No: births	No: maternal deaths/year scaled to a population of 5 million
Liberia	71,429	1100	4.503	156,000	1,904
Malawi	52,632	570	17.215	665,000	1,101
Niger	52,632	520	19.899	983,000	1,284
Sierra Leone	45,455	1200	6.453	229,000	2,129
Ethiopia	40,000	680	99.391	3176,000	1,086
Burundi	35,714	500	11.179	488,000	1,091
Tanzania	32,258	430	53.470	2064,000	830
Somalia	28,571	1000	10.787	471,000	2,183
Chad	27,027	860	14.037	630,000	1,930
Central African Republic	20,833	540	4.900	164,000	904
Togo	18,868	400	7.305	256,000	701
UK	356	9	64.716	813,000	6
USA	408	28	321.774	4025,000	18

## **A potential solution involving a task-shifting approach to provide quality maternal and neonatal hospital care in countries or regions where there are too few doctors**

Registered midwives are present in all countries, including those with the smallest number of doctors. In low-income countries, their workload is high and those working in hospitals have, after a few years, great experience in managing normal and abnormal deliveries as well as major complications such as massive haemorrhage, sepsis, shock or fits (eclampsia). However, they are not trained in the more advanced obstetrics needed to treat a significant proportion of patients with complications (for example those needing a vacuum delivery for prolonged labour or Caesarean section for obstructed labour). Especially during the night, and in rural district hospitals, they can encounter major delays in initiating curative treatments because of the lack of availability of doctors trained in obstetric surgery.

By enhancing the training of senior experienced midwives in advanced obstetrics, including abdominal surgery, to work as a team with the small number of doctors available, this task-shifting approach could provide improved obstetric care, particularly in rural district hospitals.

Midwives, unlike most doctors, are rooted in their communities and extremely unlikely migrate to seek better pay and conditions. Unlike most physician assistants/medical officers, midwives usually have a strong grounding in maternity care. The constant feedback from midwives trained and being trained in advanced obstetric care will help government to ensure the availability of essential equipment, drugs, medical and surgical supplies.

Similar factors apply to the provision of hospital-based quality neonatal care. At present most such care relies on untrained midwives, nurses or nurse assistants. A task-shifting approach to create advanced neonatal nurse practitioners may also be easier to achieve over a shorter duration of time than training in advanced obstetrics as the latter has a major surgical component.

Without doubt, good neonatal care relies on effective obstetrics and a task-shifting approach that encompasses both advanced obstetric and basic neonatal hospital care should be particularly effective.

### **Experience of a pilot programme in Liberia**

An innovative, task-shifting programme undertaken as a partnership between the Ministry of Health, the World Health Organization (WHO), the United Nations Population Fund (UNFPA), and Maternal and Childhealth Advocacy International (MCAI) is addressing the shortage of doctors in Liberia. This extremely poor country, recently damaged by armed

conflict and the Ebola outbreak, has globally the least number of doctors (1 doctor for 71,429 people: see Table 1). Starting in October 2014 the programme has involved the training of selected senior midwives in advanced obstetrics and is just starting the training of senior nurses or midwives in basic hospital neonatal care. Advanced obstetric training is undertaken by two of only 3 Liberian doctors who are trained in advanced obstetrics with support from volunteer international experts from well-resourced countries. There are so few paediatricians in Liberia that training in basic neonatal care will be undertaken by volunteer international paediatricians and advanced neonatal nurse practitioners.

Under a Memorandum of Understanding, this pilot programme involves continuous communications and regular meetings between partners, combined with robust monitoring and evaluation. WHO and UNFPA are currently the main donors but are also providing expert guidance on how to choose trainees, how to ensure their training is appropriate and evidence based. The Liberian MOH helps identify the trainees, ensures they are embedded in the public health system, on qualification after 3 years of training, ensures they are licensed to practice in public hospitals identified by them, ensures they are provided with appropriate salaries, fair living conditions and adequate clinical resources to undertake comprehensive emergency obstetric and neonatal care.

The first two trainee obstetric clinicians have recently completed their 3 years of training, including their last year as interns in 2 hospitals in Liberia. Since the start of their training in October 2014 until April 2016, they performed 671 advanced obstetric procedures, including 424 Caesarean sections. They were both successful in their final examinations, undertaken by the Liberian Medical and Dental Council. One achieved a distinction and the other passed with merit. They are about to be contracted to work as licensed obstetric clinicians in public hospitals chosen by the MOH and for a minimum of 5 years.

Nine more trainee obstetric clinicians are currently being trained, four of whom were deliberately recruited from a remote rural county (Grand Jedeh) where for a population of 126,000 people there is only one hospital doctor. The trainees are based at 3 Liberian public hospitals.

In addition to performing advanced surgical procedures such as Caesarean section, the trainee obstetric clinicians are also leading team-management of serious complications of pregnancy and delivery such as obstetric haemorrhage and severe pre-eclampsia/eclampsia. Trainees work closely with the small number of available doctors as an integral part of the clinical team and helping to reduce doctors' work load.

Preliminary results of the advanced obstetric programme were published in the Bulletin of the World Health Organization BLT.160473 Published online: 25 February 2016) and showcased in an Al Jazeera documentary

<http://www.aljazeera.com/indepth/features/2016/07/life-saving-work-liberian-midwife-160713153725961.html> More details on the project to date can be reviewed on the MCAI website: <http://www.mcai.org.uk/#!liberia/chog>

With financial support from WHO Liberia, the training programme for basic neonatal hospital care is about to begin.

The curricula for both advanced obstetric (Appendix A) and basic neonatal care training (Appendix B) in Liberia are attached.

Training for both obstetrics and neonatal care is based on apprenticeship working with local Liberian doctors and supplemented by volunteer obstetricians, paediatricians and advanced neonatal practitioners from well-resourced countries supported by MCAI. A senior Liberian obstetrician is leading the training in advanced obstetrics following a curriculum provided by MCAI and approved by all partners.

Each trainee has a computer tablet on which they record into a database information on every patient they manage. They also complete in the same way a paper logbook. Special maternal mortality forms are completed by each trainee whenever they are involved in the care of a patient who dies.

The Tablet includes an e-library of up-to-date publications, the MCAI textbook pocket books on hospital care for pregnant women, newborn infants and children in low resource settings and over 350 relevant videos. Each set of trainees has a laptop computer used for regular interactive teaching sessions from international experts via screen-sharing video conferencing. There are OSCE examinations to track progress and highlight which trainees need additional support and which may not be able to continue with the training.

There is a written examination for those interns reaching the end of their training, which they must pass if they are to be licensed to practice.

In a separate exercise for monitoring and evaluation purposes, all maternal deaths identified before and during the programme are collected already by surveillance officers from the Ministry of Health. Recently, neonatal deaths are also being audited in the same way.

### **Possible scale up and roll out of this maternal and neonatal task-shifting hospital care programme**

The success of the described programme has led partners to unite behind a proposal to find an appropriate mechanism to scale up and roll out this innovative task-shifting approach to

other interested and receptive countries throughout sub-Saharan Africa to help these countries achieve their national goals to reduce maternal and neonatal mortality and improve hospital-based maternal and neonatal care.

An international conference may be the first step in facilitating a discussion and implementing an action plan:

**Objective 1:** Establish an international conference hosted by the Liberian MOH and WHO, to facilitate a technical discussion on how to make task-shifting for quality hospital care work in different settings and

**Objective 2:** to provide expert input into the fundamentals and necessary steps to establish successful hospital based task-shifting programmes in maternal and neonatal care, perhaps expanding in the future to include hospital-based care for children.

**Outcome 1:** To provide practical technical expert guidance on establishing and implementing hospital-based task-shifting programmes to interested countries and organisations with a tangible action plan on how to take national and regional plans forward.

**Outcome 2:** To agree a mechanism on how to establish a centre (physical or virtual) of expertise on hospital-based task-shifting throughout sub-Saharan Africa.

**Outcomes 3:** To establish a forum for interested parties to keep in communication and share examples and experiences.

The main challenges to this task-shifting approach have already been addressed in the Liberian model. The main challenge was need to justify to senior doctors, and in particular to the Liberian Medical and Dental Council (the regulatory body for licensing practitioners) and the Liberian Nursing and Midwifery Association, that senior midwives should and could be trained sufficiently to practice safe advanced obstetric care in Liberian public hospitals. There could be some similar resistance in the other countries in which this task-shifting programme might be implemented. It is unlikely that there will be similar problems introducing the advanced neonatal care training programme, as doctors are currently having minimal input into the care of the newborn infant and surgery is not involved.

Additional issues that require discussion are: the importance of robust partnerships between the MOH, WHO, UNFPA and the regulators; the appropriate selection of trainers and candidates; the involvement of national universities in supporting the trainees; the strengthening of hospital facilities in terms of equipment, essential medical and surgical

supplies and drugs to ensure quality training; the provision of appropriate pay structures, accommodation and family support for trainees; and qualified task-shifting clinicians.

Finally, not only must the necessary logistic and international diplomatic work be established, but sufficient financial support is also essential.

These challenges, relevant to the context of each country interested in implementing a similar task-shifting approach in hospital-based maternal and neonatal care, could be discussed in the technical workshops of an international conference and worked through in the agreed mechanism (physical or virtual) of expertise on hospital-based task-shifting throughout sub-Saharan Africa.